EU EIP - Annual NAP Report 2020

A2 - Working Group NAP

Monitoring & Harmonisation of National Access Points in Europe

Starting in 2016 the EU EIP has published annual reports about the status of the National Access Points across Europe. This annual NAP report 2020 is the final one.
This report describes the progress of NAP implementations and the achievements of the A2 Working Group National Access Points in 2020.
It also highlights other relevant projects and initiatives helping in the continued development of successful NAPs supporting data exchange in the field of mobility.

Version: 1.0

Date: 26/02/2021

Co-financed by the European Union
Trans-European Transport Network (TEN-T)

https://www.its-platform.eu

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Distribution

Date	Version	Dissemination
22/12/2020	0.1	Internal (WG NAP)
21/01/2021	0.2	Internal (WG NAP)
28/01/2021	0.3	Internal (WG NAP)
26/02/2021	1.0	Public

Preface

Starting in 2016 the EU EIP has published annual reports about the status of the **National Access Points (NAP)** across Europe. This annual NAP report 2020 is the final one, describing the **deployment status of NAPs** in Europe as well as harmonising work on **metadata, common features,** data **standards and common formats,** harmonised **declaration of compliance**, and other issues, related to the Commission Delegated Regulations for ITS Directive priority actions.

PRIORITY ACTION	DELEGATED REGULATION	THEME	COMMON REFERENCE
(e)	(EU) No 885/2013	provision of information services for safe and secure parking places for trucks and commercial vehicles	safe and secure truck parking
(c)	(EU) No 886/2013	data and procedures for the provision, where possible, of road safety-related minimum universal traffic information free of charge to users	safety related traffic information (SRTI)
(b)	(EU) 2015/962	the provision of EU-wide real-time traffic information services	real-time traffic information (RTTI)
(a)	(EU) 2017/1926	the provision of EU-wide multimodal travel information services	multimodal travel information services (MMTIS)

Table 1: Commission Delegated Regulations and corresponding ITS Directive priority actions

This report uses the common references for the priority actions and Delegated Regulation references throughout.

Overview

By sharing the available knowledge and experiences of Member States (MS) that have already implemented NAPs, other MS can benefit from this knowledge and experience. At the same time this could lead to a more harmonised implementation of NAPs across Europe

Harmonisation

In 2020 a NAP Metadata model has been initiated, covering aspects of interoperability and linked data, the Common Features and LoS Support Document was updated, with new features added and first steps of guidelines for the improvement and harmonization of MMTIS NAPs have been taken.

In case readers would like to contribute information, please send it to Mr. R. Jorna (r.jorna@mobycon.nl).

Monitoring

This report provides an overview of:

- NAPs in an European context (chapter 2)
- state of the art of NAPs in Europe (chapter 3)
- common features & level of service (chapter 4)
- metadata (chapter 5)
- standards & common formats (chapter 6)
- MMTIS (chapter 7)
- architecture for NAPs (chapter 8)
- alternative fuel, recharging/refuelling (chapter 9)
- data exercise in existing NAPs (chapter 10)
- data initiatives relevant for NAPs (chapter 11)
- the NAP/NB community (chapter 12)
- declaration of compliance (chapter 13)
- summary and conclusions (chapter 14).

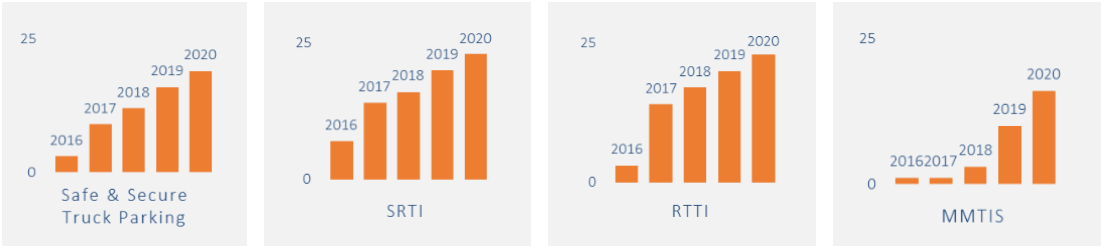
This report also contains an annex of the web-links to the NAPs and the contact points for the National Bodies.

2020 WG NAP Highlight

28/29

NAP implementers provided WG NAP survey feedback in 2020

Number of Operational NAPs



NAPs in a European Context

In 2019 and 2020 EC policy developments impacting on NAPs focus on:

- high-value datasets
- digitisation
- data sharing, discoverability & accessibility

Common Features & Level of Service

- 2020 version of the Support document published;
- Web standards, accessibility, discovery services & (machine)-readable metadata.

Metadata

- The Coordinated Metadata Catalogue is established as a blueprint for NAP Metadata for each priority action of the EU ITS Directive;
- As a follow-up, a NAP Metadata model has been initiated, covering aspects of interoperability and linked data.

Standards & common formats

- DATEX II – increasing implementation for NAP data exchange & progress towards v3;
- Progressing MMTIS related standards and formats inc. SIRI, NeTEx, TAP- TSI, GTFS & GTFS-RT.

MMTIS

- The status of the adoption of MMTIS NAPs by the MS has been assessed;
- Outstanding issues underlying MMTIS data formats and quality have been identified;
- The first steps of guidelines for the improvement and harmonization of MMTIS NAPs have been taken.

Architecture for NAPs

- In 2020 the FRAME NEXT project has moved toward implementation of the NAP Architecture reference architecture;
- Release 5.0 of the FRAME NEXT repository will be published early 2021.

2020 WG NAP Highlights

Refuelling/recharging points

- The IDACS projects aims at coordinating ID Registrations for e-mobility actors;
- IDACS aims at data collection for Alternative Fuels and making this information available through the NAPs.

Existing NAPs

- NAPs have different structures data: warehouses, web portals, market places, metadata registries;
- The use of NAPs is made in conditions of cybersecurity and security of existing data as well as user data;
- The exercise done shows that there are still things to be done to improve the user experience (at least at the level of the less experienced).

Initiatives relevant for NAPs

- The high level Data Task Force has now fulfilled it's work and a final report has been produced;
- Finland, Denmark, and Sweden agreed to adopt the Norwegian NeTEx profile and revamp it into a Nordic NeTEx profile;
- CEF PSAs to support the early implementation of MMTIS;
- "The MMITS Implementation handbook".

NAP / NB community

- EC/DG MOVE sees a need to empower NAPs as the backbone for ITS digital infrastructure. And to facilitate national & EU wide operational co-ordination for the implementation of the European specifications;
- To this end in December 2020 EC/DG MOVE has launched a call for a coordination mechanism to federate the NAPs.

Declaration of Compliance

- Uniform Declarations of Compliance available for (EU) 885/2013, safe and secure truck parking (EU) 886/2013 SRTI and (EU) 2015/962 RTTI;
- PSA on coordination mechanism to federate NAPs will comprise of a number of activities covering Asessment of Compliance.

NAP Interactive Map

A website showing a graphical overview of NAPs in Europe http://andnet.ro/nap_eueip/

EU EIP - WG NAP Webpage

https://eip.its-platform.eu/activities/monitoring-and-harmonisation-national-access-points

Table 2: 2020 WG NAP Highlight

Table of Contents

1 Introduction

This chapter describes the **scope and objectives** of the EU EIP project and more specifically **A2 Working Group NAP (WG NAP)**, dealing with **monitoring** and **harmonisation** of **National Access Points** in Europe.

1.1 Scope & objectives of EU EIP

The EU ITS Platform (EU EIP) is the place where National Ministries, Road Authorities, Road Operators and partners from the private and public sectors of almost all EU MS and neighbouring countries, cooperate in order to foster, accelerate, and optimise current and future ITS deployments in Europe in a harmonised way.

EU EIP brings together the majority of the European key players, cooperating to establish an open "forum", aiming at providing valid contributions for the future strategy and policy recommendation for better development and deployment of ITS service along European road corridors.

EU EIP is the follow up of actions already supported by TEN-T programme (2012-EU-50005-S European ITS Platform and 2013-EU-50001-S European ITS Platform+). The EU EIP runs for a six-year period from 2016 to 2021.

By monitoring, processing, evaluating, and disseminating results delivered by the ITS Road Corridor projects (the Works projects that are co-founded by EC within the CEF MAP ITS Call 2014), the EU EIP Platform can be considered as the technical European **ITS Knowledge Management Centre**, contributing significantly to the most effective use of ITS standards and specifications.

1.2 Monitoring & Harmonisation of NAPs - WG NAP in Activity 2

The task of this Working Group (WG)[1] is to monitor the on-going implementation of NAPs, to learn from each other, and to harmonise NAP services across Europe. This activity builds on the earlier work in EIP and EIP+, which has resulted in the following relevant deliverables:

- EIP: Harmonised concept of National Access Point for Truck Parking & Safety Related Traffic Information.
- EIP+: Harmonisation Proposal: National Access Point for Real-Time Traffic Information.
- SPA (Single Point of Access) – Coordinated Metadata Catalogue.

Currently, NAPs are being implemented in various MS, but they vary in approach, for example: data availability (links, metadata, databases) and procedures for assessment of compliance. WG NAP, and its predecessor SA 4.6, run from January 2016 until December 2021. Therefore, this work aims at monitoring NAP developments, contributing to harmonisation, and acting as a knowledge centre; for among others: MS, NAP operators, and Nominated National Bodies (NB) with respect to NAPs

[1] WG NAP in Activity 2 in EU EIP is the follow-up of sub-activity 4.6 of EU EIP

The objectives of the activity are to:

- Monitor development of NAPs across Europe, identify improvement needs, make recommendations.
- Harmonise the approach towards NAPs in Europe, in particular in the field of Metadata in the scope of ITS specifications.
- Knowledge exchange between the various MS in the field of NAPs.

The tasks of the activity are:

- Task 1: Monitoring of NAP developments in Europe
- Task 2: Validation of features and level of service for NAPs to see if and to what extent quality criteria are applied by the NAPs and to find out if these quality criteria function well.
- Task 3: Recommendations for harmonisation of NAP approaches will be formulated with respect to (among others) metadata, DATEX II, common approaches on quality assurance, and other harmonisation issues arising from discussions with MS and other stakeholders.

COUNTRY	ORGANISATION
NL (Lead)	Rijkswaterstaat
PT (Active)	IMT
RO (Active)	ITS Romania & RNCRIA
DE (Active)	BASt
UK (Active)	Department for Transport, Transport Scotland & Highways England
SE (Active)	Trafikverket, The Swedish Transport Administration
FR (Participant)	Cerema
DK (Participant)	Vejdirektoratet, The Danish Road Directorate
ES (Participant)	DGT, Directorate-General for Traffic
FI (Follower)	Finnish Transport and Communications Agency & Finnish Transport Infrastructure Agency
IE (Follower)	Transport Infrastructure Ireland

Table 3: List of Member States involved in A2 WG NAP

1.3 Methodology

This report is mainly based on the feedback of a survey completed by implementers of National Access Points and other relevant sources (among others: workshops, meetings with experts, literature review).

In total 28 NAP implementers completed the NAP survey 2020, 27 Member States and Norway. No feedback was received from Malta.

2 NAPs in a European context

This section outlines relevant EU policy developments and their relationship to NAP activities:

- **New EU Directive** on open data and the re-use of public sector information

- European **Green Deal**

- Strategy for a Sustainable and **Smart Mobility**

- **European strategy for data**

2.1 Recent EU actions and policy developments

Over the past 18 months there have been several European Commission policy developments with links to traffic and transport data, and NAPs. Each of the policy areas listed above have individual actions and timescales, but they are interlinked, with underlying themes that aim to tackle climate change and create a sustainable digital future.

This section provides and overview of the developments, how these may impact on NAPs; and also how NAPs can contribute to their aims and goals.

2.1.1 NEW EU DIRECTIVE ON OPEN DATA AND THE RE-USE OF PUBLIC SECTOR INFORMATION

The EU Directive on open data replaces the 2003 "PSI Directive" Directive 2003/98/EC.

Public bodies hold extensive amounts of data known as public sector information (PSI). The Commission saw a need to address the re-use of public data, supporting the progress towards more freely available public data, and the PSI Directive came into force in 2003.

A revision was made in 2013, Directive 2013/37/EU, widening the scope to institutions, museums and archives, limiting fees, putting in place independent compliance supervision, and more emphasis on machine-readable formats.

In 2018 there was a review, public consultation, impact assessment and proposal to revise the directive. Based on these the new Directive EU 2019/1024 on open data and the re-use of public sector information was published in July 2019 and has to be implemented into Member State national law by 16 July 2021.

Member States are encouraged to promote the creation of data based on the principle of 'open by design and by default'. The key changes include:

- **High-value datasets**, dynamic and real-time data, shall be made available via application programming interfaces (APIs) and, where relevant, bulk download
- Limiting the exceptions allowing public bodies to charge more than **marginal costs for the re-use** of their PSI

- Bringing new types of public and publicly funded data into the scope, such as utility, **transport** and research **data**
- More transparency around public-private data arrangements, to create a more level playing field for all market players, promoting the **use of standard licences.**

In the Open Data Directive, a particular focus has been given to high-value datasets, defined as documents whose re-use is associated with important benefits for society and the economy. The thematic categories of high-value datasets, as referred to in Article 13(1) of the Directive, are:

- Geospatial
- Earth observation and environment
- Meteorological
- Statistics
- Companies and company ownership
- Mobility.

New Open Data Directive and NAPs

A significant number of the datasets covered by the ITS Delegated Regulations are expected to be considered as PSI and are already covered in NAPs.

Article 9 of the new Open Data Directive sets out practical arrangements to facilitate **finding** data. Examples include the development of tools and online portals that make it easier for users to find and re-use data, and appropriately licensed **metadata**. Existing EU policies and NAP funded projects have made progress in portals, increasing data discoverability, metadata mapping and harmonised metadata catalogues, and it is anticipated this new directive will build from these.

The European Commission has awarded an impact assessment task to develop the list of high-value datasets, **Project SMART 2019/0025**. The main objective of the study is to define concrete high value datasets that fall under the thematic categories. This will be based on an iterative process involving a number of cycles, by which an initial broad range of datasets would be narrowed down. This project will examine ITS Delegated Regulation data, excluding (EU) 2017/1926 MMTIS. It will only consider those data whose re-use is referred to by the ITS Delegated Regulation as being governed by the rules of the PSI Directive and insofar as their inclusion in the list of high value datasets would bring added value. It is therefore anticipated Project SMART would include analysis related to some NAPs datasets.

The existing NAP networks and projects can contribute to the monitoring and evaluation aspects of the new Open Data Directive; potentially helping to monitor and measure the:

- impact of high-value datasets i.e. specific transport datasets in NAPs
- availability and the use of APIs i.e. the availability of APIs via NAPs
- re-use of transport data by SMEs i.e. interaction with, and collection of more information on NAP data consumers.

2.1.2 EUROPEAN GREEN DEAL

In December 2019, the European Commission set out a European Green Deal for the EU and its citizens. The goal of this is to achieve climate neutrality by 2050.

The transport sector will play an important role in achieving this target, as it accounts for a quarter of the EU's greenhouse gas emissions. Transport has been set the objective of reducing its emissions by 90% by 2050.

The European Green Deal provides an action plan to:

- boost the efficient use of resources by moving to a clean, circular economy; and
- restore biodiversity and cut pollution

The plan outlines investments needed and financing tools available and explains how to ensure a just and inclusive transition.

As part of the European Green Deal, the Commission is currently working on a **strategy for sustainable and smart mobility** that will address emissions from all transport modes, digital transitions, automated and smart services, and modal shift. The indicative actions and timetable for this strategy are:

Sustainable and smart mobility actions	Indicative Timetable
Strategy for sustainable and smart mobility	2020
Funding call to support the deployment of public recharging and refuelling points as part of alternative fuel infrastructure	From 2020
Assessment of legislative options to boost the production and supply of sustainable alternative fuels for the different transport modes	From 2020
Revised proposal for a Directive on Combined Transport	2021
Review of the Alternative Fuels Infrastructure Directive and the Trans European Network – Transport Regulation	2021
Initiatives to increase and better manage the capacity of railways and inland waterways	From 2021
Proposal for more stringent air pollutant emissions standards for combustion-engine vehicles	2021

Table 4: Actions and timetable for the strategy for sustainable and smart mobility

European Green Deal and NAPs

Links to NAP activities are anticipated through the **Strategy for a Sustainable and Smart Mobility** (see below), which will include mobility, data access and interoperability.

2.1.3 STRATEGY FOR A SUSTAINABLE AND SMART MOBILITY

The Strategy for a Sustainable and Smart Mobility was released on 9 December 2020 and supersedes the 2011 Transport White Paper as the European Commission's vision for transport.

In order to reach the sustainability objectives of the European Green Deal action at EU level the Commission believe it is necessary to have efficient and strong initiatives that can deliver the needed climate and environmental impacts.

The strategy sets a roadmap and clear policy framework for the sector towards the sustainable and digital transitions. It includes the following objectives:

- increasing the uptake of zero-emission vehicles
- making sustainable alternative solutions available to the public and businesses
- supporting digitalisation and automation
- improving connectivity and access.

The Strategy also includes an action plan with a list of measures that the Commission will take to achieve the objectives of the strategy.

Strategy for a Sustainable and Smart Mobility and NAPs

From the Roadmap the following areas can be linked to NAP activities:

- digitalisation - generate business opportunities, innovation, new services and business models
- innovative mobility platforms – data driven, achieved through deeper integration and pooling a variety of different mobility services
- sustainable alternative fuels and associated infrastructure – alternative fuels NAP datasets
- block-chain and common databases – supporting large analytical query workloads

2.1.4 EUROPEAN STRATEGY FOR DATA

The Communication on a European strategy for data was published in February 2020, it aims to create a single market for data that will boost Europe's global competitiveness and data laws. The Communication states that common European rules and efficient enforcement mechanisms should ensure that:

- data can flow within the EU and across sectors
- European rules and values, in particular: personal data protection, consumer protection legislation and competition law, are fully respected
- the rules for access to and use of data are fair, practical and clear, and there are clear and trustworthy data governance mechanisms in place; there is an open, but assertive approach to international data flows, based on European values.

The actions of the strategy are based on four pillars:

A. A cross-sectoral governance framework for data access and use

B. Enablers: Investments in data and strengthening Europe's capabilities and infrastructures for hosting, processing and using data, interoperability

C. Competences: Empowering individuals, investing in skills and in Small and Medium Enterprices

D. Common European data spaces in strategic sectors and domains of public interest.

European data strategy and NAPs

The strategy recognises that digitalisation and data play an increasing role in supporting transport sustainability, and points out that several legislative frameworks already contain data-sharing obligations, establishing lists of transport related datasets. The strategy states that wide availability and use of data in public transport systems has the potential to make them more efficient, greener and customer friendly. On smart cities, data use to improve transport systems is also central. These activities are all supported by NAPs.

As noted in pillar D, the strategy will support the establishment of **common European data spaces** to ensure that more data becomes available for use in the economy and society. There will be a **mobility data space**, to further advance intelligent transport systems, including connected cars and other modes of transport. The data space will facilitate access, pooling and sharing of data from existing and future transport and mobility databases.

> APPENDIX to the Communication 'A European strategy for data' – Section 3. Common European mobility data space
>
> Digitalisation and data play an increasing role in supporting transport sustainability. Several legislative frameworks already contain data-sharing obligations, which establishes a list of datasets (including datasets concerning public transport).
>
> Digital Transport and Logistics Forum is working on a concept of 'federated platforms' to define what needs to be done at the EU level to facilitate data-sharing/re-use by connecting different public and private platforms.
>
> Networks of national access points to make data available exist in the Member States where the data are made available with a view to serving road safety, traffic and multi-modal travel information services, with data generated by the public and the private sector.
>
> Wide availability and use of data in public transport systems has the potential to make them more efficient, green and customer friendly. Data use to improve transport systems is also a central feature of smart cities.

Under the European strategy for data, the European Commission published a proposal for a Regulation on European data governance (Data Governance Act) in November 2020. The Act aims to promote the availability of data for use by increasing trust in data intermediaries and by strengthening data-sharing mechanisms across the EU. The proposal complements the new Open Data Directive and will support existing legislation relating to intelligent transport systems data. The regulation will also support the creation and development of the Common European mobility data space.

Recent NAP related policy developments from the EC include:
- **New Open Data Directive**: definitions of transport related high-value datasets, development of APIs and bulk downloads, licensed metadata; to be passed into MS law by 16 July 2021
- **Strategy for a Sustainable and Smart Mobility:** progressed under the European Green Deal, strategy published December 2020, anticipated to include roadmap and policy framework covering digitisation, mobility platforms, alternative fuel infrastructure
- **European strategy for data:** key areas include digitisation, data sharing, federated platforms and NAPs, creation of Common European mobility data space, and implemented act covering high-value datasets.

The majority of actions and developments have data related commonalities and are to be progressed between the end of 2020 and 2022, therefore NAP activities should maintain a watching brief and assess the implications and impacts when more detail becomes available.

3 State of the art of NAPs in Europe

This chapter describes the **status of implementation** of National Access Points in Europe, based on the EU EIP survey carried out in 2020.

This section is updated annually to show progress made in implementing the Delegated Regulations for **safe and secure truck parking**, **SRTI**, **RTTI** and **MMTIS.**

This chapter starts with describing the information gathering methodology applied. This is then followed by the status description of the NAPs for safe and secure truck parking, safety-related traffic information, real-time traffic information, and multimodal travel information. The last two sections present the NAP map and the conclusions.

3.1 Methodology for monitoring the status of European NAPs

For the monitoring of the status of implementation of NAPs in Europe a survey template has been created to describe the status of the NAPs per country. The survey required Member States (MS) to provide details of:

- Ministry responsible for implementing the NAP and contact details.
- Nominated body for assessment of compliance, contact details, procedure for assessment of compliance.
- Status of implementation, including the URL of the NAP.
- Description of the NAP (operational or planned):
  - Availability of the data required by the Delegated Regulation
  - Language(s) of the NAP
  - Presence of any quality requirements
  - Data available in the NAP or only web-links
  - Data exchange via DATEX, other
  - Metadata and/or discovery service available
  - Number of organisations (public, private) using/providing data to the NAP.

This survey is intended to describe per country the current status of implementation of the Delegated Regulations noted above. The survey was completed by responsible ministries, National Access Points, National Bodies and/or other relevant actors via e-mail.

One completed survey was received per country.

In total 25 MS, Norway and the United Kingdom have responded to the 2020 survey, which means that this survey gives an almost 100% coverage of the status of NAPs in the European Union.

With respect to this survey the following has to be noted:

- No feedback was received from Malta;
- For Cyprus the information from the 2019 survey has been used.

Therefore, in the following paragraphs, the status of the NAPs in 28 European countries is described, including the 2019 responses of Cyprus. Malta is not included in the analysis. The information from the 2020 survey is used to get a picture of the current status of National Access Points in the EU, to draw conclusions on harmonisation needs, and to share the knowledge and experience among MS.

Annex 1 gives an overview of the current status of National Access Points, indicating the web links to the National Access Points and contact points for the National Bodies responsible for the assessment of compliance.

NOTE

The NAP templates have been completed by the countries (Ministries, NAP operators, ...), and thus the report presents the information as provided through the templates. Authors of this report have done their best to analyse the information from the survey in a concise and accurate manner, but it was not possible to check all information.

If Member States note any mistakes in this report, this can be reported to the authors of this report.

- According to the 2020 survey around 16-18 Member States have an operational NAP for safe and secure truck parking, safety related traffic information, real-time traffic information and/or multimodal travel information.
- This year especially much progress has been made with NAPs for multimodal travel information.
- Three Member States still haven't established their first NAP.

3.2 Status of NAPs for Safe and Secure Truck Parking

This section describes the current status of implementation of the National Access Point for the provision of information services for safe and secure parking places for trucks and commercial vehicles, in short 'NAP for safe and secure truck parking'. Delegated Regulation (EU) 885/2013 was adopted in 2013.

