



Report 2.4.1.

Mapping of the access nodes identifiers in the Member States

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Abstract

This report, "**Mapping of the Access Nodes Identifiers in the Member States**", constitutes a deliverable of the **NAPCORE** project, a **Programme Support Action** funded under the **Connecting Europe Facility (CEF)**. It aims to facilitate **EU-wide coordination of National Access Points (NAPs)** for the harmonized implementation of **European specifications on the ITS Directive (2010/40/EU)**, particularly focusing on **Multimodal Travel Information Services (MMTIS)**.

Within the framework of NAPCORE Task 2.4, the current report presents findings which were collected by **structured interviews based on a survey** conducted across **21 EU Member States, as well as Norway, Switzerland and the United Kingdom**. Additionally, key stakeholders such as **MobilityData, the European Union Agency for Railways (ERA), and the Airports Council International (ACI Europe)** were interviewed. The survey assesses the **current state of digital identification systems for transport access nodes**, defined as *pre-defined locations where passengers may board or leave scheduled transport or transport on demand*, and explores opportunities for further **harmonization** in alignment with **EU Directive (EU) 2023/2661**.

The **harmonization of access node identifiers** contributes to **seamless multimodal travel** in the EU. While **progress has been made, disparities in implementation and fragmented data standards** persist. By leveraging **existing frameworks**, strengthening **governance and collaboration**, and expanding **coverage to emerging mobility services**, the EU can achieve a **unified, interoperable system** that enhances **passenger experience, operational efficiency, and sustainable mobility**. Future efforts under **NAPCORE** and **EU directives** must prioritize **execution, stakeholder engagement, and continuous improvement** to realize this vision. Such policy recommendations will be delivered in the second deliverable of Task 2.4 of NAPCORE which is due April 2026.

Abbreviations/Acronyms

Abbreviation/Acronym	Meaning
ACI	Airports Council International
API	Application Programming Interface
ART	Authority for Train Reform
ASTRA	Federal Roads Office in Switzerland
AVL	Automatic Vehicle Location system
BMC	Belgian Mobility Company
CDV	Transport Research Centre of Czechia
CFR	National Railway Transport Company of Romania
CHB	Centraal Halte Bestand (Central Stop File in the Netherlands)
CISJR	National timetable information system of Czechia
CRD	Central Reference Database
DCAT	Data Catalogue vocabulary
DCAT-AP	DCAT Application profile for data portals in Europe
DELFI	Durchgängige Elektronische FahrgastInformation (German consistent electronic passenger information)
DGITM	Directorate-General for Infrastructure, Transport, and Mobility
DHID	Deutschlandweite Haltestellen-ID (Germany-wide stop ID)
DRT	Demand-Responsive Transport
EASA	European Aviation Safety Agency
EPIP	European Passenger Information Profile
EPIAP	European Passenger Information Accessibility Profile
ERA	European Union Agency for Railways
ERSAD	European Railway Station Accessibility Database
EU	European Union
FOE	Federal Office of Energy of Switzerland
FOT	Federal Office of Transport of Switzerland
FTIA	Finnish Transport Infrastructure Agency
FSR	Finnish Stop Registry
GBFS	General Bikeshare Feed Specification
GERS	Global Entity Reference System
GOFS	General On-Demand Feed Specification
GOVI	Gegevensuitwisseling Openbaar Vervoer Informatie (Dutch Public Transport Information Data Exchange)
GTFS	General Transit Feed Specification
HAFAS	Hacon Fahrplan-Auskunfts-System
HRDF	Hafas Raw Data Format
IANA	Internet Assigned Numbers Authority
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ID	Identifier
IFOPT	Identification of Fixed Objects in Public Transport
IM	Infrastructure Manager
IMT	Instituto da Mobilidade e dos Transportes
INSEE	Institut national de la statistique et des études économiques
IATA	
ISO	International Organization for Standardization
ITS	Intelligent Transport Systems
LTG	Lietuvos geležinkeliai (Lithuanian Railways)

LTSA	Lietuvos Transporto Saugos Administracija (Lithuanian Transport Safety Administration)
MaaS	Mobility-as-a-Service
MÁV	National Railways Hungary
MCT	Minimum Connecting Time
MDMS	Multimodal Digital Mobility Services
MDS	Mobility Data Specification
MERITS	Multiple East-West Railways Integrated Timetable Storage
MIVB/STIB	Brussels Intercommunal Transport Company
MMTIS	Multimodal Travel Information Services
MVO	Mobility Association Austria (Mobilitätsverbünde Österreich)
NAP	National Access Point
NaPTAN	National Public Transport Access Nodes
NDOV	National Public Transport Data Portal (Nationale Data Openbaar Vervoer)
NDW	Nationaal Dataportaal Wegverkeer
NMBS/SNCB	National Railway Company of Belgium
NSR	National Stop Register of Norway
NTA	National Transport Authority of Ireland
NTM	Nationaal Toegangspunt Mobiliteitsdata
ÖBB	Austrian Federal Railways (Österreichischen Bundesbahnen)
OP	Operational Point
PRM - TSI	Persons with Disabilities and Reduced Mobility - Technical Specifications for Interoperability
PSO	Public Service Obligations
PTA	Public Transport Authority
PTO	Public Transport Operator
RAP	Regional Access Point
RINF	Register of Infrastructure
RMS	Rhein-Main-Verkehrsverbund Servicegesellschaft
ŘSD	Roads and Motorways Directorate
RTTI	Real-Time Traffic Information
RU	Railway Undertaking
SBB	Swiss Federal Railways
SERA	Service of European Rail Agencies
SHR	Swedish Stop Registry
SKI	Swiss Public Transport Data Association
SLC	Subsidiary Location Code
SLOID	Swiss Location Identification
STePP	Portuguese national system for public transport data
TAF TSI	Telematics Applications for Freight Technical Specifications for Interoperability
TAP TSI	Telematics Applications for Passenger Technical Specifications for Interoperability
TEC	Transport Operator of Wallonia
TEN-T	Trans-European Transport Network
TIDES	Transit Integrated Data Exchange Specification
TISS	Transport Information System of Ireland
TPBI	Bucharest-Ilfov Intercommunity Development Association for Public Transport
TODS	Transit Operational Data Standard
UIC	International Union of Railways

UITP
VDV
ZHV

International Association of Public Transport
Verband Deutscher Verkehrsunternehmen
Deutschlandweites zentrales Haltestellenverzeichnis



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1. Introduction

This report is the first outcome of the Task 2.4, EU IDs for Multimodal Access Nodes of NAPCORE, a Programme Support Action - funded under the Connecting Europe Facility (CEF)¹ – which gathers public authorities of all EU member states and which aims at facilitating EU wide coordination of NAPs (National Access Points) for the harmonisation of the implementation of the European specifications adopted in the framework of the ITS Directive.

UITP – the International Association of Public Transport (see <http://europe.uitp.org/>) - is a partner of NAPCORE for what relates to Multimodal Travel Information Services (MMTIS).

In this position, UITP is responsible for “mapping access nodes identifiers in the Member States” which is addressed in this report, related to Task 2.4, EU IDs for Multimodal Access Nodes, part of the Working Group 2 on Multimodal Mobility.

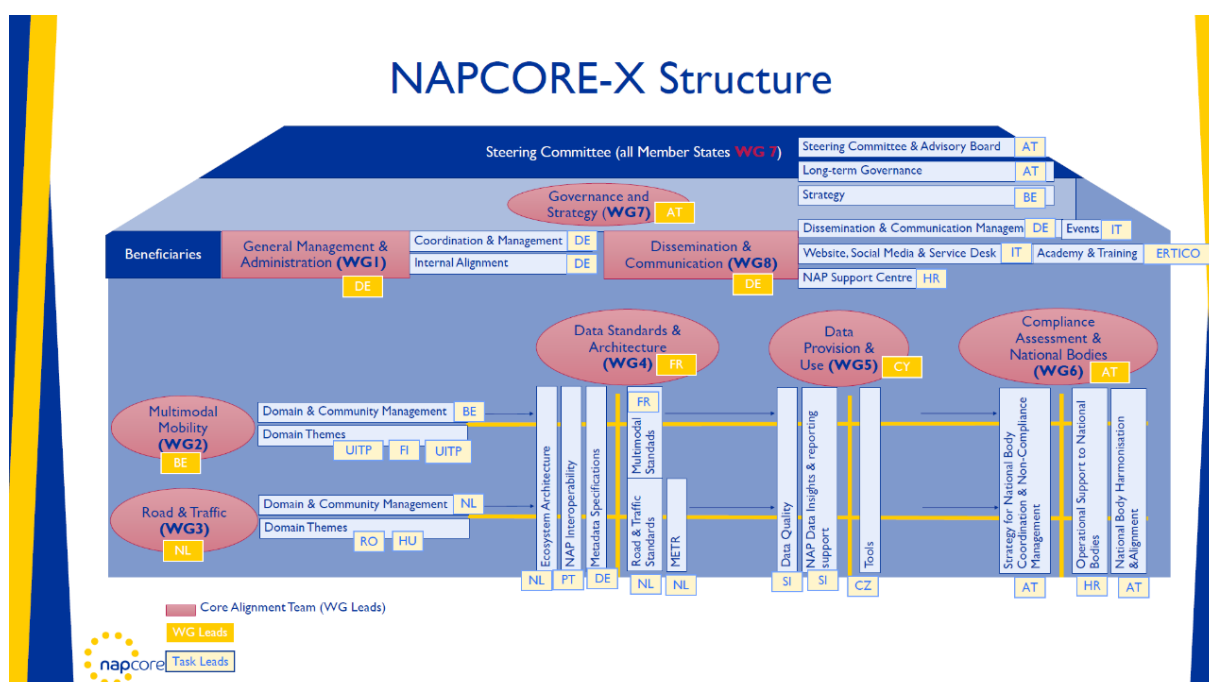


Figure 1: NAPCORE-X structure.

The task is based on surveys, targeting primarily representatives of Member States (MS), using a structured interview guideline. In this first step summarised in this report, some additional key “modal” stakeholders have been interviewed with adapted lists of questions, such as “MobilityData”, an organization in charge of the governance of global formats for road and urban mobility, the “European Union Agency for Railways” (ERA) for rail, and, for the air sector, the “Airports Council International” (European branch: ACI EUROPE). Similarly, other organisations such as the “International Union of Railways” (UIC) and the “International Air Transport Association” (IATA) were reached out to conduct an interview without a response.

A second step, after the publication of the current report, will involve inviting to interview other major stakeholders representing different modes that are crucial to achieve EU wide digital IDs for access nodes at national, European and international levels, including:

- Amadeus: Provider of travel technology that focus on developing software for airlines.

¹ The CEF is a European Union fund established in 2014 for infrastructure investments (in particular the Trans-European Networks) across the union in transport, energy, digital and telecommunication projects, which aims at a greater connectivity between EU Member States.

- Sabre: Global distribution systems (GDS) provider for air bookings.
- IATA: International Air Transport Association.
- UIC: International Union of Railways.
- APPs: Transit APP, Populus, Arrive.
- Shared mobility service providers: BlueBike, Communauto.

Additional stakeholders shall be interviewed based on information provided by task 2.1 from NAPCORE related to community management, and stakeholder involvement.

2. Background and Methodology

2.1. Background

This task supports the European Commission objective to coordinate the National Access Points (NAPs) and National Bodies (NBs) established under the Directive 2010/40/EU³, so-called **ITS Directive**, on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport.

The task is developed in application of the Delegated Regulation of the ITS Directive addressing “Multimodal Travel Information Services”, in short MMTIS DR². The connected task is part of the [working programme for Directive 2010/40/EU for the period 2024-2028](#).

In particular, the task aims to map existing tools in place to identify access nodes and review the current availability of access nodes identifiers at national or European level.

The Delegated Regulation (EU) 2017/1926 defines access nodes as follows:

‘Access node’ means a pre-defined location where passengers may board or leave scheduled transport or transport on demand³.

In Directive (EU) 2023/2661 amending Directive 2010/40/EU, access nodes are mentioned in, or related to:

- Recital (20): [...] To further enhance the accessibility of the transport system and facilitate travel for people with disabilities and people with reduced mobility, multimodal digital mobility services need to have data on access nodes and their accessibility features in accessible formats.
- Annex I - Priority area I: Information and mobility ITS services

The specifications and standards [...] shall include the following:

1.1. Specifications for EU-wide multimodal digital mobility services (including EU-wide MMTIS).

The definition of the necessary requirements to make EU-wide multimodal digital mobility services and similar services providing information, booking or purchasing features for more than one transport operator within the same mode of transport accurate and available across borders to ITS users, based on:

1.1.1. the availability and accessibility of existing and accurate multimodal traffic and travel data, used for multimodal digital mobility services to ITS service providers [...];

² Regulation (EU) 2017/1926, amended by Regulation (EU) 2024/490.

³ Definition 25 at Regulation (EU) 2017/1926, amended by Regulation (EU) 2024/490.

1.1.2. the facilitation of the electronic data exchange between the relevant public authorities and stakeholders and the relevant ITS service providers, across borders, in particular through standardised interfaces;

1.1.3. the timely updating by the relevant public authorities and stakeholders of available multimodal traffic and travel data, used for multimodal digital mobility services;

1.1.4. the timely updating of multimodal travel information, including information related to booking and purchasing where relevant of transport services, by the ITS service providers.

[...]

1.3 Specifications for EU-wide multimodal digital mobility services and road traffic information and navigation services.

[...] 1.3.2. The definition of the necessary requirements to make road, traffic and relevant travel and multimodal infrastructure data used for digital maps accurate and available, where possible, to digital map producers and service providers, based on:

1.3.2.1. the availability and accessibility of existing road, traffic and relevant travel and multimodal infrastructure data, including **identified access nodes**, used for digital maps to digital map producers and service providers; [...]

- Annex III, Data Type 4. Static multimodal traffic data for EU-wide MMTIS (as referred to in Annex I, Priority area I, paragraphs 1.1 and 1.3):

Location of **identified access nodes** for all scheduled modes, including information on accessibility of access nodes and paths within an interchange (such as existence of lifts, escalators).

For access nodes created or updated after the dates hereafter, data shall be available in digital machine-readable format and accessible via the National Access Points:

- By 31 December 2026 for Urban nodes as defined in the TEN-T Regulation, including those administered by the cities:

‘urban node’ means an urban area where elements of the transport infrastructure of the trans-European transport network for passengers and freight, such as ports, including passenger terminals, airports, railway stations, bus terminals and multimodal freight terminals, located in and around the urban area are connected with other elements of that infrastructure and with the infrastructure for regional and local traffic, including infrastructure for active modes.⁴

- By 31 December 2028 for the entire transport network of the Union.

For the moment, there is no deadline for the digitalisation of the stock.

Following a cost-benefit analysis and appropriate consultations, and considering market and technological development throughout the Union, the European Commission could adopt Delegated act(s) not earlier than 31 December 2028 for Urban nodes and not earlier than 31 December 2032 for

⁴ Definition 6 of Regulation (EU) 2024/1679 on Union Guidelines for the development of the trans-European transport network, amending Regulations (EU) 2021/1153 and (EU) No 913/2010 and repealing Regulation (EU) No 1315/2013.

the entire transport network of the EU, to require Member States to ensure that the data corresponding to all existing access nodes shall be available in digital machine-readable format and accessible via the National Access Points.

2.2. Methodology

To better understand the current situation across Europe, UITP conducted structured interviews with representatives from different countries. The complete interview format is included in Annex 1 of this document.

Format: 1- hour video conference meeting

Content: A questionnaire of 10 questions

Goal: To gather insights on how each country approaches the digital identification and registration of transport access nodes (e.g. stations, stops) and identify needs and gaps.

The key topics addressed are:

- Existence and scope of harmonized digital ID systems
- Modes of transport covered
- Responsible authorities
- Data structure, standards and access
- Regulatory or policy framework
- Challenges and outlook

2.2.1. Structured interview questions for Member States representatives

- (1) In your country, is there any harmonized system in place (or being developed) for the digital identification of transport access points (such as stations, stops)?
- (2) Is there just one system or are there different systems existing in parallel, perhaps at different levels (local, regional, national)?
- (3) What modes of transport are covered by the register? (E.g. train, bus, urban rail, micromobility, on-demand, maritime, aviation, etc.)
- (4) Who is in charge of this digital register/identification system?
- (5) How is the digital register/identification system organized? (e.g. What does a digital ID look like, how is it composed? Are there sub-levels to identify different areas or even single bus stops/platforms within the larger stations?)
- (6) What data attributes are recorded for each access point? (e.g. geographical coordinates (GPS or other), infrastructure details, accessibility features, etc.) Which standards do you use?
- (7) How is this data made available to different stakeholders? How can others access it? (Is the data open and publicly accessible, or does it require agreements/licenses?)
- (8) Are there any national regulations or policies that require or encourage the harmonization of ID for access nodes? Which ones? Or has the harmonization been a sector initiative (without policies)?
- (9) What are the main challenges faced in maintaining and improving this system? How do you see this system evolving in the coming years?
- (10) Is there anything else you consider relevant for understanding the digital registration of transport access points?



2.2.2. Interview of key “modal transport” International and European stakeholders

Three major “modal” stakeholders which influence or drive the management of information related to access nodes in their modal domain have also been interviewed within the scope of the study (see section 3.3):

- For “road”, the MobilityData association (with a scope targeting a wider range of mobility services including public transport and shared mobility services);
- For “rail”, the European Union Agency for Railways (ERA);
- For “air”, the Airports Council International association (ACI) (Europe branch).

A second set of interviews of additional key European stakeholders shall be organised and included in the second report as presented in the introduction.

[IATA](#), and [UIC](#) have been contacted pending a date for an interview. Others shall be contacted (e.g. the CCMC, CEN-CENELEC Management Center, coordinating the standardisation works of two of the three official [European Standardisation Organisations](#) (ESOs). The three ESOS are the European Committee for Standardisation ([CEN](#)), the European Electrotechnical Committee for Standardisation ([CENELEC](#)), and the European Telecommunications Standards Institute ([ETSI](#)).

3. Overview of existing access nodes identifiers

3.1. General overview

Information from all EU member states except Bulgaria, Croatia, Greece, Slovenia, Luxembourg, Malta, was gathered via an online interview or submission of the questionnaire. Besides the EU members states, information from Norway, Switzerland, and the United Kingdom was gathered. The following map shows the countries whose information was gathered, and member states contacted without information gathered, the contacts gathered didn't respond to the request. In Greece, the NAP was conducting a selection of the technical advisor and suggested to have the meeting once that process is finalized.

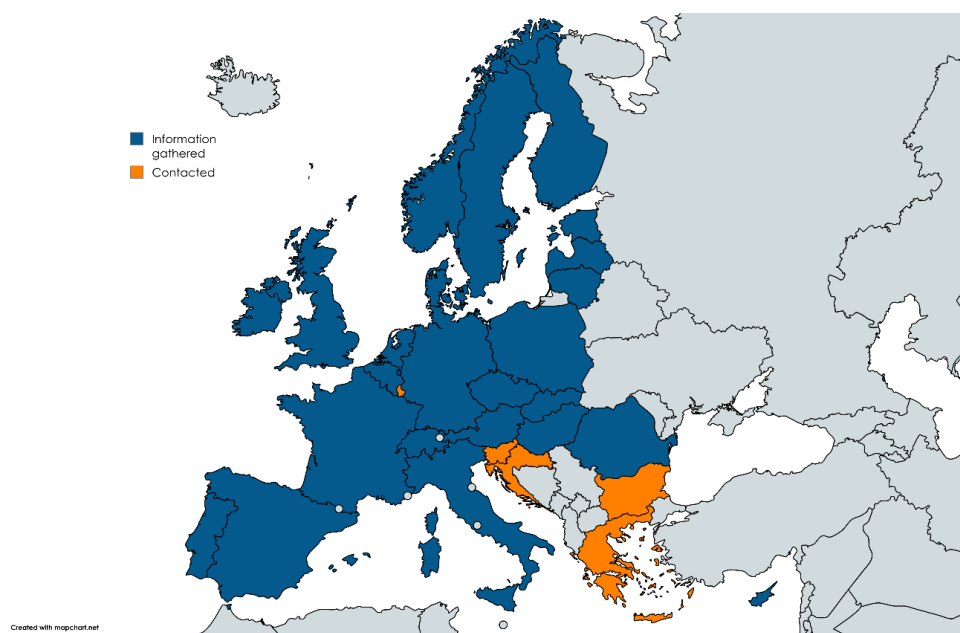


Figure 2: Countries interviewed, and contacted.

Based on the information gathered, it is possible to identify that substantial progress has been made in recent years toward the definition of national access node IDs and the digitalisation of access nodes. This includes the development of national guidelines, directives, and pilot projects for standardization, which have established clear procedures and responsibilities at national level. As a result, reliance on paper-based timetables has decreased, service integration has improved, and data accessibility through NAPs has increased.

However, countries have varying levels of progress in implementing digital IDs for access nodes. While some lack a national ID system, others allow Public Transport Operators (PTOs) to name stops without standardized guidance. A few countries have launched pilot projects in collaboration with Public Transport Authorities (PTAs), and some have established robust systems with well-defined, regularly updated online guidelines. This disparity highlights opportunities for further development and harmonization.

Regarding the ITS Directive 2010/40/EU, Annex III, data type 4, static and dynamic accessibility information for access nodes remains largely uncovered. Expanding this data, such as barrier-free routes for different disabilities and real-time updates on mechanical components (e.g. elevators, escalators) could significantly enhance the user experience during trips.

Projects as DATA4PT⁵ have contributed to increase the published static data in NeTEx format and real-time data on SIRI. As well, the first phase of NAPCORE⁶ has developed an ITS Data Dictionary to create a common understanding on data categories, and a first metadata catalogue specification for mobility data platforms to enable interoperable discoverability of data.

Despite the previous efforts, the implementation of Transmodel and associated standards remains limited to countries with well-established ITS deployment in public transport. The dedicated efforts on multimodal mobility of the second phase of NAPCORE provides an opportunity to broaden the use of European standards for timetables (NeTEx) and dynamic information (SIRI), promoting greater consistency across systems.

An element of Transmodel V6 is the IFOPT (Identification of Fixed Objects in Public Transport), which is a CEN Technical Specification that defines a Reference Data Model for describing key fixed public transport infrastructure including airports, stations, bus stops, ports, and other points of interest. It covers also their entrances, platforms, internal spaces, equipment, facilities, and accessibility features.⁷

3.2. Overview per Country

3.2.1. Austria

The information was provided by the [Mobilitätsverbünde Österreich](#) MVO (Mobility Association Austria). A reliable system to exchange scheduled public transport static information is in place. PTAs provide their schedules information used by MVO to maintain a central database. MVO ensures that all access points, - such as stops, and stations - are assigned unique identifiers which are based on the IFOPT (Identification of Fixed Objects in Public Transport) ID system. For railway stations, the data is provided by the respective PTA with Österreichischen Bundesbahnen (ÖBB), as the maintaining

⁵ [Home - Data4PT](#)

⁶ [NAPCORE | National Access Point Coordination Organisation for Europe](#)

⁷ <https://www.transmodel-cen.eu/ifopt-standard/>



organisation. The structure for railways stops is the same as for other transport modes as presented later in this section.