Table 5 shows the status of implementation from 2016 to 2020. In 2016 only four countries had a (partly) operational NAP. Four other countries had concrete plans to implement a NAP. In 2020, 19 countries have an operational NAP for Safe and Secure Truck Parking. Three countries (Croatia, Latvia, UK) have concrete plans to implement a NAP. Another four countries (Cyprus, Finland, Ireland, Portugal) stated that they have no designated areas which require safe and secure parking for trucks and commercial vehicles.

COUNTRY	2016	2017	2018	2019	2020
Austria	Planned (2016)	Operational	Operational	Operational	Operational
Belgium	Partly operationa (Flanders only)	Operational	Operational	Operational	Operational (partly via EU portal)
Bulgaria	-	-	-	Planned (2020)	Operational
Croatia	-	Planned (2019)	Planned (2019)	Planned (2020)	Planned (2021)
Cyprus	Not operational	Not operational	Not operational	Not operational	Not operational*) **)
Czech Republic	-	Not operational	Operational (via EU portal)	Operational (via EU portal)	Operational (via EU portal)
Denmark	Planned (2016)	Operational	Operational	Operational	Operational
Estonia	-	-	Planned (2019)	Planned (2019)	Operational
Finland	Not operational or planned	Not operational or planned	Not operational or planned	Not operational	Not operational*)
France	-	Operational	Operational	Operational	Operational
Germany	Operational	Operational	Operational	Operational	Operational
Greece	-	Planned (2018)	Planned	Planned (2020)	Operational
Hungary	-	Planned (2018)	Implementation ongoing	Operational	Operational
Ireland	-	Not operational	Not operational	Not operational	Not operational*)
Italy				Operational	Operational
Latvia	-	-	Planned (2020)	Planned (2022)	Planned (2023)
Lithuania	-	-	-	-	-
Luxembourg	-	-	Operational	Operational	Operational
Netherlands	Operational	Operational	Operational	Operational	Operational
Norway	Not operational or planned	Not operational	Planned (via EU portal)	Planned (via EU portal)	Not operational
Poland	Planned (2018)	Planned (2018)	Planned (2018)	Operational	Operational
Portugal	Planned (2017)	Planned (2018)	Planned	Planned	Not operational*)
Romania	-	Planned (2018)	Planned (2019)	Planned (2020)	Partly operational
Slovakia	-	-	-	Operational	Operational
Slovenia	-	Operational	Operational	Operational	Operational
Spain	-	Operational	Operational	Operational	Operational
Sweden	Operational	Operational	Operational	Operational	Operational
United Kingdom					Planned

NOTES:
*) no designated areas which require safe and secure parking for trucks and commercial vehicles
**) based on 2019 survey

Table 5: Status of NAPs for Safe and Secure Truck Parking

Annex 1 gives an overview of the web links to the National Access Points and contact points for the National Bodies responsible for the assessment of compliance.

In general, the countries with an operational NAP make static truck parking information available, in particular information about the number of parking places. In some countries information about safety and equipment is also accessible. Only in Denmark, Germany, Luxemburg and The Netherlands dynamic data on the available parking places are added for some parkings. The implementation of the NAP is done mostly (17 countries) by the road administration. Only in few (four) cases the implementation is done by separate organisations (AustriaTech, BASt, CERTH/HIT, NDW).

Most NAPs have no quality requirements for the data. This means that in most cases the data providers are responsible for the data. Those countries that reported quality requirements mention for example up-to-dateness, use of DATEX II, use of metadata, or service criteria related to truck parking infrastructure (e.g. according to the EU EIP Quality Package or compliance with LABEL service criteria). Seven countries use metadata, of which four use the Meta Data Catalogue and two used DCAT-AP.

In all countries the basic NAP service will be free of charge, but some countries (Austria, Greece, Hungary) keep the possibility open that service providers might charge for extra services. Most NAPs provide the data for free to the end-users. Generally, the language of the NAP is the national language plus English. Exceptions are France and Italy, which only have the national language.

Six NAPs actively monitor their NAP use (Austria, Germany, Greece, Slovakia, Slovenia, Sweden) and this is planned for eight other NAPs (Denmark, Estonia, Hungary, Italy, Poland, Portugal, Romania and UK). In the Netherlands the use of the NAPs will not be monitored for privacy reasons. In Luxembourg only the data owners can monitor the use.

In 20 countries a National Body for assessment of compliance has been nominated. In eight countries the Nominated Body is the same as the NAP operator. The procedures for the assessment of compliance vary largely: from an audit by independent authority to self-declaration. In many cases the procedure is still to be determined.

Data providers are mostly public authorities and concessionaires. Only in Germany, the Netherlands and Spain there are several private organisations which provide data. In most cases there is not much information available about the number of organisations who use the data from the NAP: for Czech Republic there were 62 downloads from the EU truck parking portal (2019 figure), Poland reports 19 users, Denmark and France five users and Hungary four users of the NAP for truck parking.

Apart from the national NAPs, the European Commission established a European Access Point for truck parking). The Czech Republic provides static truck parking information only to the European Access Point and has no own NAP for truck parking.

All MS are encouraged to provide their truck parking data to the European Portal. So far only a limited number of MS have done so, i.e.: Austria, Belgium, Czech Republic, Denmark, Finland, Germany, Luxemburg, The Netherlands, Slovenia, Spain (Basque country), Sweden, and Switzerland. The content of the European Access Point for truck parking is visualised in a dedicated layer of the TENtec Interactive Map Viewer.
https://data.europa.eu/euodp/en/data/dataset/etpa

Figure 1: European Access Point for truck parking

- 19 Countries have (or are very close to having) a National Access Point for safe and secure truck parking.
- However, not all data available in the National Access Points for safe and secure truck parking can also be found in the European Access Point.
- Only very few private parking operators provide data to the NAPs.

3.3 Status of NAPs for Safety-Related Traffic Information

This section covers the current status of implementation of the National Access Point for the provision of road safety-related minimum universal traffic information free of charge to users, in short 'NAP for SRTI'.

The Delegated Regulation (EU) 886/2013 was adopted in 2013. Table 6 shows the status of implementation from 2016 to 2019. In 2016 only seven countries stated they had an operational NAP for SRTI, whereas four countries had concrete plans to implement a NAP. Currently, in 2020, 23 Member States have an operational NAP for SRTI (although sometimes partly filled) and four other Member States have concrete plans for a NAP for SRTI.

COUNTRY	2016	2017	2018	2019	2020
Austria	Planned (2016)	Operational	Operational	Operational	Operational
Belgium	Planned	Planned	In progress	In progress	In progress
Bulgaria	-	-	-	Operational	Operational
Croatia	-	Planned (2019)	Planned (2019)	Planned (2020)	Planned (2021)
Cyprus	Not operational or planned	Not operational or planned	Not operational or planned	Not operational or planned	Not operational or planned*)
Czech Republic	-	Operational	Operational	Operational	Operational
Denmark	Operational	Operational	Operational	Operational	Operational
Estonia	-	-	Operational	Operational	Operational
Finland	Operational	Operational	Operational	Operational	Operational
France	-	Operational	Operational	Operational	Operational
Germany	Operational	Operational	Operational	Operational	Operational
Greece	-	Planned (2018)	Implementation ongoing (2019)	Partly operational	Operational (partly)
Hungary	-	Planned (2018)	Operational	Operational	Operational
Ireland	-	-	-	-	-
Italy	Operational	Operational	Operational	Operational	Operational
Latvia	-	-	Planned (2021)	Planned (2022)	Not operational
Lithuania	-	-	-	Not operational	Operational
Luxembourg	-	-	Planned (2019)	Operational	Operational
Netherlands	Operational	Operational	Operational	Operational	Operational
Norway	Operational	Operational	Operational	Operational	Operational
Poland	Planned (2018)	Operational	Operational	Operational	Operational
Portugal	Planned (2017)	Planned (2018)	Planned (2018)	Planned	Planned
Romania	-	Planned (2018)	Planned (2019)	Planned (2020)	Operational (Partly)
Slovakia	-	-	Operational	Operational	Operational
Slovenia	-	Operational	Operational	Operational	Operational
Spain	-	Operational	Operational	Operational	Operational
Sweden	Operational	Operational	Operational	Operational	Operational
United Kingdom	-	-	-	-	Operational

NOTES:
*) Based on 2019 survey

Table 6: Status of NAPs for Safety-Related Traffic Information

Annex 1 gives an overview of the web links to the National Access Points and contact points for the National Bodies responsible for the assessment of compliance.

The Delegated Regulation states eight types of safety-related information that should be provided:.

(a) temporary slippery road;

(b) animal, people, obstacles, debris on the road;

(c) unprotected accident area;

(d) short-term road works;

(e) reduced visibility;

(f) wrong-way driver;

(g) unmanaged blockage of a road;

(h) exceptional weather conditions.

Most countries state they provide all information types, although some countries have a smaller set of data. For example, Cyprus states that it never or rarely has exceptional weather conditions, oil spills or heavy traffic. and Finland has excluded wrong-way driver. Ten countries state that they have only weblinks to the data, nine countries state that the information is available in the NAP. Some of them offer both options.

Ten NAPs have quality requirements for the data, the others have not. Quality criteria applied can be quite different, for example the obligation to submit metadata (Austria, Czech Republic, UK), to carry out a self-assessment (Czech Republic, Greece), some internal processes (Estonia, France, Italy), or setting quality objectives following the Quality Package[2] of EU EIP (Denmark, Finland, Germany). Metadata is available for most NAPs. The EIP Metadata Catalogue is most often mentioned, but also DCAT-AP and search function based on key words.

The language of the NAP for RTTI is mostly the national language and English. Only in France and Luxemburg not everything is translated to English.

Monitoring of the use of the NAP is undertaken for 13 NAPs. Almost as many are not (yet) monitoring the use of the NAP. Three other NAPs are planning to do so.

17 NAPs have data only *supplied* by public authorities (including concessionaires). Six NAPs (Denmark, Germany, Italy, Netherlands, Spain, Sweden) have also private data sources. Examining the *data users*, 11 NAPs have users from both private and public sector. Some figures:

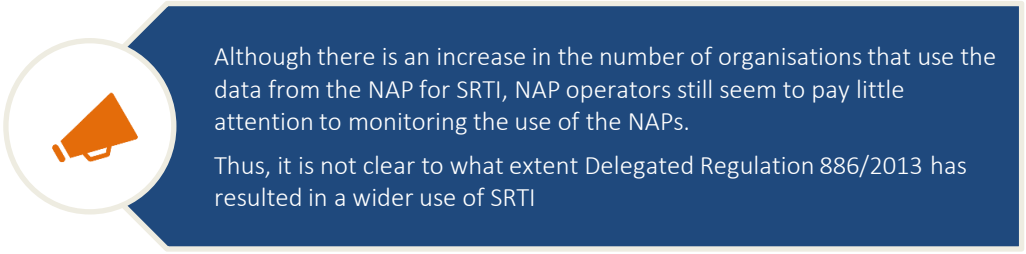
- Czech Republic: At the moment one organisation provides information. The NAP does not track how many users have used the data, but there have been more than 200 subscribers.
- Denmark: Four organisations provide information. Approximately 20 organisations (many of them large traffic information providers) use the data.
- Finland: One public organisation provides information. Several public and private organisations use the information (actual amount cannot be specified)
- Germany: Number of users is increasing slowly but steadily
- France: 38 road operators/authorities provide information as well as a number of private parties (Coyote, Mediamobile, Michelin, TomTom). It is unknown how many organisations use the NAP data.
- Italy: 144 parties provide information to the NAP. 14 partners make use of the NAP by bilateral agreement, many others use the NAP on their own.
- Netherlands: One private and one public organisation provide information. Most private service providers use the NAP SRTI in their services.

[2] Kulmala, R. et al. (2019), "Quality Package for safety-related and real-time information services", EU EIP sub-activity 4.1, https://eip.its-platform.eu/highlights/update-eu-eip-quality-package-srti-and-rtti

- Norway: One public organisation (NPRA) provides information. There are 460 subscribers to the NPRA DATEX II node.
- Poland: Three organisations provide data to the NAP, i.e. the national road operator and the cities of Gliwice and Gdynia. 19 organisations use SRTI data from the NAP, including National Road Operator, Municipal road administration from the city of Gliwice and city of Gdynia, traffic safety providers, radio broadcasters, service providers.
- Slovenia: Two organisations are providing data. Six public and five private organisations use data from the NAP.

In total 23 Member States have a National Body for assessment in place. In nine countries the National Body is the same organisation as the implementing body, although the department might be different.

Six National Bodies use the harmonised Declaration of Compliance developed by EU EIP in cooperation with TISA. Four other National Bodies have another self-assessment procedure and 3 National Bodies have other ways for assessment, such as an audit or a check against the specifications.



3.4 Status NAPs for Real-Time Traffic Information

This section describes the current status of implementation of the National Access Point for the provision of EU-wide real-time traffic information services, in short 'NAP for RTTI. Delegated Regulation (EU) 2015/962 was adopted in 2015. It applies from 13 July 2017. Table 7 shows that 23 countries have a (partly) operational NAP for RTTI. Four other countries (Belgium, Croatia, Latvia and Portugal) are already in development phase or have concrete plans to implement a NAP. Poland has not stated any plans yet.

COUNTRY	2016	2017	2018	2019	2020
Austria	Planned (2016)	Operational	Operational	Operational	Operational
Belgium	-	-	In progress	In progress	In progress
Bulgaria	-	-	-	Planned	Operational
Croatia	-	Planned (2019)	Planned (2019)	Planned (2020)	Planned (2021)
Cyprus	Partly operational	Partly operational	Partly operational	Partly operational	Partly operational*)
Czech Republic	-	Operational	Operational	Operational	Operational
Denmark	Planned (2017)	Operational	Operational	Operational	Operational
Estonia	-	-	Operational	Operational	Operational
Finland	Operational	Operational	Operational	Operational	Operational
France		Operational	Operational	Operational	Operational
Germany	Operational	Operational	Operational	Operational	Operational
Greece	-	Planned (2018)	Implementation ongoing	Partly operational	Partly operational
Hungary	-	-	Planned	Operational	Operational
Ireland	-	Operational	Operational	Operational	Operational
Italy	-	Operational	Operational	Operational	Operational
Latvia	-	-	Planned	Planned (2022)	Planned (2023)
Lithuania	-	-	-	Operational	Operational
Luxembourg	-	-	Operational	Operational	Operational
Netherlands	Planned (2017)	Operational	Operational	Operational	Operational
Norway	Planned (2017)	Operational	Operational	Operational	Operational
Poland	-	-	-	-	-
Portugal	Planned (2017)	Planned	Planned	Planned	In progress
Romania	-	Planned	Planned	Planned (2020)	Partly operational
Slovakia	-	-	Operational	Operational	Operational
Slovenia	-	Operational	Operational	Operational	Operational
Spain	-	Operational	Operational*)	Operational	Operational
Sweden	Planned (2017)	Operational	Operational	Operational	Operational
United Kingdom	-	-	-	-	Operational

NOTES:

*) Based on 2019 survey. Contains RTTI information, but is not a real NAP.

Table 7: Status NAPs for Real-Time Traffic Information

The Delegated Regulation distinguishes three types of information: 1) static road data, 2) dynamic road status data, 3) traffic data.

At this stage, most countries indicate that they provide access to all three types of information, but not always all specific categories as mentioned in the Delegated Regulation. For example:

- Austria: The NAP is capable of presenting metadata on data according to Delegated Regulation (EU) 2015/962 for RTTI.
- Bulgaria: The NAP offers static road data (traffic signs reflecting traffic regulations and identifying dangers, such as: permanent access restrictions; other traffic regulations); traffic circulation plans; location of tolling stations; location of parking places and service areas) as well as dynamic road status data (road closures; lane closures; bridge closures; accidents and incidents; poor road conditions; temporary traffic management measures; weather conditions affecting road surface and visibility).
- Cyprus: Level of Traffic (speed and volume data) on primary road network of Cyprus and parking availability at Nicosia city centre parking areas.
- Czech Republic: Static road data, dynamic road status data, and traffic data is available.
- Denmark: All currently available data are provided for the three types of information (static road data, dynamic road status data, traffic data).
- Estonia: Traffic restriction data, road camera pictures, Locations of road cameras, Measurement results of road weather stations, Locations of road weather stations and traffic counters, road works, and traffic hazards.
- Finland: Static road data (partially), dynamic road status data (partially), and traffic data (partially).
- France: Static data are available on the national road network. Dynamic and circulation data will be accessible on the national road network and Ile-de-France. Data speeds and travel time on the national road network will be made available soon.
- Germany: Data are provided by different road authorities, representing the 16 Federal States of Germany. Data coverage is not consistent across these road authorities, as each authority has different data sources. Some federal States provide all required data, while others provide some of them.
- Greece provides the following data (real-time and historical) through the NAP: Network Speed in urban areas, Level of congestion in urban areas, Travel times in urban areas, Traffic Volumes along motorways (i.e. traffic counts at toll stations and through Vehicle Detection Sensors or inductive loops), VMS contents along motorways.
- Hungary offers the following RTTI data through the NAP: Geometry, Road width, Number of lanes, Road classification, Access conditions for bridges, Permanent access conditions, Speed limits, Identification of tolled roads, Location of parking places and service areas, Locations of public transport stops (only interurban bus stops), Location of delivery areas (Budapest), Availability of (truck/P+R)parking places, where the monitoring system is installed, Road closures, Lane closures,

Bridge closure, Roadworks, Accidents and incidents, Poor road conditions, Weather conditions affecting road surface and visibility, Traffic volume, Travel times.

- Ireland: Vehicle speed, traffic flow, traffic concentration, VMS messages, weather station data, and travel times.
- Italy: all static road data, dynamic road status data and traffic data
- Lithuania: all static road data, dynamic road status data and traffic data
- Luxembourg: The data available focusses on dynamic road status updates. Including: type of road status update, the location of the event, and the period of occurrence of event.
- Netherlands: Roadwork information, traffic management measures, real-time traffic data, travel times, estimated travel times, intensities, speed, safety-related traffic data
- Norway: The types of the static road data include in particular the categories: a), b), c), d), g), h), i) and l). Dynamic road status data include in particular: a), b), c), e), f), j), o), p) and Traffic data include in particular: a), b) and c).
- Slovakia: Static road data (b, i, j, k, l), dynamic road data (a – f), and traffic data (a – c) are available.
- Slovenia: Static road data (except paragraphs (e), (j), (k), (l), and (m)), dynamic road status data (except paragraph (d), (l), (m), (n), and (o)) and traffic data (except paragraph (d)).
- Spain: For example: Road network links and some of their physical attributes, Road classification, Traffic regulations identifying dangers (Access conditions), Speed limits, Traffic circulation plans, Road closures, Lane closures, Roadworks, Accidents and incidents, Direction of travel on reversible lanes, Temporary traffic management measures, Traffic volume, Speed, Travel times.
- Sweden: Static and dynamic road data.
- United Kingdom: all static road data, dynamic road status data and traffic data.

Twelve countries state that the information is (or will be) available in the NAP for RTTI. Eight countries state that they provide web-links to the data. Some countries (are planning to) offer both options. Cyprus provides the Real Time Traffic Information via a map-tool, but this cannot be considered as a real NAP.

Most Member States do not have quality requirements or have not yet decided about quality requirements for the data to be made available. Eight countries stated that there are/will be some form of quality requirements, e.g. completeness of minimum metadata set, accordance to the data quality frameworks developed in EU EIP sub-activity 4.1[3] , checks by road operators, validated information, best effort, or in general compliance with the requirements mentioned in the text for Delegated Regulation (EU) 2015/962 for RTTI.

Eleven NAPs provide metadata, of which nine use (or will use) the Metadata Catalogue.

Almost all countries state that the use of the data is/will be free of charge, but some NAPs have functionality to allow a charge for data, or this is to the decision of the data owner. Some countries who provide the data

[3] Kulmala, R. et al. (2019), "Quality Package for safety-related and real-time information services", EU EIP sub-activity 4.1, https://eip.its-platform.eu/highlights/update-eu-eip-quality-package-srti-and-rtti

without a charge do request additional requirements. For example, France will not charge for the use of data but requires registration.

The language of the NAP for RTTI is mostly the national language and English. However, in France and Luxemburg the English translation is only partly effectuated.

Monitoring of the use of the NAP is already done in 14 NAPs, another six NAPs are planning to monitor the use of the NAP. With respect to data provision, 14 NAPs provide access to data exclusively from public authorities (including concessionaires); eight NAPs also provide access to private data sources. On the user side it can be noted that eight Member States report that they have users from both public and private sector.

The following list provides some examples of (potential) information providers and information users:

- Cyprus: The planned NAP will expand to cover data from municipalities, police, port and airport authorities, public transport operators, etc. Users can be found in the Public Works Department, police, Nicosia municipality, 2-3 universities, and (under development) 6-8 private companies via web service to receive raw data and develop their own services.
- Czech Republic: NTIC reports to have more than 200 subscribers. There are only few registered users so far.
- Croatia: Five motorway operators (three public, two private) will be providing data.
- Denmark: DRD provides data to the NAP, as well as TomTom. There are twelve registered users of the NAP.
- Finland: One public body is providing data. Several public and private organisations use the data (actual amount cannot be specified).
- France: Apart from Directorate of Roads and concession operators, also Michelin Travel Partner and TomTom provide data. 17 Subscribers are connected to the Datex II service for action b, of which 5 public organisations, and 9 private organisations.
- Greece: two motorway companies, the Hellenic Association of Toll Road Network and CERTH/HIT provide data to the NAP.
- Hungary: Six parties, of which four motorway concessionaires) provide data.
- Italy: 144 parties provide information to the NAP. 14 partners make use of the NAP by bilateral agreement, many others use the NAP on their own.
- Netherlands: Seven parties providing data to the NAP; use of the NAP is not monitored.
- Norway: NPRA is only data provider to NAP in Norway. There are 460 users of the DATEX II node.
- Slovakia: Five public parties provide data to the NAP.
- Slovenia: Three public and one private organisation provide data. The data are used by six public and five private organisations.
- Spain: Among others Traffic Management Centres and traffic police provide information to the NAP. Information on data usage is not available.

- Sweden: STA is the only provider and user of the NAP.

According to the Delegated Regulation (EU) 2015/962 for RTTI a National Body is not required. Nevertheless, 14 Member States have nominated a National Body and three are planning to do so. 11 countries will not nominate a National Body or don't know yet.

- In approximately two thirds of all Members States the implementation of the NAP for the provision of EU-wide RTTI services is operational.
- At least six out of 23 NAPs for RTTI also provide data from private parties.

3.5 Status of NAPs for Multimodal Travel Information Services

This section describes the current status of implementation of the National Access Point for the provision of Multimodal Travel Information Services, in short 'NAP for MMTIS'. The Delegated Regulation on this topic ((EU) 2017/1926) was adopted by the European Commission on 21 October 2017. For the first part (point 1.1 of the Annex of the Delegated Regulation) the static travel and traffic data should be made accessible through the NAP by 1 December 2019. For the second part (point 1.2 of the Annex of the Delegated Regulation) the static travel and traffic data should be made accessible through the NAP by 1 December 2020.

16 Member States report a NAP for MMTIS either fully or partially operational. In eight other Member States the NAPs are in progress or there are concrete plans (Croatia, Hungary, Italy, Latvia, Slovakia, Romania, Slovenia and Spain). The content mainly consists of data on public transport and sometimes taxi services, and in some cases also information on cycling.

NOTES:

*) Based on 2019 survey – Cyprus has MMTIS information, but is not a real NAP.

Table 8 provides an overview of the current status of implementation for the NAPs on Multimodal Travel Information Services.

COUNTRY	2016	2017	2018	2019	2020
Austria	Planned (2017/2018)	Planned (2017/2018)	Planned	Operational	Operational
Belgium	-	-	In progress	In progress	Operational
Bulgaria	-	-	-	-	-
Croatia	-	-	In progress	In progress	In progress
Cyprus	Planned (2018)	Planned (2018)	In progress	Operational	Operational*)
Czech Republic	-	-	In progress	In progress	Operational
Denmark	Planned (2019)	Planned (2019)	Planned (2019)	Planned (2020)	Operational
Estonia	-	-	Planned (2020)	Planned (2020)	Operational
Finland	Planned (2018)	Planned (2018)	(partly) Operational	(partly) Operational	Operational
France	-	-	(partly) Operational	Operational	Operational
Germany	-	-	Preliminary research	Operational	Operational
Greece	-	In progress	In progress	Planned	Partly operational
Hungary	-	-	In progress	In progress	In progress
Ireland	Operational	Operational	Operational	Operational	Operational
Italy	-	-	-	Planned	Planned (2021)
Latvia	-	-	Planned	Planned (2022)	Planned (2023)
Lithuania	-	-	-	Operational	Operational
Luxembourg	-	-	Planned (2019)	Operational	Operational
Netherlands	-	-	In progress	Planned (2020)	Operational
Norway	-	Planned (2019)	Planned (2019)	Operational	Operational
Poland	-	-	-	-	-
Portugal	-	-	-	-	-
Romania	-	-	-	-	Planned (2022)
Slovakia	-	-	-	-	In progress
Slovenia	-	Planned 2020	Planned (2020)	Planned (2020)	Planned (2021)
Spain	-	-	-	Planned (2020)	Planned (2021)
Sweden	Pre-study	Pre-study	In progress	Planned (2020)	Operational
United Kingdom	-	-	-	-	-

NOTES:

*) Based on 2019 survey – Cyprus has MMTIS information, but is not a real NAP.

Table 8: Status of NAPs for Multimodal Travel Information Services

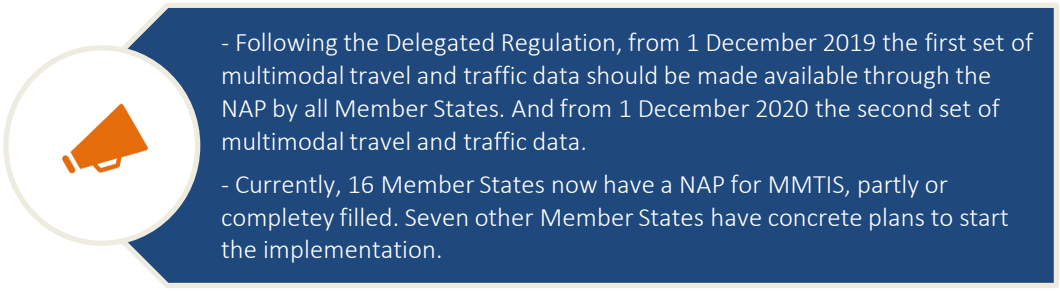
In six MS the organisation in charge of implementing the NAP for MMTIS is different than for the other NAPs. In 13 MS it is the same organisation. Probably this is caused by the fact that in many cases the other Delegated Regulations dealt exclusively with data about the main road network, whereas the Delegated Regulation for MMTIS only partly deals with these data, but in addition also covers other modes of transport (public transport, taxi, cycling, …), other road networks (e.g. urban) and other topics (e.g. electric charging). Thus, the role of the national road authority is less evident in the Delegated Regulation for MMTIS. The role of road authorities in the implementation of MMTIS NAP is often limited to delivering part of the data (RTTI).

Even though establishment of a National Body is not an obligation from the Delegated Regulation, 18 Member States have (or are planning) to nominate National Bodies for the assessment of compliance. How to carry out the assessment of compliance is not yet clear for most countries.

Eight NAPs will only provide weblinks to the data, eight NAPs (will) have data in the NAP or (will) have a mix of weblinks and data, e.g. static data in the NAP and dynamic data via weblinks. Five Member States are or will be using the Metadata Catalogue, which has recently been updated for the purpose of multimodal travel information (see chapter 5). Two Member States will use elements of the Metadata Catalogue as an extention to DCAT-AP.

Data exchange will take place using DATEX II for road data, whereas NeTEx, GFTS, Transmodel and SIRI are mentioned for other modes, and INSPIRE for geographical data.

In chapter 7 more specific attention is paid to the NAPs for Multimodal Travel Information Services.



3.6 NAP Interactive Map

Three years ago EU EIP developed a web page named **NAP Map** in order to promote NAPs across Europe, to make them more visible and to have a user-friendly web service were all interese parties could find links for all NAPs across Europe.

In these three years the number of implemented NAPs has increased considerably, and the old web page did not have all the facilities to be able to satisfy our requirements regarding user interactivity. Therefore this year the page has been completely replaced with a new web page much more "*dynamic*" and more "*interactive*".

As in the past, the page is hosted on an external server, ensuring the NAP Interactive Map is easy to maintain and update and a link to this page were posted on the official website of the EU EIP project and can be access from the link below:

https://eip.its-platform.eu/activities/sa-46-monitoring-and-harmonisation-single-point-access

The page can also be accessed directly using the link:

http://andnet.ro/nap_eueip/

On this page, the visual identity elements of the EU EIP project (in the upper left corner, near the menu bar) and of the European Commission (in the lower left corner) have been preserved. The tabular form of the available information about NAPs and NBs has been kept and can be accessed from the menu bar on the top of the pages. The background of this page is new.

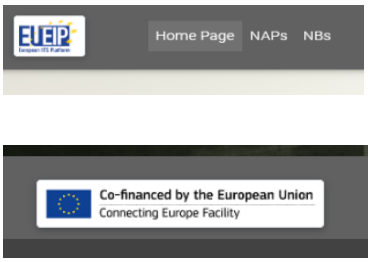


Figure 2: Visual identity elements

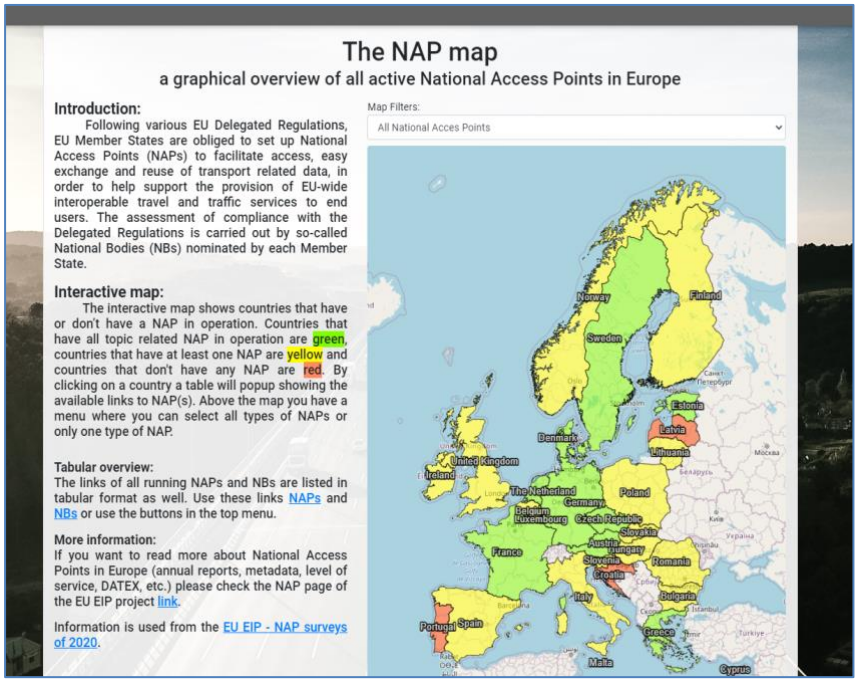


Figure 3: NAP Interactive Map

The most important change is the map itself. The interactive map at the Home page shows countries that have or don't have a NAP in operation.

By clicking on a country a table will popup showing the available links to NAP(s) and the name of the related National Body.

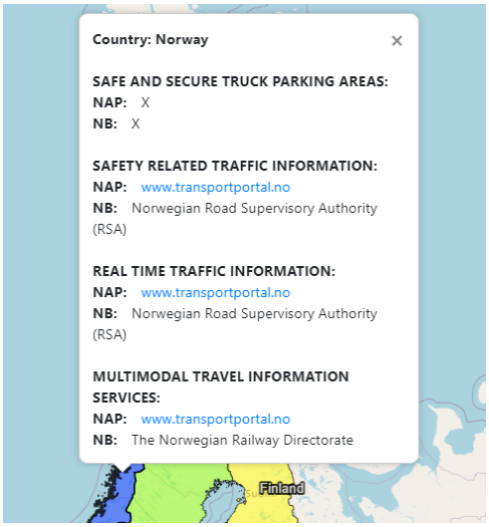


Figure 4: Country popup list

Above the map you have a menu where you can select all types of NAPs or only one type of NAP. When we select only one type of NAP the colour of countries wil change in green for the country that have establish that kind of NAP or red if the NAP is not establish or the Delegated Regulations is not applicable in that country.

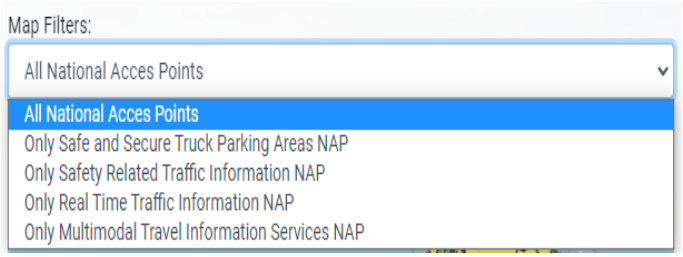


Figure 5: NAP selection menu

To further enhance NAP promotion, information sharing and engagement, the NAP Map still includes a list of contact details of the designated national bodies. The designated national bodies are important as they are required to assess whether the requirements of the Delegated Regulations are being fulfilled in their countries; and should be known by any party contributing (or planning to contribute) to a NAP.

Therefore, on the NAP Map page selecting the “NAPs” or “NBs” menu provides a complete list of all web addresses of the NAPs and the contact details of the NBs. The list can also be found in Annex 1.

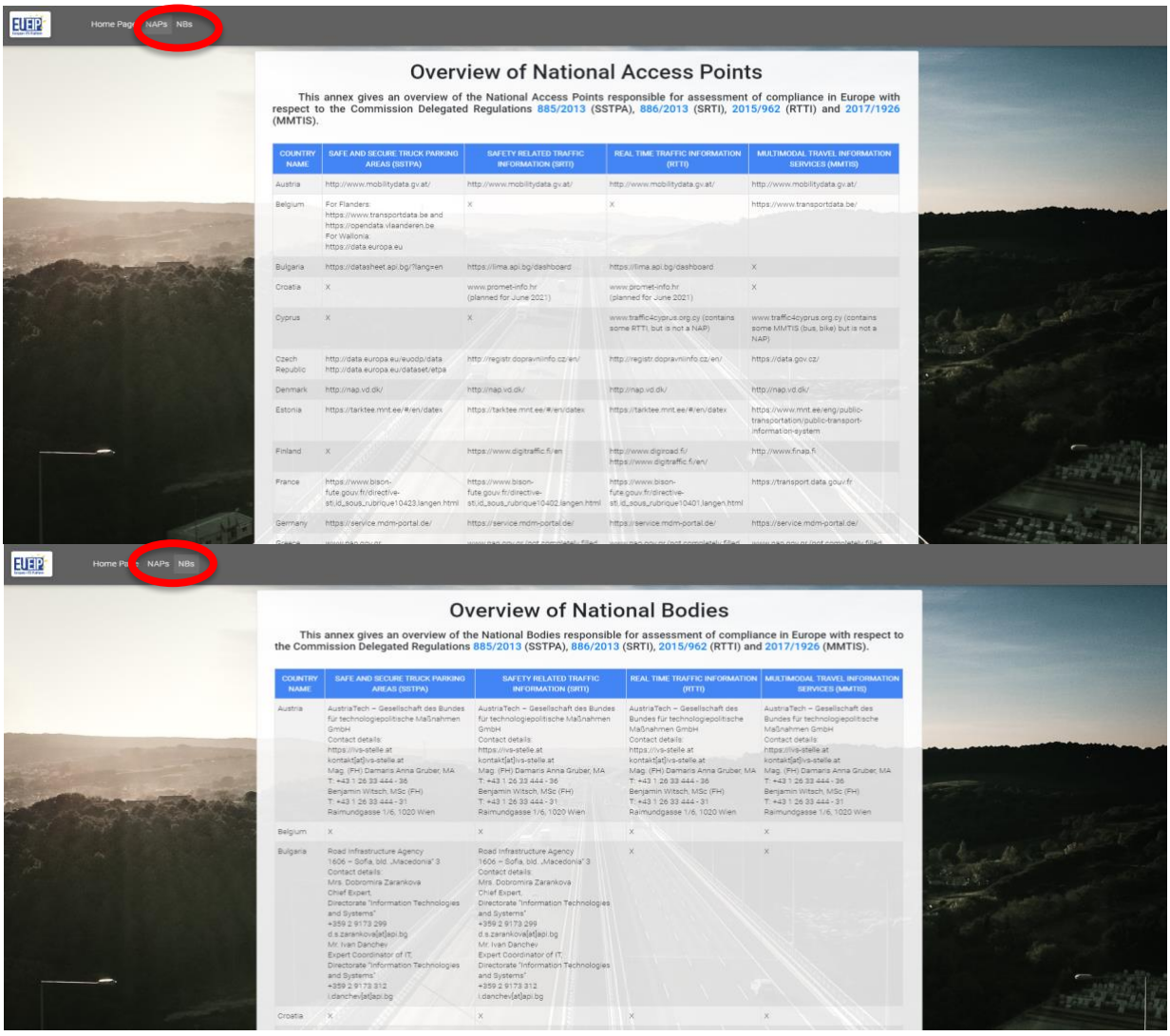


Figure 6: NAP Interactive Map Contacts and NBs

.

3.7 Conclusions

Based on the survey conducted in 2020 it can be concluded that MS are increasingly complying with the Delegated Regulation for safe and secure truck parking ((EU) 885/2013), SRTI ((EU) 886/2013), RTTI ((EU) 2015/962) and MMTIS ((EU) 2017/1926). However, there are still quite a few countries who have work to do.

With respect to the NAP on safe and secure truck parking, from the MS that have participated in the survey 19 countries currently have an operational NAP and three countries have concrete plans to implement the NAP. The European NAP for safe and secure truck parking has truck parking data from 12 countries including Switzerland.

In the case of NAPs for safety-related traffic information currently 23 countries have an operational NAP for SRTI. Three others have concrete plans to implement a NAP.

Currently, 23 countries have a (partly) operational NAP for real time traffic information. Four other countries are implementing or have concrete plans to implement a NAP.

16 Member States report a NAP for multi-modal travel information services, either fully or partially operational. In eight other Member States the NAPs are in progress or there are concrete plans to implement them.

From the above it can be concluded that NAPs for safety-related and for real time traffic information are the most implemented NAPs, whereas the number of NAPs implemented for multi modal travel information services is significantly lower.

For all National Access Points, it is generally the public authorities (including concessionaires) that provide the data. Data from private parties, either as actual data or as weblinks or metadata, are rather limited so far. Although there seems to be an increase in the number of organisations that use the data from the NAP, NAP operators seem to pay little attention to monitoring the use of NAPs. Thus, it is not clear to what extent Delegated Regulation have resulted in a wider (re)use of the various data sources.

- From 2016 to 2020 a gradual increase of the number of implemented and/or planned NAPs can be seen.
- For NAPs for MMTIS the number of NAPs has clearly increased since 2019, but the number is still much lower than for SRTI and RTTI.
- To what extent the NAPs contribute to better information services for road users and travellers remains unclear, since monitoring of the use of the data in the NAP seems to be rather limited.

4 Common features & Level of service

This task has developed a Support Document with 20 NAP features.

These are intended to facilitate effective NAP functioning and make the NAP a straightforward, valuable resource. MS Surveys are used to obtain feedback on feature status.

4.1 Activity overview

This task covers the development of NAP common features and level of service. From the previous EIP and EIP+ projects it is acknowledged that MS will implement their NAPs using different structures, models, methods of data access / search tools, data checking methodologies. This task identifies the various features of NAP implementations. The scope does not include validation of the quality of the content of the NAP or NAP datasets, data quality aspects are covered by EU EIP SA 4.1.

The list of features was developed with the help of EU EIP NAP implementers in 2016. Over the course of the EU EIP project the list was elaborated into a fuller Support Document. The document had undergone several iterations, taking NAP implementers feedback into account and adding additional features as NAPs advanced and were more widely put into action.

The Support Document describes a set of features intended to support good practice, help make existing and future National Access Point services available to a wider audience, facilitate data sharing, and promote the discovery of datasets. The features are not mandatory and have no formal link to the Delegated Regulation of the ITS Directive. There are 20 features, grouped into five subsets:

1. Access – six features covering gaining access to the NAP and basic features
2. Communication – four features related to engaging with data consumers and publishers
3. Finding datasets – four features to facilitate data consumers need to find datasets they want
4. Update and maintenance – three features on ensuring information is current and the NAP is maintained
5. Dataset information – three features covering the additional dataset information that should be provided by the NAP

Each feature has a description, reasons for being included, examples, and benefits. Features are also described as either mandatory or nice to have, Figure 7.

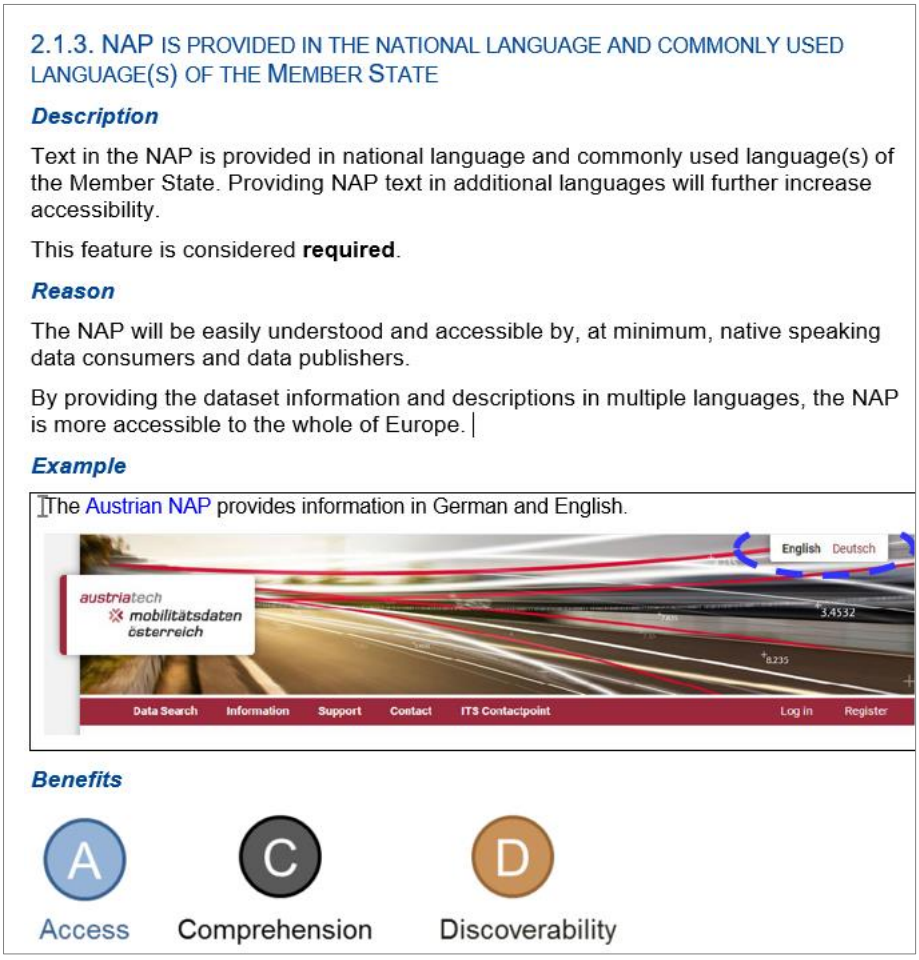


Figure 7: Example Feature from the Support Document

There is also a Features Checklist to collect implementer feedback for each Delegated Regulation specifying a NAP, Figure 7.

Safety related traffic information

	yes	no	planned	n/a
1. the NAP is available over the internet	○	○	○	○
2. NAP can be navigated easily and is design compliant with web design standards / accessibility	○	○	○	○
3. NAP is provided in the national language and commonly used language(s) of the MS	○	○	○	○
4. NAP follows EU data protection and industry data security standards	○	○	○	○
5. NAP requires data publishers to register to add their data / metadata	○	○	○	○
6. NAP requires data consumers to register for full access	○	○	○	○

Figure 7: Extract from the Features Checklist

4.2 Updated Support document & feedback

Following NAP implementer feedback and internal WG NAP discussions in late 2019 and 2020 two additional features covering data consumer registration and map-based search were added to the Support Document. The document was also updated and refreshed to correct links and renew images. Version 2.0 was published on the EU EIP website in 2020.

The features checklist was updated and distributed to NAP implementers for their responses.

Overall, based on the checklist feedback the features are being implemented or are planned in the responders' countries.

For SRTI, RTTI, and safe and secure parking places for trucks, NAP feedback was similar, many services are well established and maintained, with developed registration methods, contact strategies, and policies for monitoring NAP usage.

It is interesting to note that while these NAPs have been functioning for many years, in some instances, important developments and updates are taking place:

- in many MS more work is planned to ensure NAPs are compliant with web design standards / accessibility; and that EU data protection and industry data security standards are met
- developments are planned to improve discovery services
- few NAPs currently provide machine readable metadata, this is a feature that is planned for future implementation in many NAPs
- providing a map-based search is not currently a feature of many NAPs and is not currently widely planned to be implemented.

For MMTIS, the feedback suggested there are more differences in the way MMTIS NAPs and their features have been implemented, with more planned / proposed implementations. But in a similar way to the other NAPs, providing a map-based search was not considered highly relevant to many MMTIS NAPs; and ensuring

web design standards and accessibility requirements are either already in place, or planned, for most MMTIS NAPs is a priority.

For all NAPs the survey results were split on the implementation of mandatory registration for data consumers.

4.3 Future steps

Moving into 2021 it is anticipated aspects related to this activity are likely to be undertaken under the new CEF PSA. In 2021, EU EIP WG NAP will facilitate activity handover where required. With the new EU Directive on open data and the re-use of public sector information, there will be a move towards APIs for high-value datasets which will also impact on NAP features and implementations.

Updated version of the Support Document is published. Based on MS feedback the focus of future NAP feature developments and improvements are in the areas of:

- compliance with **web design standards** and **accessibility**
- **data protection** and **data security**
- enhancing **discovery services**
- **metadata** and **machine-readable metadata**

5 Metadata

Metadata describes the **administration**, **organisation**, and **content** of a dataset and of a data service. Metadata datasets are therefore **crucial elements** to make NAPs **accessible** and **searchable.**

This task examines the usage of metadata in NAPs and works towards harmonization.

The most visible Metadata representation are the dataset descriptions in NAP portals, see the example from the Mobility Data Marketplace (MDM, German NAP) in Figure 8.