There are around 35,000 physical stops across the country, corresponding to approximately 80,000 scheduled stop points (considering different platforms or lines per stop). All these 80,000 stop points are digitised and assigned unique IDs, including those for trains, buses, trams, and metros. Demand-Responsive Transport (DRT) systems and shared mobility services are generally not included unless they are integrated with a public transport stop. For instance, when a DRT stop coincides with a public transport stop, the DRT stop inherits the public transport stop ID. When DRT is managed by the regional PTA, the information is included in the database. However, when DRT is managed by other bodies or municipalities, data collection is more fragmented. The stop places hierarchies representing multimodal hubs is presented below. As indicated before, each stop place and quay has its own ID. IT is important to note that the component GroupofStopPlaces is not in use in the Austrian [NeTEx](#) profile.



Figure 3: Austria's Stop Place hierarchies⁸.

Regarding other modes, airports are not included within the Austrian information system. Waterborne transport is partially included; if it is part of scheduled public transport, it is included, but if it is for seasonal tourism, it is not included in the timetable data and therefore lacks a node ID in the harmonised system. The same applies to cable cars, they are usually not included if they are used for seasonal tourism. Some PTAs are interested in including them and have started to build timetables so that the data can be used in journey planners.

The unique ID system managed by MVO assigns and maintains stops across borders, ensuring data consistency for Austrian services. Over the past two years, information from neighbouring regions, especially Western Austria, have been added to support cross-border commuting and tourism. This includes areas in Germany, Switzerland, and Italy. National datasets of neighbouring countries are not provided, but cross-border lines are included and maintained for seamless journey planning. This implies that the ID for the same stop can be different in the Austrian system and the corresponding system in Germany, Switzerland or Italy.

Regional PTAs are responsible for maintaining stop point IDs. Each authority can generate unique nationwide IDs within their area, typically one of Austria's nine federal states. PTAs also maintain the timetables and assign the IDs according to the IFOPT format. Each region manages its own five-digit identifier to ensure uniqueness. MVO checks the data quality and provides support to regional PTAs,

⁸ [Stop Place hierarchies - NeTEx Profil Österreich - Mobilitätsverbünde](#)

it also updates the datasets daily when changes occur, in 10 separate data packages, one per region, and one for the national railway system.

The structure of the ID is hierarchical and consistent, it follows a similar structure as the one used in Germany. It follows the IFOPT format according to Transmodel V6.2:2024 [Part 2 - Public Transport Network Topology \(NT\)](#) and to the Austrian EPIP [NeTeX profile](#) based on the CEN/TS 16614-4:2017 for [stop places](#), with the following structure:

- Country Identifier – always starts with “AT” for Austria.
- Region Code – a two-digit code representing the federal state ordered alphabetically (e.g. “44” for Upper Austria, “49” for Vienna).
- Stop Place ID – a unique five-digit number.
- Quay (Platform) ID – an additional digit or two appended if platforms are defined.
- Scheduled Stop Point – includes an identifier at the end of the string.

For example:

AT:44:12345

AT:44:12345:2

AT:44:12345:0:1

- “AT” – Country
- “44” – Upper Austria
- “12345” – Stop place
- “0” – Quay (default “0” if unspecified)
- “1” – Scheduled stop point

A scheduled stop point without explicitly identifying the quay is defaulted to zero (“0”). This gives flexibility to modify station layouts, —such as adding new entrances or quays, without changing the ID of the scheduled stop point.

Each regional PTA:

- Is responsible for maintaining the five-digit unique code.
- Use the same IDs when exporting their data.
- Maintains alignment with the national railway authority, even in the railway package, which incorporates regional IDs for each station.

MVO is working to include detailed elements such as entrances, elevators, escalators, stairs, gate locations, among others. The infrastructure base map layer is available [online](#) including detailed information about accessibility such as bridges, underpasses, escalators, elevators, stairs, among others that will be included in the database.

The information available via the [NAP](#) and connected to MVO includes timetable data, stop and infrastructure details, accessibility. Currently [only static data is included](#) and available after registration, but in the future, it will also include real-time updates, disruptions, and incident messages. Documentation is available [online](#). Information about default transfer times are not part of the Austrian [NeTeX profile](#) at the moment.

Looking forward, the lack of a unified ID system for on-demand and shared mobility remains one of the main challenges, and discussions are ongoing to explore how this could be addressed. Similarly, real-time information shall be included.

3.2.2. Belgium



An interview was conducted with the Federal Public Service – Mobility and Transport; the National Geographic Institute, in charge of the development and management of the NAP platform in Belgium (www.transportdata.be); De Lijn (Flemish PTO); the department of Transport from the Flemish Government; and the Belgian Mobility Company (BMC) which is a cooperative initiative of the 4 Belgian Public Transports Operators TEC, STIB-MIVB, DeLijn and NMBS-SNCB.

Belgium currently lacks a unified system for digitally identifying transport access points. At the national level, BMC adds prefixes to the data feeds of the country's four main PTOs—Brussels' MIVB/STIB, Flanders' De Lijn, Wallonia's TEC, and the national railway NMBS/SNCB. While this helps distinguish between operators and maintain data consistency, it does not represent a comprehensive or harmonized national system. Each operator manages its own data feed independently.

There are no shared stops with shared IDs, i.e., they are mostly physically separated among operators even when stops are a couple of meters away. Between TEC and De Lijn there are some poles with information board shared but in GTFS feeds of both operators the ID is different and assigned by each operator.

In Flanders, De Lijn manages approximately 30,000 digitized access points. Most stops display physical timetables, including updates for temporary service changes. In the future De Lijn wants for some distant or infrequent stops to only include a QR code to access the timetable and changes in the services.

Besides that, there are regional initiatives to represent multimodal transport hubs.

Flanders: Hoppin points are multimodal transport hubs where different transport modes converge and are coordinated, including:

- Public transport (bus, tram, train)
- Shared mobility (bicycles, scooters, cars)
- Parking facilities for cars and bicycles

In the Hoppin points [database](#) each point has a unique ID-number and FID-number. The ID number consists of a maximum of four digits. The same applies to the FID reference. The database is freely available via the Flemish Government and the [NAP](#).

E.g.: the Hoppin point 'Torhout Station' has: FID: hoppinpunt_mapstore.71, ID: 1031

Wallonia: Similar multimodal hubs exist under the names of **Mobipoles** (train stations) and **Mobipoints** (bus, tram, metro station). They are also subclassified by the number of people that pass them per week. An internal database was created based on that classification and is the basis for the public [database](#). Some attributes collected in Hoppin points in Flanders are not collected in Wallonia.

Each hub has Boolean attributes such as bike parking, EV charging point, secure bike parking, shared cars station, shared bikes station, shared scooters station and a unique non-numeric ID as follows:

"...the INS number (official city number) + a unique 3 digits number for each mobipole or mobipoint within the city + the class of the mobipole/mobipoint"

Brussels-Capital Region: the Brussels Mobility Hubs will be multimodal hubs where different modes come together, such as:

- Public transport (STIB/MIVB, SNCB/NMBS, De Lijn, TEC).
- Shared mobility (bicycles, scooters, cars).
- Parking facilities.

- Bicycle repair points and charging stations.

This project will be rolled out early next year. A numbering system has not yet been developed.

Information accessible via the [NAP](#) include **GTFS/GTFS-RT feeds** of:

- **Buses** (De Lijn, TEC, STIB)
- **Trams** (De Lijn, STIB, TEC)
- **Metro** (STIB in Brussels)
- **Trains** (NMBS, national level)

As well as information from shared mobility services such as Cambio, Lime, Dott, Bluebike, coach, airplane. Mobility hubs (i.e. Hoppin) include shared mobility, parking facilities and DRT.

Information is available free of charge, after subscription via API for [De Lijn](#) Static (GTFS, and NeTEx) and real-time (GTFS RT). For SNCB/NMBS the [static information](#) is updated daily and available for free after request. Real-time information in GTFS RT is updated every 30 seconds. For TEC, NeTEx and GTFS data is [available](#) for free without registration, and for GTFS RT is available under request to opendata@letec.be. Lastly, STIB/MIVB's [GTFS](#) and [NeTEx](#) data are accessible free of charge.

Information per stop includes stop names, geographic coordinates (GPS), and timetables. Accessibility data is often missing or incomplete due to resource constraints. De Lijn aims to increase the availability of accessibility data by visiting the stops and registering information required.

Hoppin points, Mobipoints and Mobility hubs include multimodal services (e.g. bike-sharing, parking), geographic coordinates, and a list of available transport modes.

GTFS and GTFS-RT are used by DeLijn, TEC, and STIB-MIVB for static and dynamic information; NeTEx is being explored by these operators but not yet fully implemented due to budget and technical constraints associated with updating the current operational system. STIB has a project to start using SIRI internally.

Belgium is working on transposing the revised ITS directive by the end of 2025. The focus is on compliance with EU standards, including the publication of information in NeTEx⁹ and SIRI according to the ITS Directive and MMTIS Regulation, but no additional national legislation is currently planned.

Harmonization efforts (e.g. BMC's role, adoption of NeTEx) are largely driven by the transport sector, not by national policy yet.

The main challenges in standardizing access nodes—including IDs—are:

- **Data quality:** Lack of resources to collect detailed data (e.g. accessibility features, and details).
- **Standardization:** Difficulty aligning GTFS, NeTEx, and regional initiatives (e.g. hoppin points). Currently, BMC converts data received from PTOs to build the NAP database, but PTOs do not use this data for their own operations, nor do they benefit from a native NeTEx implementation.
- **Budget constraints:** Limited funding for projects like NeTEx implementation vs. GTFS and GTFS-RT which are already implemented.
- **Speed of adoption:** different PTOs are at different stages of digital maturity.

Future evolution:

⁹ [NeTEx Belgium: Timetables \(application profile\)](#)



- Short-term: Focus on improving data quality and adopting NeTEx profiles (e.g. EPIP, EPIAP, EFIP).
- Long-term: Aim for a national system, but this will require coordination and investment.
- Cross-border collaboration: Efforts to synchronize transport plans and improve multimodal hubs.

Additional information provided:

- **Interoperability:** The lack of a single national system creates challenges for travelers, especially at multimodal hubs.
- **Vendor dependence:** The dominance of GTFS makes it difficult to transition to NeTEx, which is seen as more complex and resource-intensive.
- **Political and organizational barriers:** Belgium's federal structure and the autonomy of PTOs slow down harmonization efforts.
- **Future priorities:** Beyond digital identification, there is a push for a **unified mobility ticket** across all PTOs, but this is politically and technically challenging.

3.2.3. Cyprus

The information was provided by KIOS – University of Cyprus, the NAP operator. The Public Transport Telematic System is the national harmonized system in Cyprus. This system has information about the stops of buses, long-distance coach, and shuttle services. It is managed by the public works department of the Ministry of Transport, Communications and Works . Maritime mode is not covered at the moment, multimodal hubs are not covered under a unique ID (airports, ports). The current [transport legislation](#) does not oblige to have a standardized ID or a procedure to do so.

The information is available via the [NAP](#) and [motion](#), and is updated monthly. Each bus stop or station have a unique ID following a protocol that establishes that the initial part of the ID provides a value corresponding to the district of Cyprus, the information available for each stop includes¹⁰:

Field Name	Type	Description
stop_id	ID	Identifies a stop, station, or station entrance. The term "station entrance" refers to both station entrances and station exits. Stops, stations, or station entrances are collectively referred to as locations. Multiple routes may use the same stop. Number between 3 and 5 digits.
stop_code	Text	Short text or a number that identifies the location for riders.
stop_name	Text	Name of the location. Use a name that people will understand in the local and tourist vernacular.
stop_desc	Text	This field is used to specify the short name of the stop.
stop_lat	Latitude	Latitude of the location. The coordinates must be the ones of the bus pole — if exists — and otherwise of where the travelers are boarding the vehicle (on the sidewalk or the platform, and not on the roadway or the track where the vehicle stops).

¹⁰ Motion. Consulted on August 14 2025. Open Data dictionary. Motion.

<https://www.motionbuscard.org.cy/opendata>



stop_lon	Longitude	Longitude of the location. The coordinates must be the ones of the bus pole — if exists — and otherwise of where the travelers are boarding the vehicle (on the sidewalk or the platform, and not on the roadway or the track where the vehicle stops).
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Table 1: Information available for each bus stop in Cyprus.

The telematic system also allows the:

- Monitoring of Fleets and Services.
- Provision of Information to Passengers regarding real time arrival at bus stops.
- Electronic Ticketing and sales monitoring.

This system supports multimodal travel if it is integrated with Park & Ride facilities, last-mile services, and micromobility options (such as bicycles and scooters). The main challenges include:

- Establishing clear rules for payment settlement between service providers.
- Ensuring seamless system integration for trip planning, booking, and payment.
- Digitally registering transport access points (e.g. micromobility hubs) to enhance user experience.

3.2.4. Czechia

Information was provided by the Transport Research Centre ([CDV](#)). Czechia does not have a harmonized national system for digital IDs of transport access points. However, such a system will be developed as part of the transposition of the ITS Directive. A national [timetable information system](#) has all the information digitized, it centralizes timetable and schedule data for the public transport network. Each of the 14 administrative regions, railway system, and major cities (Prague, Brno, Ostrava) manages its own data systems for public transport, with their own IDs and data warehouses (dynamic, static, nodes' information).

The current NAP has the timetables [available](#) in NeTEx format, but information coming from Regional Access Points (RAPs) is not harmonized. Some cities have information in GTFS and are not sure how to implement the minimum NeTEx profile. Similarly, PTOs maintain their own databases and IDs for access points. The legislation including the transposition of ITS directive is expected by the end of 2025. It aims to harmonize static and dynamic, road and public transport information into a single NAP, expected to be ready by the end of 2028.

Modes covered by the NAP or current trip planner:

- Trains: state-owned operator ČD and other private operators such as Regiojet.
- Coach: intercity, and international such as Flixbus, StudentAgency/Regiojet.
- Urban transport: tram, metro, bus, trolleybus.
- DRT: Operated by commercial operators, expected to be included in the new legislation. Long-term goal is to allocate public funding for services in regions not yet covered by public transport.
- Micromobility: Under discussion for future integration but not yet mandatory to share information (Uber, Bolt, Rekola, NextBike). Conversations on the regulation requirements and information to be sent in NeTEx format and minimum NeTEx profile.

Aviation and waterborne are not included within the NAP.

The Ministry of transport leads the implementation of the ITS Directive and the NAP overhauling through the Roads and Motorways Directorate (ŘSD) who will be responsible for managing the NAP



and centralizing data for all modes. The current responsible entity for managing and quality-check static data on behalf of the ministry is [CHAPS](#). Under the new law, public and private operators must provide their data to the NAP under the supervision of the Ministry.

Each operator or region uses its own conventions for stops and stations IDs. Some operators use GTFS, even though the information available via the NAP is in NeTEx format. Stop names might be consistent across services in the same access node, but IDs may vary by operator. The following table presents IDs examples for operators from information available via the NAP. Information for each line indicates that for every line the ID starts at 1 and increases to the last stop, while for trains it has dedicated non-consecutive IDs.

ID	Source
CZ:cisjr_jdf:StopPlace:23	National timetable information system (CISJR) The ID starts on 1 for every route and increases until the last stop. The ID is unique for every route, but not across the system.
CZ:CISJR_CZPTT:StopPlace:CZ57076	Railway, for different operators. ID not consecutive it is assigned to the train station.

Table 2: Examples of IDs for StopPlace in Czechia.

The deployment of future information in the NAP will consider a metadata catalogue, structure according to the NeTEx profiles (EPIP, EPIAP), with unique IDs for each access node.

Attributes vary per access node, but might include coordinates, name, infrastructure details, accessibility features, and connectivity.

Regarding the accessibility of the data:

- Static data: Freely accessible via the national journey planner or operator websites.
- Dynamic data: Requires a license or agreement with the operator or NAP. Currently, users must submit a request via email to access it.
- New NAP (2028): Will provide centralized access with a registration system for users (businesses, developers, authorities).

The main challenges include:

- Convincing operators to adopt and share data in NeTEx.
- Reluctancy of micromobility and DRT operators to share data in specified formats.
- Integrating heterogeneous systems (regional, urban, national) into a single platform.

During the implementation of the NAP, information and best-practices from other countries can contribute to the better deployment of the legislation and design of the architecture of the system.

3.2.5. Denmark

The information was provided by the Danish Civil Aviation and Railway Authority, [Trafikstyrelsen](#), and the journey planner manager, [Rejseplanen](#). Denmark has a national system for public transport stops managed by the national journey planner Rejseplanen. Rejseplanen is the only national system for public transport stops and it aggregates and manages stop IDs across Denmark. It is not mandated by legislation, the system has been developed collaboratively by PTAs and operators PTOs. However, local operators may use internal IDs which are mapped to the national IDs for integration ensuring consistency in the national journey planner and allowing flexibility at local level.

Rejseplanen is owned by 6 PTAs and 1 PTO, it acts as the de facto national system for identifying and coordinating stops, stations, and hubs for scheduled public transport. It manages the digital register and coordinates IDs with PTAs and PTOs. It also acquires and maintains data from participating operators. It exists since 1st October 1998, even though it is a voluntary action, it can be the basis for MMTIS delegated regulation implementation. PTAs and PTOs are the data providers that submit and update stop data (e.g. new stops, deletions or changes). Rejseplanen acts as the central coordinator and integrator. It checks the information, via Scripts and alert to potential errors to PTAs and PTOs who update the information if there is a mistake or validate if is correct.

The register includes:

- Bus, train (including metro, tram, and suburban rail), and ferries (partially):
- Ferries: Only a few are included depending on agreements with the Rejseplanen.
- DRT are partially included.
- Exclusions:
 - Micromobility: Partially included depending on agreements with the National Journey Planner. i.e. Donkey republic. Further ideas to include them in the future.
 - Taxis and aviation: Aviation was covered in the past but not anymore.
- Bus, Metro, and Railways stops are digitized. Some ferry stops are not digitized.

Stop IDs are numeric and vary by operator. Rail-related stops use 7-digit UIC-based codes starting with 86 (Denmark). Other operators have their own ranges of IDs defined by Rejseplanen (e.g., Movia uses 1–99,999). Aliases or local IDs may be used but are mapped to national IDs. Quays and platforms are identified using Netex EPIP standards, though not all sub-elements are fully utilized. The stop ID covers Quays and StopPlace, it follows the EPIP- NeTEx standards with specificity for Denmark. In cases where multiple PTOs use the same stops Rejseplaner unifies the ID to make sure that only one ID is used.

Recorded attributes for each access node includes:

- Stop name
- GPS coordinates
- Mode type
- Accessibility (limited) – e.g., low-floor access
- Real-time alerts (e.g., elevator outages via free-text)

Standards used:

- Netex EPIP for static data
- SIRI for real-time data
- UIC codes for rail stations

Some infrastructure details (e.g., shelters, screens) are not consistently recorded due to lack of data from PTOs. Additional information can be processed if is informed by the PTOs and PTAs.

Data is freely available via [RejseplanenLabs](#) (GTFS, NeTEx, API, SIRI, and GTFS RT) which requires email authentication, and the [NAP](#) (NeTEx, SIRI) with Creative Commons Universal license. The NAP is managed by the [Danish Road Directorate](#). It operates separate from Rejseplanen and is a common access point for ITS data.

PTO's share supplementary data on access points on the NAP in separate files:

- Access points for companies without an agreement with the Rejseplanen:



- Accessibility information- Limited data: Only static information on accessibility elements (e.g., elevators, escalators) is recorded. (No real-time updates or detailed accessibility features (e.g., tactile paths).) Information if there is a bus with ramp.

Real-time data flows 24/7, but static data updates occur on weekdays (except Wednesdays). Language limitations exist in the app (mostly Danish), affecting accessibility for foreigners. Cross-border stops (e.g., Sweden, Germany) are handled using UIC codes. Stop ID reuse is technically possible but discouraged. Around 30-50 k stops are managed.

The main challenges and future evolution of the system are presented below.

Challenges:

- Lack of legislation enforcing ID standards
- Limited integration of **shared mobility, micromobility, coach, some ferries.**
- Inconsistent data quality and completeness
- Difficulty in integrating **ticketing and pricing** into the NAP. Ticketing, information is showed indicatively and then re-directed to corresponding entity.
- **No unique IDs** for multi-modal hubs (e.g., Copenhagen Central Station)

Future evolution:

- Move toward a **Mobility-as-a-Service (MaaS)** model
- Better integration of **alternative transport providers**
- Potential inclusion of **ticketing information** in the NAP
- Strategic partnerships to improve data coverage and interoperability
- Work to develop the business case to include (back) the different stakeholders, airports, bikes, scooters, car-sharing. There used to be more providers that are no longer there.

3.2.6. Estonia

Information was provided by the Estonian Transport Administration (under the Ministry of Climate) and the Public Transport Department at the Ministry of Regional Affairs and Agriculture. Estonia has a national harmonized system for static information including digital IDs of transport access points. The system is managed by the [Ministry of Regional Affairs and Agriculture](#) and outputs data in [GTFS Feed](#) freely accessible and updated daily. It is the basis for a national public [journey planner](#). An additional regular output in NeTeX is planned for 2026 as part of a software upgrade.

Information available at national level is defined by the [Public Transport Act](#) indicating who is responsible for collecting data. Information available includes static information for buses (urban, intercity, some internationals, according to the journey planner), trains (domestic), tramway (in Tallin), and ferries (domestic, between islands). DRT is included in the GTFS feed without specifying the nature of the line (e.g. scheduled, DRT), a new software will help to solve this, specifically, they will use the pickup_type and drop_off_type values 2 and 3 from GTFS stop_times.txt for this purpose. Modes not included are international ferries (e.g. Finland), international trains, shared mobility services (Bolt, scooters, bike-sharing, car-sharing), and aviation, the last one planned to be included in the future.

The Ministry of Regional Affairs and Agriculture manages the national static data register and includes information on domestic ferries, domestic flights, domestic trains, domestic and international coaches. Information is included by eleven Transport Centers (counties PTAs) which submit data from PTOs and are responsible for data quality. In addition, some cities also enter data there separately (Tallinn, Tartu, Narva, Rakvere, Kohtla-Järve).

Real time information is not included in the national system, but is included independently by cities or operators in GTFS RT (e.g. [Tallinn](#), Tartu). The Ministry of Regional Affairs and Agriculture also receives some GTFS-RT data from Ridango, because parts of the ticket sales system contracts concluded by the transport centers stipulate that bus GPS data must be shared with the ministry via an API (restricted by IP) and can be shown in the [journey planner](#), although there are still occasional problems. Once the timetable management software has been updated, the Ministry will keep working on that issue. The ministry cannot share real-time information because they do not own this data.

The transposition of the ITS directive and delegated regulations (e.g. for multimodal transport, real-time traffic, safe parking) is under discussion and expected to be approved by the end of 2025. Within this legislation, the Estonian Transport Administration will be responsible for ITS legislation and the future NAP management, which will focus on metadata for and redirect to the data publisher. The Estonian Transport Administration will mandate data publication by designated owners (e.g. Transport Administration, Ministry of Agriculture, major cities). There will be no obligation to publish data that does not exist (e.g. if no real-time data is collected, there is no requirement to create it).

The ID structure on the current system works as follows:

- IDs for Stops/Stations:
 - Unique stop codes (number between 3 to 6 digits) are assigned to each access point (e.g. bus stops, train stations).
 - The same stop ID is used by all operators serving that stop, ensuring consistency.
 - Stop codes may include location-based information (e.g. side of the road), but the exact structure is not fully standardized.
- Hierarchy:
 - There are no sub-levels for platforms or terminals yet, but the new software will support terminals and better differentiation (e.g. pick-up types for demand-responsive services).
- Attributes:
 - Geographical coordinates (GPS)
 - Stop name and code
 - Lines and timetables serving the stop
 - Accessibility: Wheelchair accessibility is recorded; other features (e.g. visual impairments) are not yet included.