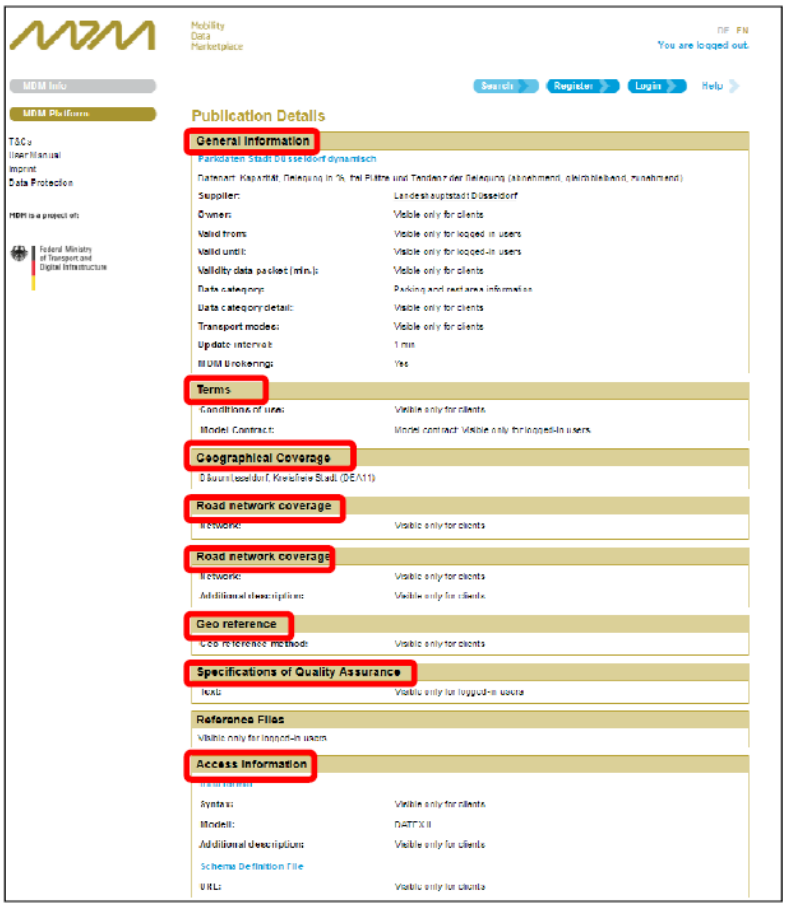


Figure 8: Metadata as part of the data set description in a NAP portal

Metadata represent a recurring element of Delegated Regulations of the ITS Directive. Metadata have been mentioned to date for Delegated Regulation (EU) 2015/962 for RTTI and for Delegated Regulation (EU) 2017/1926 for MMTIS. It is recommended that Metadata should also have the same relevance for all other Delegated Regulations.

There is a need to harmonise Metadata descriptions and structures for the following reasons:

- to help to make data available and searchable for pan-European service providers,
- to ensure Metadata to be machine-readable in a later stage, and
- to ensure a common understanding of the listed data content.

In the context of EU EIP WG NAP, harmonisation approaches are being discussed in the field of Metadata. In particular, recommendations are being elaborated in terms of how to implement Metadata in existing and upcoming NAPs across Europe.

The activities of EU EIP WG NAP are based on:

- results from the former projects EIP and EIP+, in particular the "Coordinated Metadata Catalogue" (2015) as a proposal for a harmonised set of Metadata[4],
- evaluation of Metadata approaches in the MS so far, and
- identification of needs and requirements in order to further develop a recommended, harmonised Metadata approach across Europe.

5.1 Previous activities & initial findings

As an on-going work of EU EIP WG NAP, the current practice and experiences of individual NAPs in terms of Metadata approaches are being reviewed and evaluated.

As already found out in previous reviews, the current 2020 NAP reports again indicate a quite heterogeneous Metadata landscape across all reviewed NAPs. The introduced "Coordinated Metadata Catalogue" is a reference in about half of the analysed NAPs. It is noted that this Catalogue was updated in 2019, and we assume the latest version is only applied in a few instances, e.g. in Germany. However, in some other cases alternative Metadata approaches are chosen, or no information on the Metadata approach is given at all. Reasons for this heterogeneity have been discussed many times: individual system architectures, individual IT / Open Data frameworks, and individual NAPs "maturity levels".

As Metadata are more and more recognised as a key factor to ensure interoperability between different data catalogues, the Metadata perspective has to be widened beyond NAPs, also looking at Open Data Portals, Government Data platforms, commercial data platforms in the hands of e.g. IT big players. This way, any Metadata harmonization activities need to expand to wider data ecosystems. A concrete approach is presented below.

When it comes to Metadata infrastructures in individual NAPs, there is a clear need to support NAP operators, by e.g. proposing best-practices with the aim of efficiency and harmonisation across Europe.

The EU EIP WG NAP has been working for many years on that matter. A major product is the "Coordinated Metadata Catalogue"5 (EU EIP, November 2019). This work is a blueprint for Metadata structures at each

[4] https://www.its-platform.eu/filedepot_download/1701/5355
[5] https://www.its-platform.eu/highlights/harmonised-metadata-national-access-points

individual NAP in Europe; defining a common, minimum Metadata set; and considering all data and information domains of the EU Directive and the respective Delegated Regulations.

After a successful update work for the Catalogue 2019, with additional coverage of multi-modal travel data and services, according to Delegated Regulation (EU) 2017/1926 for MMTIS, some stakeholders stated to advance with the Catalogue in the direction of Metadata interoperability. In particular, there was the idea to bring together the Catalogue with DCAT-AP, a well-established metadata specification in the domain of European Open Data portals, developed by a joint initiative of the EU organizations DG DIGIT, DG CONNECT and the EU Publications Office6.

An envisioned product will be a "napDCAT-AP" extension, i.e. an adaptation of the DCAT-AP data model to meet the specific demands of NAPs, e.g. by adding NAP-specific model elements. "napDCAT-AP" will eventually foster interoperability of NAP metadata with, e.g. open data portals, and eventually allow findability of NAP data sets outside the NAP portals.

During 2019, we concretised this idea: we made some investigations on the DCAT-AP domain and, based on that, a first attempt for a "napDCAT-AP" specification and accompanying documents. The concept and draft of "napDCAT-AP" is now presented on the EU EIP website7. On November 19, 2020, a webinar was held to present latest developments and discuss next steps.

5.2 Next steps

The above-mentioned work on "napDCAT-AP" has been recognised as a promising step towards efficient and harmonised Metadata usage across European NAPs. However, the current elaboration is still in a premature status. Many experts and references related to DCAT-AP have been consulted, and a first iteration to set up a stable specification of "napDCAT-AP" has been accomplished. However, a viability and acceptance of this concept will be only possible with wider stakeholder engagement and additional maintenance structures to handle this specification.

Ideas to do so are discussed and concretised within the preparations for the upcoming CEF call on NAP federation. We will expect that a dedicated work package will be proposed to deal with progressing of "napDCAT-AP". We also expect that many experts and stakeholders from the previous EU EIP Metadata activities will be part of this. With a clear vision how to proceed, we believe there will be smooth transition on the Metadata topic under the new CEF project, with a motivated group of stakeholders ready to elaborate as soon as the new project starts. Further, under this new activity, additional liaising is planned with other European Groups, such as the Semantic Interoperability Community (SEMIC), to ensure a wider perspective on Metadata beyond the NAP domain.

[6] https://joinup.ec.europa.eu/solution/dcat-application-profile-data-portals-europe/about

[7] https://eip.its-platform.eu/highlights/progressing-metadata-national-access-points

6 Standards & common formats

All Delegated Regulations supplementing the ITS Directive refer to certain standards to be used when exchanging information with NAPs.

While **DATEX II** is prevalent, the **NeTEx** CEN/TS 16614 and **SIRI** CEN/TS 15531 standards are also stated. This task highlights relevant developments and implementer feedback.

Additionally, the following are also relevant in the context of NAP data exchange:

- **TAP–TSI** - technical specification for interoperability (TSI) for telematics applications for passenger services (TAP)
- Public transport — **Open API** for distributed journey planning – CEN/TC 278
- **GTFS** - Google Transit Feed Specification and **GTFS-RT**

The following chapter provides a brief description of these standards and the conclusions, mainly about DATEX II implementation, from the 2020 survey on the status of national NAP developments.

6.1 DATEX II standard

DATEX II was developed as a standardised solution to communicate and exchange traffic information among traffic centres, service providers and information broadcasting companies. The usage of DATEX II for data exchange is named in Delegated Regulations for safe and secure truck parking ((EU) 885/2013), SRTI ((EU) 886/2013), RTTI ((EU) 2015/962) and MMTIS ((EU) 2017/1926).

For example, in Delegated Regulation 885/2013, for safe and secure truck parking, in article 5 it is stated: “Public or private parking operators and service providers shall share and exchange data referred to in paragraph 1 of Article 4. For these purposes they shall use DATEX II (CEN/TS 16157) format or any DATEX II compatible international machine-readable format”.

Similarly, in Delegated Regulation (EU) 886/2013, for SRTI, in article 7 it is stated: “Public and/or private road operators and/or service providers shall share and exchange the data they collect pursuant to Article 6. For that purpose, they shall make these data available in the DATEX II (CEN/TS 16157) format or any fully compatible and interoperable with DATEX II machine-readable format through an access point.

However, common and harmonised recommended reference profiles or recommendations are only available as follows:

- Delegated Regulation (EU) 885/2013 – safe and secure truck parking
  - DATEX II Profiles available

- Parking Publications are part of DATEX II v3
- The profiles can be found at: http://www.datex2.eu/content/act-e-truck-parking

- Delegated Regulation (EU) 886/2013 – SRTI
  - Recommendations are available
  - DATEX II Guide for Road-Safety Related Traffic Content in DATEX II.
  - Link: http://www.datex2.eu/content/act-c-safety-relevant-traffic-information
  - DATEX II organisation[8] is working on a DATEX II reference profile that is considered to contain all events that are known as "SRTI-flagged" in the EU

- Delegated Regulation (EU) 2015/962 – RTTI
  - For dynamic information, several parts of DATEX II have to be taken into account:
    - For real-time event (roadworks, traffic management, …), Situation Publication
    - For real-time messages, VMS Publication
    - For real-time traffic information, Elaborated Data Publication
  - For static data, the INSPIRE Directive (2007/2/EC), has drafted detailed technical documentation of transport network specification which includes many of the static data elements of this Delegated Regulation. Further development in this is required to link the work of INSPIRE.
    DATEX II is also able to provide historical traffic data, Location of the measurement site, static signal like speed limits,

- Delegated Regulation (EU) 2017/1926 – MMTIS
  - this regulation extends some of the services from Truck Parking, SRTI, RTTI to all the road network. The provision in DATEX II is possible with dedicated location referencing.

There are also some other initiatives to promote and support the use of DATEX II for NAPs:

- In the CROCODILE project (https://crocodile.its-platform.eu/) a 'Man in the middle' has been developed called Middleware system. This system maps SRTI data of more advanced data sources to simpler data clients. Especially for those parties having not implemented the entire list of possible SRTI relevant events, this middleware enables the exchange of information for triggering Traffic Management Plans (TMPs) cross border.

- As reported by the national NAP body, the NAP in Greece will also make available to data providers an online tool that will assist them in providing their datasets in a DATEX II compliant format.

TIPI, the French IT Framework developed within previous European project since TEMPO Program and EasyWay, offers to local authorities an entry point to provide their real-time road event, which will be published in DATEX II version 2.3 on the URL for SRTI and RTTI.

[8] https://www.datex2.eu/index.php/datex2/about

6.2 NeTEx & SIRI standards

NeTEx and SIRI are CEN standards managed by CEN/TC278/WG3/SG9 and CEN/TC278/WG3/SG3.7, a committee of public transport experts from different European countries[9]. These standards are based on the Transmodel[10] framework.

NeTEx

The NeTEx (**Network Timetable Exchange**) standard is a CEN standard (CEN TS 16614-1, 16614-2 and 16614-3) for exchanging public transport data, based on Transmodel (EN 12896-1 to 9), aiming at standardising the way of exchanging data between the information systems involved in public transport. It is based on open technologies (XML, XSD, and UML) and enables service operators and authorities to represent public transport data anywhere in Europe using common formats, standard rules, and uniform protocols.

NeTEx is divided into three parts:

Part 1: Network topology (CEN TS 16614-1)

Part 2: Timing information and Scheduled Timetables (CEN TS 16614-2)

Part 3: Description of the tariffs (CEN TS 16614-3)

Standards are, by their own nature and definition, broad documents that incorporate a very large spectrum of requirements that are beyond local needs and specific implementations. This means that standards' documents are quite large and detailed and somewhat difficult to use for practical applications complying with it. In addition, some local or national specificities can lead to a specific use or a specific codification to be used for certain information or legacy data formats that may be meaningless for all other applications. Finally, in order to use NeTEx, a set of choices need to be made: some elements proposed by the standards are optional and it must be decided if these items are to be used or not. All of this means, essentially, that the use of profiles is mandatory to adjust the use of a standard to a specific context and a specific use case. The profile may contain information such as:

- details of services
- details of the fixed objects
- details on the options proposed by the standard
- details on optional elements
- precision on the codifications to be used

The NeTEx deliverables comprise of:

(i) a CEN Specification document (in three parts),

(ii) a data model in the standard UML modelling language and

[9] http://netex-cen.eu/wp-content/uploads/2015/12/01.NeTEx-Introduction-WhitePaper_1.03.pdf
[10] http://www.transmodel-cen.eu/

(iii) an accompanying XML schema providing a formal electronic description that can be used by data processing software. Data in NeTEx format is encoded as XML documents that must conform exactly to the schema – standard XML validator tools can check conformance automatically. The schema can also be used to create bindings to different programming languages, automating part of the implementation process for creating software that supports NeTEx formats. Some example XML document encoding different data sets and exchange functions are provided along with the schema.

In effect, documents in NeTEx format are computer files that can be exchanged by a wide variety of protocols (http, ftp, email, portable media, etc). In addition, a SIRI based protocol is specified for use by online web services. The common SIRI framework is used to describe a specific NeTEx/ data service (SIRI-NX) with specialised messages that can be used to request and return messages containing data in NeTEx format, as well as publish/subscribe messages for push distribution. The SIRI-NX responses return a NeTEx XML document that satisfies the request criteria (and also conforms to the NeTEx schema). There is a WSDL binding for this SIRI NeTEx service to make it easy to implement services and service clients as http requests.

A NeTEx service need only implement those elements of relevance to its business objectives – extraneous elements present in the binding can be ignored. Parties using NeTEx for a particular purpose will typically define a "PROFILE" to identify the elements that must be present, and the code sets to be used to identify them, for example a Norwegian NeTEx profile has been defined that specifies the use of NeTEx for the exchange of NeTEx data. This profile is now used in the Nordics as a "Nordic profile".

SIRI

SIRI defines a standard for exchanging **dynamic public transport passenger information** data in XML format. SIRI (**Service Interface for Real-time Information**) is divided into five parts:

Part 1 describes the context and the framework including the different organisations involved, public transport vehicle control centres, fleet of public transport vehicles, network information, information provision systems, passenger information services or devices.

Part 2 describes the communication infrastructures and mechanism to exchange real time information.

Part 3 specifies individual application interface of functional modules on real-time tables (production, estimated, at stop, for connection) or on monitoring of vehicles with current position and travel time.

Part 4, named Facility Monitoring, enables the exchange of information on the current status of available facilities.

Part 5 is linked with DATEX II to provide real-time information on situation and incident that appends along the road network and which impacts the journey of the public transport vehicles.

To give some simple examples, SIRI provides:

- real-time departure which could be different from the departure announced in the time table provided by NeTEx,
- real-time information about the position along the route to an individual vehicle,
- synchronisation between arrival and departure to guarantee the connection, if connections are needed for a journey

A SIRI-Lite version is also available which is a profile of SIRI to make it simpler to implement and deploy according to the usage of Representational state transfer (REST) than SIRI uses SOAP.

6.3 TAP – TSI standard

A **technical specification for interoperability** (TSI) for **telematics applications for passenger services** (TAP) of the trans-European rail system has been defined by Regulation 454/2011. These specifications are maintained by ERA, European union Agency for Railways[11]. This agency is also responsible of the TAF-TSI which applies to freight transport by rail.

TAP TSI allows the harmonisation/standardisation of procedures, data and messages to be exchanged between the computer systems of the railway companies, of the infrastructure managers and of the tickets vendors in order to provide reliable information to passengers and to issue tickets for a journey on the European Union railway network, in accordance with Regulation n°1371/2007 on rail passengers rights and obligations[12]. TAP – TSI can also be used in the context of urban rail systems.

The Technical Specification for Interoperability on "Telematics Applications for Passengers" (TAP – TSI) prescribes protocols for the data exchange of:

- timetables
- fares / tariffs
- reservations
- information to passengers in station and vehicle area
- train running information, etc.

6.4 Open Journey Planning standard

The **Open Journey Planning** (OJP) API will allow a system to engineer just one interface that it can make available widely (to authorised users or openly as they so choose) rather than having to engineer separate APIs for each bipartite exchange arrangement that may be required with other systems[13].

The principle of the OJP standard is based on a distributed journey planning. Two profiles are possible for a journey planner system:

1. **Active** which receives the request from the traveller with origin and final destinations, analyses the possible routes, requests to each passive journey planner involved in the route calculation, collects and combines the responses from each of them and provides the responses to the traveller who choice his preferred route.

[11] https://www.era.europa.eu/

[12] https://ec.europa.eu/transport/modes/rail/interoperability/interoperability/telematic_applications_en

[13] http://www.normes-donnees-tc.org/wp-content/uploads/2017/01/TC_278_WI_00278420_E-RS-170118-final3.pdf

2. **Passive** which receives the request of the active journey planner to calculate routes in its geographical area, transmits the responses to the active journey planner.

The basis of this standard is that the most relevant journey planner to provide the most accurate and updated information is the one which is operating closely to the public transport network.

It limits the data collection and data update at centralised level to avoid risk of delay and big data exchange of unused data.

Existing journey planning systems (and probably some that will be developed in the near future) may require their own specific APIs for use with their closest partner systems, where the volume of enquiries is such that efficiency considerations demand a tightly specified API for such clients. The intention of the Open API is to provide an opportunity for just one universal channel to exchange information to lower-volume users – once created then there is little reason not to allow as many users of this API as may wish to use it.

The greatest use of public transport (in terms of the number of passenger journeys) happens in urban areas where frequent and regular services cater for the needs of relatively short-distance journeys. Usage then declines as journey distances get longer – with inter-regional and international journeys comprising the smallest number of public transport journeys.

However, the need for information about PT services is least in areas with frequent and regular services, where passengers quickly get to know about the services they rely on for most of their journeys – and therefore their need to check information systems is relatively infrequent. Longer distance journeys, however, are made less often and for a variety of reasons there is a much greater need to obtain information for such journeys before setting off. So, the need for information is greatest for the very journeys that are made least often. It is difficult to make a business case to provide information systems geared specifically to the needs of the longer-distance travellers, therefore. Instead it becomes important to find ways of meeting the information needs of those passengers by using information collated and delivered primarily for the much larger group of those making short-distance journeys.

6.5 GTFS & GTFS-RT formats

TriMet in Portland, Oregon, along with Google, was one of the first public agencies to try and tackle the problem of online transit trip planners through the use of open datasets that are shared with the general public (How Google and Portland's TriMet Set the Standard for Open Transit Data in Streetsblog SF)[14]. TriMet worked with Google to format their transit data into an easily maintainable and consumable format that could be imported into Google Maps. This transit data format was originally known as the Google Transit Feed Specification (GTFS). GTFS provide the static information for the public transport network and time table.As a result of developer innovation, GTFS data is now being used by a variety of third-party software applications for many different purposes, including trip planning, timetable creation, mobile data, data visualisation, accessibility, analysis tools for planning, and real-time information systems. In 2010, the GTFS format name was changed to the **General Transit Feed Specification** to accurately represent its use in many different applications outside of Google products.

[14] https://gtfs.org/gtfs-background

Among public transportation data formats, GTFS stands out because it was conceived to meet specific, practical needs in communicating service information to passengers, not as an exhaustive vocabulary for managing operational details. It is designed to be relatively simple to create and read for both people and machines. Even organisations that work with highly detailed data internally using standards like NeTEx, use GTFS as a way to publish data for wider consumption by software developers who are more familiar with the Android applications.

GTFS-RT is the real-time data extension for GTFS. It can be translated in SIRI-Lite.

6.6 Objective & methodology of DATEX II activity in WG NAP

The DATEX II activity in WG NAP is primarily focused on identifying the needs and experiences of NAP implementers with respect to using DATEX II for data exchange. The main objectives of the activity are to:

- Organise interviews with NAP implementers and service providers on DATEX II needs and implementation experiences.
- Analyse DATEX II needs for NAP and formulate proposals towards the DATEX II organisation.
- Develop conclusions/recommendations for DATEX II needs for NAP.

The survey organised in 2020 by WG NAP gave a good picture on how DATEX II is used by NAPs and it confirms an increase of the knowledge about DATEX II in the national implementations. Also, compared to last year, more countries have operational NAPs which contributes to an even better picture of the DATEX II and other standards usage by NAPs. As concluded in the previous survey, the expertise level is still divided: there are countries that are very familiar with DATEX II, while others are just beginning, and for the moment using proprietary formats to exchange data. Finally, a very positive conclusion is that some countries are already planning and working towards implementing DATEX II v3, the latest version of the standard.

This activity is carried out in close cooperation with **EU EIP SA4.5 (Liaison for data exchange)** which ensures the **link between EU EIP and the DATEX II** organisation. The main goal of the SA4.5 consists on centralising all EU EIP new user needs regarding DATEX II model and to disseminate information to the DATEX II organisation.

SA4.5 acts as the unique interface between the DATEX II organisation and EU EIP. Additionally, the **A2 DATEX II activity will also maintain a direct link with the DATEX II** organisation through ITS Romania/ELECTRONIC SOLUTIONS experts that are involved in the DATEX II organisation.

6.7 Feedback from the WG NAP surveys

Regarding the NAPs for truck parking, out of 27 replies, 14 are providing data using DATEX II in line with the common Parking Publications profiles. Another 11 do not have a Truck Parking NAP and the other two are using their own formats: .xls files or geojson.

Most of those using DATEX II did not mention any technical difficulties with it. Only one issue which could be considered very problematic was mentioned by Denmark: version 2.3 “An outstanding issue when using

DATEX II version 2.3 is that this version cannot be used for validation of DATEX II XML messages with Level-B extensions which extend objects that are already extended in version 2.3. This problem is recorded by DATEX II Support but not solved yet. ” This issue has been submitted to DATEX II Support and is pending resolution.

Another important aspect is that many NAPs are not databases, so data format is dependent on the supplier. Therefore, as mentioned at least by Germany, some datasets are available in DATEX II using the common European profile while others are using different profiles bilaterally agreed between the parties exchanging the information. Germany also supports “EU-wide harmonisation of DATEX II profiles for interoperability reasons”.

All the NAPs that are databases provide all the data elements required by the Delegated Regulations.

Regarding the NAPs for SRTI, out of 27 replies, 20 use DATEX II and three of them also use other formats: xml, proprietary data files, RSS, GEO-RSS and JSON. All the others either do not have a NAP for SRTI or did not provide an answer. No technical difficulties were reported except for Denmark, which mentioned the same issue as for the NAP for truck parking; and Italy: there are some issues about the description of events, due to the different terminology used.

Same as for Truck Parking NAP, many NAPs are not databases, so data format is dependent on the supplier. However, all those that are using DATEX II have version 2.3.

Seven NAPs that are databases provide all the data elements required by the Delegated Regulation while the other four NAPs reported as databases provide only some of those data elements

Looking at DATEX II profiles for SRTI NAPs, the most relevant answers are from Czech Republic and Greece, who are using only the recommended common profiles for SRTI and the answer from Italy who is using several different profiles tailored for the needs of each communicating party.

Regarding the NAPs for RTTI, out of 27 replies, 21 use DATEX II for dynamic road status data and most of them also use other formats (e.g. xml, JSON, Shapefile) for static data. The regular use of other data types is to be expected as not all information required by RTTI regulation can be provided in DATEX II standard.

No major technical difficulties were reported except for Denmark, which mentioned the same issue as for the NAP for truck parking.

Other issues mentioned regarding DATEX II in NAPs for RTTI are:

- **Netherlands**: harmonisation of geo-referencing
- **Italy**: some issues about the description of events, due to the different terminology used.

Same as for Truck Parking NAP, many NAPs are not databases, so data format is dependent on the supplier. However, all those that are using DATEX II have version 2.3.

Regarding the NAPs for MMTIS, out of 27replies, only two use DATEX II while most of them use other formats (e.g. xml, JSON, NeTEx, SIRI, GTFS, TRANSMODEL). This is to be expected as only a few countries currently have a NAP for MMTIS and few datatypes required by MMTIS regulation can be provided in DATEX II standard. No major technical difficulties were reported.