The main challenges in standardizing access nodes—including IDs—are:

- Fragmentation: Lack of integration between national, regional, and local systems (e.g. real-time data silos).
- New Mobility: Shared mobility and commercial services (e.g. Bolt, scooters) are not legally required to open data.
- Data Ownership: Real-time data is controlled by private operators or municipalities.
- Standards Transition: Moving from GTFS to NeTEx and improving data quality (e.g. differentiating demand-responsive services).

The future plans for the system will include:

- National Access Point (NAP): Will centralize metadata and require APIs from data owners (expected 2026).
- Mobility Platform: Under development to encourage data sharing from commercial providers.
- Legislation: New ITS laws will clarify responsibilities and encourage openness.

3.2.7. Finland

The information was provided by [Fintraffic](#). Finland operates [Digiroad](#), an official, legally mandated, and freely accessible national road database and an electronic rail infrastructure information management system managed by the Finnish Transport Infrastructure Agency ([FTIA](#)). The system is XML-based, and integrates bus stops as attributes within the road graph, each assigned a unique ID, 6 digits for older stops and 9 digits for newer ones. About 95% of bus stops used by PTAs and PTOs rely on this system, which is exclusive to bus stops.

Operational for 20 years, Digiroad serves around 30 PTAs (both regional and citywide) and some 150 PTOs, including contracted operators and inter-city coach lines. Due to evolving governance agreements, the number of PTAs is expected to decline in the coming years. Despite the existence of Digiroad, private operators often use their own internal IDs, especially for coach services.

Within Digiroad, municipalities manage the bus stop data as they maintain the road infrastructure. However, many small municipalities lack capacity and awareness given that public transport is often organised by regional PTAs. This leads to inconsistent and outdated data.

Since spring 2025, Finland has been transitioning to Finnish Stop Registry (FSR) a unified digital ID system for public transport based on Fintraffic's information system and the Nordic NeTEx profile. This initiative is developed in collaboration with ENTUR, with weekly developer meetings to ensure alignment. Approximately 20 people from Fintraffic, PTAs and outsourced teams work in this effort. The development process is based on a [concept paper](#) completed in 2022¹¹¹²¹³.

The shift supports upcoming national legislation, which transposes the ITS Directive—including MMTIS (Multimodal Travel Information Services). The [legislation](#) is set for a vote in autumn 2025 and will take effect from January 2026.

The FSR will be [available](#) without registration, in XML data exchange format (NeTEx and SIRI standards). Full documentation in Finnish based on the Norwegian booklet is expected to detail the IDs composition and how StopPlaces are created and linked to the road network. There is a discussion on how to include information from micromobility operators, if in NeTEx/SIRI or GBFS. Similarly, there is a conversation with the ERA (European Railway Agency) to include accessibility data according to their requirements which are not fully supported by the Nordic profile.

The FSR will encompass around 9,000 access points and its full roll-out is expected by winter 2025-2026. It will include the following scheduled transport modes:

- Bus stops.
- Train stops and stations.
- Urban rail, metro, and tramways.
- Major airports (aviation).
- Waterborne transport (ferries) including semi - DRT services.

¹¹ Fintraffic. August 2021. Keskustelunavaus: Suomalaisen liikenteen ekosysteemin dataarkkitehtuurin tavoitetila. Fintraffic. <https://www.fintraffic.fi/sites/default/files/2023-11/Liikenteen%20Data-arkkitehtuurin%20tavoitetila%2008-2021.pdf>

¹² Fintraffic. December 23, 2022. Projektin loppuraportti KESKI-SUOMEN LAATUPALVELUPILOTTI. Fintraffic. https://www.fintraffic.fi/sites/default/files/2023-02/Keski-Suomen%20laatu palvelupilotti_loppuraportti_2022.pdf

¹³ Fintraffic. April 26, 2022. Loppudokumentti Fintrafficin liikkumisen tietopalveluiden konseptointi. Fintraffic. <https://www.fintraffic.fi/sites/default/files/2023-02/Fintrafficin%20liikkumisen%20tietopalveluiden%20konseptointi%202022.pdf>



Full DRT services are represented as service areas rather than fixed stops and are not included in the FSR.

PTAs and PTOs will be responsible for updating their operational data and must use national stop IDs when publishing transport information. Fintraffic will coordinate development, supervise data quality, and manage the database.

The structure and format will follow the Norwegian version with a difference in the prefix identifier:

- Norway uses NSR (Norwegian Stop Registry).
- Finland uses FSR (Finnish Stop Registry).

IDs are unique codes assigned to stop places, which cover:

- Static stop places such as bus stops, metro stations, train stations.
- Sub-elements within stations, e.g. platforms, elevator locations, escalators.

There are sub-levels within the system that identify finer details inside larger stations (e.g. platform IDs, elevator status).

The attributes recorded include:

- **Geographical coordinates:** GPS coordinates for each access point linked to the national road network.
- **Infrastructure details:** Information on static elements including platforms, shelters, elevators, escalators, among others.
- **Accessibility features:** A project ongoing with KONE to create SIRI Facility Management feeds for elevators and escalators status.
- **Others:** Stop, quay and platform IDs, that uniquely identify parts of a StopPlace. Attributes related to the operation and management including the routes that serve the stop.

Using NeTEx and Siri to develop the FSR, Fintraffic has:

- Leveraged Norwegian expertise on open, shared developments.
- Identified the potential to adopt a **more open, agile, and community-supported approach**, speeding up improvements.
- Expanded accessibility coverage.
- Developed a system that supports real-time data and multimodal integration.
- Expanded the ecosystem around [open](#) transport information.

The process to implement the FSR leaves the following lessons learned:

- Successful digital registration **requires strong buy-in from industry stakeholders** (PTAs, PTOs, service providers).
- A [robust governance](#) and **change management model** is needed to communicate clearly the value and benefits of maintaining good, accurate access point data.
- Both incentives (“carrots”) and requirements (“sticks”) are required to motivate stakeholders to keep data up to date and high quality.
- **Making the data visible** through applications and services helps demonstrate its practical value.
- If operators see that **better data leads to increased use of their services**, they are more motivated to improve data quality.

- The Nordic countries (Finland, Norway, Denmark, Sweden) work closely together on stop place registries and data harmonization.
- There is ongoing dialogue and potential development cooperation with Poland and other European partners, reflecting wider continental efforts in stop place data registration.

3.2.8. France

Information is provided by the Directorate-General for Infrastructure, Transport, and Mobility ([DGITM](#), Direction Générale des Infrastructures, des Transports et des Mobilités). There is currently no harmonised system in place, but the Ministry of Transport has recognised the importance of developing one to improve data interoperability. At present, the same stop might have different IDs across datasets. A project to address this is being developed based on the French NeTEx profile within the EPIP (European Passenger Information Profile) and EPIAP (European Passenger Information Accessibility Profile) for static information, and SIRI-EPIP for dynamic information.

Regional PTAs, particularly in Nouvelle-Aquitaine, Grand Est, Normandie, Paris, Centre-Val de Loire, and Pays de la Loire, are developing their own IDs, more regions will be included in 2026. These efforts are supported by regional legislation that mandates the implementation of regional journey planners and accessibility data using the NeTEx standard. Each region manages its own stop IDs and develops regional aggregates, including local PTA information, reinforcing the role of the region as level for coordination. These regions are sharing specifications and coordinating efforts to validate stop aggregates, aided by the NeTEx training platform on [GitHub](#), which is funded by the Ministry of Transport.

The register focuses on scheduled transport modes, including between 600k to 700k stops of train, bus, and urban rail services. DRT, micromobility, maritime, and aviation are excluded, with the initial emphasis on ensuring quality and consistency within scheduled modes before further expansion. A dataset aggregating the GTFS information with all the stops (including duplicates) is available at the French [NAP](#).

Private operators primarily manage micromobility and provide data through the General Bikeshare Feed Specification (GBFS). DRT poses additional challenges for data modelling and integration. While some DRT services may be partially modelled within NeTEx, coverage remains inconsistent, and the Ministry is analyzing potential integration methods.

The maritime and aviation sectors, operated by private entities, are not currently a focus. Waterborne transport, including ferries and water taxis, exists in some areas but is a lower priority compared to land-based transport and is not a focus at this stage.

The register is being developed incrementally, starting with scheduled modes at local and regional levels, where multimodal transport policies are primarily implemented. Responsibility for the digital register is shared across governance levels in France: local authorities manage data for their areas, while regions consolidate this information to build regional journey planners. At the national level, the Ministry of Transport and the NAP provide support and coordination.

Implementing a centralized system for national assignment and management of stop IDs is currently not feasible. Instead, regions manage their own stop ID assignments but are open to adopting harmonized methodologies with clear guidance and best practices. The Ministry of Transport supports these efforts by assessing the quality of registers, providing tools, and promoting best practices, including fostering alignment between regions and encouraging consistency through common code spaces and naming conventions based on European standards NeTEx and Transmodel.

Information about the stops structure including the attributes per type of component is available [online](#) including the hierarchical level of stops. The structure of the IDs is as follows: **[Code PAYS]:[Code commune INSEE]:[Type d'objet]:[Code arrêt spécifique]:[Code émetteur du code technique ou LOC]** where¹⁴:

- **[Code PAYS]:** Country ID based on the ISO 3166-1 norm (FR for France)
- **[Code commune INSEE]:** 5 characters, 2 for the department and 3 for the municipality if the municipality is in Metropolitan France. It can include the number of the “arrondissement” followed by a “-”, if there are changes in the municipality code done by the INSEE, the code of the stop will keep having its original code without any change.
- **[Type d'objet]:** ZE (ZONE D'EMBARQUEMENT), LMO (LIEU D'ARRET MONOMODAL), PM (POLE MONOMODAL), LMU (LIEU D'ARRET MUTIMODAL), AC (ACCES).
- **[Code arrêt spécifique]:** code technique libre
- **[Code émetteur du code technique ou LOC]:** Identifier of the centralized technical code assigner, if any, and LOC otherwise.

Examples:

- Gare ferré “PARIS MONTPARNASSE 1 2” : FR:75114:LMO:39100:ERA
- Arrêt de bus sur la commune de Guyancourt, attribué par un système transporteur : FR:78297:ZE:110E8400-E29B-11D4-A716-446655440000:LOC
- Station de métro parisienne, avec identifiant STIF (REFLEX) : FR:75105:LMO:43289:NUTS10

Each stop's information includes latitude and longitude coordinates, the type of stop (such as GTFS stop or NeTEx StopPlace), the data source, naming information, and technical identifiers. These technical identifiers can exceed 200 characters due to elements like service provider, IDs, and publisher prefixes. The system supports both local legacy IDs and globally unique identifiers. However, this creates challenges for data aggregation since many local systems can only store six-digit codes. To address this, a dual ID system has been implemented, allowing each stop to retain its legacy code while also receiving a unique ID prefixed with "FR."

The focus has primarily been on "StopPlace" and "Quays," which make up nearly 85% of public stops in France. A [legal provision](#) "Accès libre Mobilités" initiative encourages the publication of accessibility data in itinerary calculators. Since these calculators depend on consistent and persistent IDs, the legal provision indirectly promotes the use of globally unique and stable identifiers.

In the future, the NAP will develop validation tools to ensure that datasets published on the NAP comply with the official identifiers provided by the regions, aiming to maintain consistency and traceability across national, regional, and local sources.

The IDs governance involves coordination between regions and large cities' PTAs. While regions primarily handle publishing IDs, conflicts can arise when metropolitan areas operate services across boundaries or have their own ID systems. Working on these governance issues will be crucial in the coming years. The current approach avoids top-down changes, focusing instead on listening to regions, addressing their concerns, and building consensus. Stakeholders value this collaborative method, as it involves co-designing the system rather than imposing rules from a central authority.

A unified national register with persistent and unique IDs is widely recognized as essential for technical integration, enabling field operations (e.g. data collection at stops) and future extensions of the

¹⁴ Ministry of Transport. November 21, 2024. NeTEx - Profil France v2.3 - Éléments communs. Ministry of Transport. https://normes.transport.data.gouv.fr/normes/netex/elements_communs/#codification-des-identifiants-darret



system. Looking ahead, regions will remain key actors in managing IDs, particularly for regional rail and bus services. DGITM will encourage NeTEx-compatible IDs, but without mandating a single format. The priority is to introduce flexibility into the system, allowing multiple IDs to coexist while enabling cross-referencing and linking between them. DGITM will build data analysis tools that can flag likely duplicate or equivalent stops and support human decision-making. Rather than forcing uniformity, the goal is to enable interoperability through cooperation, shared tools, and incremental alignment.

3.2.9. Germany

This information was provided by the **Rhein-Main-Verkehrsverbund Servicegesellschaft (RMS)** on behalf of **Durchgängige Elektronische FahrgastInformation (DELFI e.V.)**.

The deutschlandweite Haltestellen-ID (DHID) is the system with IDs used nationwide for stops and consolidated in the Deutschlandweites zentrales Haltestellenverzeichnis (ZHV). The system is described at the national level by the Verband Deutscher Verkehrsunternehmen (VDV), and the IDs are assigned regionally. The uniqueness of these IDs is checked nationally by DELFI. The ID system implemented in Germany is the same as the one implemented in Austria.

Global IDs for journeys and infrastructure elements (such as elevators) have been defined but are not yet implemented. The IDs are detailed in **VDV documents** [432](#) and [433](#).

Coverage includes:

- Railways, regional and city buses, underground, and light rail vehicles (fully covered).
- DRT services (partially covered, limited to scheduled services; area-based services are in preparation).
- Ferries (partially covered, only if integrated into a transport network).

Not covered:

- Long-distance buses, commercial ferries, ship traffic, and aviation.

The **IFOPT** specifies components for identifying a stop including country code, mode, admin area identifier, and stop place identifier. The stop object is further differentiated into level (floor/ level) and quays (platforms).

The underlying level (stop positions/sections) is not described at IFOPT. The DHID is supplemented with the stop position object. For buses/stops, this refers to the stopping or waiting position, while for rail/stations, it refers to the track section.

The following is the structure for the **Stop ID** according to the IFOPT standard:

- **IFOPT:** <Country Code>:<Admin Area>:<Stop Place>:<Level>:<Quay>
- **DHID:** <Country Code (LK)>:<District Key (KS)>:<Local Stop ID>:<Area ID>:<Quay ID>:<Stop Position>

Not all data elements are needed to describe individual objects. For example:

- **Stops:** <LK>:<KS>:<Local Stop ID>
- **Areas:** <LK>:<KS>:<Local Stop ID>:<Area ID>
- **Quays:** <LK>:<KS>:<Local Stop ID>:<Area ID>:<Quay ID>
- **Stop Positions:** <LK>:<KS>:<Local Stop ID>:<Area ID>:<Quay ID>:<Stop Position>

Country Code: Uses the Internet Assigned Numbers Authority (IANA) code (based on the ISO 3166-1 norm). The length of the fields is variable. A total length of **≥ 25 characters**, including delimiters (:), must be assumed.

District Key (KS): Digits 1–2: State (Bundesland) Digits 3–5: District (Landkreis) or independent city (kreisfreie Stadt) Any leading zeros in the district key must be retained.

In the stop directory:

1. All stops where passengers can board or alight (e.g. request stops or depots) must be represented.
2. Each stop must have an affiliation with a municipality. However, this affiliation is derived from the descriptive reference, not from the partial key of the stop ID (i.e. district key).
3. Stops on municipal boundaries (where one quay is in one municipality and the opposite quay is in another) are fully assigned to one municipality. An agreement on this must be reached between the involved parties.

Local Stop ID: Corresponds to the stop ID of the "owner" of the stop.

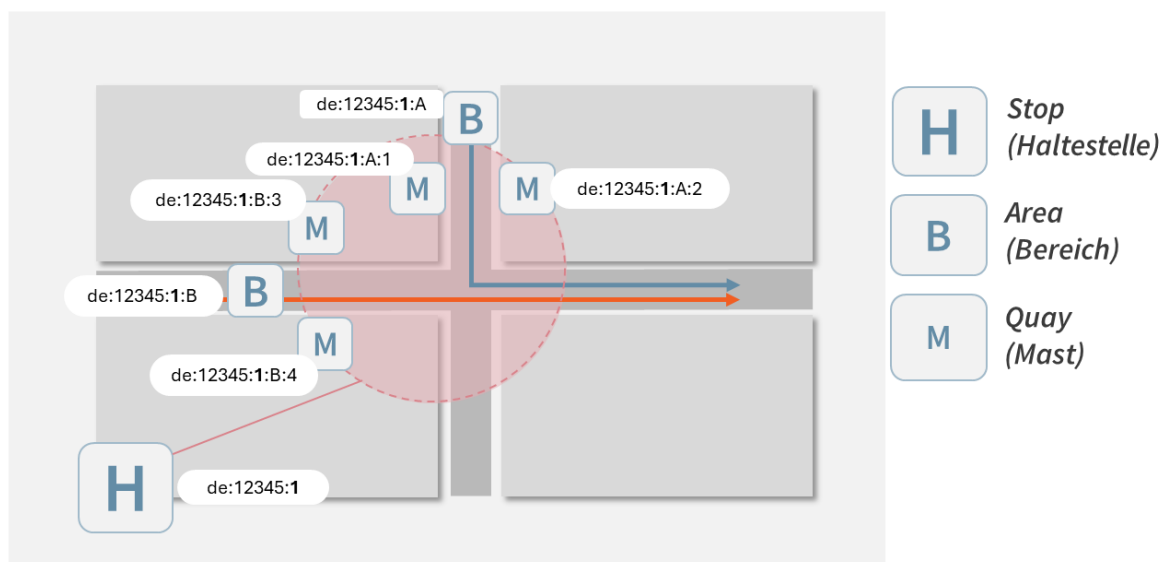
Area ID: It designates stop areas, such as S-Bahn areas, bus areas, taxi areas, or areas with equal accessibility (e.g. barrier-free zones).

Quay ID: The quay ID designates specific platforms/quays where vehicles stop for boarding and alighting, or specific entrances for areas with equal accessibility. At quay level, non-numeric IDs exist, so alphanumeric keys are allowed (the colon remains reserved as a delimiter in the syntax).

Stop Position: The stop position indicates sections on the platform (e.g. for specific trips such as first-class cars or dining cars).

NAPCORE – access nodes identifiers

Example of representation of areas, quays, and stops IDs in Germany.



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Figure 4: Example of representation of areas, quays, and stops IDs in Germany.

The key elements can contain all Unicode characters from Unicode 32, except Unicode 127 (control character) and Unicode 58 (colon :). The key elements are separated by colons. Spaces are not allowed at the beginning or end of a key element. The entire key is stored in UTF-8 encoding.

The DHID is generated **once** according to the procedure described above, based on the data available at the time of creation. After this, it must not be changed, even if the descriptive objects used in its syntax have changed (e.g. district key). Therefore, it is not permanently interpretable.

Besides the ID, the following attributes are included:

- Recognizable name of the object (for stops, including the location).
- Responsible organization.
- Point coordinates (WGS84 coordinates; elevation is not recorded).
- AGS (Official Municipality Key).
- Sub-locality key (optional).
- [Last operation date](#) (replacing operational status and physical status)
- Operational status (automatically determined: "unknown," "served," or "not served").
- Physical status (describes the physical condition, e.g. "unknown," "planned," "built," or "dismantled").
- Germany-wide fare stop ID: is an additional data element at fare level that is valid nationwide for storage-optimised mapping in chip cards/barcodes in accordance with the VDV core application.
- Comment tables with history for each directory object (optional, for verbal descriptions of conditions).

Additional data about a stop can be stored in other cadastre systems that reference the ZHV.

The ZHV can be accessed for free [online](#) after registration. DELFI [datasets](#) at the NAP include the ZHV also in XML format, and timetables in NeTEx and GTFS.

The main challenge identified is the IDs maintenance. The responsibility for the accuracy and quality of data must be clearly and unambiguously regulated. Each stop must be the responsibility of a single organisation with its relevant areas and masts/platforms as well as attributes to be described in order to avoid overlapping responsibilities and thus prevent the risk of inconsistencies.

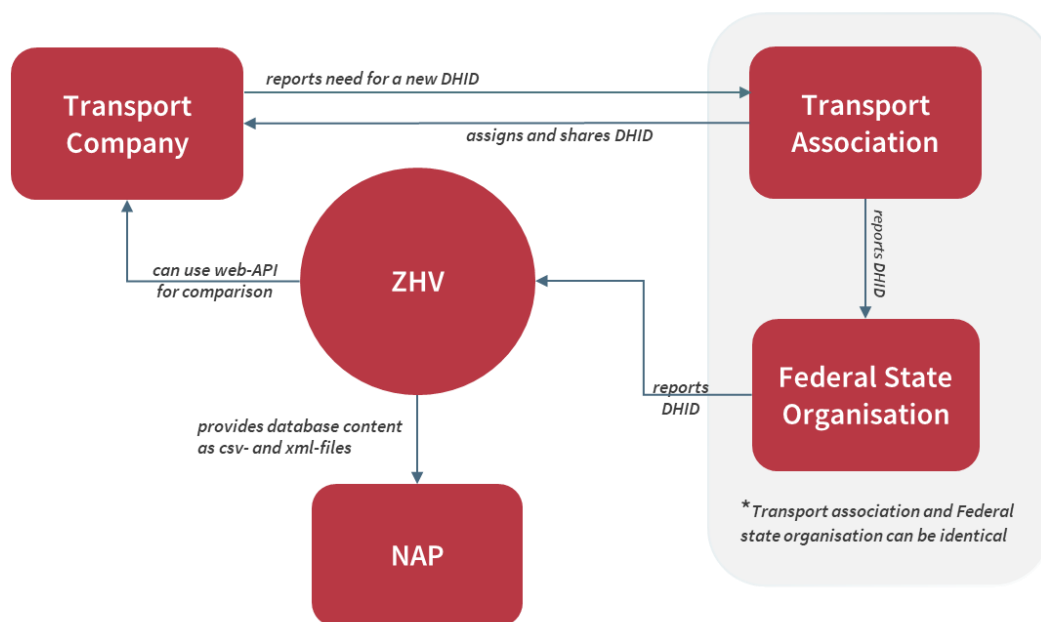
To this end, quality assurance processes (quantitative/qualitative) must be defined and applied. Rules for dealing with the DHID, e.g. in the event of name changes of stops/stations or structural changes, are to be formulated. This applies to complex structures such as main stations, transfer hubs, and changes at the mast / stop position level. Infrastructure operators must be involved in these processes.

The life cycle of the DHID must be clearly regulated. There must be no recycling of DHIDs once issued. It must be clearly defined which organization may create a stop ID, for example, and at what point in time this must be done.

The current data flow for schedule data is shown below.

NAPCORE – access nodes identifiers

Data flow „Zentrales Haltestellenverzeichnis (ZHV)“



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Figure 5: Data flow in schedule data in Germany.

Regarding the way forward, it is envisioned to add further information such as the responsible body, owner, references to replacement services, fares zones, among others.

3.2.10. Hungary

The information was provided by the Hungarian Public Roads ([Magyar Közút](#)).