The following general issues were identified regarding DATEX II for all types of NAPs:

- Implementers are looking forward to the new version 3.0 (or the new Light alternative) expecting it to be simpler / less complicated
- Surprisingly, no report mentions lack of standard profiles as a problem. Most likely custom profiles were defined with data suppliers and users. This conclusion is supported at least by the report from Germany which mentions regarding RTTI NAP that "Depending on the data type, specific DATEX II profiles are applied". This situation could lead to incompatibility between NAPs from different countries.

6.8 Feedback from the WG NAP annexes

This section represents the interpretation of annexes referring to data exchange for Delegated Regulation for member states. Completion of these annexes to the template was requested only for NAPs that are databases.

6.8.1 ANNEX 1: DATA EXCHANGE FOR DELEGATED REGULATION ON SAFE AND SECURE PARKING PLACES FOR TRUCKS AND COMMERCIAL VEHICLES ((EU) 2013/885)

Information on data categories

This annex is divided in 4 categories referring to the data exchange standard implemented. The results in this annex are presented below.

In the first category, "Static data related to the parking areas", the main standard used is DATEX II. In total, 14 out of 27 countries use this standard except Spain,France, Poland, Italy and UK that use another one which is not specified. Bulgaria uses Geojson as the main standard. Countries such as Belgium, Luxembourg and Portugal use other standards in addition to DATEX II. Hungary also uses Transport Network Intelligent Transport Systems (TN-ITS).

The second category "Information on safety and equipment of the parking area" almost all country use DATEX II, Spain, the United Kingdom and Belgium use other standards that are not mentioned. Bulgaria uses Geojson for this category.

The third category "Contact information of the parking operator" nine out of 14 countries use DATEX II. The Czech Republic also uses information from Road and Motorway Directorate of the Czech Republic (ŘSD ČR). Spain, France and UK use another standard which is not specified.

DATEX II is the most common format for exchanging dynamic data on availability of parking.

Information on location referencing

Also, the location referencing where was implemented DATEX II is added in this annex. Figure 9 shows that 13 out 16 states use coordinates to determine the point location while for linear location most countries use Alert C linear.

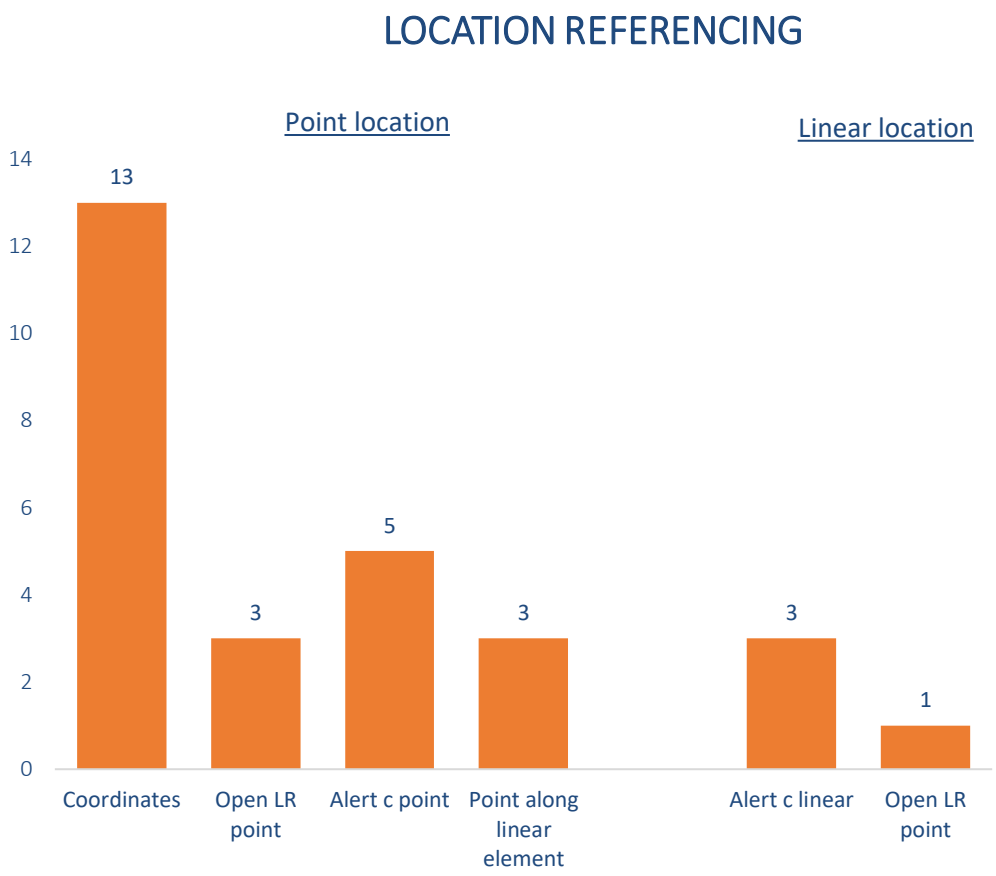


Figure 9: Location referencing for Parking Regulation

6.8.2 ANNEX 2: DATA EXCHANGE FOR DELEGATED REGULATION ON SAFETY RELATED TRAFFIC INFORMATION SERVICES ((EU) 2013/886)

DATEX II for data exchange standard implemented is used by 22 countries (Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Italy, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain ,Sweden and the UK).

Figure 10 shows the type of DATEX II location implemented for location referencing:

- 14 out of 20 use coordinates for point location.
- 13 countries use Alert C linear for linear location.
- Seven countries use Alert C Area for area location.

The United Kingdom uses others like API and Halogen Reporting for determining location referencing.

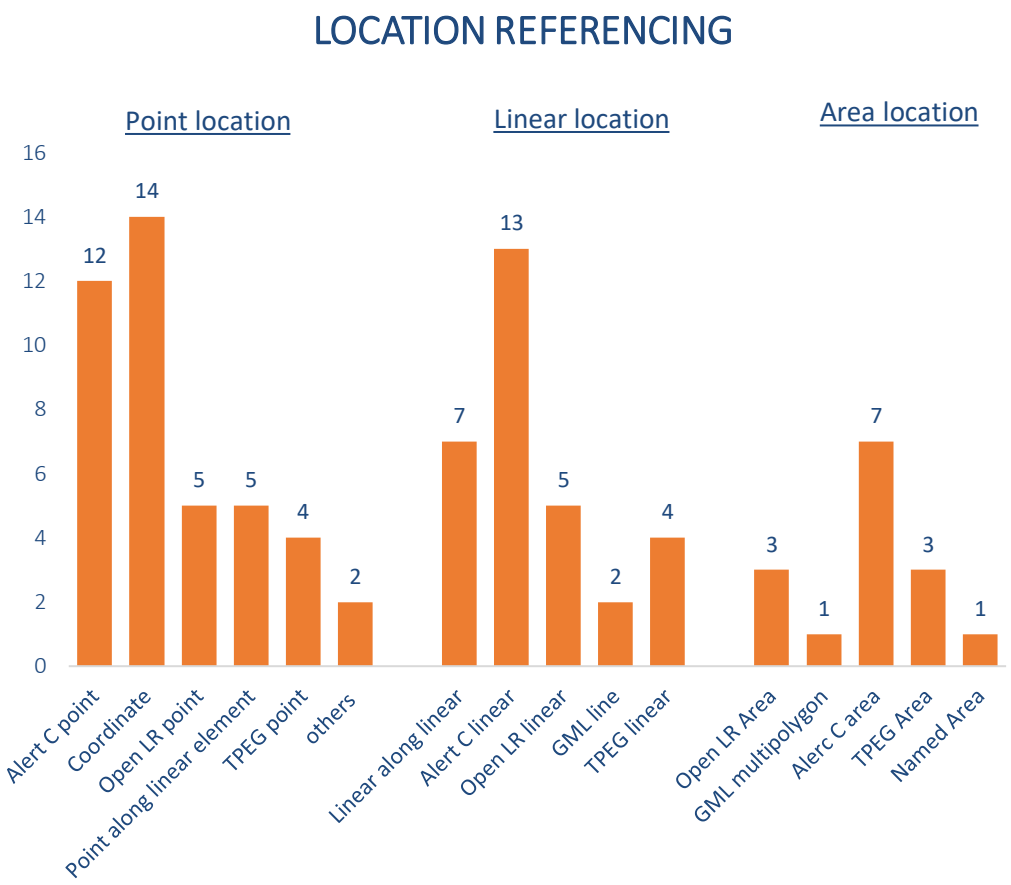


Figure 10: Location referencing for SRTI Regulation

6.8.3 ANNEX 3: DATA EXCHANGE FOR DELEGATED REGULATION ON REAL TIME TRAFFIC INFORMATION SERVICES ((EU) 2015/962)

The results in this annex are presented in the next lines.

In the first category, "The types of the static road data", nine out of 14 countries use DATEX II (Figure 11), five countries use WMS/WFS, Czech Republic uses Alert C. The Netherlands uses OJP and CSV. Norway uses data only from Norway National Road Database (NVDB api) and other additional links (https://www.autopass.no/, https://info.nobil.no/).

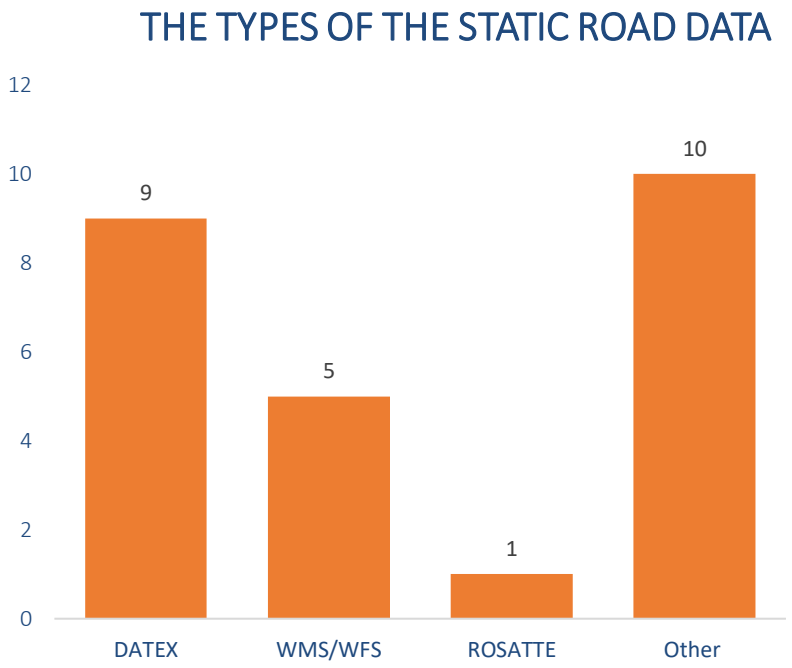


Figure 11: Standards used for static road data for RTTI Regulation

The second category, “The types of the dynamic road status data” almost all states uses DATEX (Figure 12) excepted United Kingdom that uses data extract, MCH 1780, TBC and website. Also, the Netherlands uses JSON, while Spain and Belgium also use other standards, but they do not specify which one.

Geojson is another standard that is frequently used by Bulgaria, Croatia and Finland.

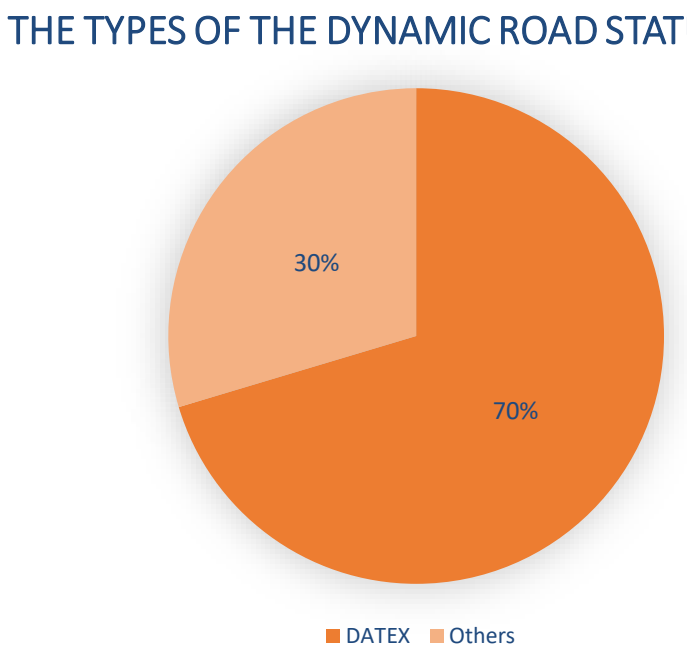


Figure 12: Standards used for the dynamic road status data for RTTI Regulation

The third category, “The types of the traffic data”, all countries state that they use DATEX.

The United Kingdon uses also WebTRIS and TCF Files while Finland uses JSON.

For the location referencing the most countries use coordinates for point location, for linear location uses Alert C linear followed by Open LR linear and Linear along linear element, and for arena location uses Alert C area (Figure 13).

United Kingdom uses Excel document, Halogen Reporting, website, API.

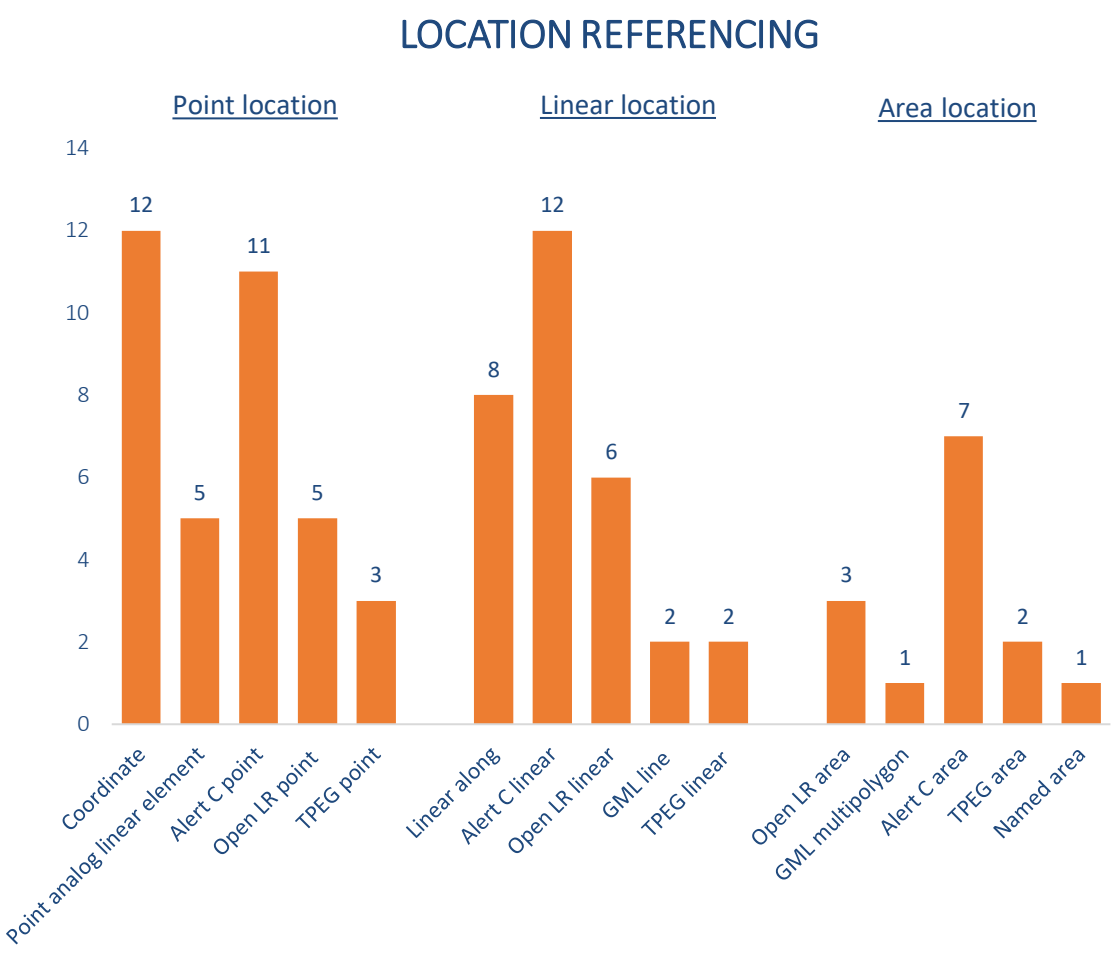


Figure 13: Location referencing for RTTI Regulation

6.8.4 ANNEX 4: DATA EXCHANGE FOR DELEGATED REGULATION ON MULTIMODAL TRAVEL INFORMATION SERVICES ((EU) 2017/1926)

Only Lithuania, Luxembourg, France, the United Kingdom and Norway have completed the template for this annex.

Lithuania uses the following standards:

- NeTEx and other which is not specified for service location search, trip plans, trip plan computation - scheduled modes transport and road transport, dynamic passing times, trip plans and auxiliary information.
- NeTEx and SIRI for information about service trip plans, auxiliary information, availability check.

Norway uses the following:

- NeTEx, Norwegian Mapping Authority (Kartverket), Open Street Map (OSM) and General Bikeshare Feed Specification (GBFS) for service location search.
- NeTEx for service detailed common standard and special fare query, trip plans, trip plans, auxiliary information, availability check and trip plan computation - scheduled modes transport and road transport.
- NeTEx and General Bikeshare Feed Specification (GBFS) for service information.
- SIRI for service "dynamic passing times, trip plans and auxiliary information.
- NeTEx, General Bikeshare Feed Specification (GBFS), Open Trip Planner (OTP) for service dynamic availability check.

Luxembourg uses:

- Inspire, WMS and NeTEx for service Location search.
- NeTEx and Inspire for service "Trip plans"
- NeTEx and SIRI for "Dynamic passing times, trip plans and auxiliary informations"

France uses NeTEx and GIBFS for determine location search. And also uses SIRI and others for dynamic passing time service.

The United Kingdom uses other standards which are not specified.

6.9 Update on DATEX II organisation

The current major focus of the DATEX II group is on developing the new version of the standard. Also, they are aiming to provide more support to the users and one of the actions in this respect is the redesign the website which is the main access point for all information about DATEX II for all target groups. This means the website incorporates different types of information (technical level / management level). All information is more easily accessible and structured so both new and existing users find everything they need to work with DATEX II and learn about its operational use and current developments.

Based on the current status of NAP implementations in Europe, DATEX II organisation was able to draft a visual representation showing which countries use DATEX II in their NAPs, what version of DATEX II is used and what data categories are exchanged using DATEX II protocol required by a Delegated Regulation. It also shows which countries are related to the DATEX II organisation. The information comes from the analysis of the NAP surveys, collected by the EU EIP NAP activity, in combination with desk research of the data categories exchanged per NAP per Delegated Regulation. The visual representation can be found at the following web address: https://datex2.eu/naps.

This dedicated webpage showcases the use of DATEX II at NAPs for safe and secure truck parking, SRTI, RTTI and MMTIS, based on information derived from the 2020 surveys collected by EU EIP WG NAP; cooperation between DATEX II activity and the DATEX organisation. The visual representations links to the nodes directory for further details on the implementations. Using a toggle button, the user is able to switch between the map data on safe and secure truck parking, SRTI, RTTI and MMTIS.

DATEX II group has developed Recommended Service Profiles for each of the ITS Services described in the "European Reference Handbook for harmonized ITS Core Service Deployment in Europe". The Handbook is developed by EU EIP A2 Activity as a successor of the ITS Deployment Guidelines and will be published end 2021

6.10 Conclusions

This activity is focused on identifying the needs and experiences of NAP implementers with respect to using DATEX II for data exchange. This year the activity continued to maintain a close cooperation with Activity 4.5 and DATEX II organisation, also supported by the involvement of Romanian experts both in EU EIP and DATEX II organisation.

The survey organised this year by WG NAP gave a good picture on how DATEX II is used by NAPs. The feedback was interesting and provided relevant information on the status of implementation and existing issues. The newly added questions, when compared with the previous year, also helped to further clarify the status and main issues about DATEX II implementation.

Overall, only one major technical issue was reported, however it is submitted to DATEX II support which suggests the positive conclusion that implementers are aware of the help they can receive from the DATEX II organisation.

The clearest situation regarding DATEX II implementation is for truck parking NAPs, mostly because common EU DATEX II profiles are available. For the other types of NAPs, the implementations are more complex. This is partly due to the fact that DATEX II cannot be used for all data types and partly because common recommended reference profiles are not available yet.

This need for common profiles is confirmed by DATEX II organisation and can also be concluded based on the report from Germany where, in the case of RTTI NAP, it mentions that:

> *"a DATEX II has been created for the data type <<road works>>, which is recommended to be used by all Federal States as data suppliers…… Discussions and trainings with the Federal States are on-going, with the goals of consistent usage of the DATEX II profile."*

Germany also reported that it supports "EU-wide harmonisation of DATEX II profiles for interoperability reasons".

The new Annexes about which data categories (out of those required by a Delegated Regulation) are provided by a certain standard and the version of DATEX II they are using brought further information and better insights on how the information is exchanged by NAPS, not only for DATEX II but also for other standards.

The most important conclusion coming from the analysis of the Annexes is that the main standard used is DATEX II. Most countries are open to providing information about data exchange. Coordinates is the most common used format for location referencing.

The NAP survey confirms an increase of the knowledge about DATEX II in national implementations.

Also, compared to 2019, more countries have operational NAPs which contributes to an even better picture of the DATEX II, and other standards, usage NAPs.

A very positive conclusion is that some countries are already planning and working towards implementing **DATEX II v3**, the latest version of the standard.

7 MMTIS: responsibility for road operators-authorities

Within the scope of this task, the main objective is to identify the developments in the field of the implementation of **NAPs for MMTIS**, focusing on **road operators and authorities**.

To reach such an objective, we have identified specific, measurable, and relevant objectives:

- Surveying the latest developments and projects supporting the implementation of MMTIS NAPs.
- Identify and take note of the major questions, issues, and barriers for the adoption of MMTIS NAPs by the different Member States.
- Which standards used for exchanging MMTIS information are relevant and efficient to be implemented by road operators/authorities to benefit from receiving MMTIS information.
- Which data elements collected by road operators/authorities are relevant for provision to MMTIS NAPs.
- Identify gaps and non-conformities with the EU Directives in the existing MMTIS NAPs.
- Understand and list the plans for sustainability and continuity of the NAPs post-implementation.
- Systematize and share best practices in the development of MMTIS NAPs as a set of guidelines.

7.1 Scope

The framework for the coordinated and effective implementation of intelligent transport systems across Europe was set by the ITS directive. Specifications are needed to ensure seamless continuity and integration of multiple and heterogeneous services within and across member states. The Directive Delegated Regulation for the provision of EU-Wide Multimodal Travel Information Services (EU) 2017/1926, MMTIS, proposes the requirements to make EU-wide multimodal travel information services accurate and available between the Member States. Such concerning public and private stakeholders across all transport modes, namely: the technical means to comply with functional requirements, procedural obligations of the various stakeholders, and levels of services.

The Delegated Regulation (EU) 2017/1926 for MMTIS, throughout the Union, of information services on multimodal travel defines the rules on the opening of data. This regulation requires each Member State to create a National Access Point (PAN), which references all the mobility data needed to inform travellers in the territory. The MMTIS NAP is intended for data producers (local authorities, transport companies, etc.) and data reusers (developers, route calculation applications, information services, etc.). Travellers/users benefit indirectly from these travel information services.

In the first step, the MMTIS defines static data uploaded from transport operators and authorities, infrastructure managers, and transport on-demand service providers. In a second step, optionally, dynamic data can be made available once the Member States decide to do so.

According to the document, the static data to be exchanged includes (but is not limited to):

- Level 1
  - Local search (origin/destination, access nodes, geometry/layout, points of interest)
  - Trip plans (calendar, mapping day types to calendar dates)
  - Trip plan computation — scheduled modes transport (interchanges, routes/lines, transport operators, timetables, stop facilities access nodes, vehicles, accessibility
  - Stop facilities and accessibility
- Level 2
  - Stop search (transport on demand)
  - Bikesharing stations / Carsharing stations
  - Refuelling /electric charging stations
  - Information services: tariffs, complementary information, trip plans
- Level 3
  - Detailed common standard and special fare query (all scheduled modes)
  - Information on how to book and pay for the services
  - Where how to pay for car parking, public charging stations for electric vehicles, and refuelling points
  - Detailed trip plans
  - Trip plan computation

As for optional **dynamic data**, some examples include:

- Level 1
  - passing times, trip plans, and auxiliary information (disruptions, delays, cancellations)
  - status of access node features (including dynamic platform information, operational lifts/escalators, closed entrances, and exit locations)
- Level 2
  - Passing times (estimated departure and arrival times of services, current road link travel times)
  - Information services (availability of publicly accessible charging stations for electric vehicles and refuelling)
  - Availability check (carsharing availability, bikesharing availability, car parking spaces available (on and off-street), parking tariffs, road toll tariffs)
- Level 3
  - Trip plans (future predicted road link travel times)

This data is to be exchanged through National Access Points (NAP) and via license agreements of data providers, using a defined group of standards/specifications. Regarding MMTIS, the National Access Points are expected to provide information for public transport and other scheduled modes for the comprehensive TEN-T networks, using the NeTEx CEN/TS 16614 standard and subsequent versions, technical documents

defined in Regulation (EU) No 454/2011 and subsequent versions, technical documents elaborated by IATA or any machine-readable format fully compatible and interoperable with those standards and technical specifications. As an option for Member States, similar documents shall be produced for dynamic information, and more specifically, those using CEN SIRI CEN/TS 15531 standard.

7.2 Status of the MMTIS NAPs

Across Europe, the MMTIS NAPs have been implemented individually by each MS, according to the national regulations, resulting in different levels of development. According to the current state of the National Access Points previously introduced in section 3.5, the following Member States are still establishing their MMTIS NAP[15]: Bulgaria, Croatia, Greece, Latvia, Portugal, Romania, Slovenia, and Spain. 16 other countries already have a NAP. Some are summarized from Table 9 to Table 25. The data category column summarizes the general categories of all MMTIS NAPs.

Across Europe, there is a shared path towards harmonization and a similar implementation of the MMTIS NAPs as much as possible. Some countries aggregate all the MMTIS, RTTI, SRTI, and SSTP information in a single NAP website. Others set apart their multimodal information in another database, e.g., Belgium, Czech Republic, Estonia, Finland, France, Lithuania, Norway, Poland, and the United Kingdom.

When MMTIS data is collected and available separately in another NAP, information such as road link travel times, safety, and truck data might be duplicated or even redirected through a link to the original NAP. Such evidence that the need for a boundary between the information available in the MMTIS and the others RTTI, SRTI, and SSTP NAPs. Such European harmonization would help clarify the modes of transport expected to be in the MMTIS NAPs. Multimodal information might go beyond passenger/commuting trips – for instance, some individual MMTIS NAPs include aerial and maritime data.

Austria (MMTIS, RRTI, SRTI, and SSTP) NAP[16] contains 24 datasets from 6 organizations. NeTEx profile is present in the timetable data for public transportation. Table 9 summarizes all the MMTIS information in the standard formats (CSV, JSON and XML) from 11 datasets. Austria MMTIS NAP is at an initial stage – bike sharing and pedestrian data will be collected and added in the future.

Belgium MMTIS NAP[17]contains 67 datasets from 19 organizations. The data formats are available in the standard formats JSON (15), XML (6), CSV (1), and others. The majority is open data to the public (ND-not disclosed), other datasets have license not specified (16), Creative Commons CCZero (3), Creative Commons Non-Commercial (3), Open Data Commons Attribution License (3), and others are covered by UK Open Government Licence -OGL (4). Truck parking is also included in this MMTIS NAP. Table 10 summarizes the MMTIS data – note that some datasets can be provided by the same might be organization and the data might belong to different data categories, e.g., the address points and transport network datasets. In the Belgium MMTIS NAP, most categories are redirected to other link websites, e.g., the data regarding electric charging stations.

[15] https://ec.europa.eu/transport/sites/transport/files/its-national-access-points.pdf
[16] http://www.mobilitydata.gv.at
[17] https://www.transportdata.be/en/ https://infrabel.opendatasoft.com/pages/license/

The Cyprus (MMTIS and RTTI) NAP[18] is still at an initial development stage – see Table 11. Most of the information is presented as a user-friendly platform, and datasets in the standard formats are unavailable—the real-time data concerns bike-sharing, car parking, and traffic data.

In the Czech Republic, the MMTIS NAP [19]includes 136,047 datasets from 41 data providers – see Table 12. This NAP provides regional datasets and contains information beyond transport (e.g., tourism, education, and environmental data). In transport, there are 49 datasets from 7 data providers in the following formats: CSV (25), ZIP (12), Excel XLSX (5), RSS feed (5), PDF (4), Esri Shape (1), Excel XLS (1), GeoJSON (1), XML (1). Most data is static, open, and free through Creative Commons (cc-zero) Licence.

The (MMTIS, RRTI, SRTI, and SSTP) NAP[20] in Denmark only contains MMTIS datasets related to road traffic under the Danish Road Directorate license and the Creative Commons 4.0 International Public License.

Likewise, the MMTIS NAP[21]of Estonia is also at an initial development stage - Table 14. The information available is presented as a user-friendly platform without datasets, focused on real-time route/trip planning in the form of four modes of transport: pedestrian, cycling, road, and public transport systems (bus and rail).

In Finland, the MMTIS NAP[22]contains a total of 2711 datasets from 5917 data providers - condensed in Table 15. Public transport data is already in NeTEx profile. All datasets in the MMTIS NAP are covered by the Creative Commons Attribution 4.0 International license.

The French MMTIS NAP[23] contains a diversity of datasets in numerous formats, though most are outdated and available under commons license - Table 16. The most recent ones are already in NeTEx profile, with the conventional formats (e.g., CVS, JSON, XML).

The German (MMTIS, RRTI, SRTI, and SSTP) NAP[24]contains several datasets of public transportation under the NeTEx profile and the European standard formats (e.g., CVS, JSON, XML) - Table 17.

In Hungary, the (MMTIS, RRTI, SRTI, and SSTP) NAP [25]is centered on RRTI and SSTP information, such as road travel time links and truck parking. Multimodal information is currently being collected, with no dataset still available.

The (MMTIS, RRTI, SRTI, and SSTP) NAP[26]of Ireland has 409 datasets in the NAP, though only some concern MMTIS information. Table 18 summarizes the details. The most recent datasets are available in standardized formats (e.g., CVS, JSON, XML).

In Italy, the NAP[27] gathers all MMTIS, RRTI, SRTI and SSTP datasets. The MMTIS NAP is in the initial stage of development, and information is still being stored in the platform.

[18] http://www.traffic4cyprus.org.cy/
[19] https://data.gov.cz/datov%C3%A9-sady
[20] https://nap.vd.dk/ https://prod-nap2.dannap.dk/api/v1/nap/document?key=General%2BTerms%2Band%2BConditions
[21] http://www.peatus.ee/
[22] http://www.finap.fi
[23] https://transport.data.gouv.fr/ https://opendatacommons.org/licenses/odbl/1.0/
[24] https://service.mdm-portal.de/
[25] https://napportal.kozut.hu/
[26] https://data.gov.ie
[27] http://www.cciss.it/

The MMTIS NAP[28] of Lithuania is currently a database directory, lacking data categories for easy access. A user-friendly platform is embedded in an interactive map with road traffic data.

In Luxembourg, the (MMTIS, RRTI, SRTI, and SSTP) NAP[29] involves 24 datasets related to mobility from 10 organizations. Table 19 depicts a summary of the MMTIS information available in the NAP. The datasets are available through licensing of either Creative Commons Zero (CC0) or Creative Commons Attribution 4.0.

Also, Malta MMTIS and RRTI NAP[30] is designed as a user-interactive map, with very few datasets - Table 20.

Netherlands (MMTIS[31], RRTI, SRTI, and SSTP) NAP[32]has 26 datasets of MMTI - Table 21.

Norway (MMTIS, RRTI, and SRT) NAP[33] currently has 22 datasets under the topic of Traffic and Transportation - Table 22. Most datasets are open and covered by Norwegian license (NLOD), and others are shared publicly in real-time as downloadable files, subscription services, and APIs. Public transport information is already implemented under the NeTEx profile.

In Poland, the MMTIS NAP[34] is in a development stage. There are only three static datasets with open data without restrictions. The existent datasets are under the category "public information: operational information" and relate to timetables, travel information, operators under XLSX, CSV, and JSON formats and links. This MMTIS NAP will enable existing public transport data along with the interoperable European data exchange protocol (NeTEx) and a direct connection of various national MMTIS (API).

Slovakia NAP[35] is currently a trip planning interactive platform for users, gathering mostly road traffic and events data without multimodal information or datasets.

Sweden (MMTIS, RRTI, SRTI, and SSTP) NAP[36] gathers all MMTIS information at Traffiklab for travel planning, which is summarized in Table 23. Data is in JSON and XML format, according to the end of the service call or via parameter, and licensed under CC0 1.0 Universal (CC0 1.0) Public Domain Dedication and API license.

Switzerland (MMTIS and RRTI) NAP[37] is under development and contains 37 datasets, summarized in Table 24. Most of the data is focused on railway, bus, and road traffic.

The UK (MMTIS, RRTI, SRTI, and SSTP) NAP[38] has 911 datasets in total, covered by UK Open Government Licence (OGL) and Public Sector INSPIRE WMS End User Licence. However, these datasets are not related to MMTIS in accordance to the Delegated Regulation (EU) 2017/1926, namely the data formats and data access. Table 25 summarizes MMTIS information in the UK.

[28] http://www.visimarsrutai.lt/gtfs
[29] https://data.public.lu/en/
[30] http://news.transport.gov.mt/data/
[31] https://ndovloket.nl
[32] https://nt.ndw.nu/
[33] https://transportportal.atlas.vegvesen.no/no/ https://data.transportportal.no/datasets?losTheme=trafikk-og-transport&page=1 https://data.norge.no/nlod/no/2.0/
[34] https://dane.gov.pl/dataset/1739,krajowy-punkt-dostepowy-kpd-multimodalne-usugi-informacji-o-podrozach
[35] https://odoprave.info
[36] https://www.trafficdata.se/dataset/publictransport https://www.trafiklab.se/node/25593/license
[37] https://opentransportdata.swiss/en/dataset https://opentransportdata.swiss/en/terms-of-use/
[38] https://data.gov.uk/search?filters%5Btopic%5D=Transport

AU		Datasets Provided	S(tatic) &/ R(eal)-T(ime) Data *(update frequency)*	N(ational) / R(egional) Coverage	Data format							Use of data				Visibility
					Syntax					Model	Protocol	Cost		Type		
MMTIS	Data category				Link	CSV	JSON	XML	other			Free	Fee	ND	License	Signed Agreement
http://www.mobilitydata.gv.at	General Information on Route/trip Planning	2	S *(monthly & trimestrally)*	N		X		X		NeTEx & GTFS	HTTP/ HTTPS	X			X	
	Pedestrian Networks															
	Bike sharing															
	Bike Parking															
	Cycling networks															
	Public information: operational information	4	S *(montly, trimestrally & annualy)*	N		X		X	X	NeTEx & GTFS	HTTP/ HTTPS	X		X	X	X
	Public transport: location information	3	S *(monthly & annually)*	N		X			X	other	HTTP/ HTTPS	X		X	X	X
	Public transport: fare and purchase information															
	Railway Data															
	Road networks / Traffic Information	1	RT *(5min)*				X				HTTP/ HTTPS		X		X	X
	Road Works /Traffic Restrictions	2					X	X		DATEX II & other	HTTP / HTTPS	X	X		X	X
	Car sharing															
	Road Parking Information															
	Electric Vehicle Charging Stations															
	Aerial Data															
	Maritime and river transport															
	Free-floating Vehicles (scooters)															

Table 9: Current State of Austria MMTIS NAP.

BE					Data format										Use of data		
					Syntax									Model	Cost	Type	
MMTIS	Data category	Datasets Provided	S(tatic) &/ R(eal)-T(ime) Data *(update frequency)*	N(ational) / R(egional) Coverage	Link	CSV	JSON	XML	KML	XLSX	HTML	SHP	other		Free	ND	License
https://www.transportdata.be/en/	General Information on Route/trip Planning	1	S *(montly)* & RT *(1min)*	N	X		X										
	Pedestrian Networks	13	S	N	X		X	X					X		X		X
	Bike sharing	10	S&RT	N	X		X	X					X		X		Creative Commons & OGL
	Bike Parking	1	RT	N	X			X					X		X	X	Creative Commons
	Cycling networks	20	S&RT	N & R	X		X	X					X		X		X
	Public information: operational information	13	S&RT	N & R	X	X	X						X		X		X
	Public transport: location information																
	Public transport: fare and purchase information	3	S *(yearly)* & RT	N	X								X		X	X	
	Railway Data	35	S *(semestrally)* & RT	N	X	X	X		X	X		X	X		X	X	X Infrabel Open Data
	Road networks	18		N & R	X		X	X					X	DATEX2 & other	X	X	
	Road Works/Events	1	R	N	X		X						X		X		X
	Car sharing	12	S & RT		X		X								X		X
	Road Parking Information	1		R	X		X				X				X	X	
	Electric Vehicle Charging Stations	1	S	N	X	X	X						X		X	X	
	Aerial Data																
	Maritime and river transport																
	Free-floating Vehicles (scooters)																

Table 10: Current State of MMTIS Belgium NAP.

CY		Datasets Provided	S(tatic) &/ R(eal)-T(ime) Data	N(ational) / R(egional) Coverage	Data format						Use of data		
					Syntax					Model	Cost	Type	
MMTIS	Data category				Link	CSV	JSON	XML	other		Free	ND	License
http://www.traffic4cyprus.org.cy/	General Information on Route/trip Planning		RT	R	X				X		X	X	
	Pedestrian Networks												
	Bike sharing		RT	R					X		X	X	
	Bike Parking												
	Cycling networks												
	Public information: operational information		S	R					X		X	X	
	Public transport: location information		S	R					X		X	X	
	Public transport: fare and purchase information												
	Railway Data												
	Road networks		S	R					X		X	X	
	Road Works/Events												
	Car sharing												
	Road Parking Information		RT	R					X		X	X	
	Electric Vehicle Charging Stations												
	Aerial Data												
	Maritime and river transport												
	Free-floating Vehicles (scooters)												

Table 11: Current State of MMTIS Cyprus NAP.

CZ		Datasets Provided	S(tatic) &/ R(eal)-T(ime) Data	N(ational) / R(egional) Coverage	Data format												Use of data		
					Syntax											Model	Cost	Type	
MMTIS	Data category				Link	CSV	JSON	XML	ZIP	KML	XLSX	SHP	DXF	KMZ	other		Free	ND	License
https://data.gov.cz/datov%C3%A9-sady	General Information on Route/trip Planning	9	S	R		X	X		X								X	X	X
	Pedestrian Networks																		
	Bike sharing																		
	Bike Parking																		
	Cycling networks	8	S	R		X	X		X		X						X		X
	Public information: operational information	10	S	R		X			X	X		X			X				
	Public transport: location information	1	S	R		X													
	Public transport: fare and purchase information	2	S	R		X								X			X		X
	Railway Data	3	S	R			X		X			X	X		X		X	X	X
	Road networks	2	S	R					X								X	X	X
	Road Works/Events																		
	Car sharing																		
	Road Parking Information	2	S	R		X		X	X					X			X	X	
	Electric Vehicle Charging Stations	1	S	R											X		X	X	
	Aerial Data	3	S	R		X											X	X	
	Maritime and river transport																		
	Free-floating Vehicles (scooters)																		

Table 12: Current State of MMTIS Czech Republic NAP.

DK		Datasets Provided	S(tatic) &/ R(eal)-T(ime) Data	N(ational) / R(egional) Coverage	Data format			Use of data		
MMTIS	Data category				Syntax		Model	Cost	Type	
					Link	other		Free	ND	License
https://nap.vd.dk/	General Information on Route/trip Planning									
	Pedestrian Networks									
	Bike sharing									
	Bike Parking									
	Cycling networks									
	Public information: operational information									
	Public transport: location information									
	Public transport: fare and purchase information									
	Railway Data									
	Road networks / Travel Times	1	RT	N		X	other	X		X DRD
	Road Works/Events	1	RT	R		X	Datex II	X		X DRD
	Car sharing									
	Road Parking Information									
	Electric Vehicle Charging Stations									
	Aerial Data									
	Maritime and river transport									
	Free-floating Vehicles (scooters)									

Table 13: Current State of MMTIS Denmark NAP.

EE		Datasets Provided	S(tatic) &/ R(eal)-T(ime) Data	N(ational) / R(egional) Coverage	Data format							Use of data		
MMTIS	Data category				Syntax						Model	Cost	Type	
					Link	CSV	JSON	XML	ZIP	other		Free	ND	License
http://www.peatus.ee/	General Information on Route/trip Planning	1	S	N	X				X			X	X	
	Pedestrian Networks													
	Bike sharing													
	Bike Parking													
	Cycling networks													
	Public information: operational information													
	Public transport: location information													
	Public transport: fare and purchase information													
	Railway Data													
	Road networks / Travel Times	1	S	N	X							X	X	
	Road Works/Events													
	Car sharing													
	Road Parking Information													
	Electric Vehicle Charging Stations													
	Aerial Data													
	Maritime and river transport													
	Free-floating Vehicles (scooters)													

Table 14: Current State of MMTIS Estonia NAP.

FI		Datasets Provided	S(tatic) &/ R(eal)-T(ime) Data	N(ational) / R(egional) Coverage	Data format								Use of data		
MMTIS	Data category				Syntax							Model	Cost	Type	
					Link	CSV	JSON	XML	GTFS	HTML	other		Free	ND	License
http://www.finap.fi	General Information on Route/trip Planning	5	S & RT	N & R	X	X	X		X		pdf	NeTEx	X		X
	Pedestrian Networks														
	Bike sharing														
	Bike Parking														
	Cycling networks														
	Public information: operational information	251	S & RT	N & R	X	X	X		X		pdf	NeTEx	X		X
	Public transport: location information	13	S	R			X		X			NeTEx	X		X
	Public transport: fare and purchase information	141	S & RT	N & R	X		X		X			NeTEx	X		X
	Railway Data / Transport	12	S & RT	N & R	X		X		X				X		X
	Road networks / Travel Times														
	Road Works/Events														
	Car sharing	22	S	N & R			X			X			X		X
	Road Parking Information														
	Electric Vehicle Charging Stations														
	Aerial Data	24	S	N			X	X					X		X
	Maritime and river transport														
	Free-floating Vehicles (scooters)														

Table 15: Current State of MMTIS Finland NAP.

FR		Datasets Provided		S(tatic) &/ R(eal)-T(ime) Data	N(ational) / R(egional) Coverage	Data format														Use of data		
MMTIS	Data category					Syntax													Model	Cost	Type	
						CSV	JSON	XML	GBFS	XLSX	JPG	HTML	SHP	GPKG	DXF	WFS	KMZ	ODS		Free	ND	License
https://transport.data.gouv.fr/	General Information on Route/trip Planning	1		S	N															X		ODbL
	Pedestrian Networks																					
	Bike sharing	19		S & RT	R		X		X				X							X		ODbL
	Bike Parking																					
	Cycling networks																					
	Public information: operational information	289	252	S	R		X		X										NeTEx	X		ODbL
	Public transport: location information		37	RT	R		X		X										NeTEx	X		ODbL
	Public transport: fare and purchase information																					
	Railway Data	10		RT	R		X		X										NeTEx	X	X	ODbL
	Road networks	4		S&RT	N	X		X				X	X	X						X	X	ODbL
	Road Works																					
	Car sharing	3		S	N	X				X										X		ODbL
	RoadParking Information	34		S	R	X	X	X		X			X		X	X	X	X		X		
	Electric Vehicle Charging Stations	1		S	N	X					X									X		ODbL
	Aerial Data	2		S	N	X														X	X	ODbL
	Maritime and river transport	7		S	R		X		X										NeTEx	X	X	ODbL
	Free-floating Vehicles (scooters)																					

Table 16: Current State of MMTIS NAPs in France.

DE		Datasets Provided	S(tatic) &/ R(eal)-T(ime) Data *(update frequency)*	N(ational) / R(egional) Coverage	Data format								Use of data				Visibility
					Syntax						Model	Protocol	Cost	Type			
MMTIS	Data category				Link	CSV	JSON	XML	ZIP	other			Free	ND	License	Depends on the Data Supplier	Registered Users with an agreement
https://service.mdm-portal.de/	General Information on Route/trip Planning	2	S *(yearly)* &RT*(1min)*	N & R	X		X	X	X		DATEX II & other		X		X		X
	Pedestrian Networks																
	Bike sharing																
	Bike Parking																
	Cycling networks	2	RT *(1-5min)*	R				X			DATEX II	other	X		X		X
	Public information: operational information	2	S *(weekly)* &RT*(1min)*	N & R	X	X					NeTEx & GTFS	HTTP/ HTTPS					
	Public transport: location information	1	S *(weekly)*	N	X	X					other	HTTP/ HTTPS					
	Public transport: fare and purchase information																
	Railway Data																
	Road networks	48	S & RT	R				X			DATEX II	HTTP/ HTTPS	X		X	X	X
	Road Works	14	S & RT	R				X			DATEX II	HTTP/ HTTPS	X		X	X	X
	Car sharing																
	Road Parking Information	33	S & RT	R	X		X	X			DATEX II &other	HTTP/ HTTPS	X	X	X	X	X
	Electric Vehicle Charging Stations																
	Aerial Data																
	Maritime and river transport																
	Free-floating Vehicles (scooters)																

Table 17: Current State of MMTIS Germany NAP.

IE		Datasets Provided	S(tatic) &/ R(eal)-T(ime) Data	N(ational) / R(egional) Coverage	Data format												Use of data		
MMTIS	Data category				Syntax											Model	Cost	Type	
					Link	CSV	JSON	XML	ZIP	KML	GTFS	XLSX	HTML	SHP	other		Free	ND	License
https://data.gov.ie/	General Information on Route/trip Planning																		
	Pedestrian Networks																		
	Bike sharing	2	S & RT	R		X	X								Table		X		X
	Bike Parking	2	S	N		X	X								WMS		X		X
	Cycling networks	3	S	N					X						DWG		X		X
	Public information: operational information	55	S & RT(1)	N		X		X	X		X		X		MDB PDF		X		X
	Public transport: location information	1	S	N		X		X	X					X			X		X
	Public transport: fare and purchase information	1	S	R	X										API		X		X
	Railway Data / Transport																		
	Road networks / Travel Times	1	RT	N				X								DATEXII	X		X
	Road Works/Events																		
	Car sharing																		
	Road Parking Information	20	S & RT	N & R		X	X	X		X		X	X		WMS PDF		X		X
	Electric Vehicle Charging Stations	1	S *(annually)*	R		X				X				X					
	Aerial Data	3	S	R			X	X			X				PX		X		X
	Maritime and river transport																		
	Free-floating Vehicles (scooters)																		

Table 18: Current State of MMTIS Ireland NAP.