Hungary does not have a harmonized system of IDs of transport access points. Each operator uses its own identification system, leading to duplicates, and inconsistencies. The NAP started receiving datasets in 2024 and acts as a repository for multimodal data, primarily collecting static timetables and some real-time data in GTFS format. The [NAP](#) is managed by the Hungarian Public Roads, under the direction of the Ministry of Transport, and covers both RTTI and MMTIS. Following MMTIS the Hungarian NAP is producing a repository for metadata, and following RTTI the info is a database.

While the NAP aims to centralize data, the system is fragmented, and the NAP does not enforce data quality, content of the datasets, or its validation. The operators can decide the update frequency of the timetables provided to the NAP.

- **State-owned operators** (covering 90% of public transport, such as trains and buses) share their data voluntarily, mostly in GTFS format. Available as multimodal information in the NAP. Data quality and availability remain the sole responsibility of the operators.
- **Private operators** (10% of the market) often lack digital infrastructure, relying on printed timetables or basic digital formats. The NAP has reached them to convince them to voluntarily submit the information to the NAP.

Some efforts to harmonize IDs are in place but not legally enforced. The NAP is working on aligning data with the national road database, but this is a long-term process. Currently a single bus stop can have different IDs if it is served by different operators, or if the information comes from the road database or the multimodal information available via the NAP.



Google Maps and other Hungarian apps have better information and provide more comprehensive trip planning, ticketing, and real-time information, often with better coverage than the NAP. Some conversations have taken place to guide these companies to use the information available in the NAP, but the amount of data in the NAP remains scarce.

[MÁV group](#) (national railways) covers around 90% of public transport (rail and bus) and provides data to the NAP, but its IDs and formats are not harmonized with other operators. MÁV has a real time visualization [platform](#) that provides information about their services covered, however, for stops it is not possible to identify what is the structure of their IDs. Small and medium cities (less than 100.000 inhabitants) usually have agreements with MÁV so it can provide the service, only bigger cities have their own PTAs and/or PTOs.

Timetables and information about multimodal access nodes in the NAP can be accessed [online](#) for free and covers:

- **Train (100% coverage):** All national rail timetables are available provided by MÁV.
- **Bus (99% coverage):** Almost all bus schedules, including intercity and some municipal services.
- **Maritime and aviation:** Partially included, but most operators (e.g. airports, ferries) do not share data due to perceived lack of need.
- **Micromobility, DRT, and shared services (e.g. bike/car sharing):** Not covered by the NAP. These are available on private platforms like Google Maps.

Information for each stop is provided in GTFS format, as it was adopted due to Google's requirements. NeTEx and SIRI are rarely used or known by PTOs. The information available for each stop includes:

- Stop ID
- Stop Code
- Stop Name
- Latitude
- Longitude
- Parent Station (not available for all stops)
- Wheelchair boarding (not available for all stops)

Even though the NAP was created to comply with the ITS Directive, it is not clear if Hungary has transposed these into national policies. In the current situation, without legal mandates, harmonization relies on operators' willingness and resources.

The main challenges identified by the Hungarian public roads include:

- **Fragmentation:** 10% of operators (mostly private) lack digital systems or won't share data.
- **Resource constraints:** Small operators and the NAP lack funding/knowledge for digitalization and harmonization.
- **Role of private platforms:** Google and local apps offer better information, reducing incentives for operators to improve NAP data.
- **Lack of enforcement:** No penalties for non-compliance or poor data quality.
- **Cross-border data:** The NAP focuses on domestic data. International services (e.g. trains to Austria) are registered separately by each country's NAP.

Whilst the future evolution envisioned includes:

- Future EU regulations may enforce stricter standards.
- If the Ministry prioritizes the issue, it could drive standardization.

- The NAP aims to become the primary data source for platforms, but this requires operators buy-in and resource investment.

3.2.11. Ireland

The information was provided by the National Transport Authority (NTA). Ireland uses a centralized system called the Transport Information System (TISS) developed by Trapeze and managed by the NTA. Stops IDs are publicly accessible online via Transport for Ireland [webpage](#) and the [NAP](#).

The TISS covers all the country, including stops for trains, trams, buses, taxi ranks, airports, ferries, seaports, and coach services. All the stops in Ireland are digitized. Taxi rank information is not up-to-date, while coach services are included via partnerships with local operators. DRT is expected to be integrated in the future, and micromobility is not currently included. Small operators might submit paper timetables that are later digitized by the NTA which is the only authority for public transport data.

The ID structure follows the UK National Public Transport Access Nodes ([NaPTAN](#)) specification. **NaPTAN Stop Point Identifiers** provide a standardized system for uniquely identifying every public transport access point. Local authorities submit stop data to NTA, which consolidates and redistributes it for public use. Every transport stop, including bus stops, train stations, airports, ferry terminals, and coach termini, receives a **unique NaPTAN identifier**. For major hubs (e.g. airports, train stations), NaPTAN identifies **public entrances** (with one designated as the main entrance) and may include a second point for the **transport side** (e.g. airside, platforms, or berths).

Every NaPTAN stop has two unique identifiers:

1. AtcoCode:

- A **12-character code** designed for **computer systems and backend operations**. Composed of:
 1. **3-digit admin area reference** (unique across Ireland and the UK). There are between 30 to 35 different areas in Ireland.
 2. **Plate code number** (unique identifier for each stop).

2. NaptanCode:

- A **7- or 8-digit code** intended for **public use**, such as displaying on physical stops or referencing in **SMS, apps, or other user-facing systems**.

Details on how NaPTAN codes are assigned are outlined in the UK section of the document. The NTA provides equivalent [documentation](#) for reference.

TISS was developed to support Ireland's **first national journey planner (2010–2011)** and remains a sector initiative not mandated by national policy. The **Next-Generation Automatic Vehicle Location system (AVL)** (implemented by 2026) will **require all operators to use NaPTAN IDs**.

The main challenges identified in the current system include:

- Some operators use **their own AVL systems and IDs**, requiring mapping to NaPTAN.
- Currently, **two operators might use different IDs for the same stop** in their local systems. This will be resolved with the **centralized AVL system**.
- **DRT and micromobility** are not yet included.

Plans for the future include the implementation of the national AVL system that will enforce the use of NaPTAN IDs and replace independent systems. Also, bike sharing systems are being considered to be included, without concrete plans yet. There are two systems (Dublin Bikes, [Coke Zero Bikes](#)) managed by the NTA while all the others are private.

3.2.12. Italy

5T - Tecnologie Telematiche Trasporti Traffico Torino supplied the information. Currently, there is no national database containing stop IDs. However, efforts are being made to standardize naming conventions for identifiers, based on the Italian [NeTEx profile](#). In Italy, multimodal information for the [NAP](#) is provided by each region. There are 21 [regional access points](#) (RAP) responsible for transmitting this information to the NAP. Some regions are still defining data structures and RAP in charge. In larger regions, there are established IDs for stops and stations via NeTEx datasets. Legacy systems used by PTOs often have their own IDs mapped at regional level to ensure interoperability.



Figure 6: Map of RAPs in Italy according to the stage of implementation.

Scheduled public transport is included and reported to the NAP by each entity. In 2018, some major train stations received ID codes but this was not implemented across all railway operators, only regional and not national lines were included. Micromobility is also included, DRT and aviation are not included. Waterborne is included in some of the regions. In some cases, the regional or local IDs differ from the one used by the PTO, although the naming convention remains harmonized. Each PTO maintains its own set of identifiers.

The ID convention is presented below followed by an airport example which represents a complex stop, still in discussion.

Examples: [country code] : ([local code]) : [object type] (_ [epip-type]) : [technical-identifier] : [ID provider for shared IDs]

[country-code] ISO 3166-1

[local-code] NUTS code for Region

Example: IT:ITC1:ScheduledStopPoint:busATV:164136

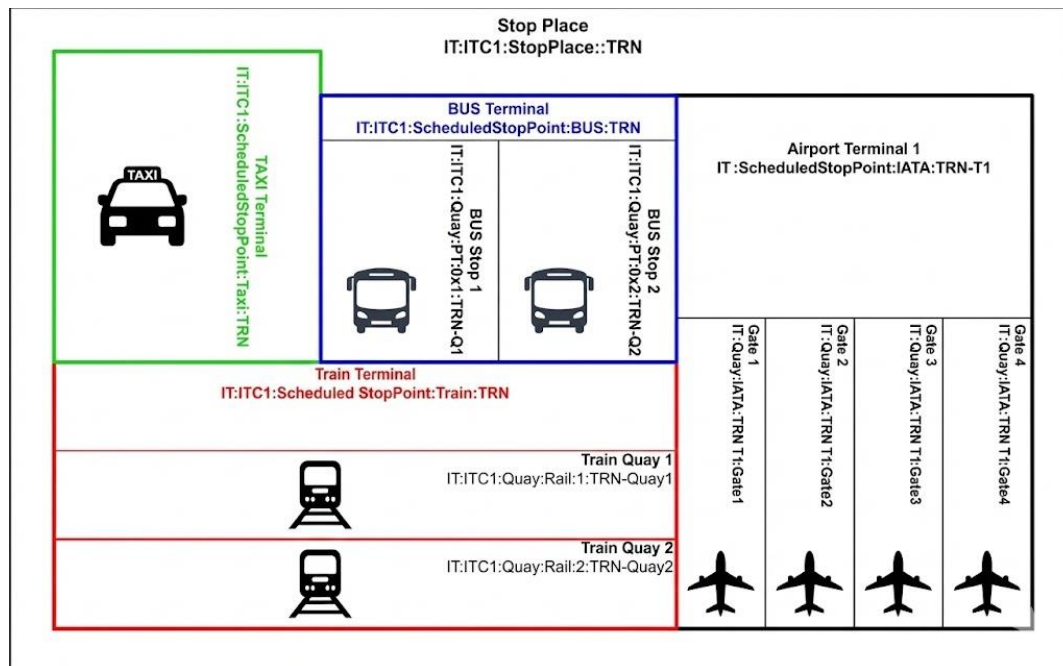


Figure 7: ID airport example in Italy.

Information available per access node aligns with Italian NeTEx profile levels:

1. EPIP: Includes stop locations, routes, timetables, and fares.
2. Italy-specific data structure: Exchange of information related to contracts between PTAs and PTOs. It details vehicle characteristics, and parking facility attributes. For parking, it includes accessibility data such as geographical boundaries and pedestrian/car access points.
3. Fare structure: Defines how fare-related data is organized and exchanged.
4. Micromobility and shared mobility: Level under development.
5. Accessibility: Italy has adopted the European profile and is working on its implementation.

The National Public Transport Observatory, within the Ministry, is responsible for monitoring public transport. One of its objectives is to prevent data duplication, including IDs and redundant datasets.

Additionally, the National Regulation Authority is responsible for establishing policies that guide local administrations in managing public tenders for public transport services, and calculates performance indicators, promoting the use of standardized approaches.

3.2.13. Latvia

ITS Latvia provided the information. Currently, there is no harmonized system in place or under development for the digital identification of transport access points. Although the information is intended to be digital, some cities still rely on paper schedules displayed on large dashboards. Each stakeholder uses its own system, and the information is not consolidated by the [NAP](#). The majority of the information available in the NAP is from road infrastructure, both static and real-time, including camera locations, weather data, and construction updates. There is no information available at the national level regarding trains or city buses.

Each city manages its own public transport system, while micromobility operators function independently without an integrated approach. Specifically for Riga, [GEO RĪGA](#) includes data on micromobility and a public transport map. Rigas Satiksme provides [real-time visualization](#) of the system and [stops](#) in Riga. A private company which operates in Latvia and other Baltic countries,

[Merakas](#), has relevant information which is private and not centralized by NAP. Owners of information send it to apps such as [Baltic maps](#) without sharing it to the NAP.

Latvian State Roads oversees the NAP, with a primary focus on road infrastructure. Given the NAP focus, Latvian PTAs and PTOs are not involved in the NAP. Integrating Riga's public transport system with suburban areas could increase the urgency to share more information and consider the allocation of financial resources. Conversations about data sharing with Baltic maps could increase the data available via the NAP.

3.2.14. Lithuania

Information was facilitated by Lithuanian Transport Safety Administration ([LTSA](#)) and [Via Lietuva](#). A national harmonized system exists in Lithuania. It was created in 2015, initially managed by the road administrator until 2022, when LTSA took over due to institutional restructuring. The system covers digital identification of bus stops, bus stations, railway stations, ferry stops (domestic), and waypoints (e.g., for routes). It supports public transport data (schedules, routes, infrastructure).

Access points for different modes (e.g., bus + train at a hub) are registered separately, making it difficult to report multimodal nodes to the EU Commission. The system struggles with duplicate entries (e.g., same stop with different IDs from different operators/municipalities). No automated solution exists at the moment to merge these.

The data included per mode is presented below.

Mode	Coverage Status	Notes
Bus	Fully covered (urban, intercity, local).	Includes stops, stations, and timetables.
Train	Partially covered (integration ongoing as of Oct 2025).	Data provided by LTG Info (national rail operator).
Ferry	Domestic ferries only.	Excludes international maritime transport.
Aviation	International flights static data.	No domestic flights; data is informational.
Micromobility	Not included (under consideration for future).	E.g., bike/car-sharing.
DRT	Excluded.	Classified as municipal social services (e.g., for elderly/disabled).
Tram/Light Rail	No tram systems in Lithuania.	Potential future projects.
Road Traffic	Separate system (no integration with public transport data).	Managed by a different entity; no coordination with LTSA. Manual data exchange on bus stops.

Table 3: Summary modes covered in Lithuania.

The system owner is the Ministry of Transport and Communications who delegates the management and following roles to LTSA.

- Data aggregation (from municipalities, operators, rail).
- Validation and publishing (open data portal).
- Supervision of data quality (limited).

Data providers of the system:

- Municipalities: Responsible for local bus stops/infrastructure. Often delegate data submission to operators due to resource constraints.
- Operators: Submit data via LTSA's interface or third-party vendors.
- LTG Info (Rail): National rail operator; data integration underway.

- Third-Party Vendors: Two Lithuanian companies provide fleet management/ticketing software to operators, which feeds into LTSA's system.

Data Submission Methods:

- APIs (for real-time data, e.g., GTFS-RT).
- Manual input (via LTSA's user interface).
- File uploads (GTFS, NeTEx formats).

Fragmentation:

- No unified ID system. Operators/municipalities may assign their own IDs, leading to inconsistencies and duplicates. Currently working on input data review procedures.
- Rail data was historically siloed but is now being integrated into the national system.

Example in GTFS:

- Metadata:
stop_id,stop_name,stop_lat,stop_lon,stop_code,stop_desc,zone_id,stop_url,location_type,parent_station,wheelchair_boarding,stop_timezone,vehicle_type,platform_code,level_id,mta_stop_id,regional_fare_card,tts_stop_name
- Example:
4777,Klydžionys,54.482733,24.268337,,,4777,"https://www.visimarsrutai.lt/#/stop/result?stopId=4777",,,,,,,,,

No sub-levels (e.g., no grouping of platforms within a station). Stops are flat entries with no parent-child relationships (e.g., a train station with multiple bus stops nearby are registered separately).

The IDs provided on GTFS and NeTEx are a number of 4 to 5 digits. The information in the [Lithuanian NeTEx profile](#) indicates:

The ID attribute of NeTEx objects must follow a common pattern, and should be structured in the following way: [codespace]:[type]:[identification]

- Codespace uniquely represents the owner, creator, or administrator of the data.
- Type should always be the name of the NeTEx data type, using exactly the same spelling as implemented in the NeTEx XSD (for example ResourceFrame, TransportMode, Network, Line, StopPlace, Quay etc.).
- Identification must be a value which, in context of the first two parts (codespace + type) of the ID, uniquely identifies the data object. Please note that the identification string can only use numbers (0-9), lowercase (a-z) and uppercase (A-Z) letters, dash (-) and underscore (_), in any combination.

Object Type	Example ID Format
Line	VTR:Line:ABC
Route	VTR:Route:3434
RoutePoint	VTR:RoutePoint:43423342-3424

Table 4: Example Lithuanian NeTEx profile..

When exchanging stop place information (StopPlace, Quay etc.) with the central database, usage of nationally defined ID's is recommended, but not mandatory, as at present there are no appropriate regulation.

As there is no mandatory requirement for uniform coding of the reported data, Vintra will implement additional analytical tools to ensure the integrity and unambiguity of the data.



It is recommended too that all data objects describing continual public transport services, such as Line, Route, or ServiceJourney also maintain static ID's across datasets, even if each dataset contains changes to them. This makes the collection and use of historical data easier, as well as linking to the dataset from other datasets (between codespaces).

Besides the ID, the access nodes include the name and geographic coordinates as attributes. Optional attributes can include accessibility, phone number, timetables, and infrastructure details.

The database is publicly accessible via [National Access Point](#). The information is segregated by municipality and available in GTFS, NeTEx, and ArcGIS services. Developers can access via APIs or GIS services. Municipalities and Operators submit data manually or via APIs. Lithuania submits data to the EU Commission but lacks multimodal nodes (required by EU regulations). LTSA provides a separate, validated GTFS file for Google Maps (due to format incompatibilities). In the future a big data system to store historical records for analytics/reporting is planned.

Guidelines are outlined in the "statement of the register" (functions like a law but not legally binding). Minimum data standards are being defined (expected approval by end-2025). Harmonization is operator/municipality-led, not mandated by policy. Lithuania seeks EU-wide best practices but has no direct collaboration with neighboring countries.

Municipalities are independent and rarely seek LTSA's support. There is no structured forum for feedback. Users report errors via email/phone; no API for real-time corrections. In total there are around 40k stops registered, all of them digitized. There are 28 intercity bus operators.

3.2.15. Netherlands

The information was facilitated by the [Nationaal Dataportaal Wegverkeer](#) (NDW). The Netherlands has a harmonised national database [available](#) at the [Nationaal Toegangspunt Mobiliteitsdata](#) (NTM) including all scheduled public transport stops – bus, metro, tram stops, and railway stations: airports are not included. The database is called Centraal Halte Bestand (CHB), it is accessible [online](#) and via a [dedicated viewer](#). The database is updated daily, presented in XML format, part of the [Dutch NeTEx profile](#) and is available for free after registration.

A harmonized system called [NDOV Loket](#) (Nationale Data Openbaar Vervoer) presents public transport planned and real-time information, fares, fares zones (called OV zones), and stop accessibility from more than 20 PTOs including water taxis, ferries, bus coach, international long distance travel and urban public transport. NDOV and CHB are managed within the framework of the [DOVA partnership](#), which is a collaboration of 15 decentralised PTAs. The PTOs are required to provide standardised data which is included at NDOV and CHB. DOVA acts as the data owner and ensures that the information is harmonized, up to date, and accessible by public authorities, operators, and the NTM.

Public ferries in urban areas, such as GVB in Amsterdam and RET in Rotterdam, are integrated into NDOV and CHB. Regional, commercial, inland waterways and river transport are not fully integrated into the central systems.

The system assigns a unique ID to each stop, including individual stops located on opposite sides of the same road. The IDs are numerical codes, with the specific structure not fully public, i.e. if certain digits correspond to geographic areas or transport modes. The data structure follows NeTEx and SIRI standards for interoperability, it is integrated with real-time and timetable data provided by PTOs.

New stops can be added by PTOs, but these additions must be validated by the corresponding PTA who is responsible with the contract with the PTO, ensuring the quality and consistency of the CHB.

The diagram illustrates the Haltebeheersysteem (HBS) architecture, showing the flow of data and processes between three main entities: Vervoerder (Carrier), NDOV Beheerorganisatie (NDOV Management Organization), and OV-autoriteit (Public Transport Authority).

Vervoerder (Carrier):

- Planning:** A cylinder representing the carrier's planning system.
- Vervoerkundige / Planner:** A person icon representing the carrier's planner.
- Nieuwe / bestaande halte? Aanvraag:** A box representing the request for new or existing stops.

NDOV Beheerorganisatie (NDOV Management Organization):

- Tool: Invoeren mutaties:** A box representing the tool for entering mutations.
- CHB + verwijstabel:** A cylinder representing the central data store.

OV-autoriteit (Public Transport Authority):

- Weg-/infrabeheerder (Road/Infrastructure Manager):** A box representing the manager of the road/infrastructure.
- Haltebeheersysteem (Stop Management System):** A box representing the stop management system.
- Halte-informatie (Stop Information):** A box representing stop information.
- Overig (Other):** A box representing other data.
- Haltedata-beheerder (Stop Data Manager):** A person icon representing the manager of stop data.
- Meetboek / batch interface:** A box representing the interface for batch processing.
- Halteviewer (afnemer NDOV) (Stop Viewer (NDOV customer)):** A box representing the stop viewer.

Processes and Data Flow:

- Bepalen unieke haltes (Determine unique stops):** A process flow from the Vervoerder to the NDOV Beheerorganisatie.
- Dienstregeling (KV1 / NeTEx):** A process flow from the Vervoerder to the NDOV Beheerorganisatie.
- Invoeren mutaties:** A process flow from the NDOV Beheerorganisatie to the OV-autoriteit.
- Meetboek / batch interface:** A process flow from the NDOV Beheerorganisatie to the OV-autoriteit.
- Halteviewer (afnemer NDOV):** A process flow from the NDOV Beheerorganisatie to the OV-autoriteit.
- CHB + verwijstabel:** A central data store that receives data from the Vervoerder and the NDOV Beheerorganisatie, and provides data to the OV-autoriteit.

NDOV Loket(ten) (NDOV Counter(s)):

- A box representing the NDOV counter(s).

Functies (Functions):

- Tonen mate TOV
- Crowd sourcing
- Inkijk vervoerder
- Feedback beheerders

There are separate layers or databases for different types of infrastructure such as road network and public transport stops. There have been discussions about aligning these layers (e.g. integrating the road network used by NDW), the CHB uses its own reference layer.



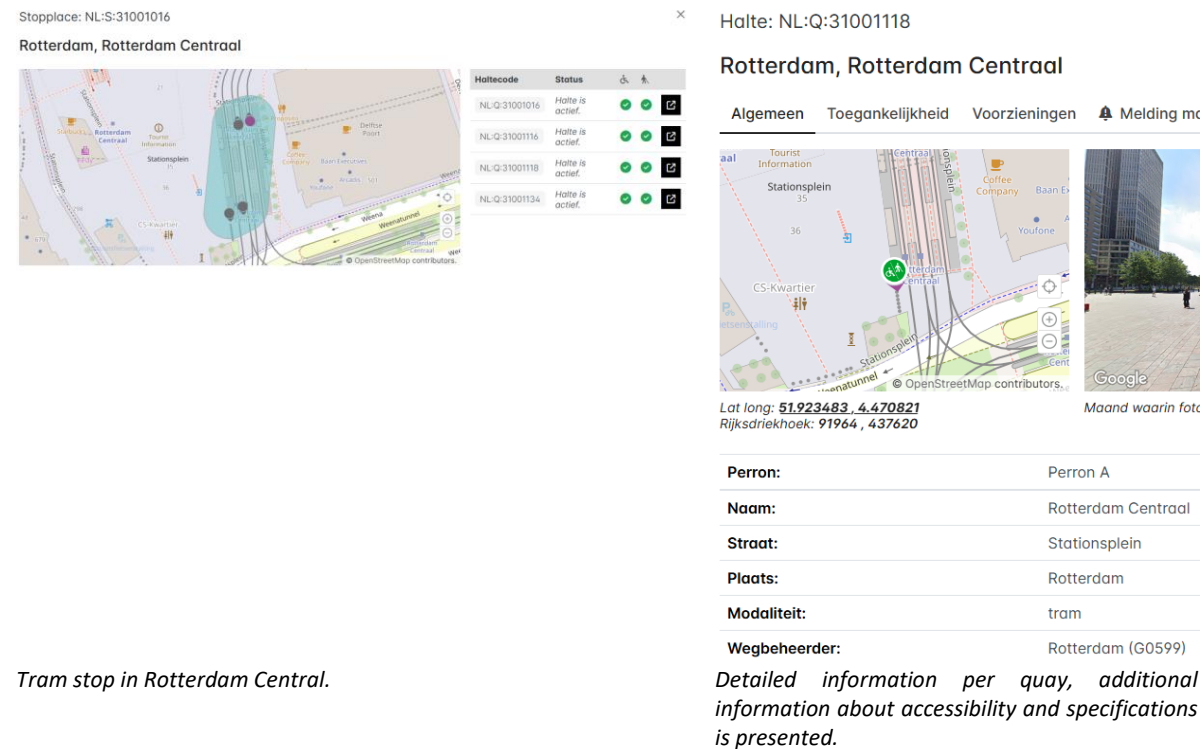


Figure 9: Example information available in CHB.