LU		Datasets Provided	Static (S) & Real-time (RT) Data *(update frequency)*	N(ational) / R(egional) Coverage	Data format													Use of data		
					Syntax												Model	Cost	Type	
MMTIS	Data category				Link	CSV	JSON	XML	ZIP	GTFS	XLSX	JPG	HTML	SHP	ODS	other		Free	ND	License
https://data.public.lu/en/	General Information on Route/trip Planning	1	S *(montly)*	N		X					X							X		X
	Pedestrian Networks																			
	Bike sharing	2	S	N			X									X		X	X	X
	Bike Parking	1	S	N			X													
	Cycling networks	1	S	N					X			X				PDF		X		X
	Public information: operational information	5	S *(weekly)* & RT	N & R			X	X	X	X						XSD	NeTEx	X		X
	Public transport: location information	3	S *(trimestrly)*				X		X					X				X		X
	Public transport: fare and purchase information	1	S			X										GML	WMS			
	Railway Data / Transport	11	S	N			X									GML	WMS	X	X	
	Road networks / Travel Times			R																
	Road Works/Events																			
	Car sharing	1	S *(yearly)*	N			X							X			HTTP	X		X
	Road Parking Information	1	S	N			X								X	DOC				
	Electric Vehicle Charging Stations	1	S	N												ODS Text		X		X
	Aerial Data	2	S	N			X		X					X			HTTP WMS	X	X	
	Maritime and river transport	1	S	N			X		X								HTTP WMS	X	X	
	Free-floating Vehicles (scooters)																			

Table 19: Current State of MMTIS Luxemburg NAP.

MT		Datasets Provided	S(tatic) &/ R(eal)-T(ime) Data	N(ational) / R(egional) Coverage	Data format				Use of data		
					Syntax			Model	Cost	Type	
MMTIS	Data category				Link	PDF	other		Free	ND	License
http://news.transport.gov.mt/data/	General Information on Route/trip Planning	1	RT	N	X		X		X	X	
	Pedestrian Networks										
	Bike sharing										
	Bike Parking										
	Cycling networks										
	Public information: operational information	6	S	R		X	X		X	X	
	Public transport: location information										
	Public transport: fare and purchase information	1	S	R		X	X		X	X	
	Railway Data / Transport										
	Road networks / Travel Times										
	Road Works/Events										
	Car sharing										
	Road Parking Information										
	Electric Vehicle Charging Stations										
	Aerial Data										
	Maritime and river transport										
	Free-floating Vehicles (scooters)										

Table 20: Current State of MMTIS Malta NAP.

NL		Data Providers	S(tatic) &/ R(eal)-T(ime) Data *(update frequency)*	N(ational) / R(egional) Coverage	Data format											Use of data			Visibility
					Syntax									Model	Protocol	Cost	Type		
MMTIS	Data category				Link	CSV	JSON	XML	ZIP	KML	OJP	GTFS	Other/ unknown			Free	ND	License	Signed Agreement
https://nt.ndw.nu/	General Information on Route/trip Planning	2	S *(daily &weekly)*	N							X				HTTP/ HTTPS	*X*		*X*	*X*
	Pedestrian Networks	1	S *(monthly)*		X						X				HTTP/ HTTPS	*X*			
	Bike sharing																		
	Bike Parking																		
	Cycling networks																		
	Public information: operational information	5	S *(weekly &annualy)*	N	X		X					X			HTTP/ HTTPS	*X*	*X*		
	Public transport: location information	2	RT	N	X					X					ZeroMQ	*X*		*X*	*X*
	Public transport: fare and purchase information																		
	Railway Data	2	RT	N						X					HTTP/ HTTPS	*X*		*X*	
	Road networks&travel times	2				X					X				HTTP/ HTTPS	*X*		*x*	
	Road Works&incidents	1	RT	N		X									HTTP/ HTTPS			*X*	
	Car sharing																		
	Road Parking Information	1	S (daily) & RT	N	X						X				HTTP/ HTTPS	X	X		
	Electric Vehicle Charging Stations	2	RT	N			X												
	Aerial Data																		
	Maritime and river transport																		
	Free-floating Vehicles (scooters)																		

Table 21: Current State of MMTIS Netherlands NAP.

NO		Datasets provided	S(tatic) &/ R(eal)-T(ime) Data	N(ational) / R(egional) Coverage	Data format														Use of data		
					Syntax													Model	Protocol	Cost	Type	
MMTIS	Data category				Link	CSV	JSON	XML	ZIP	GBFS	XLS	HTML	ESRI SHP	Geo JSON	Spatial Lite	PDF	Other/ unknown			Free	ND	License
https://transportportal.atlas.vegvesen.no/no/ https://data.transportportal.no/datasets	General Information on Route/trip Planning	1	RT	N			X							X			X	NeTEx & SIRI		X		X
	Pedestrian Networks	1	S	N		X	X	X														
	Bike sharing	2	S & RT	N		X	X			X									HTTP	X		X
	Bike Parking	1	S	N		X	X	X														
	Cycling networks	2	S	N			X	X				X	X	X	X					X		X
	Public information: operational information	1	S & RT	N				X									X	NeTEx & SIRI		X		X
	Public transport: location information	1	S & RT	N			X										X	NeTEx & SIRI		X		X
	Public transport: fare and purchase information	1	S & RT	N			X							X			X	NeTEx & SIRI		X		X
	Railway Data																					
	Road networks & Travel times	8	S & RT	N		X	X	X	X									DATEX II & SIRI		X		X
	Road Works & incidents	2	S	N		X		X			X					X		DATEX		X		X
	Car sharing																					
	Road Parking Information	1	RT	N			X													X		X
	Electric Vehicle Charging Stations																					
	Aerial Data																					
	Maritime and river transport	2	S	N		X	X	X												X		X
	Free-floating Vehicles (scooters)	1	RT	N			X												HTTP	X		X

Table 22: Current State of MMTIS Norway NAP.

SE		Datasets provided	S(tatic) &/ R(eal)-T(ime) Data	N(ational) / R(egional) Coverage	Data format							Use of data		
					Syntax					Model	Protocol	Cost	Type	
MMTIS	Data category				Link	CSV	JSON	XML	Other/ unknown			Free	ND	License
www.trafficdata	General Information on Route/trip Planning	2	S & RT	R & N			X	X			API	X		X
	Pedestrian Networks													
	Bike sharing													
	Bike Parking													
	Cycling networks													
	Public information: operational information	8	S & RT	R & N			X	X		NeTEx & GTFS	API	X		X
	Public transport: location information	4	S & RT	N			X	X			API	X		X
	Public transport: fare and purchase information													
	Railway Data	2	RT	R			X	X			API	X		X
	Road networks & Travel times	2	RT	N			X	X			API	X		X
	Road Works & incidents	1	RT	N			X	X			API	X		X
	Car sharing													
	Road Parking Information													
	Electric Vehicle Charging Stations													
	Aerial Data													
	Maritime and river transport	1	RT	R			X	X			API	X		X
	Free-floating Vehicles (scooters)													

Table 23: Current State of MMTIS Sweden NAP.

CH		Datasets provided	S(tatic) &/ R(eal)-T(ime) Data	N(ational) / R(egional) Coverage	Data format											Use of data		
					Syntax									Model	Protocol	Cost	Type	
MMTIS	Data category				Link	CSV	JSON	XML	ZIP	XLSX	GTFS	HRDF	Other/ unknown			Free	ND	License
https://opentransportdata.swiss	General Information on Route/trip Planning	2	RT	N											API	X		X
	Pedestrian Networks																	
	Bike sharing																	
	Bike Parking																	
	Cycling networks																	
	Public information: operational information	25	S & RT	N		X			X	X	X	X			API	X		X
	Public transport: location information	3	S & RT	N		X									API	X		X
	Public transport: fare and purchase information	1	S	N						X						X		X
	Railway Data	1	S & RT	R						X					API	X		X
	Road networks & Travel times	3	RT	N		X								DATEX II	API	X		X
	Road Works & incidents																	
	Car sharing																	
	Road Parking Information																	
	Electric Vehicle Charging Stations																	
	Aerial Data																	
	Maritime and river transport																	
	Free-floating Vehicles (scooters)																	

Table 24: Current State of MMTIS Switzerland NAP.

UK		Datasets provided (without filter)	S(tatic) &/ R(eal)-T(ime) Data	N(ational) / R(egional) Coverage	Data format																				Use of data		
					Syntax																				Model	Protocol	Cost	Type	
MMTIS	Data category				Link	CSV	JSON	XML	KML	ZIP	XLSX	XSD	HTML	ESRI SHP	Geo JSON	MapInfo TAB	Map	CIF	WMS	ODS	PDF	DOC	N/A			Free	ND	License
https://data.gov.uk/	General Information on Route/trip Planning	2	S	R				X																			
	Pedestrian Networks	2	S	R		X		X							X											X	X	X
	Bike sharing	1		R	X	X			X					X		X											
	Bike Parking	4		R																							
	Cycling networks	2	S	R	X	X							X						X				X				
	Public information: operational information	13	S & RT	R		X				X	X		X					X		X	X	X			API	X		X* Might require registration
	Public transport: location information	11	S	R	X	X		X			X		X						X				X			X		X
	Public transport: fare and purchase information	3	S	R									X							X			X			X	X	X
	Railway Data	37	S & RT	R	X	X	X	X	X	X	X		X	X	X			X	X	X	X		X		API	X	X	X
	Road networks & Travel times	2	S & RT	R	X								X	X		X			X		X		X		API	X		X
	Road Works & incidents	1	S & RT	R				X																	API	X		X
	Car sharing	2		R					X		X		X													X		X
	Road Parking Information	13	S & RT	R	X	X	X	X	X	X		X	X	X	X		X		X		X	X	X		API	X		X
	Electric Vehicle Charging Stations	2	RT	R		X			X						X											X		X
	Aerial Data	4	S	N	X	X							X								X		X			X	X	X
	Maritime and river transport	1	S	N																			X			X	X	
	Free-floating Vehicles (scooters)	1	S	N									X													X		X

Table 25: Current State of MMTIS United Kingdom NAP.

From Table 26 to Table 29, the status of each MMTIS NAP is summarized according to the data categories from the Directive Delegated Regulation for the provision of EU-Wide Multimodal Travel Information Services (EU) 2017/1926 that divides the MMTIS information into several levels of static and dynamic data.

In summary, some inconsistencies are identified in the adoption of the MMTIS NAPs by the different Member States, such as the following:

- The integration and organization of the datasets on the NAP websites. Some MMTIS NAPs are a website repository with links redirecting to an external entity. Others are focused on a repository of metadata (e.g., Lithuania). Yet, some others are focused on providing a user interactive platform for trip planning.
- European nomenclature harmonization regarding data categories and contents in each MMTIS NAP, with common tags regarding modes of transport and data categories according to the Delegated Regulation (EU) 2017/1926 for MMTIS, would be helpful in uniformizing the data access.
- The clarification of the end-user of the MTTIS NAPs: data user entities or passengers. Some NAPs are focused on being a repository of links or datasets. Others like Cyprus and Estonia are focused on the final user (i.e., a passenger) providing an interactive platform.
- European legal harmonization regarding licensing data usage. Some countries make a clear division between license and contract. Some ask for a signed agreement; others registering. Such differences might create barriers in the data access.
- Quality of data. It might be difficult to access and estimate the quality of the data since the organisation is the only responsible for making sure that the data corresponds to what is declared in the metadata specification. In order to maintain a high quality of data, NAPs are strongly instructing API connections to adjust any changes in the data.

Data category according to COMMISSION DELEGATED REGULATION (EU) 2017/1926 of May 31 2017				AU	BE	CY	CZ	DK	EE	FI	FR	DE	HU	IE	IT	LT	LU	MT	NL	NO	PL	SE	CH	UK
Static Data	Level 1	Local search (origin/destination)	Address identifiers (building number, street name, postcode)		X		X			X	X						X			X		X	X	X
			Topographic places (city, town, village, suburb, administrative unit)		X		X		X	X	X						X	X		X		X	X	X
			Points of interest (related to transport information) to which people may wish to travel		X				X	X							X	X		X				
		Trip plans	Operational calendar, mapping day types to calendar dates	X	X	X	X		X	X	X	X		X			X	X	X	X	X	X		X
		Location search (access nodes)	Identified access nodes (all scheduled modes)	X	X		X		X	X	X	X		X			X		X	X		X	X	X
			Geometry/map layout structure of access nodes (all scheduled modes)	X	X		X		X	X	X	X		X			X		X	X		X	X	X
		Trip plan computation — scheduled modes transport (interchanges, routes/lines, transport operators, timetables, stop facilities access nodes, vehicles, accessibility)	Connection links where interchanges may be made, default transfer times between modes at interchanges	X	X						X	X		X			X		X	X		X	X	X
			Network topology and routes/lines (topology)	X	X	X	X		X	X	X	X		X			X	X	X	X		X	X	X
			Transport operators	X	X	X			X	X	X	X		X			X	X	X	X	X	X	X	X
			Timetables	X	X	X	X		X	X	X	X		X			X	X	X	X	X	X	X	X
			Planned interchanges between guaranteed scheduled services	X	X		X		X	X	X	X		X				X	X	X	X	X	X	X
			Hours of operation	X	X	X	X		X	X	X	X		X			X	X	X	X	X	X	X	X
			Stop facilities access nodes (including platform information, help desks/information points, ticket booths, lifts/stairs, entrances and exit locations)	X	X		X			X				X			X	X	X	X	X	X	X	X
			Vehicles (low floor; wheelchair accessible.)		X					X				X										X
			Accessibility of access nodes, and paths within an interchange (such as existence of lifts, escalators)	X	X					X				X										X
			Existence of assistance services (such as existence of on-site assistance)																					
		Trip plan computation — road transport (for personal modes)	Road network	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
			Cycle network (segregated cycle lanes, on-road shared with vehicles, on-path shared with pedestrians)		X		X		X		X	X		X			X			X				X
			Pedestrian network and accessibility facilities		X				X		X									X				X

Table 26: Summary if the MMTIS NAPs information (Static Data – Level 1) across Europe.

Data category according to COMMISSION DELEGATED REGULATION (EU) 2017/1926 of May 31 2017				AU	BE	CY	CZ	DK	EE	FI	FR	DE	HU	IE	IT	LT	LU	MT	NL	NO	PL	SE	CH	UK
Static Data	Level 2	Location search (demand-responsive modes)	Park & Ride stops		X						X								X					X
			Bike sharing stations		X	X					X			X			X			X				X
			Car-sharing stations		X					X	X			X			X			X				X
			Publicly accessible refuelling stations for petrol, diesel, CNG/LNG, hydrogen powered vehicles, charging stations for electric vehicles		X		X				X			X			X		X					X
			Secure bike parking (such as locked bike garages)																					X
		Information service	Where and how to buy tickets for scheduled modes, demand responsive modes and car parking (all scheduled modes and demand-responsive incl. retail channels, fulfilment methods, payment methods)		X						X							X						X
		Trip plans, auxiliary information, availability check	Basic common standard fares (all scheduled modes): — Fare network data (fare zones/stops and fare stages) — Standard fare structures (point to point including daily and weekly fares, zonal fares, flat fares)		X		X			X	X			X			X	X		X			X	X
			Vehicle facilities such as classes of carriage, on-board Wi-Fi.																					

Table 27: Summary if the MMTIS NAPs information (Static Data – Level 2) across Europe.

Data category according to COMMISSION DELEGATED REGULATION (EU) 2017/1926 of May 31 2017				AU	BE	CY	CZ	DK	EE	FI	FR	DE	HU	IE	IT	LT	LU	MT	NL	NO	PL	SE	CH	UK
Static Data	Level 3	Detailed common standard and special fare query (all scheduled modes)	Passenger classes (classes of user such as adult, child, student, veteran, impaired access and qualifying conditions and classes of travel such as 1st, 2nd.)		X		X			X														X
			Common fare products (access rights such as zone/point-to-point including daily and weekly tickets/single/return, eligibility of access, basic usage conditions such as validity period/operator/time of travel/interchanging, standard point to point fares prices for different point to point pairs including daily and weekly fares/zonal fare prices/flat fare prices)							X	X													X
			Special Fare Products: offers with additional special conditions such as promotional fares, group fares, season passes, aggregated products combining different products and add on products such as parking and travel, minimum stay							X														X
			Basic commercial conditions such as refunding/replacing/exchanging/transferring and basic booking conditions such as purchase windows, validity periods, routing restrictions zonal sequence fares, minimum stay.							X	X													X
		Information service (all modes)	How to pay tolls (incl. retail channels, fulfilment methods, payment methods)		X					X										X				
			How to book car sharing, taxis, cycle hire etc. (incl. retail channels, fulfilment methods, payment methods)		X					X														
			Where how to pay for car parking, public charging stations for electric vehicles and refuelling points for CNG/LNG, hydrogen, petrol and diesel powered vehicles (incl. retail channels, fulfilment methods, payment methods)		X						X													X
		Detailed trip plans	Detailed cycle network attributes (surface quality, side-by-side cycling, shared surface, on/off road, scenic route, 'walk only', turn or access restrictions (e.g. against flow of traffic)		X		X																	X
			Parameters needed to calculate an environmental factor such as carbon per vehicle type or passenger mile or per distance walked				X																	X
			Parameters such as fuel consumption needed to calculate cost				X																	X
		Trip plan computation	Estimated travel times by day type and time-band by transport mode/combination of transport modes	X	X	X	X												X	X				X

Table 28: Summary if the MMTIS NAPs information (Static Data – Level 3) across Europe.

Data category according to COMMISSION DELEGATED REGULATION (EU) 2017/1926 of May 31 2017				AU	BE	CY	CZ	DK	EE	FI	FR	DE	HU	IE	IT	LT	LU	MT	NL	NO	PL	SE	CH	UK
Dynamic Data	Level 1	Passing times, trip plans and auxiliary information	Disruptions (all modes)		X					X	X	X							X			X	X	X
			Real-time status information — delays, cancellations, guaranteed connections monitoring (all modes)	X	X				X	X	X	X					X		X	X		X	X	X
			Status of access node features (including dynamic platform information, operational lifts/escalators, closed entrances and exit locations — all scheduled modes)	X	X					X	X								X	X		X	X	X
	Level 2	Passing times, trip plans and auxiliary information (all modes)	Estimated departure and arrival times of services	X	X				X	X	X	X		X			X		X	X		X	X	X
			Current road link travel times	X	X	X			X	X	X	X	X	X	X	X	X		X	X		X	X	X
			Cycling network closures/diversions		X				X					X			X			X				X
		Information service	Availability of publicly accessible charging stations for electric vehicles and refueling points for CNG/LNG, hydrogen, petrol and diesel powered vehicles								X			X										X
		Availability check	Car-sharing availability, bike sharing availability		X	X					X			X						X				X
			Car parking spaces available (on and off-street), parking tariffs, road toll tariffs		X					X	X			X										X
	Level 3	Trip plans	Future predicted road link travel times	X	X			X	X	X	X	X	X	X					X	X		X	X	X

Table 29: Summary if the MMTIS NAPs information (Dynamic Data – Level 1, 2 and 3) across Europe.

7.3 MMTIS NAPs: data formats

The status of the MMTIS NAPs in the different Member States revealed that the harmonization of the data formats across Europe is ongoing (e.g., GeoJson, Shapefile, JPG, CVS, XML). Without harmonization, the same road operator/authority working in different Member States might have to convert and submit its data in two different formats. Nevertheless, there have been efforts regarding this issue among all Member States to convert data into NeTEx profiles.

The formats of the data are different according to the mode of transport. The most common are:

- Public transport (bus and railway): theoretical timetables, e.g., NeTex profile, JSON and XML format;
- Bike-sharing and cycling networks, e.g., in GeoJSON, JSON, GBFS, GTFS format;
- Car-sharing, e.g., GeoJSON, JSON format;
- Location points for bus, carpooling/carsharing, e.g., in CSV format;
- Road link travel times, e.g., in CSV, XML format and DATEX II profile.
- Charging infrastructure for electric vehicles, e.g., in GeoJSON or CSV format;

In real-time, information usually is available through GTFS-RT, SIRI format or APIs.

NeTEx profile implementation

From a practical point of view, the NeTEx profiles presents an implementation guideline for the Public Transport Network topology and timing concepts (Part 1), the complete profile is composed by numerous fields. To prepare the profile needed for MMTIS NAPs covering all needs of a Member State, it is advised to incrementally building the national profile for public road transport, by modules. The first step should be to engage all the relevant stakeholders, i.e., the data providers. Such initial engagement in the earlier stages will ensure quality and consistency of the data. Such two-way communication process provides a mechanism for exchanging information and promoting stakeholder interaction with the technical teams responsible for developing the NeTEx profiles and/or NAPs for Delegated Regulation (EU) 2017/1926, MMTIS. The second step is a thorough analysis of all the potential data elements involved, as well as the relevant exchanges between different identified application elements. This provides a focus onto relevant parts of the NeTEx standard, and a first idea on the options, values, and parameters relevant for the applications. Once these have been identified, the profile can be completed. In summary, the main difficulties Member States face while developing the respective MMTIS NeTEx profiles seem to fall into three main categories:

1. the size of the task at hand;
2. reach an agreement on elements involved;
3. the quality of the data available.

NeTEx profiles for passenger information are already available in Austria, France, Finland, Norway, Germany and the Netherlands. Each national NeTEx profile must, naturally, comply with the common minimum European profile developed within TC278/WG4/SG9. This profile is a **"minimum" profile for passenger information**, covering all needs shared by member states.

The implementation of Delegated Regulation (EU) 2017/1926 MMTIS is supported by:

- CEF Programme Support Actions (PSAs), such as the recent **IDACS** and **DATA4PT** projects;
- Individual Standardisation Activities, such as **INSPIRE-MMTIS Project** or **TN-ITS Extension**;
- MMTIS Stakeholder workshops;
- Other studies/activities, such as the recent **Persons with Reduced Mobility** (PRM) study.

The "**DATA4PT - Data for Public Transport"** European Project – PSA under the CEF Transport to support Member States in the development and deployment of European public transport data standards Transmodel, NeTEx and SIRI for the provision of Union-wide multimodal travel information services", started recently, bringing together nine Member States; the specific objectives of the project include:

- Support the technical development of Transmodel, NeTEx and SIRI to fulfil the needs of MMTIS providers,
- Develop data validation tools and test platform,
- Conduct required updates for all standards,
- Assist the development of National SIRI profiles,
- Facilitate the operational use of Transmodel, NeTEx and SIRI standards by Public Transport Operators and Public Transport Authorities,
- Exchange of best practice.

One of the key actions of the project is the setup of an expert team to be able to support any project using Transmodel, NeTEx or SIRI in Europe, providing and supporting Member States for writing national profiles, and train new experts. The project will also provide validation tools, a test platform and specific training.

The IDACS, "ID and Data Collection for Sustainable fuels in Europe"[39], is the PSA "**Data collection related to recharging/refuelling points for alternative fuels and the unique identification codes related to e-Mobility actors**" where 16 Member States come together to:

- set up harmonised e-mobility Identification Codes for Charging Point Operators and e-mobility service providers,
- implement ID registration repository for exchanging information on these e-mobility ID codes,
- ensure that all data of infrastructure for electricity and hydrogen are made available through the NAPs.

The IDACS project started in January 2019. More detail on IDACS can be found in chapter 9 of this report.

Another PSA example is the Portuguese MMTIS Action "**How2Go**". The objective is to support the early implementation of the Delegated Regulation under Directive 2010/40/EU by MS, including the public transport authorities, public transport operators, and service providers in their territory, for the provision of Union-wide multimodal travel information services which apply to the TEN-T network including urban nodes.

[39] https://ec.europa.eu/transport/content/programme-support-action-addressed-member-states-data-collection-related_en

In the scope of the project, the national NeTEx is to be developed and the planned NAP will be extended for MMTIS.

The PRM study, **Mapping Accessible Transport For Persons With Reduced Mobility**[40], aimed at assessing whether the digital travel information systems are providing information on the infrastructural accessibility conditions to/from transport services that allow PRM users for informed decisions on their travel plans and how this could be enhanced. The study designed and conducted a pilot experiment involving an interactive web-map travel information and journey planner application. The pilot demonstration was evaluated in three different contexts:

1. A cross-border scenario, involving German and Dutch border (NL/DE);
2. A national scope scenario for rail, involving the United Kingdom (UK);
3. A last mile scenario, involving the urban region of Lisbon (PT).