Specifications on the information available per type of NeTEx element and the architecture are presented in the [documentation](#), as is the [ID structure](#).

The harmonisation of access node IDs in the Netherlands has been mainly achieved through a sector-driven initiative, not a formal regulatory requirement. This system was created collaboratively by DOVA and market stakeholders to ensure consistent and accurate dynamic travel information nationwide. The effort began with the GOVI (Gegevensuitwisseling Openbaar Vervoer Informatie) project, which aimed to provide real-time travel information at stops and led to the digitalization of bus, tram, metro, and train stops, excluding coach stops. The diagram below shows the timeline.

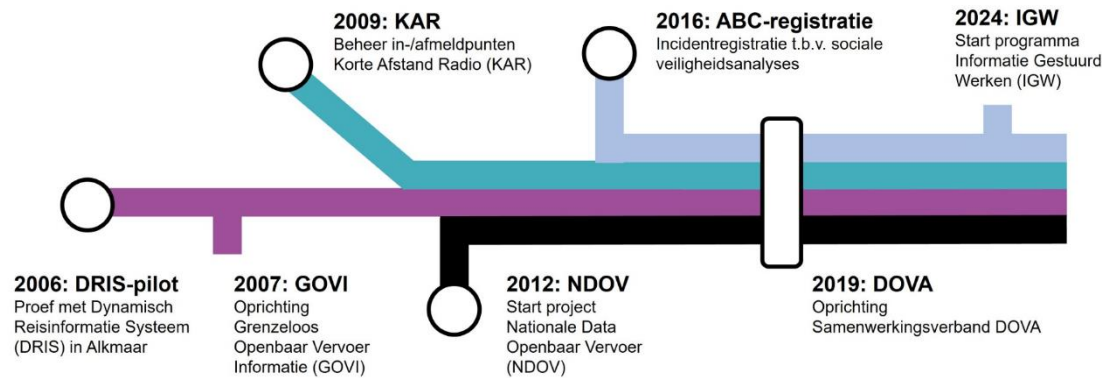


Figure 10: Timeline of Mobility Open Data in The Netherlands.

The work is aligned with the ITS directive and the Regulation (EU) 2024/1679 over trans-European transport network TEN-T. For instance, 26 urban nodes in the Netherlands are included in the Annex II “LIST OF NODES OF THE TRANS-EUROPEAN TRANSPORT NETWORK” of the Regulation (EU) 2024/1679, offering standardized data to support integration across the EU.

Establishing the central database itself was a challenge, which required coordination among DOVA, PTAs, and PTOs. With the system now operational, the focus has shifted to maintaining data quality

and keeping information updated. DOVA oversees a quality control process, managing both static and dynamic data from operators. Inaccuracies trigger a review process backed by contractual obligations for data accuracy.

3.2.15.1. *Shared mobility*

The information was complemented by the city of Amsterdam. The Netherlands is currently exploring the possibility of expanding the CHB system to include shared mobility options and mobility hubs. These HUBs are being considered for integration to facilitate seamless transfers between different modes of transport, such as from a train to a shared bike or scooter, supporting multimodal travel.

A mobility dashboard, utilized primarily by cities, offers insights into shared mobility services like scooters, shared cars, and bikes. However, this data is not open to the public, and not all service providers share their data. The dashboard aids urban policy and regulation by showing how public spaces are used by these services, rather than providing real-time travel information for end users. Currently, shared mobility data lacks centralization, with each provider or city often using its own system, unlike the nationally harmonized data for scheduled public transport.

It is expected to centralize this data and publish it in the NAP, it will be based on the Dutch profile which includes MDS (most used in cities for shared mobility), GTFS, NeTEx, Datex, Tomp, among others. The selection of the standard is based on the use case according to the needs of the city.

Looking forward, the system aims to incorporate new transport modes like shared mobility services and mobility hubs. There is also interest in integrating public transport data with other areas such as parking, cycling infrastructure, and on-demand services to enhance multimodal travel planning and urban mobility management. As the mobility landscape evolves, ensuring interoperability, data quality, and timely updates remain crucial challenges.

To standardize shared mobility and include the information in the NAP it is envisioned to set up working groups for shared mobility to discuss what is needed, i.e. crashes API to understand where the incidents are happening, cross of current datasets and databases. For shared-mobility it is necessary to have some flexibility, it is new and innovative sector that requires a standard that keeps involving overtime to make sure that the information can be gathered. Additional funding is needed to develop the standards and set up working groups.

3.2.16. *Norway*

The information was facilitated by ENTUR. Norway has implemented a harmonised database called National Stop Register (NSR) including all public transport stops in Norway, primarily used to store and redistribute infrastructure information of a stop place¹⁵. The database includes a total of 60,000 stop places and over 120,000 quays including bus, train, urban rail, maritime transport and aviation in urban, regional, and intermodal hubs such as railway stations and airports.

Information per stop includes ID, name, relation, position and additional data as shelter and wheelchair accessibility. The NSR can be [navigated in the web](#), and exported daily to [NeTEx files](#) freely available under NLOD license. All the documentation is freely [available](#).

Hereby some exceptions and clarifications about the NSR:

- **DRT** usually does not have fixed stops. Therefore, **flexible areas and virtual stops** related to DRT services are managed within the **timetable data**, not in the NSR.

¹⁵ ENTUR. Consulted on August 4 2025. National Stop Register (NSR). ENTUR.

<https://developer.entur.org/pages-nsr-nsr>



- **Micromobility services** (e.g. e-scooters, shared bikes, car-sharing) are **included in journey planning solutions**, but their **access points are dynamic** and **not registered as static stop places**. Instead, their location data is provided in real time by the operators and used directly by the journey planner.
- **Park-and-ride facilities** connected to a stop place are **registered in the NSR**, only with **basic information** such as the number of parking spaces. More detailed data on public parking areas falls under the responsibility of the **Norwegian Public Roads Administration**, while public transport-related stops are managed by **Entur**. This creates a **shared responsibility** between both organizations.
- **Taxi services** are **not yet integrated** in a structured way. While taxis can be included in journey planning through routing data from **OpenStreetMap**, there is currently **no official registry of taxi stands or parking areas** in the system beyond that.

The data is created and maintained by counties (fylkeskommune) with Entur acting as the administrator who oversees the process at national level, providing guidance, ensuring proper use of the system, and monitoring compliance with national standards. When the new national IDs for stops was implemented, the system providers of the planning tools integrated support for the new IDs into their systems, and overnight, the national dataset began using the new IDs. The challenge faced was for the PTAs to support other internal systems, such as their real-time system, which took longer. However, they are now all using national IDs. The purpose of having a master database for all stops is to avoid duplication of stop data across providers and make it easier for new operators to plan and establish routes.

The process to gather and update the data is presented below:

- **PTAs update and maintain stop places** in the **NSR**.
- PTAs send their **timetable data** to the **national timetable database**, where it's validated towards NSR.
- **Real-time data (SIRI)** is sent to ENTUR **real-time hub**, where it's validated and harmonized.
- All this data is integrated into the **National Journey Planner Engine**, which powers the **Journey Planning API** available to all apps and web services.

For **shared mobility**, a parallel structure is followed with data collected in **GBFS format** into a dedicated **Micromobility Hub**, developed as a national solution. This data is also integrated into the **Journey Planner**, making micromobility options accessible through the same API.

Additionally, **raw micromobility data** is available for direct access if needed. While the data formats and structures differ (due to the nature of each mode), everything is harmonized for the end user.

National MobilityHub - collection of mobility data

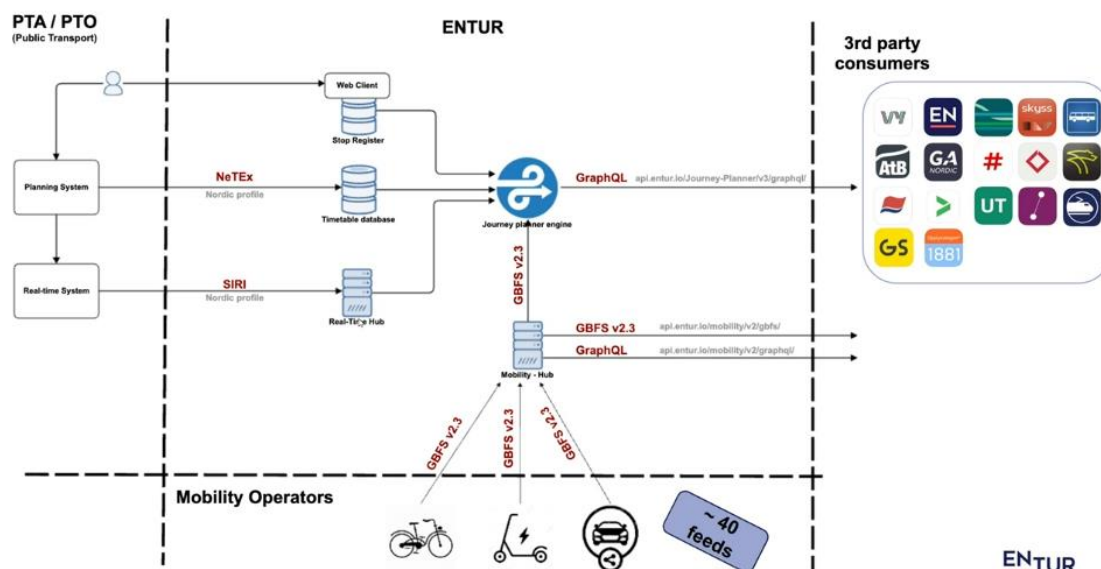


Figure 11: National MobilityHub – collection of mobility data.

Regarding the ID structure, each stop or related element in the system is assigned a globally unique identifier. For example, a stop place might have the ID **NSR:StopPlace:5532**, while a specific boarding position (quay) might be identified as **NSR:Quay:10129**. The general format follows this structure: [Namespace]:[ObjectType]:[UniqueNumber]. “NSR” refers to the National Stop Register, the object type refers to the type of element (e.g. StopPlace, Quay), and **the number is a meaningless but unique identifier**. These identifiers are never reused, even if the stop is decommissioned, which ensures data continuity and historical traceability.

IDs don’t include semantic content. In other words, no geographic or administrative information (such as municipality codes or stop names) is embedded in the ID. This avoids problems when such attributes change over time. Instead, all descriptive information—such as name, geographic coordinates, and administrative boundaries—is stored as metadata associated with the stop.

The figure below shows Oslo central station based on [Stoppested](#).

Oslo S, Oslo (NSR:StopPlace:59872)
Versions

Multimodal StopPlace
TAGS

Version 8

Local reference:

Group of stop places: [Oslo](#)

Name

Oslo S

Name is required

Description for travellers

Children stop places

Oslo Tollbugata [NSR:StopPlace:60158](#)

Oslo S [NSR:StopPlace:337](#)

Oslo S Trelastgata [NSR:StopPlace:2](#)

Oslo S Trelastgata, Oslo (NSR:StopPlace:2)

Belongs to multimodal stop place [NSR:StopPlace:59872](#)

Version 33

Local reference:

RUT:StopPlace:3010010-6, TEL:StopPlace:3010010, NSB:StopPlace:760010030, NSB:StopPlace:760010030, OPP:StopPlace:3010016, TEL:StopPlace:3010010, RUT:StopPlace:3010010-6, HED:StopPlace:3010016, RUT:StopPlace:3010010

Oslo S Trelastgata

Name is required

Description for travellers

ved spor 19

MORE ...

QUAYS (16)

PARKING (0)

Oslo S Multimodal StopPlace is part of the group of stop places "Oslo" and has three StopPlace: Tollbugata, Oslo S and Oslo S Trelastgata

Oslo S Trelastgata has different local references (legacy), it has specifications about the tariff zones (Tz), if the interchange is allowed and indicating if it's wheelchair accessible and other services such as ticketing vending machine, waiting area, etc. Additional information is presented per quay.

Figure 12: Oslo S at Stoppested database.

3.2.17. Poland

Information was provided by the [Ministry of Infrastructure](#). Poland currently lacks a harmonized system for digital IDs of transport access points, though development is underway in the analytical phase. The goal is to create a National Access Node Registry as part of a fully operational National Access Point (NAP) by end-2029, for multimodal data.

Current situation:

- Approximately 64% of urban nodes have identified. Around 20 major cities and regional PTAs are responsible for their own system for access points (based on study of 30 urban nodes in which 11 provided answer). They may include additional modes (e.g. bike, car-sharing) in their local systems.
- These systems use GTFS (around 90%), the remainder corresponds to **native less known formats** (legacy systems) or non-digital, non-machine-readable formats (in smaller cities and rural municipalities) for identifying access points.
- In some cases, the data is publicly accessible. The stop IDs in the [GTFS files analyzed](#) are numbers of 4 to 8 digits, duplicates are expected across different PTOs.
- These systems operate without central coordination or harmonization.
- Three out of 16 voivodeships (main administrative divisions) are working on local harmonization, but these efforts remain unstandardized and unintegrated nationally.
- [Railway data](#) gathered by regional and national operators is the most advanced in terms of centralization and complexity.
- The [NAP](#) currently exists in a temporary, updated [regularly](#), and non-fully operational form.

Based on research conducted in November 2022, entities provide data to publicly accessible databases (e.g., mobile applications, websites). In the case of Gdańsk, data is publicly [available](#) in GTFS and GTFS-RT, also at [Poland's Data portal](#). Koleje Śląskie determines the rules for sharing transport data individually with each service provider in XML and GTFS files. Koleje Małopolskie enables [downloading](#) data in GTFS. The Łódź Road and Transport Authority provides data via MS SQL and [GTFS](#) generated by the Łódź PTO. [Warsaw](#), similarly to Gdańsk, provides an API within the Warsaw City Hall open data framework as well as open MySQL databases. ZTM GZM shares data in GTFS files. MKM in Tomaszów Mazowiecki uses MS SQL files and provides XLSX files for application purposes. Availability of data per standard can be accessed [online](#).

The National Access Node Registry will digitize all the stops and unify data on IDs currently managed at local and regional levels. Its focus will be on scheduled modes (e.g. buses, trains, trams); micromobility, on-demand transport, maritime, and aviation are not yet priority in the National Registry. However, the system is designed to be flexible and could potentially include those modes in the future.

The EU ITS Directive revision is in the process of being transposed into national law. The deadline for this legislation was initially set for the end of 2025, but delays are expected. Implementation of the law will be carried out gradually within the 2026–2030 timeframe. There will be two dedicated NAPs, one for MMTIS Regulation, and one for the other three Regulations. The Ministry of Infrastructure

(who oversees transport) will be responsible for the National Access Node Registry. The law will define the technical requirements for the registry, including the harmonized ID schema, likely it will include an updated national NeTEx profile. This responsibility may be delegated to another body.

The National Access Node Registry will follow the NeTEx structure. The identification schema will align with NeTEx guidelines, inspired by systems like Norway's NSR. Currently there is a national NeTEx profile in Poland, but it is not in use, due to lack of an XSD schema. The registry will include sub-levels to identify different areas (e.g. platforms within a station) and will support hierarchical relationships (e.g. parent-child relationships for multimodal hubs). The registry will be freely available via NAP.

The planned National Access Node Registry will include the following attributes for each access point:

- Name of the access point.
- Geographical coordinates (GPS).
- Managing entity (e.g. municipality, PTO).
- Period of availability for operators.
- Mode of transport (e.g. bus, train, tram).
- Accessibility information (e.g. features for persons with disabilities and persons with reduced mobility).
- Assistance information for passengers with disabilities (train, bus).
- Level of stop location in multi-level stations (e.g. underground, ground level).

Gathering and digitizing this data will require manual collection, especially for the accessibility features, as current systems lack detailed or standardized information. The data will be collected, reported and maintained by the owners of the objects or by designated managers, and checked and uploaded at regional level by Voivodeship Marshals. It should be underlined that those requirements are still under consultation and the specific rules may change.

Key Challenges

- Data Collection: Fragmented, non-digital, or non-standardized sources complicate gathering data.
- Manual Effort: Initial collection, especially for attributes like accessibility, requires significant hands-on work.
- Data Quality: Maintaining completeness, accuracy, and currency poses an ongoing challenge.
- Standardization: Aligning local, regional, and national systems with NeTEx/EU standards demands coordination and technical expertise.

Future Evolution

- Unification & Optimization: The system will progress toward greater standardization, mirroring advancements in other EU member states.
- Automation: Manual processes will shift to automated workflows, prioritizing maintenance and updates.
- Cross-Border Collaboration: implementing NAPCORE recommendations like: harmonization with NeTEx, NAP Reference Architecture, common standard for access nodes identifiers, should result in seamless cross-border integration. Future efforts may include closer cooperation with neighboring countries (e.g. with Germany) to harmonize data for cross-border transport services.

There are known 2 regional, cross-border initiatives:



- Currently ongoing 01.01.2025-31.12.2027: the Polish-German smartENT project - one of the objectives of the project is to improve access to passenger information, including timetables.
- Finished in June 2020: the Interconnect project developed and implemented a system, common to all transport organizers and operators in Blekinge region (Sweden) and Pomerania Voivodeship (Poland), for a unified passenger information system.

NAPCORE and Norway's National Stop Place Registry (NSR) are seen as valuable models for Poland. Sharing best practices and tools is critical for progress. Poland participates in NAPCORE in the SCOM and in task 8.5 (Academy). Poland aims to adopt proven systems rather than developing entirely new ones, leveraging existing and successful implementations in other countries.

3.2.18. Portugal

Information was provided by [IMT](#) (Instituto da Mobilidade e dos Transportes). Currently, there is no harmonised national system for identifying transport access points. There is no national ID assigned to all stops, and the definitions and processes for registering new ones are not standardised. However, nearly all public transport services are digitised and integrated into a single national system. While the data lacks a fully standardised format, all stops are digitally recorded and accessible through the [NAP](#). The MMTIS is supported by the national system for public transport data ([STePP](#)) available online. Each component is managed by a different department within the same national authority.

STePP is a GIS-based platform designed to comply with [Regulation \(EC\) No 1370/2007](#) and support market opening created through law 52/2015 which did not include requirements for standardisation of IDs. STePP includes static information for all regular public transport modes (train, bus, domestic coach, road and inland waterways). It covers some DRT bus services and does not include parking, micromobility, maritime or aviation modes. It includes financial and contractual data and involves 23 regional and 50 municipal authorities.

The NAP, introduced later, focuses on road and multimodal transport, it is the only source of real-time information. It includes regular public transport (bus and rail), the largest bike-sharing systems, and parking information. Information is available online without registration. The NAP is managed by various departments, with the planning department handling multimodal data and the infrastructure department managing other ITS-related data.

Both systems serve different purposes and are essential, but there is a strong push to enhance interoperability and data exchange between them using NeTEx format. Harmonisation remains a challenge, i.e. all stops are included but lack consistent national ID assignments. Full integration is difficult due to differences in purpose and content, but alignment is a clear objective.

The PTAs are responsible to update the information available in STePP. PTOs are legally required to input their service data into the system and PTAs are responsible for validating the data. Non-compliance by PTOs can lead to fines. The information flow is presented below.

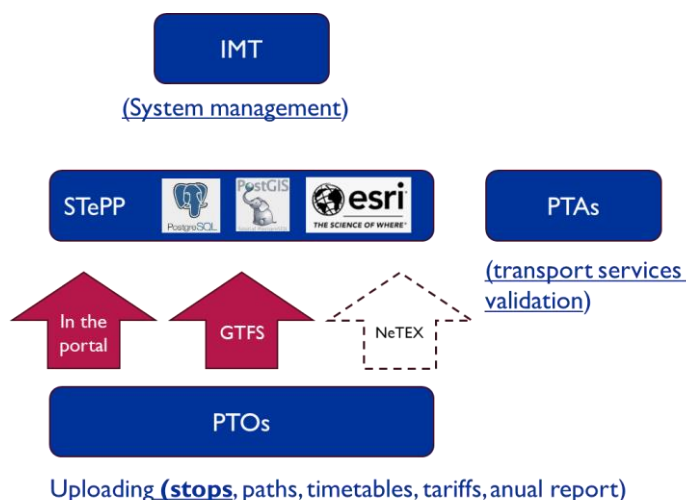


Figure 13: STePP data flow and stakeholders involved.

Information is organised by PTO and service, given that the system was originally designed around services and not as a centralised stop register. There are 50.000 stops nationwide, despite the mechanisms to avoid duplication some stops are duplicated especially if they are shared by multiple PTOs under different PTAs.

The concept of what constitutes a stop, or how to register a new one, is not yet standardized. The ID includes the following elements:

- A national code
- A regional PTA code (optional)
- A PTO code
- A service code
- A (currently missing) stop number

Regional flexibility is allowed. In Lisbon, stops are identified by numbers, while in Porto, a three-letter municipal code is used. Regional identifiers often follow the NUTS 3 code, which could be integrated into an EU-wide standard (suggested format: Country code + NUTS3 code).

Each service is assigned a unique code, typically composed of:

- PTO ID + Route ID

Limitation identified include stability of service codes due to changes in PTOs, duplication of stops, no consistent way to represent multimodal hubs i.e. a train station with adjacent bus and bike-sharing facilities. Unclear if it should be treated as a single node or as multiple linked stops.

STePP stops include geographical coordinates, infrastructure/ equipment details (i.e. shelter, bench, signage, among others), partial information about accessibility for passengers with disabilities and passengers with reduced mobility. The information is openly available without registration, PTAs have registered full access, PTOs have registered partial access, other national entities also have registered partial access.

PTAs human resources remain a challenge. Often, a single part-time employee or fewer is tasked with uploading, verifying, and validating data, which hampers data maintenance and accuracy. Ensuring timely and accurate data submission is a significant challenge due to the lack of dedicated staff.

Future improvements to the system will likely require:



- Increased staffing or improved resource allocation within PTAs.
- Enhanced automation or streamlined processes to reduce manual tasks.
- Better integration and communication between existing systems, such as STePP and NAP.

These enhancements would lead to more reliable data and efficient system management.

3.2.19. Romania

The company "Transport Public" in Romania provided the information. Currently, there is no harmonized system in place. The National Railway Transport Company of Romania ([CFR](#)) publishes [datasets](#) for each of the nine train operators in XML format once a year in December, a week before timetable changes. These datasets allow for the inference of station IDs and include station names and IDs but lack latitude and longitude data. The train services, schedules and renders are regulated by the Authority for Train Reform (ARF).

Private [initiatives](#) have created GeoJSON files using OpenStreetMap based on the dataset names, manually correcting any inaccuracies. The dataset is updated annually, and any timetable changes during the year require direct contact with the operator. There is no information about stops features (platform types, shelters, waiting rooms, etc.). There are 2,120 stops including active, inactive, narrow-gauge lines and heritage railways.

Other modes are not covered, in most of the cases the PTO defines its own private, and non-standardized ID. The implementation of the NAP is still on progress and most of the [data](#) available is about roads, and it is not updated regularly.

In Romania, there are no regulations requiring PTOs to upload information unless they operate services between two of the 41 administrative regions. In such cases, they must upload basic information in XML, PDF, or scanned format. There are currently up to 10 local and regional PTAs, with more needing to be implemented.

The PTA of Bucharest, [TPBI](#), has available information online via [GTFS](#) covering the metropolitan area which includes IDs assigned by TPBI for bus, trams and metro stops. Static and Dynamic information is available free of charge in GTFS and GTFS real-time format, SIRI is used internally for information systems. Other PTAs have their own IDs, not harmonized that can overlap across databases. Where no information is available a random ID has been created to fulfil the gaps. Information about accessibility, such as elevators, escalators, stairs and static information, is included only for metro stations.

There are no DRT services in Romania, in some rural areas there are paratransit not-registered operators. Flixbus own IDs are covered by their global GTFS while other operators don't have public information. Some micromobility services funded by the EU publish their GBFS feed in [MobilityDatabase](#). Other services such as waterborne or aviation are not considered.

The ID published for train station consists of 5 digits and has the following structure:

- 1st digit: Defines the region of the railway network, nine in total.
- 2nd digit: Defines the line within that region.
- Last 3 digits: Identify the specific stop on that line.

The challenges identified include:

Lack of mandatory data sharing related legislation: Data sharing is voluntary and fragmented. A legal mandate is required for PTAs and PTOs to share data in a standardized format, improving coverage and quality.

Absence of a unified, structured ID system: There is no official, hierarchical identifier system for access nodes or stops that spans country, region, and PTA levels leading to duplications, especially if multiple services use the same stop, and inconsistency.

Cross-border coordination issues: Countries abroad have their own IDs without a synchronization mechanism causing duplicated stops and mismatches in journey planners when routing cross borders.

Project and Infrastructure Stalls: Additional efforts are required to implement regional PTAs and the NAP in Romania.

3.2.20. Slovakia

The [Ministry of Transport](#) provided the information. At the national level, the national railways use a unified system and coordinate their timetable yearly with PTOs to harmonize arrivals and departures, although changes during the year may not be considered by PTOs. This database includes international services and it is managed by the [national/main railway](#).

At the regional level, there are eight regions, each with an assigned PTA, two of which are not operating. Three regions have an integrated transport company that coordinates all public transport, including rail, regional buses, and city transport, within their territory. At the city level, around 35 cities operate their own systems, while cities with fewer than 20,000 inhabitants rely on regional services. Static timetable information is generally digitized, including rail, bus, trams, trolleys, airports, it's unclear if the data is in an interoperable format. IDs for waterborne and coach services are managed privately without any regulation.

- **Geographical coordinates:**
 - Railway stations: GPS coordinates are recorded and publicly available.
 - Bus stops: Most cities define stops using geographical coordinates, although the completeness of this information for smaller stops may vary.
- **Accessibility information:**
 - Railways: Accessibility details for stations are provided, including their suitability for passengers with disabilities and passengers with reduced mobility.
 - Urban transport: In larger cities such as Bratislava, timetables indicate services with low-floor buses through pictograms or symbols.
 - In some major bus stations, accessibility information is available but is less consistent for smaller stops.

Most of public transport information is available in GTFS and GTFS real-time. Bratislava has its GTFS feed [publicly available](#). For railways, the data follows national guidelines aligned with European railway data exchange format TAP TSI. Data are provided on the website of the national railways infrastructure manager ([Public and media | ŽSR](#)), e.g. for what regards accessibility: [List of stations and their accessibility | ŽSR](#).

There is no NAP at the moment, its implementation is expected in two phases lasting three years starting operations in 2029. The NAP implementation will contribute to harmonize the data transfers and centralize the information. In January 2024 the [National Transport Authority](#) was established under the Ministry of Transport to coordinate at national level and improve collaboration between the regional PTAs.

The main challenges include the integration of multiple databases via the NAP, lack of human resources and time for integration and further maintenance, coordination among stakeholders and their willingness to work together, and fragmentation of responsibilities based on the mode of transport.

3.2.21. Spain

Information was provided by the ministry of transport, entity in charge of the MMTIS NAP. In Spain there is no harmonized system. In the past, the NAP explored merging the GTFS of different operators into a single system, but the project stalled due to the difficulty in identifying duplicate stops. Identification depends exclusively on the criteria of each operator or regional authority, without a national standard. Within the same region, processed and unprocessed files can coexist, generating inconsistencies. For example: In Barcelona, stop IDs include prefixes such as TMB_ or FGC_ to distinguish networks, but this is an internal solution without uniform application nationally.

Some autonomous communities group data from their operators and send them to the NAP, but others do not have the technical capacity to do so. In some cases, the data arrives in duplicates: the same operator sends its GTFS to the NAP and also through its autonomous community, without coordination. The NAP accepts data from different sources, resulting in overlaps and gaps. The ideal would be a model where the autonomous communities centralised regional information.

Modes Included ("scheduled transport"):

- **Land:**
 - Train (including commuter trains and metro).
 - Bus (urban, intercity, and coaches such as Alsa).
 - Tram (where applicable, e.g.: Barcelona).
- **Maritime:** Ferries (e.g. Baleària, Fred.Olsen), but only if the operators provide data.
- **Air: Limited to airport slots** (via Aena), without information on ground connections.

Excluded:

- Micromobility (bikes, scooters).
- DRT.
- Complementary infrastructure (car parks, bike lanes).
- **Private services** (e.g., hotel or airport shuttles).

Coverage depends on who digitizes and shares data (e.g. aviation only includes data from AENA (slots), not from airlines). The airport does not coordinate information with the public transport operators that provide access to it.

Operators and regional authorities decide what data to share and how to identify it. There is no entity that supervises or unifies criteria. The Ministry of Transport: Promotes digitalization (e.g., through the future Sustainable Mobility Law), but without legal tools to force operators or communities to share data under certain schemes. There is no body that defines rules for IDs or resolves conflicts such as duplicate stops.

IDs vary from digits to complex alphanumeric codes with no national pattern.

- Some systems (e.g., TMB in Barcelona) use hierarchies:
 - Prefixes to distinguish operators (TMB_, FGC_).
 - Suffixes for specific platforms or stops (_P1, _E1).
- Problems:
 - Inconsistency: The same stop can have different IDs in GTFS from different operators.
 - Lack of metadata: There is no documentation explaining the logic behind the IDs.
 - AMP_1401,,C. Madrid,,40.7098389,0.5800650,,,0,,,0
 - AUC_1000,,Parc de Torreblanca,Sant Feliu de Llobregat,41.3796272,2.0532758,,,0,,,0

- AVE_04104,,Camp de Tarragona,,41.1920662,1.2726660,,,0,,,0

Data for each access node includes:

- Geographical coordinates (stop_lat, stop_lon).
- Number of the parada (stop_name).
- Type of location (location_type: e.g.: stop, station).

Additional data (depending on the operator):

- Accessibility (wheelchair_boarding): Only some include this field.
- Tariff zones (zone_id): Present in registries such as CRTM (Madrid), but not in all.
- Schedules and frequencies: Included in most, but with different formats.

Key data such as connection between modes (e.g. how to transfer from metro to bus at an interchange) is missing. Use of GTFS, heterogeneously. NeTEx is not used due to lack of demand, Bilbao leads the first implementation of NeTEx. Validator detects if there are features such as rates, line shapes, accessibility.

All data is published in **static GTFS** at nap.transportes.gob.es, under open data license with no restrictions on use. The data can be downloaded from GTFS files or via API for developers.

The NAP performs quality control of the GTFS by validating the file to detect errors in the file format, or deduced from the information in the GTFS (e.g., an arrival time prior to a departure time) similarly as other GTFS validators ([Canonical GTFS Schedule Validator](#)). On the other hand, the NAP receives reports of errors from developers, usually obtained through user reports. The NAP reviews and communicates these errors to the data provider sources, so that they can be corrected at their source. Although the NAP does not directly modify the GTFS received, it ensures their quality and acts so that it is the GTFS provider who corrects any errors and failures that may exist at source.

MMTIS DR requires the sharing of data **if it is already digitized**, but **it does not require digitization**. No sanctioning mechanisms in Spain.

- **Sustainable Mobility Law** (in process):
 - It does not include unique IDs for stops.
 - It could include clauses for autonomous communities to require GTFS from operators, but **it is not guaranteed**.
- **Voluntary initiatives**:
 - Some communities (e.g. Catalonia) require operators to publish data in the NAP when renewing contracts.
 - **There are no national policies** to standardize IDs. Harmonization would depend on sectoral agreements between authorities.

Challenges include:

- **Incomplete digitalisation**: Many services (especially in rural areas) **are not digitalised**.
- **Duplicates and overlaps**: Same data received from multiple sources.
- **Lack of resources**: The NAP ensures the quality of the data and, although it does not modify them directly, it acts to correct the quality problems that are detected and the corrected GTFS reaches the NAP.
- **Adoption of advanced standards**: NeTEx is on hold due to **lack of developer interest** and because it does not solve underlying problems (e.g., inconsistent IDs).

Next steps (2025–2026):



- Comply with the EU Regulation for **dynamic data** (e.g. real-time schedules) by **Dec. 2025**.
- Incorporate **DRT** and infrastructure data (e.g., parking lots).
- **Long-term goal**: To achieve **1 GTFS per autonomous community** (instead of hundreds of fragmented files), but **it depends on the political and technical will of each region**.

3.2.22. Sweden

Information provided by [Samtrafiken](#). Sweden has a database called the [Swedish Stop Registry](#) (SHR), managed and maintained by Samtrafiken. The SHR consolidates data contributed and updated by all PTAs and PTOs according to local planning and infrastructure changes. It assigns unique national IDs to each stop, addressing issues like duplicated or conflicting IDs across regions. The Swedish Transport Agency ([Transportstyrelsen](#)) oversees compliance, under regulation [TSFS 2012:2](#).

The SHR has four main objectives:

- **Standardization**: Ensure unique, national IDs for each stop.
- **Accessibility**: Allow consistent and traceable access to stop data across Sweden.
- **Multimodal platforms**: Facilitate seamless combined travel, such as Resplus, enabling ticket integration.
- **Efficiency**: Reduce redundant local databases and manual reconciliation.

The database includes bus stops, train stations, station areas, and transfer points. It does not include micromobility and other modes, but it has the potential to include it in accordance with national and MMTIS regulation¹⁶.

- Stop name
- Stop ID number (national and local)
- Geographical coordinates
- Municipality code
- Minimum transfer time

The following figure presents two examples, one for a single mode and two quays, and one with two modes and 7 quays in total.

¹⁶ Samtrafiken. April 2024. The Swedish Stop Registry. Samtrafiken. <https://samtrafiken.se/wp-content/uploads/2024/04/the-swedish-stop-registry.pdf>



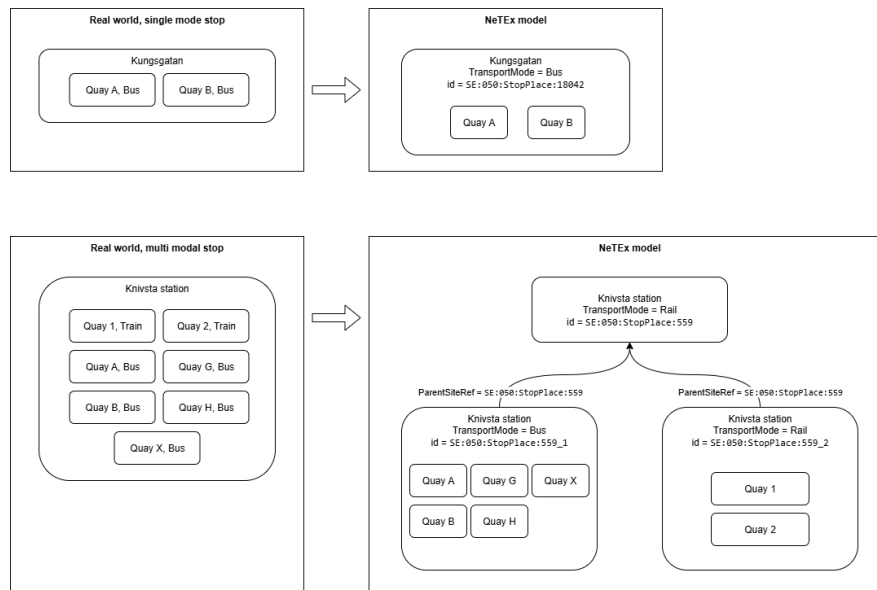


Figure 14: Examples of Swedish IDs.

The structure of the IDs is presented as follows: SE:050:StopPlace:18042 for a single mode stop. Here's a breakdown of the components:

- SE refers to the country.
- 050 refers to Samtrafiken (this part is the same for all ID stops).
- StopPlace refers to the component in NeTEx.
- 18042 is the unique ID.

When multiple modes are available there is a ParentSiteRef inherited mode by mode, the underscore indicates this is child stop 1 of multimodal stop 559 (_1, _2 in Kivista station)¹⁷.

There is no relationship in the IDs between the StopPlace and the quays. For example, the stop SE:050:StopPlace:559_1 has the quays: SE:050:Quay:4205, SE:050:Quay:4206, SE:050:Quay:4207, SE:050:Quay:4210 while the stop SE:050:StopPlace:559_2 has the quays: SE:050:Quay:4208, SE:050:Quay:4209 and SE:050:Quay:135729.

The SHR is in NeTEx format and follows the [Nordic NeTEx profile](#), additional technical information is presented by [Samtrafiken](#). The data is available via an API that requires registration at Samtrafiken and under the CC0 1.0 Universal (CC0 1.0) Public Domain Dedication license. The database is published in Swedish's NAP [Trafficdata](#).

The main challenges in the implementation include duplicate IDs, name conflict across regions, stops duplicated across systems with different metadata, and manual reconciliation efforts. The way forward includes the potential expansion to handle micromobility and accessibility features.

3.2.23. Switzerland

The information was provided by the Swiss Federal Railways (SBB) with information from the Swiss Public Transport Data Association (SKI). Switzerland has a unique harmonized system for scheduled public transport services ([Atlas](#)) managed by the **Federal Office of Transport (FOT)**. Atlas is available via [OpenTransportData.swiss](#) (NAP), API access and open datasets. The FOT contracts SKI to collect,

¹⁷ Samtrafiken. June 2025. Samtrafiken Stops NeTEx export. Samtrafiken.

<https://samtrafiken.atlassian.net/wiki/spaces/SamtrafikenOpenData/pages/3701309442/Samtrafiken+Stops+NeTEx+export>

maintain, and manage Atlas. PTOs are responsible for updating their own stops in the central registry, while the SBB manages rail stops. The FOT partially manages DRT, while the Federal Office of Energy (FOE) oversees shared mobility and charging infrastructure. The road infrastructure is managed by the Federal Roads Office (ASTRA), but the data quality is not accurate given the decentralized ownership of infrastructure by cantons and cities.

Atlas includes all public transport with Public Service Obligations (PSO). Which means that **all scheduled stops** (train, bus, urban rail, tramways, waterborne) have a **unique SLOID (Swiss Location Identification)**. Atlas uses Hafas Raw Data Format (HRDF) which is the data exchange format of the Hacon Fahrplan-Auskunfts-System (HAFAS). In the future Atlas will transition to NeTEx and keep publishing GTFS feeds. This is mandated by law.

Information excluded from Atlas:

- DRT: This information is produced on a special NeTEx, and a GTFS Flex (and also a HRDF Flex) is produced based on that, even though its adoption is limited. Fixed stops can be included when they are identical to scheduled public transport stops. Areas or more dynamic stops are not included in ATLAS and will be transferred in the timetables (similarly as ENTUR).
- Coach stops: There are about 10-20 stops and cities are responsible for its management. They are not included in ATLAS, SKI is working on having a transfer description ready as HDRF and or GTFS at the moment.
- Micromobility: There are GBFS streams, but the ID of the stops are not regulated; the access point can be a fixed station or floating vehicle where the access node is the vehicle itself.
- Taxi stops: Still under development through research projects.
- Micromobility and pooling services: not included, use of GBFS is envisioned.
- Cable cars (skiing): not included yet, but there is interest and discussions to include them.
- Aviation: Not included.

For foreign stop places the following considerations apply:

- For train stations, UIC codes used are those provided by foreign railway undertakings. They use Atlas for Swiss stations and the information available for foreign stops, without specifying to PLCs or SLCs, or the database used.
- For buses, the FOT assign Swiss SLOIDs within certain number of ranges (e.g. 11 for Germany) to ensure consistency.
- Coaches are not regulated.
- Foreign operators may change IDs, complicating maintenance and transfer relationships.
- It would be ideal to include the nearest public transport stop ID with all “alternative” stops that are part of the meta-station (coaches, micro-mobility, D&RT) to model transfer relationships, which are needed for classic trip planning.

Documentation about SLOIDs is available at the [Atlas Stop Documentation](#) and [SLOID Documentation](#). It includes **Parent-child relationships** to group platforms, tracks, sector groups, and sectors under stations (and meta stations between STOP PLACE). The structure of the SLOIDs is:

ch:1:sloid:7000:0:312381

- ch: Country code (Switzerland).
- 1: Authority (FOT).
- sloid: ID type.
- 7000: Location (former DiDok number, not guaranteed).
- 0:312381: Components (stop zone and edge, but not regulated).



The attributes recorded for each stop include:

- **Geographical coordinates** (Swiss coordinate system and WGS84).
- **Stop name, type, and locality.**
- **Accessibility:** Limited to **wheelchair accessibility** (no tactile paths or other disabilities).
- **Parent-child relationships** (e.g. platforms grouped under stations).

There is no specific law or regulation for non-scheduled modes (e.g. DRT, micromobility). **NeTex adoption** is pending but **not mandatory**. Transition from legacy systems to import/export NeTex directly. Ecosystem on NeTex will be probably adopted within the next 10 years. NeTex export provided for the whole scheduled public transport. Switzerland differs in the approach to what must be delivered to the NAP from the exports provided to consumers.

The current challenges in Switzerland include:

- Lack of resources for IDs in modes not identified as PSO, including DRT, micromobility, touristic, taxi and coach stops.
- GTFS and NeTex require globally unique IDs, but Swiss SLOIDs may not always align. If platforms/ tracks and sector groups are not differentiated, IDs cannot be used in GTFS. E.g. in Zurich the side of the track for trains is only decided 5 min before arrival resulting in a track change that is not currently transmitted in the platform SLOID.
- There is no detailed standardized hub data modelling, especially for train stations, some modes are omitted (e.g. DRT), no detailed accessibility information such as DELFI.
- A high maintenance effort is required for tactile guidance, accessibility updates, hub modelling etc.
- Not enough data quality in stops from abroad.
- Booking (STOP PLACE based) may use different id than trip planning/timetables/realtime (QUAY based).

The table below presents a summary provided by SKI per type of mode and structure of access nodes.

Modes of transport	Scheduled Transport and DRT using regular official stops	Touristic transport with cantonal approval	DRT	Shared	Pooling
Example	ch:1:sloid:7000:0:312381	Probably pseudo-sloid: ch:2:sloid:<operator>:<a and so on>	Probably pseudo-sloid: ch:3:sloid:<operator>:<a and so on>	xxx	tbd
Responsible authorities	SKI on behalf of FOT	Operator	Operator	Operator	Operator
Dissemination of base data	Central registry ATLAS	Through timetables	Through timetables	Through GBFS feed	Tbd
Standards	HRDF NeTex GTFS	NeTex GTFS HRDF	NeTex GTFS HRDF	GBFS	Tbd
Granularity (as expressed in Transmodel)	STOP PLACE, QUAY SCHEDULED STOP POINT EQUIPMENTPLACE	STOP PLACE, QUAY SCHEDULED STOP POINT	STOP PLACE, QUAY SCHEDULED STOP POINT	GBFS	GTFS
Remarks	The stops are «owned» by the Federal government Be aware: carTransportRail	Be aware: skilifts and the like		Also floating	Not yet used

Table 5: Summary provided by SKI.

3.2.24. United Kingdom



Information based on public links provided by the Department of Transport and National Highways. The national public transport access nodes ([NaPTAN](#)) is a national dataset of all public transport ‘stops’ in England, Scotland and Wales, managed by the Department for Transport and based on Transmodel. The dataset includes the following modes:

- Bus stops and railway stations.
- Tram, metro and underground stops.
- Airports and ferry terminals.

No information about micromobility or DRT services was identified.

The NaPTAN dataset is updated with information provided by PTAs around the UK. Information may be provided by staff using the National Public Transport Gazetteer, which is a dataset of places throughout cities, towns and villages in the UK. NaPTAN is used by PTOs, data managers and PTAs, it is used to manage public transport-related software or services. It is freely available without registration, it can be accessed via the [website](#) in CSV or XML format, or the [API](#).

Regarding the identifier¹⁸:

- Every UK station, coach terminus, airport, ferry terminal, bus stop, etc is allocated at least one unique NaPTAN stop point with its own identifier.
- For large interchanges and termini, NaPTAN points identify the entrances from the public thoroughfare – one identifier is distinguished as the main entrance. A second point may be used to designate the ‘transport side’ – airside, berth or platform area.

For every NaPTAN stop there are two associated NaPTAN identifiers, each unique within the UK:

- The AtcoCode: A twelve-character NaPTAN identifier intended for use in computer systems. The AtcoCode has a general form of: Database prefix [3] + Flag [1] + Local reference [up to 8 alphanumeric characters], where:
 - The Database prefix is the AtcoAreaCode of the Administrative Area responsible for managing the stop (including special values for rail stations, coach locations, ferry ports and airports).
 - The Flag normally has a value of ‘0’. Historically ‘1’ was used to encode stops belonging to another administrative area – this is not now needed so its use within NaPTAN 2 constitutes an error.
 - Local reference is an identifier of the stop, unique within the scope of the AtcoAreaCode.
 - Rail Station Entrances. The designated form is ‘AAA0XXXXXXn’ where AAA comprises the AtcoAreaCode, ‘0’ is a fixed flag, XXXXXX is the Network Rail TIPLOC code (generally alphabetic, capitalised, up to seven characters) for the station, and n is a zero character for the main entrance, and a sequence number for the other entrances. For example, ‘4000FARNHAM0’, ‘4000FARNHAM1’.
 - Coach Station Entrances. The preferred form of number for Coach station entrances is AAA0YYYYYn where is the AtcoAreaCode of the AdministrativeArea responsible for managing the stop, ‘0’ is a fixed flag, YYYYY is the National Coach code (5 digit numeric) for the coach station, and n is a

¹⁸ Department for Transport. 2014. NPTG and NaPTAN Schema Guide V 2.5. Department for Transport <https://www.gov.uk/government/publications/national-public-transport-access-node-schema/naptan-and-nptg-data-sets-and-schema-guides>



- zero character for the main entrance and a sequence number for the other entrances.
 - Transport side Access Areas. The stop point codes of the 'Transport side' stops (GAT, FER, MET, RLY, and FBT, RPL, PLT) are assigned centrally from special national prefixes ranges beginning with '9'. The numbers of all other points begin with a local area prefix. For example, '4000FARNHAM0'.
 - OnStreet Stops. The preferred form of numbers for on-street stops is AAA0YYYYYYY where AAA is the AtcoAreaCode of the AdministrativeArea responsible for managing the stop. '0' is a fixed flag. YYYYYYY is a unique locally allocated code of up to 8 alpha-numeric characters
 - The NaptanCode: A short (seven or eight digit) identifier suitable for displaying on stops and referring to the stop in public facing systems. This has been designed to be suitable for use in SMS and other delivery channels requiring direct reference to a stop identifier by the public. In most areas it uses a character set optimised for a mobile device keypad.
The NaptanCode is composed of two parts:
 - A one- or three-character area AlphaPrefix prefix, chosen ideally to have mnemonic relevance to the administrative area name of the locality, and using any of the letters (or numbers) mapped to a given key.
 - Three to five characters (letters or numbers) stop reference unique within the area grouping, for example dagm, '7456'. The choice of letters or numbers is made by each administrative area – the prefix and suffix elements should be either wholly alpha or wholly numeric.

The information available per access node includes the AtcoCode, NaptanCode, information about the location including the town, street, lat, long. The metadata can be consulted in the [Schema Guide](#) and [online](#). Information about accessibility, or specificities about the stop was not identified.

Looking forward, the UK is currently working on a Data Action Plan that is planned to be published in the second semester 2025 with updates to the NaPTAN.

3.3. Other stakeholders

3.3.1. *MobilityData*

MobilityData is a non-profit organization that improves and extends data formats, making them easier to use through training, documentation, open-source software, online services, and more on public Transport and shared mobility. MobilityData facilitates changes to internationally used mobility data standards, including the General Transit Feed Specification (GTFS), General Bike Feed Specification (GBFS), General On-Demand Feed Specification (GOFS), Transit Integrated Data Exchange Specification (TIDES), & The Transit Operational Data Standard (TODS).

GTFS and GBFS define basic ID requirements such as the use of ASCII characters for machine readability, but **no strict harmonization rules** exist. For instance, **GTFS** does not establish length limits on IDs leading to inconsistencies. **GBFS** has a similar flexibility. Documentation about the definition of IDs can be found for [GTFS](#) and [GBFS](#).

Some current challenges include:

- Stops with identical coordinates but different names (or vice versa) create ambiguity.
- Some IDs use other characters, causing ASCII compatibility issues.
- Harmonization depends on local/regional initiatives (e.g. Norway or Switzerland).
- Lack of clear authority leads to duplication (e.g., trip planners must manually merge feeds).

Documentation about the features included in GTFS are available [online](#). Information about the different types of “access nodes” are under the *location_type* field and included in the file [stops.txt](#) in the feeds. Station modelling including elevators, stairs, entrances and exits, is done via the [pathways.txt](#) and [levels.txt](#) files. A guide on how to model a station is available [online](#).

In GBFS information about stations is described at [station_information.json](#) and [station_status.json](#) files. GBFS can also define geofencing zones via [geofencing_zones.json](#). GBFS is evolving, and other features could be added in the future.

Ongoing work:

- **GTFS Pathways:** Proposal to label stops accessible from stations (e.g., street-level vs. internal). [Pathways - General Transit Feed Specification](#). Pathways also includes **Entrances/Exits**, **Boarding areas** and **Nodes** (logical stops for routing). Stops near stations (e.g., outside entrances) are being added via a new proposal.
- Additional efforts to solve inconsistencies are included in the [GTFS-Pathways extension project](#), which is designed to incorporate critical features like elevator outages.
- **Community discussions:** [Debates](#) on [ID](#) standardization on [GitHub](#), but no consensus yet.

[MobilityData’s validator](#) flags potential duplicate stops (based on name/coordinates), but resolution is manual and carried by the responsible entity.

Conversion between GTFS and NeTEx loses granularity as NeTEx is more detailed. However Nordics use cross-referenced IDs (GTFS ID in NeTEx feeds and vice versa). Some automatic converters exist ([French convertor](#)), but **NeTEx-to-GTFS is harder** due to NeTEx’s complexity ([Nordic convertor](#)).

Local authorities publish GTFS/GBFS feeds according to their own formats, while **higher-level aggregators** such as the [Mobility Database](#) consolidate data **without enforcing harmonization**.

The modes covered by format includes:

Format	Modes Covered	Notes
GTFS	Train, bus, rail, ferries, DRT (via Flex extension) , aviation (Spain)	Ferries are common; aviation is uncommon and not intended.
GBFS	Micromobility (e.g., bikes/scooters), car-sharing , DRT (limited)	Focus on shared mobility; DRT is emerging.

Table 6: Summary modes covered by GTFs and GBFS.

Besides the ID the following attributes are included in GTFS and GBFS.

Attribute	GTFS	GBFS	Notes
Geographical coordinates	Lat/long	Lat/long	
Accessibility	Wheelchair ramps, elevators, text-to-speech for blind users, pathways, barrier-free routes.	Limited	GTFS Pathways includes ramps, elevators.
Infrastructure	Shelters, screens, stop_headsign (pole names)	N/A	GBFS lacks detailed stop amenities.
Mode-specific details	Parent station (hierarchy)	Vehicle types	GTFS links stops to stations.
Dynamic data	Static, GTFS-RT for dynamic data	Real-time availability	GBFS includes live vehicle locations.

Table 7: Attributes covered by GTFS and GBFS.

No EU-wide ID standard yet, but projects like Overture Maps (OpenStreetMap-based) propose a Global Entity Reference System for transit stops.

Additional [discussions](#) around [IDs](#) that don't map to a physical infrastructure (e.g., mapping a GTFS feed to its GTFS Realtime feed or to a NeTEx feed. Change on GTFS and GBFS are done according to their governance process following guidelines for [GTFS](#), [GTFS-RT](#), [GBFS](#).

Challenge	GTFS	GBFS
Duplicate stops	Merging feeds requires manual de-duplication.	Less discussed (virtual stops shared by operators).
Conversion losses	GTFS ↔ NeTEx granularity mismatches.	N/A
Accessibility data	Incomplete in many feeds.	Limited focus.

Table 8: Challenges discussed with MobilityData.

The future outlook for GTFS and GBFS includes:

- **EU Harmonization:** NAPCORE/NAPs may lead to **Norway-like catalogs** across Europe.
- **Overture Maps:** Potential [global ID standard](#) (backed by Meta, Amazon, TomTom).
- **GTFS/GBFS:**
 - **GTFS:** May adopt **ID length limits** or best practices.
 - **GBFS:** Could expand to **on-demand integration**.
- **Trip Planners:** Open-source tools (e.g., OpenTripPlanner) already tackle de-duplication.
- **Collaboration:** Need for cross-sector dialogue (e.g., PTOs, shared mobility, regulators).

In MobilityData's ecosystem the main stakeholders that handle access nodes IDs problem are:

- Data platforms that need to publish comprehensive and harmonized data for a region.
- Data re-users (or consumers) that need to aggregate feeds from several sources:
 - Trip planning apps aiming at providing an accurate experience to riders.
 - Cities aiming at seeing an overview of all mobility offer in order to make planning decisions.
 - Researchers.

[Overture Maps Foundation](#) and their work on the [Global Entity Reference System](#) (GERS) as well as their documentation on [transportation](#) is relevant for the ID definition. The technology is free to use under an open license. Although you need to pay to be part of the formal working groups, some discussions also happen in GitHub ([example](#)). Overture maps is part of the [Linux Foundation](#), and it's funded in big part by the private sector (Amazon, Meta, Microsoft, Tomtom). Having common IDs for physical attributes is central to the project.

Additionally, it was suggested to contact Open Mobility Foundation to get additional insights about GBFS and Mobility Data Specification (MDS) synergies.

3.3.2. European Union Agency for Railways (ERA)

The ERA operates under the interoperability Directive (EU) 2016/797¹⁹, which establishes the conditions to be met to achieve interoperability within the Union rail system. This directive applies across the Union, but does not apply to:

- Metros;
- Trams, light rail vehicles, and infrastructure used exclusively by these vehicles;
- Networks functionally separated from the Union rail system, used only for local, urban, or suburban passenger services, including undertakings operating solely on those networks.

Member States may also exempt:

- Lines operated solely for local, historical, or touristic purposes;
- Privately owned infrastructure used exclusively by its owner for non-commercial freight or passenger transport.

Exempted lines also fall outside the scope of related regulations, such as the Telematics Applications for Freight ([TAF TSI](#)) and Telematics Applications for Passenger ([TAP TSI](#)), which govern data exchange for freight, passenger information, and ticketing.

Passenger railway station IDs are currently managed under the scope of the TAP TSI by their owners.

The lack of application and enforcement of the TSI leads to complexity in location identification. For example, the [TrainLine open data portal for European stations](#) lists 21 columns of location identifiers, including UIC codes (7 digits) and operator-specific codes (e.g. SNCF, DB, TGV, FlixBus, Renfe, etc.). These IDs are used for passenger information, timetable data exchange, and reservations. The lack of application of the harmonized requirements defined in the TAP TSI creates inefficiencies for timetables and reservation systems.

Key challenges:

- **Non application of legal provisions** : Some IDs are not managed by a National Allocation Body but by UIC, others by individual operators, without an active governance of this body in some cases.
- **Multiple IDs per station**: e.g. Salzburg station in Austria may have up to 10 different IDs.
- **Limited scope**: The database focuses on passenger information; operational data exchange is not covered by these IDs.

Within the register of Infrastructure ([RINF](#)) the Infrastructure Managers (IMs) are responsible for assigning Operational Points (OP) identifiers, which pinpoint physical locations on the railway network (e.g. operational points on single or double-track lines). These IDs include technical parameters like electrification and axle load and sometimes involve ministries in their management.

A second, OP identifier links to telematics via the TAF-TAP primary location code. This code is managed by national allocation bodies (e.g. IMs, ministries) in the Central Reference Database (CRD), supporting timetabling and real-time data exchange (e.g. train delays, run information). Subsidiary Location Codes (SLCs) further specify use cases, such as handover points between IMs or border crossings.

- OP IDs for infrastructure management differ in format and purpose from those used for passenger information.

¹⁹ THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION. 2016. DIRECTIVE (EU) 2016/797 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 May 2016 on the interoperability of the rail system within the European Union. Official Journal of the European Union. <https://eur-lex.europa.eu/eli/dir/2016/797/oj/eng>



- The Central Reference Database (CRD), managed by RailNetEurope (RNE), centralizes these codes for European IMs.

The adoption of the TSI Telematics on the interoperability of data sharing in rail transport, repealing existing TAF TSI and TAP TSI, is expected at the end of 2025. It will place under a European governance, the European Union Agency for railways (ERA), as system authority for telematics, unique IDs for all rail-related processes (e.g. capacity and traffic management, ticketing, passenger information, and network topology). ERA will be responsible to manage and assign European identifiers ('EU-Ids') for locations, including for multimodal access nodes connected to rail, and for organizations, that should be used when referring to an access node or a data holder via NAPs.

For standard numerical coding of locations, see the section 4 of the [ERA Technical Document 103](#).

There are two codes relevant for train stations as described on section 4 of the ERA Technical document 103:

- Primary Code for retail locations: shall be compulsory for all relevant locations of a Railway Undertaking or Infrastructure Managers. To ensure uniqueness in one Member State of the European Union, the code shall be assigned by the ERA according to section 5 of ERA Technical Document 103. This code defines a location. It has seven alphanumeric characters and is structured like:

NN (Numerical Country Code 2N) **NNNNN** (Railway location number 5N)

- Subsidiary code: May be allocated to Infrastructure Managers or Railway Undertaking locations. It is allocated in addition to the Primary Code, some Subsidiary Codes are:
 - Reservation code (39)
 - Metastation (40)
 - State border (03)

Additional concepts include Meta Stations which represents a group of stations for a major city (e.g. "Paris" as the meta station for all Paris intra-muros stations e.g. Gare du Nord, Gare de Lyon, etc.). For those cases the governance of current TAF and TAP TSIs was ambiguous given two registration types. Including SLC within the CRD and the passenger information managed by the UIC. The TSI Telematics establishes a European governance with ERA as EU-wide system authority managing and assigning locations centrally.

Regarding the Minimum Connecting Time (MCT), the Railway Undertakings (RUs) have historically managed MCT within and between stations, with different approaches by operator. No functional harmonization existed in current TAP TSI; RUs set MCTs for their own trains, not competitors. At airports, MCTs are governed by a committee that regularly discusses MCT within and between airports, ensuring coordination among airlines. Journey planners often use their own MCTs due to lack of standardized governance.

- Most EU Member States use CRD or OP formats, but four countries (including Germany) adopted entirely different approaches.
- Even with the same format, full harmonization is not achieved.

The Technical Specifications for Interoperability Persons with Disabilities and Reduced Mobility (TSI PRM) is a mandatory requirement, and its implementation will soon be reflected in the [European Railway Station Accessibility Database](#) (ERSAD). This database, hosted by ERA, is designed to include details about station accessibility, parking facilities, and the nearest public transport stops. It covers all the Union rail system, and is based on Transmodel and NeTEx standards for data consistency. This EU-



wide databased will be freely accessible to the public, and therefore service providers. NAPs are free to reuse data at national level.

Under the **TSI TAP, National Contact Points (NCPs)** have been established in each country. However, their level of engagement in promoting and disseminating information about telematics TSIs varies significantly from one country to another. The TSI Telematics reinforce the responsibility of NCPs for the dissemination of the legal framework and the national coordination of the implementation.

For rail replacement services, such as buses substituting for trains, the location codes for these stops are encoded in the CRD. These codes use the TAF TSI reference system for capacity and traffic management to ensure seamless integration into timetables and passenger information systems.

When it comes to multimodal stops for passenger services, such as bus or ferry stops that are historically included in railway timetables and ticketing systems, there is an ongoing discussion about where this data should be accommodated. ERA and the European Commission suggest integrating multimodal locations not connected to rail under the MMTIS framework, while the UIC offers for the inclusion of these non-rail related stops, approximately 1,000 in total, in its Multiple East-West Railways Integrated Timetable Storage (MERITS) database. These stops are not covered by the rail legal framework, neither by the current TAP TSI nor the TSI Telematics..

For bike services, while reference data exists under the NeTEx profile EPIAP, they are not included in the ERSAD that exclusively focuses on the accessibility of station for PRM. Harmonizing this data could help bridge the gap between different transport modes, particularly for bike parking at stations.

Regarding luggage storage services, liability is addressed under the Appendix A to the Uniform Rules for the International Carriage of Passengers by Rail of the Convention concerning International Carriage by Rail COTIF (CIV UR), and unaccompanied luggage is covered by the Regulation (EU) 2021/782 that integrates relevant part of the CIV UR. These legal provisions do not cover digital aspects. Information Digital information about luggage lockers in stations is limited, with only a few IMs or RUs providing clear details.

3.3.3. Airports Council International (ACI)

Major commercial airports (around 500 in Europe) use the IATA 3-letter codes for passenger-facing systems, including flight bookings, baggage tags, and travel itineraries. These codes are embedded in global distribution systems and are familiar to travelers, airlines, and ground handlers.

The remaining airports—often smaller regional or general aviation airfields—rely on ICAO 4-letter codes, maintained by the International Civil Aviation Organization (ICAO). These codes are used for operational and regulatory purposes, such as flight planning and air traffic control. While IATA and ICAO maintain correlation tables to bridge these two systems, the lack of a unified identifier creates challenges for multimodal integration, where passengers may need to transition seamlessly between air, rail, and road transport.

The European Aviation Safety Agency (EASA) provides the most comprehensive dataset for airports, as it is responsible for certifying and regulating airfields across Europe. EASA's data includes runway orientations, threshold locations, and terminal certifications. This data is pilot-centric to ensure the safe operation of aircraft, not to facilitate passenger movements or multimodal connections (terminal gates, check-in counters, or connections to rail and bus stations). The data by the EASA is not directly related with the IATA or ICAO codes.

The ACI aggregates traffic data on passenger and cargo volumes .monthly. This data is static and high-level, lacking the granularity required for multimodal coordination. Similarly, Eurocontrol manages air

traffic across Europe, and maintains an airport database called Airport Corner which focuses on capacity and operational metrics (e.g. number of gates, runway throughput) rather than passenger access or geographic details. Eurocontrol, tracks flight punctuality and operational data (e.g. take-off/landing times, airspace congestion). This data is critical for air traffic control, but it is not designed for passenger use and is not systematically shared with rail, bus, or MaaS platforms. Eurocontrol's focus is on airside operations, not landside connections or multimodal integration. The airport IDs used are mostly IATA codes.

The coordination of multimodal connections at airports is highly decentralized and largely ad-hoc. Airports operate as nodes with less oversight from European or national authorities regarding multimodal integration. At most airports, the physical and operational connections between air travel and other modes are managed by airport operators, airlines, or local transport authorities.

- High-speed rail services are assigned with IATA codes, in addition to their rail specific codes, to facilitate integration into airline booking systems allowing passengers to book combined air-rail tickets. This practice is not standardized and varies by airline and rail operator.
- Airport shuttle services are typically operated by third-party or the airport. These services use their own IDs for stops and schedules which are unharmonized with aviation data systems.

The information provided to passengers about multimodal connections is fragmented and inconsistent. Airports and airlines offer internal information which is rarely shared in a standardized format with stakeholders, such as NAPs or Mobility-as-a-Service (MaaS) platforms. As a result:

- Passengers struggle to plan journeys that combine air travel with rail or bus connections, particularly when delays or disruptions occur.
- Real-time updates (e.g. a delayed flight affecting a rail connection) are not systematically communicated across modes, leading to missed connections and poor travel experiences.
- Passengers rely on multiple, unconnected apps (e.g. airline apps for flights, rail apps for trains) to manage their journeys.

There is an absence of standardized IDs for sub-locations within airports, such as rail stations, bus stops, or taxi ranks. Each operator uses its own naming conventions, which can vary in format, length, and structure.

Dynamic, real-time data of public transport and other modes (car-sharing, parking availability, etc.) is limited and inconsistent at airports. Some data is collected and shared within the aviation ecosystem, but it is not integrated with other transport modes or available to passengers in a user-friendly format.

ACI has launched a prototype Airport Performance Network, which tracks punctuality metrics (e.g. arrival/departure delays, taxiing times) for a small number of participating airports. However, this initiative is voluntary and limited in scope, with only five or six airports currently sharing data.

The primary obstacle to dynamic data sharing is the lack of a unified platform or governance framework to aggregate and distribute real-time information across modes. While technical solutions (e.g. APIs, data exchanges) exist, they require collaboration between airports, airlines, rail operators, and regulators—something that has not yet been achieved at scale.

Airport fees—i.e. parking charges, access fees, and passenger facility charges—are not standardized or coordinated at the EU level. Instead, they are regulated nationally and set individually by airport operators, leading to significant variability across Europe. They are subject to national regulation, with each MS defining its own rules for fee structures, transparency, and approval processes.

- In some countries airport fees are approved by national aviation authorities and published in official gazettes.
- In other countries, fees may be set unilaterally by airport operators, with limited oversight.

Airlines and passengers rely on individual airport websites or third-party services (e.g. airportcharges.com) to access fee information.

While airport fees are not directly related to multimodal integration, they indirectly influence passenger behaviour and access choices. For example:

- **Parking Fees:** Some airports charge premium rates for short-term parking to discourage private car use and reduce congestion, while others offer free drop-off zones for trains and buses users to incentivize sustainable transport.
- **Access Charges:** A few airports (e.g. in the UK) impose entry fees for all vehicles, including taxis and ride-sharing services, to fund infrastructure improvements. However, such fees are unpopular with passengers and can create perceptions of “double charging”.

ACI suggested to reach the following organizations to gather additional insights:

- Eurocontrol: To integrate air traffic and airport capacity.
- IATA and ICAO: To align aviation codes (IATA/ICAO) with multimodal IDs.
- SITA and Amadeus: To leverage their schedule and booking data.

3.4. Similarities and common ground

3.4.1. Existence of harmonised systems

The implementation of access node identifiers varies across countries. In recent years, progress has been made toward digitizing access node information and identifiers (e.g. Portugal, Spain). However, each country has adopted its own approach, shaped by its unique context and collaboration among NAPs.

Some cooperation has arisen in recent years between NAPs contributing to local harmonization. This is the case of the Nordic NeTex profile created by Norway and in use by Sweden and Finland, the use of NaPTAN by UK and Ireland, and the use of IFOPT by Germany and Austria.

3.4.1.1. Modes covered

Most ID systems focus on public transport modes, including buses, metros, trams, and trains. Other services such as ferries, cable-cars or DRT are sometimes included if they are part of the public transport local offer. However, touristic, unscheduled, or DRT services are often excluded, depending on local policies and obligations to report this data.

Micromobility services typically remain outside these systems, with data shared only at the local level between operators and cities according to local agreements between the operators and the cities. Airports are partially included, with incomplete or fragmented information about terrestrial modes that connect the airport according to the services that connect the airport, and exceptionally with information about the flights (e.g. Spain). This remains an opportunity to include further modes in the system.

3.4.1.2. Policies



For Member States, the national regulation specifying the procedure to identify the access node is typically the transposition of the ITS Directive and its associated Delegated Regulation, although in some cases a national regulation had been adopted before this transposition, and in other cases the EU legislation has not yet been transposed.

In many cases, the creation of these centralized databases and guidelines for access node identifiers followed the adoption of laws defining the roles and responsibilities of PTAs, PTOs, and NAPs regarding data collection, publication, maintenance, and reuse (e.g. Norway, Finland, Germany).

In some other cases, it has come from an initiative from the different PTAs (e.g. Denmark, The Netherlands) to establish common guidelines and a common ID system that benefits all the stakeholders. In those cases, the system remains voluntary but widely adopted while the governance is done by the different PTAs via the entity in charge of managing the registry.

3.4.1.3. General governance

The typical information flow for access node IDs identified is presented below:

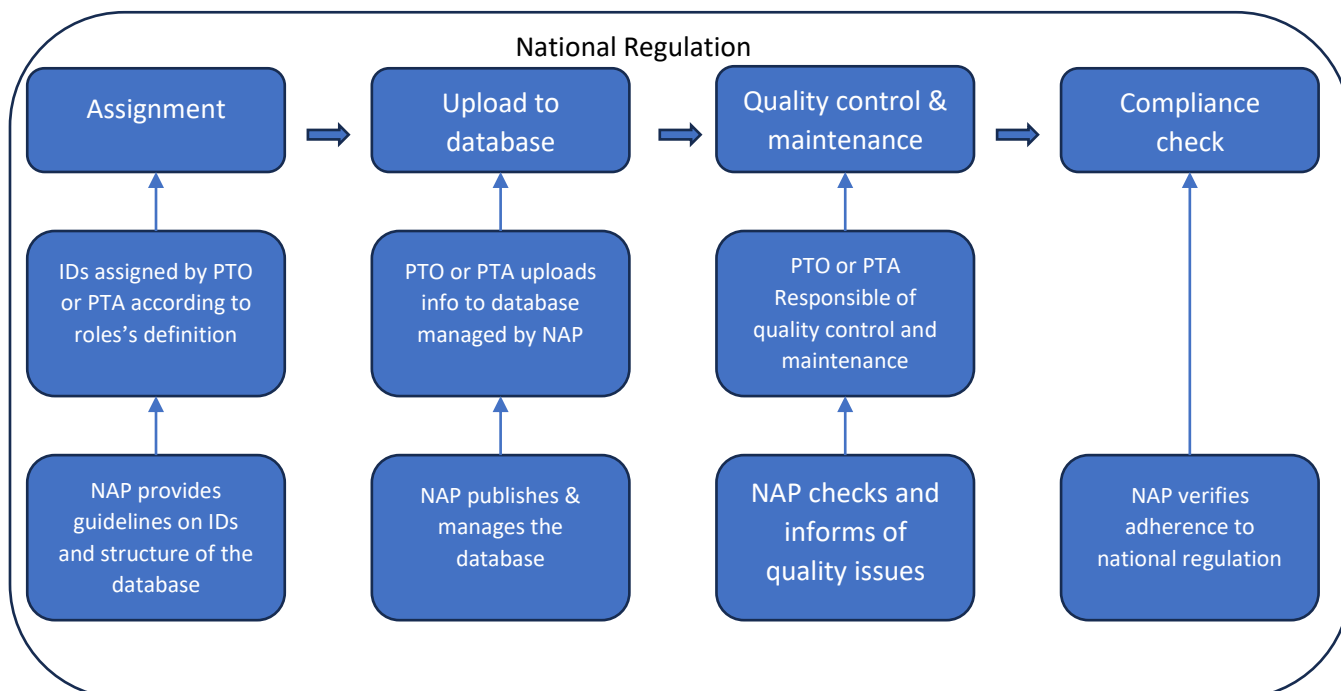


Figure 15: Typical flow of information for access nodes IDs.

Responsibilities are assigned based on the available capacities and resources, as well as the relationship with the information and services provided, and the legislation adopted. In many cases, the PTO already possesses the data required for publication, as specified in its service contract with the Public Transport Authority PTA.

3.4.2. Availability of information

In countries with a national database of access node IDs, this information is typically available at the NAP in NeTEx and/or GTFS format. Access is usually free —either via APIs or downloadable databases— though registration may be required in some cases. Some countries have also developed national journey planners that integrate schedules and real-time information.

3.4.3. Technical challenges

Countries have various approaches to assigning IDs for multimodal access nodes—such as airports and major train stations, due to their inherent complexity as hubs for trains, buses, trams, metros, taxis, ridesharing, parking, and shared mobility services like bike-sharing, car-sharing, and scooters. This complexity is further intensified by the differing regulatory frameworks, identification systems, and data standards applied to each transport mode. For example, airports typically use internal ID systems for gates, terminals, and transport stops, while train stations often rely on distinct national or regional ID systems for platforms and connections. The lack of compatibility among these systems leads to fragmented identification, management, and communication of access nodes for both passengers and service providers.

Access nodes IDs in other Member States remain a key concern among NAPs and stakeholders interviewed. Issues include unclear maintenance responsibilities, inconsistent update frequencies, and compatibility problems between systems. Lack of documentation on the identification procedure and update frequency leads to lack of interoperability, due to duplicate IDs or lost references to services, especially when IDs change over time or vary in format.

Interoperability remains an unresolved goal in the current deployment of access node IDs. Some of the countries interviewed lack cross-country, and sometimes even intra-country compatibility. Achieving interoperability would support initiatives like the European Mobility Dataspace and simplify user interfaces. The European governance established for rail with the European Union Agency for railways (ERA) responsible as system authority for the management and assignment of EU-IDs for rail-related datasets accessible via NAPs could also be a role model for other transport mode benefitting from the service of an EU agency.

In some cases, access node IDs include information such as geographical location, transport mode, administrative division, or even transport operator within the ID which leads to disruptions and duplicates. Most systems have inalterability of IDs ensuring consistency in referencing access nodes, regardless of operational shifts.

IDs for deactivated stops are in some cases retained to avoid conflicts with new stops. While marked as "inactive," these IDs preserve historical data and prevent misalignment in system references.

4. Mapping of existing standards for data collection and management

4.1. Existing system per country

The table below summarizes the structure of access node identifiers by country, including a brief description of their format, the transport modes covered, and where the information can be accessed.

Country	Example ID structure	Brief explanation of ID structure	Common modes covered	Accessible online?
Austria	AT:44:12345	IFOPT format according to the NeTEX profile .	Trains, buses, trams, and metros. DRT, waterborne, cable cars are partially included.	NAP
Belgium	NA	No single registry, each PTO has its own system.	Trains, buses, trams, and metros. DRT, and shared mobility included in a dedicated system	NAP
Cyprus	Number between 3 and 5 digits, field stop_id.	Information available in XML, using DATEX II format	Buses, long-distance coach and shuttle services	NAP and motion
Czechia	CZ:CISJR_CZPTT:StopPlace:CZ57076 CZ:cisjr_jdf:StopPlace:23	IDs not harmonized at national level. For train routes the code is unique per stop, for buses the ID starts at 1 and increases progressively until the last stop. Available in NeTEx.	Trains, coach, urban transport. Further discussions with DRT and micromobility to include them in the future.	Timetables available .
Denmark	Rail: 8600626 Other modes: according to the ranges established by Rejseplanen.	7 digit number for rail related stops and stations, using UIC formats, starting with 86 for Denmark. For other modes, and operators ranges have been specified by Rejseplanen.	All train, and bus, Ferry, DRT and micromobility (partially) Aviation is not included anymore	RejseplanenLabs NAP
Estonia	123456	Number between 3 to 6 digits, without duplicates	Buses (urban, intercity, internationals), DRT, domestic trains and ferries. Shared mobility is not included.	GTFS Feed , journey planner
Finland	FSR:StopPlace:847 FSR:Quay:853	Similar as Nordic NeTEx Profile (Norway). Compatibility with legacy systems.	Buses, trains, urban rail, metro, tramways, major airports, waterborne, including semi DRT services.	Available once completed (2026)

France	Gare ferrée "PARIS MONTPARNASSE 1 2" : FR:75114:LMO:39100:ERA	[Code PAYS]:[Code commune INSEE]:[Type d'objet]:[Code arrêt spécifique]:[Code émetteur du code technique ou LOC]	Train, bus, urban rail scheduled services. DRT, micromobility, maritime, aviation are excluded.	Available online including the hierarchical level of stops
Germany	Area de:06412:2899:1 Quay de:06412:2899:1:1	Based on IFOPT (DHID) Stop Positions: <(country)LK>:<(district key)KS>:<Local Stop ID>:<Area ID>:<Pole ID>:<Stop Position>	Railways, regional and city buses, urban rail, DRT and ferries (partially). Long-distance buses, commercial ferries, ship and aviation not included	For free online after registration
Hungary	ID determined by each operator	GTFS files	Train and bus. Waterborne and aviation partially. Micromobility, DRT not included.	Online for free
Ireland	AtcoCode: 7010PB003860 7010B158131	UK NaPTAN specification AtcoCode: 3-digit admin area Plate code number (unique ID)	Bus stops, airports, train stations, airports, ferry terminals, and coach termini.	Transport for Ireland webpage and the NAP
Italy	IT:ITC1:ScheduledStopPoint: busATV:164136	[country code] : ([local code]) : [object type] (_ [epip-type]) : [technical-identifier] : [ID provider for shared IDs]	Scheduled public transport, train stations, micromobility. Waterborne (partially), DRT and aviation are not included.	NAP
Latvia	There is no harmonized system in place or under development for the digital identification of transport access points			NAP
Lithuania	VTR:RoutePoint:43423342-3424	GTFS IDs: 4-5 digits, Lithuanian NeTEx profile recommends having an unique ID but lacks any enforcement.	Bus, train, ferries, aviation. Micromobility and DRT are excluded.	NAP
Netherlands	Quay CHB:Quay:54000470 StopPlace CHB:StopPlace:32005215	XML format, part of the Dutch NeTEx profile	Bus, metro, tram stops, and railway stations (CHB).	Online and via a dedicated viewer

	GroupOfStopPlaces CHB:GroupOfStopPlaces:31008012	The IDs are numerical codes, with the specific structure not fully public. Managed by the DOVA partnership .	Possibility to extend it to micromobility services.	
Norway	NSR:StopPlace:5532 NSR:Quay:10129	[Namespace]:[ObjectType]: [UniqueNumber] The number is a meaningless but unique identifier	Bus, train, urban rail, maritime and aviation in urban, regional, and intermodal hubs. DRT, micromobility, taxi, not included.	Navigated in the web , and exported daily to NeTEx files
Poland	Current system: 4 to 8 digits (GTFS) Expected: ID not defined	NA	Scheduled services	NAP
Portugal	There is no national ID assigned to all stops. All stops are digitally recorded and accessible through the NAP		Scheduled services.	STePP
Romania	There is no harmonized system in place.	Structure for train stations IDs: 5 digits, 1 st digit defines the region, 2 nd line within the region, last 3 specific stop in the line.	Train. Scheduled services in major cities.	Train datasets Bucharest GTFS
Slovakia	Most of scheduled public transport information is available in GTFS and GTFS real-time format. There is no national ID system in place. There is no NAP implemented, although the NAP is expected to start operations in 2029.			
Spain	AVE_04104 AMP_1401 AUC_1000	GTFS static data, ID includes prefixes to distinguish operators in some cases, and suffixes for platforms or stops. Not harmonized, each PTO or PTA can have their own IDs.	Train (including commuter and metro), bus (urban, intercity and coach), Tram, Ferries (partially), Air (Aena). Micromobility, DRT, private and infrastructure are excluded.	NAP
Sweden	SE:050:StopPlace:18042	SE refers to the country. 050 refers to Samtrafiken (this part is the same for all ID stops). StopPlace refers to the component in NeTEx. 18042 is the unique ID.	All bus stops, train stations, station areas, and transfer points. It has the potential to include micromobility, DRT and other modes.	Swedish Stop Registry

		NeTEx format and follows the Nordic NeTEx profile		
Switzerland	ch:1:sloid:7000:0:312381	ch: Country code (Switzerland). 1: Authority (FOT). sloid: ID type. 7000: Location (former DiDok number, not guaranteed). 0:312381: Components (stop zone and edge, but unregulated).	All scheduled stops (train, bus, urban rail, tramways, waterborne). DRT, coach, micromobility, taxi, cable cars, aviation are not included.	Atlas , available via NAP , API access and open datasets
UK	490008990S 490008993S	AtcoCode: 12 characters identifier. Database prefix (administrative area) [3] + Flag [1] (usually 0) + Local reference [up to 8 alphanumeric characters]	Airports, ferries, bus, railway, tram, metro and underground stops, stations and terminals. No information over micromobility or DRT services.	NaPTAN , Website in CSV or XML format, or the API

Table 9: Summary ID structure per country.

Item	Analysis
Numbering system	Most of the systems analysed don't have consecutive or sequential IDs for access nodes. It can happen that it is numbering in ascending order (i.e. Cyprus, Portugal) or in specific ranges (i.e. Denmark). If new access nodes are added they might use the next code available.
Reference to Member State/city/region	Most of the systems analysed don't use a reference to a Member State. City or Region in the ID for access nodes, they usually use it as an attribute. It can be the case that it is used according to the country (e.g. Denmark and the UIC code), region (e.g. Austria, Italy), or district (e.g. Germany, France). However, if there are changes in the district, or region, the ID can remain the same without geographical reference.
Reference to the operator	Most of the systems analysed don't use a reference to the operator in the access node ID. In some cases a prefix is added to differentiate operators, allowing unique IDs, usually with duplicates (e.g. Belgium, France, Portugal, Spain). The main challenge remains if the operator changes due to a new contract or change in the name, and duplicates when more than one operator uses the same access node.
ID reusability	Most of the systems with unique nationally harmonized ID do not allow reusability of IDs for access nodes. Once it is used it can be used and tracked also during time. In some systems where the information is partially validated or directly managed by the PTO it can be possible that an ID is reused in another access node (e.g. Romania).
Temporality of the ID	Most of the systems analysed advocate for an indefinite use of an ID changing the status of the access node in its attributes (active, inactive, out of service, etc.).
Parent-child relationship	Some of the systems include parent-child relationships between QUAYS, STOPPLACESs, and GROUPOFSTOPPLACES in the attributes (e.g. The Netherlands, Finland, Norway). Other systems allow it directly in the ID (e.g. Germany, Sweden). Finally, some systems do not allow parent-child relationships (e.g. Portugal, Cyprus, Romania).
Standard and format used	Some of the systems analysed are based on the Transmodel Standard including Norway, Sweden, and Finland using the Nordic NeTex profile, Germany and Austria using IFOPT (DHID) according to their respective NeTex profile, EPIP in Italy. Other formats include the AtcoCode part of the NaPTAN in Ireland and the UK, and GTFS feeds in Spain, Romania, Lithuania, Hungary, and Estonia. Cyprus uses DATEX II on its data publication.
Accessibility	Accessibility is partially included or in the process to be included in Austria, Belgium, Czechia, Denmark, Estonia, Finland, France, Germany, Italy, Denmark, Norway, Poland, Romania, Slovakia, Spain, Sweden, and Switzerland. Besides that, MobilityData reported inclusion of accessibility as part of the GTFS format, as well as ERA with the ERSAD.
Multimodal hubs	Multimodal hubs are not broadly covered in the systems analysed. When covered, they are usually included as

	GroupOfStopPlaces with a parent-child relationship in its attributes (i.e. Norway, the Netherlands).
Modes included	Most of the systems analysed focus on Scheduled Transport (according to the definition provided in the MMTIS DR), and more specifically on those where there is a PSO. This includes buses, trains, metros, trams, ferries (if part of PSO i.e. The Netherlands), etc.
Other modes	Touristic modes are partially covered (i.e. ferries, cable cars), and in some cases there is the intention to include them more thoroughly (e.g. Austria). Coaches are partially included and reported in the information at the NAPs (e.g. Czechia) but the IDs are not harmonized. Flights and airports are partially included (e.g. UK, Spain, Denmark (in the past)) but remain outside the focus of NAPs managers. Taxis have not been assessed in this stage and might be included in the next report. Some shared mobility services are included (e.g. Denmark) usually by the private sector initiative. Further interviews will be conducted with the sector to identify their insights. Parking facilities at mayor stations or airports are usually not included. Maritime modes are usually not included.
Cross-border	When considered, IDs of access nodes operated by cross-border services are usually duplicated in the different NAPs (e.g. Austria), this is mostly the case for buses, and coach. For trains the UIC codes provide a common ground for access nodes IDs, UIC was reached to gather information without any response.
Legislation	In some cases (e.g. Norway, Germany) there is a legislation or guideline specifying the ID structure and stakeholders responsibilities (e.g. PTAs, PTOs, NAP). In other cases (e.g. Poland, Finland) this legislation is being discussed as part of the MMTIS DR transposition. Similarly, the initiative has come from the grouping of the different PTAs (e.g. The Netherlands, Denmark) to create a single system. Lastly, some countries lack a specific regulation (e.g. Spain, Romania).
Additional information	Some systems (e.g. The Netherlands, Norway) report additional information of the stops that can include infrastructure characteristics (e.g. height of the platform, shelter and screens availability, etc.). Other systems are working to include additional information (e.g. Belgium, Poland).
Update frequency	Most of the systems update the data regularly, at least once per week and in some cases even once per day. In some cases the data is only updated once per year (e.g. Romanian railways).
Maintenance	The data is usually maintained by the owner of the data (e.g. PTO or PTA), receiving inputs from users, APPs, and internal validations. The NAP usually checks and raises a flag if it

	detects some inconsistencies but usually without modifying the data.
Digitized information	Most of the scheduled transport access nodes are digitized. In some cases, minor operators, or services out of the scope of the information provided in the NAP are not digitized.
Public availability	GTFS feeds and NeTEx files are usually available at the NAP for free, usually without registration and under Creative Commons license. However, finding the data might be challenging and in some cases the metadata is not available.
APPs	Information consumed by third party APPs can be obtained via the NAPs in GTFS, and NeTEx and also via APIs. In some cases the NAP prepares a specific file for APPs (e.g. Google).

Table 10: Analysis of the main items identified in the systems studied.

5. Outlook and conclusions

The landscape of access node identifiers in Europe reflects both significant progress and persistent challenges. While digitization of access node information—evident in Portugal and Spain—reflects a positive trend toward standardization and interoperability, the diversity of national approaches, shaped by local contexts and collaboration among National Access Points (NAPs), continues to create fragmentation.

Each country maintains its own identifiers for access nodes, timetables, and services, but these are commonly not aligned or cross-referenced across borders or even between domestic operators. This lack of cohesion makes more difficult to aggregate or exchange information effectively, leaving datasets in silos and in some cases the same physical access node represented by different IDs depending on the data provider, region, or transport mode. The mapping presented in this document identified opportunities to include additional involvement of stakeholders within the fragmented landscape, including PTOs, PTAs, the railway and aviation sector, and alternative mobility providers.

Improving the accessibility of information presents an opportunity to streamline the ID process for access nodes. Detailed data on stops and stations, such as stairs, elevators, and escalators, is critical for identifying barrier-free routes. On this regard, information provided by the ERSAD by the ERA will contribute to identify the accessibility of rail services. Similarly, information available via the NAP in The Netherlands, or Norway about accessibility and characteristics of information can contribute to identify how to gather, maintain and communicate accessibility information.

Defining roles and responsibilities among stakeholders is vital for effective ID management, particularly in multimodal hubs. Collaboration among stakeholders is required to harmonize existing IDs and address overlaps or inconsistencies. Ensuring their voluntary participation and alignment with regulations is crucial for successful implementation and long-term compliance. Information sharing and organization of workshops for peer-to-peer learnings across NAPs will be considered in NAPCORE, including share of experiences after establishing stops registries that can contribute to the development of these systems in other Member States.

Cross-border access nodes remain a challenge, requiring additional coordination between NAPs and stakeholders. Austria's inclusion of border-access nodes serves as a model for addressing this issue.

Some of the common characteristics identified in the different systems in place include uniqueness, traceability, and interoperability of IDs at national level, these IDs are usually unique across all access nodes, and they remain in place even if the access node gets deactivated, to prevent duplication.

Most systems analyzed include public transport services, such as buses, trams, railways, metros, and exceptionally ferries, cable-cars while rarely including DRT. Additional services currently not included, such as tourism, DRT, airports, and micromobility present an opportunity to increase public transport ridership. Engaging these stakeholders in discussions about ID management can foster collaborative alliances, leading to more connected services and shared information. Further research by UITP could help identify current practices in these sectors, enabling the development of tailored strategies to integrate them effectively into the broader public transport ecosystem.

The harmonization of access node identifiers across the EU will contribute to achieve seamless multimodal travel. The current state of access node identifiers in Europe reflects a dynamic but uneven landscape. While progress has been made in digitizing and standardizing these identifiers, significant challenges remain—particularly in achieving interoperability, expanding coverage to include all transport modes, and ensuring consistent data quality and maintenance.

The level of advancement has been influenced by each country's context and regulatory framework. This has led to a variety of ID systems, which, while tailored to local needs, could lack compatibility with one another.

Some initiatives like the Nordic NeTEx profile used by Norway, Finland and Switzerland and being regarded as a potential example to follow by other NAPs, the NaPTAN used by the UK and Ireland, or the IFOPT system used by Germany and Austria demonstrate how regional collaboration can drive harmonization. Scaling these efforts could bridge gaps between countries and modes.

Several technical and governance challenges persist, including the complexity of multimodal hubs, inconsistent ID formats, and unclear maintenance responsibilities. This highlights the need for a harmonized approach and future guidelines on responsibilities and governance frameworks.

There have been both top-down legislative approaches (e.g., Norway, Germany) and bottom-up voluntary initiatives (e.g., Denmark, the Netherlands) that have proven effective. This indicates that a tailor-made approach according to the national characteristics could lead to similar results. Different countries are in the process of transposing the ITS Directive which could lead to an opportunity to include specific requirements for access nodes IDs (e.g. Finland, Poland).

Currently, the absence of harmonized identifiers for critical data elements—such as access nodes and timetable data—limits the functionality of national datasets and cross-border travel services. This fragmentation is further exacerbated by the lack of standardized NeTEx and SIRI profiles, which complicates data exchange and interoperability. As a result, passengers face inconsistencies in travel information, while transport authorities and operators struggle to integrate services across borders or even within their own networks.

Ultimately, compliance is not the goal in itself, but a criterion to support a future-proof mobility ecosystem. By standardizing access node IDs, it could be possible to further develop common European Mobility Data Spaces and increase smoother data exchange, improve real-time travel information, and pave the way for innovative services. The next steps must focus on a better understanding, increased execution, collaboration, consistent objectives and compatible roadmaps between continuous improvement to define common EU-iDs ensuring the multiple stakeholders' role of access nodes for the passenger sustainable mobility owning, holding and managing stop IDs data. The next report shall address the issues presented and provide recommendations of a EU-wide ID for access nodes.

6. Annexes

6.1. Interview format

Access nodes identifiers in the EU – Questionnaire

(Targeted at UITP members)

Background

As part of the current ITS Work Programme of the European Commission, the Commission wants to study how multimodal access nodes are currently digitally identified across the EU Member States, with a view to harmonise access nodes IDs in the future at European level. “Access node” means a pre-defined location where passengers may board or leave scheduled transport or transport on demand²⁰.

The study, which includes (1) a mapping of the current situation in the European Member States and (2) recommendations for harmonization, shall be carried out within the future NAPCORE-X project. The International Association of Public Transport (UITP) is coordinating this task. In order to get a first orientation, we are asking our members for information from their countries.

We thank you very much for supporting our research.

If you want to know more, you may contact Eloísa Álvarez de Perea Llamas (eloisa.alvarezdeperea@uitp.org) and Efe Usanmaz (efe.usanmaz@uitp.org).

Survey

1. About you

Name:

Function:

Company/Authority (name of entity):

Country:

Email address:

2. Questions about the identification of access nodes

(1) In your country, is there any harmonized system in place (or being developed) for the digital identification of transport access points (such as stations, stops).

²⁰ Article 2(25) of [Regulation \(EU\) 2024/490](#) (Amendment to MMTIS DR) - Provision of EU-wide real-time traffic information services)



- (2) Is there just one system or are there different systems existing in parallel, perhaps at different levels (local, regional, national)?
- (3) What modes of transport are covered by the register? (E.g. train, bus, urban rail, micromobility, on-demand, maritime, aviation, etc.)
- (4) Who is in charge of this digital register/identification system?
- (5) How is the digital register/identification system organized? (e.g. What does a digital ID look like, how is it composed? Are there sub-levels to identify different areas or even single bus stops/platforms within the larger stations?)
- (6) What data attributes are recorded for each access point? (e.g. geographical coordinates (GPS or other), infrastructure details, accessibility features, etc.) Which standards do you use?
- (7) How is this data made available to different stakeholders? How can others access it? (Is the data open and publicly accessible, or does it require agreements/licenses?)
- (8) Are there any national regulations or policies that require or encourage the harmonization of ID for access nodes? Which ones? Or has the harmonization been a sector initiative (without policies)?
- (9) What are the main challenges faced in maintaining and improving this system? How do you see this system evolving in the coming years?
- (10) Is there anything else you consider relevant for understanding the digital registration of transport access points?