The service intended to make use of both public transport information, as well as available accessibility information. The NeTEx profile developed in the context of this pilot is an important milestone and brings also added value for those working in this field, addressing a possible common set of attributes and improving the feasibility of future PRM projects.

7.4 MMTIS NAPs data providers: road operators and authorities

Public and private authorities, road transport service operators, and mobile service providers, as well as infrastructure managers, are required to make available, through the digital platform, data services and networks that are necessary for the information of travellers. The purpose of such available data in the MMTIS NAP is to be re-used by providers of travel information services, for instance.

The first barrier identified in this topic is the identification of the data providers. Each Member State delegates its national regulation/directive that identifies the road operators and authorities obliged to provide data to the NAPs. Without a European harmonization, a road operator/authority working in different Member States might only need to provide its data in some countries/regions.

The second issue is the data category to be provided to the NAP. Relevant information includes, for example, service area, routes, schedules, prices, service availability, accessibility, booking, sales, ticket, and payment information. Not all information is relevant to every mode of transport or service. The main modes of transport involve cycling, railway, pedestrians, and road public transport (bus). The information to be provided is specified in each country directive.

The publication of data is done via each country's NAP. The third issue identified is the publication of the data in the standard format of each Member State MMTIS NAP. Only some MMTIS NAPs provide a guide for data publication, explaining step-by-step this procedure. For the static data (e.g., theoretical timetables), such upload procedure should take around 10 minutes. For the dynamic data, such upload is usually done through APIs that require registering and an API key. In accordance with the license terms and the NAP server, there

[40] https://ec.europa.eu/transport/themes/research/challenge/projects/accessibility-mapping-urban-digital-way-finding-people-reduced-mobility_en

might be technical limitations for the APIs in the form of a number of calls/transferences per month or per minute.

The road transport service operator /authority can upload its dataset directly; or ask the platform or any other external entity to do such procedure – this last reflects on an extra cost for the data provider. The services each NAP offers to the road operators are summarized in the following points:

- **Technical and operational support** for data providers in ensuring the quality and conformity of their data (analysis, recommendations, monitoring), raw data conversion to the standard format required by European regulations.
- **Legal harmonization** for data usage conditions via the use of a license, contract, registered users or signed agreements.
- **Collecting data**: if a data provider already has its own open data portal, the NAP can act as a repository, giving direct access to this data stored elsewhere.
- **Direct contact with data users**, who no longer need to get in touch with each data provider. The NAP collects comments on the published data and the data holders respond to them;
- **Automatic conversion of data to NeTEx profile t**o facilitate compliance with regulatory obligations by data producers. For instance, in France, the NAP uses the Gtfs2NetexFr converter;
- **Automatic conversion of data to SIRI-Lite format**, the most NAPs use GTFS-RT format.
- **Server usage** with the possibility of the NAP server hosting high-demand real-time streaming data.

Currently, there is not a clear estimation of the cost practiced by the NAP/external entities. From a data provider perspective, such cost certainly might have an impact on the data update frequency.

In summary, the Delegated Regulation (EU) 2017/1926 for MMTIS should consider some relevant questions, issues, and barriers from the road operator/data provider perspective:

- A clear definition of the **stakeholders involved**
- The clarification on the **modes of transport** involved and its **relevant information**
- the standard **data format** of the NAP
- the standard **protocols/profiles** to exchange relevant information (e.g., NeTEx, DATEX II)
- a step-by-step procedure guide for the upload of data, especially in real time
- the existence of **APIs** and its technical issues (API keys, transfer limitations) to send/receive data from providers to NAP in real time
- a survey regarding the costs practiced across European NAPs

7.5 Future work

Regarding the EC MMTIS roadmap, the first levels of static data for the comprehensive TEN-T (including Urban Nodes) are already developed, including timetables, access nodes, accessibility PRM and network topology, bike-sharing & car-sharing stations, vehicle facilities, basic common standard fare, cycling network attributes; how and where to buy tickets, estimated multimodal travel times and the rest of the information by 2021. Other parts of the network should be covered by 2023. If the Member State chooses to include dynamic data in the NAP, they are encouraged to follow the mentioned timeframe.

As mentioned in section 7.2, sixteen Member States report a NAP for MMTIS, but these are not yet complete, and eight other Member States are in the process of establishing. Some of them, like Austria or Hungary, for instance, adopted a strategy of extending the existing NAP to include MMTIS. MMTIS NAPs are "still in early implementation," and given the positive developments reported, the EC reckons it seems "appropriate to continue supporting current Member States' efforts".

The expectation is that the MMTIS regulation will give a boost in the provision of multimodal travel information in general, the data heterogeneity and gaps are blocking the process, with major efforts being still required to achieve the desired levels.

There are still some problems to be addressed in the near future. As already mentioned in section 7.2, the integration and organization of the datasets in the NAP websites, European nomenclature harmonization regarding data categories and contents; definition of the mode of transports, the focus on end-user of the MTTIS NAPs (data user entities and/or passengers), European legal harmonization regarding licensing the data usage (no restrictions, license, and contracts, signed agreements, user registration).

Despite the availability of standards and the growing trend towards open data, in real life, a rather ugly picture is shown for data quality: datasets have different information, different data attributes, different purposes, or incomplete data. Also mentioned in section 7.2 and 7.3, the datasets do not contain all the expected information, there is a lack of accuracy where the information does not reflect the 'true' situation; lack of data versioning where a system may not be using the latest available data and is therefore at risk of misrepresenting the 'live' situation, lack of coherence, i.e. that the data is not compatible and internally consistent (e.g. a set of summer timetables and stops that are operated in the winter), and lack of compliance, i.e., that the data does not match the rules of the format, just to name but a few issues with real data. There is also the stakeholders' sensitivity associated with tariffs information and the issues and barriers faced by road operators and authorities.

The relevance of the aforementioned quality of data issues is also stressed in the report to the EP and Council on the implementation of the ITS Directive with analysis of MS reports, where it acknowledges the need "to assess the need for further action." One strategy to bridge this gap is to focus on road-operators and authorities, helping them with guidelines and customized support with clear fares, to "let them do the job" of uploading accurate data. In general, MMTIS NAPs are strongly advising API connections to immediately adjust any changes in the data.

From a road transport operator perspective (section 7.4), there are some differences across countries that might baffle and complicate the contribution of road operators and authorities. There is a need to define of the stakeholders involved in every European country; subsequently, the modes of transport and its relevant

information with the proper data format, the standard protocols/profiles to exchange relevant information; the issues regarding procedure guide for the upload of data, especially in real-time, for instance, the APIs' technical issues (API keys, transfer limitations) to send/receive data from providers to NAP in real-time; and information/survey regarding the NAP services and its associated cost.

Moreover, there is the issue of the costs of scaling up: providing sources of dynamic data (e.g. SIRI real-time feeds) or existing travel information services requires a supporting business model. Finally, despite the fact that cities and operators sometimes have their own continuously improved databases, which they have refined and corrected using much of their own resources and day-to-day operation knowledge, this data is very valuable and cannot be easily obtained from them (e.g., differing for the one available in the NAP).

- The status of the adoption of MMTIS NAPs by the MS has been assessed.
- Outstanding issues underlying MMTIS data formats and quality have been identified.
- Some of the major questions, issues and barriers faced by the road operators and authorities in the collaboration with MMTIS NAPs have been assessed.
- The first steps of guidelines for the improvement and harmonization of MMTIS NAPs have been taken.

8 Architecture for NAPs

To support harmonisation of NAPs in Europe it is of value to explain the concept of architecture.

A first important step in setting up a NAP is defining the **architecture**.

8.1 What is an ITS architecture?

An Intelligent Transport System (ITS) architecture is a set of high-level views that enable plans to be made for integrating ITS applications and services. It normally covers technical aspects, plus the related organisational, legal, and business issues[41].

Using an architecture helps to ensure that the resulting ITS deployment:

- is harmonized at EU level
- can be planned in a logical manner → integrates successfully with other systems
- meets the desired performance levels → has the desired behaviour → is easy to manage
- is easy to maintain → is easy to extend → satisfies the expectations of the users.

8.2 FRAME NEXT

EU EIP WG NAP consulted FRAME NEXT.

FRAME NEXT is a project that **extends the European ITS Framework Architecture**, now known as the **FRAME Architecture**, with the priority areas of the ITS directive (Directive 2010/40/EU) and with the methodologies and tools that make a modern ITS architecture attractive and appealing for ITS.

The FRAME Architecture is technology independent, and **does NOT provide detailed designs** for equipment but may be used to gather functional requirements to assist in procuring compliant technology

More about FRAME NEXT architecture check: https://frame-next.eu/

The aim of FRAME NEXT is to support the EU-wide harmonisation of the six priority actions, by extending the existing FRAME architecture with these priority actions as reference architectures. In 2020 the FRAME NEXT project has moved toward implementation of the NAP Architecture reference architecture, which will be part

[41] FRAME NEXT https://frame-next.eu/, in addition to http://frame-online.eu

of the Release 5.0 of the FRAME NEXT repository to be released early 2021.

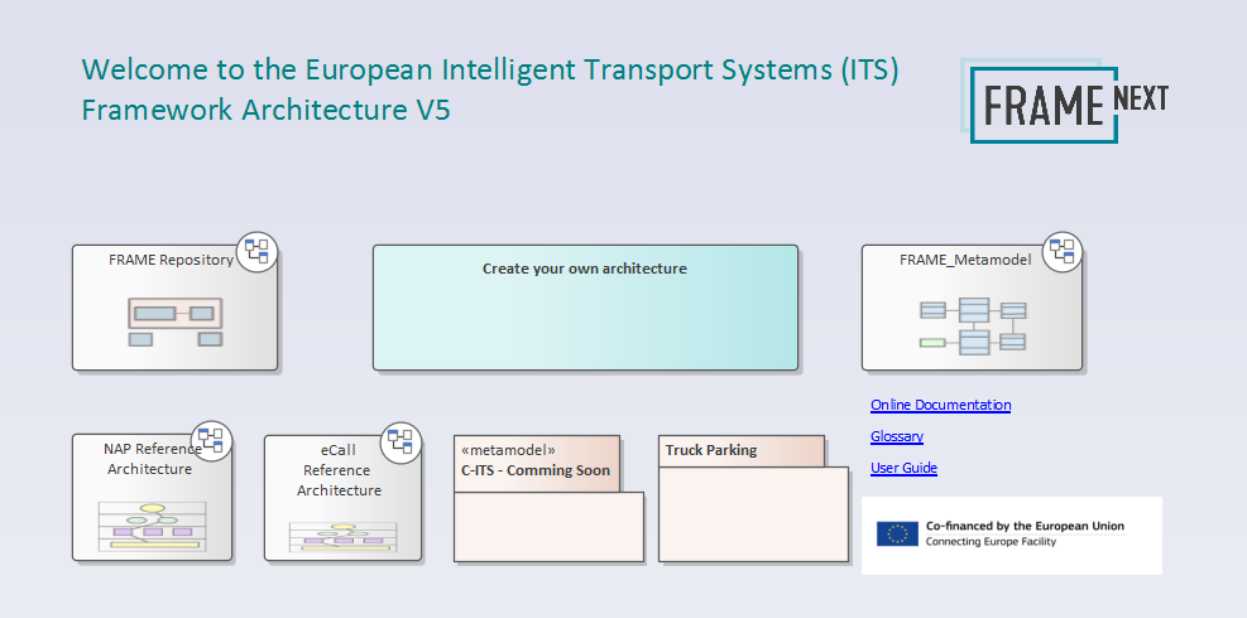


Figure 14: Screenshot of a pre-release version of the FRAME NEXT repository main page, from where one can easily navigate the architecture

In addition to the extension with the first two reference architectures, this 5.0 release will include the full existing FRAME architecture in a state-of-the-art tool - Sparx Enterprise Architect. The full release consists of an updated meta-model or Toolbox (the IT architects' view on how and what can you model for your FRAME based ITS architecture), as well as various documentation (Quickstart Guide, User Manual):

- FRAME v5.0 repository consisting of following packages:
    - FRAME meta-model
    - User Needs and Functional View
    - eCall Reference Architecture
    - NAP Reference Architecture
- FRAME Toolbox v1.0 (the technical implementation of the meta-model)
- Manuals and descriptions:
    - FRAME NEXT User Manual v1.0

The remaining ITS Reference architectures for the priority areas will follow in release 5.1 in 2021.

From an architectural point of view, it is a fact that the various NAPs currently in operation at first sight seem to be providing their services using quite different technical solutions.

To achieve a next level of harmonisation in NAPs, the first area tackled in FRAME NEXT consisted of developing a first European blueprint ITS architecture for NAPs. Therefore, FRAME NEXT studied details of three NAPs in operation, from the Netherlands, Germany, and Austria later checked against other FRAME NEXT member states' NAPs. From this analysis a common functionality was derived, and shown in different viewpoints on the User Needs, Functionality, Organization, the physical architecture (note: this is still technology independent) and a data/communication view.

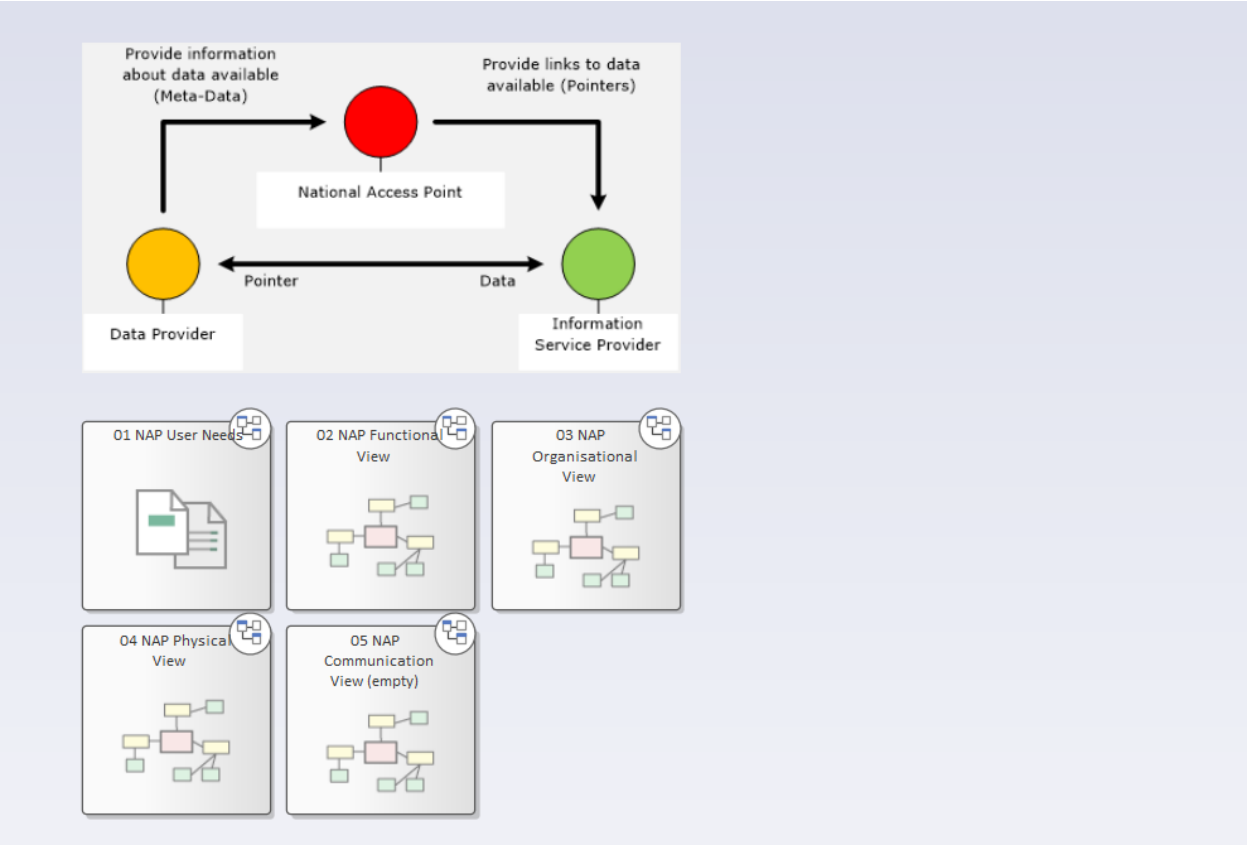


Figure 15: Screenshot of a pre-release version of the NAP Reference Architecture landing page

The functional view of the NAP Architecture recognizes six actor roles (in alphabetical order):

- NAP Administrator
- NAP Content Manager Metadata
- NAP Promotor
- NAP Technical Operator
- NAP User Manager
- NAP User Support

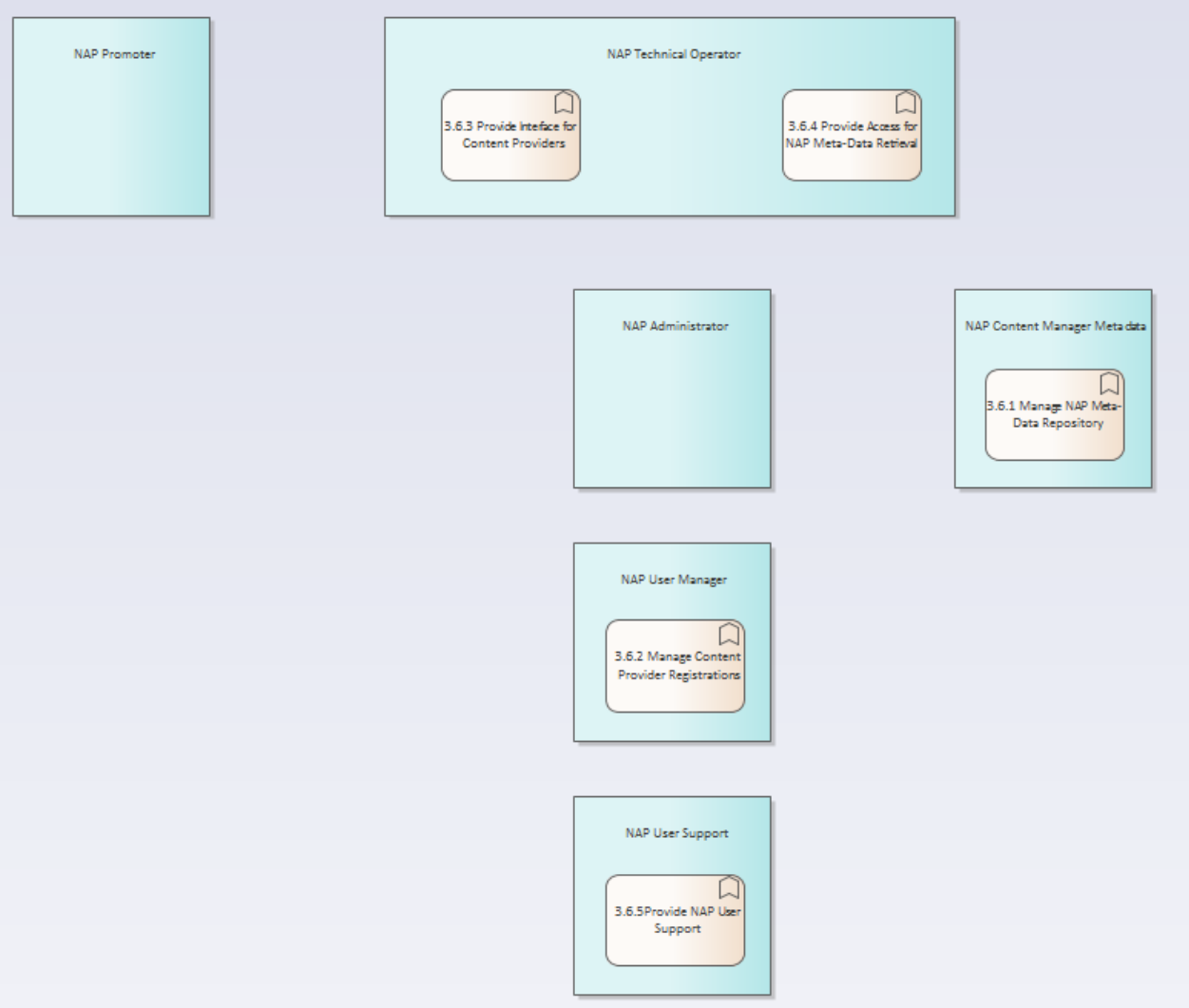


Figure 16: Screenshot of a pre-release version of the NAP Reference Architecture Organizational View - Roles

A draft of the final NAP architectural blueprint is seen in Figure 18. This is however not the final NAP architectural blueprint of a NAP as some issues still have to be solved.

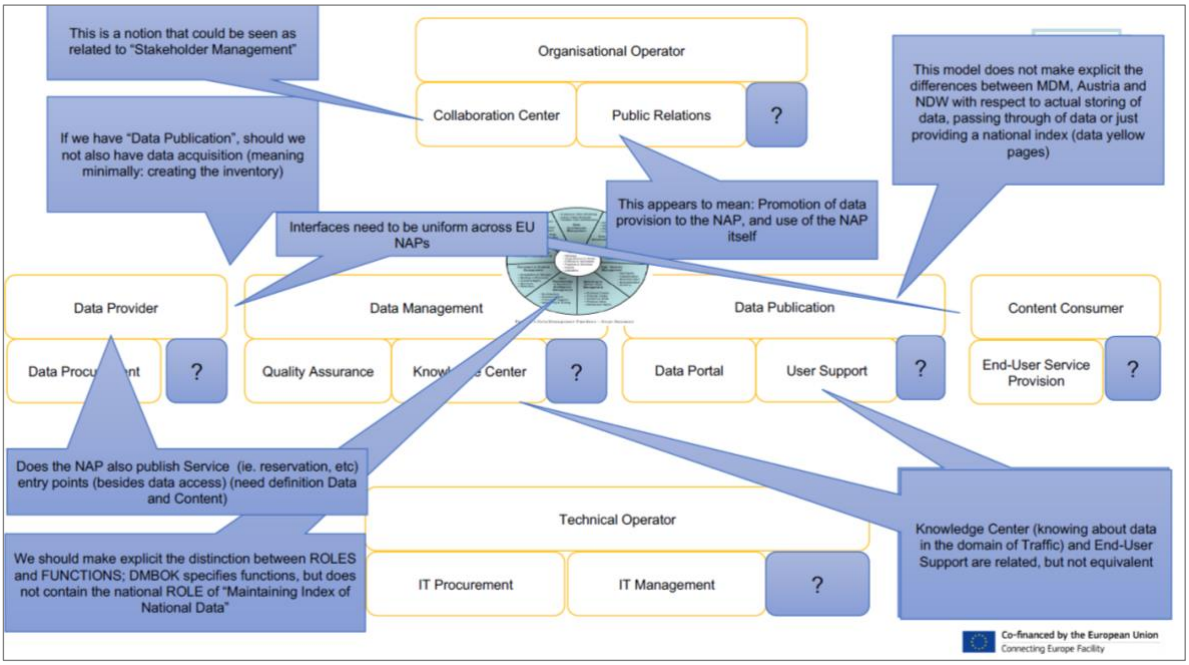


Figure 17: A draft of the final NAP architectural blueprint

FRAME NEXT is currently working on a final document "NAP Architecture".

- In 2020 the FRAME NEXT project has moved toward implementation of the NAP Architecture reference architecture.

Release 5.0 of the FRAME NEXT repository will be published early 2021.

9 Data collection recharging-refuelling points for alternative fuels

For a successful uptake of alternative fuels it is essential that there is clear, reliable and up-to-date information for consumers about the location, availability and the cost of recharging and refuelling points.

These data will be made available through the National Access Points.

9.1 Introduction

The PSA has been set-up by the European Commission to support Member States in setting up data collection for alternative fuels and make the data available through the National Access Points and to develop an effective, EU-wide coordination mechanism to assign unique identification codes to Charging Point Operators (CPOs, the owner of the charging point) and to Electric Mobility Service Providers (EMSPs, the organisation that offers contracts for charging). The Programme Support Action (PSA) was originally named "Data collection related to recharging/refuelling points for alternative fuels and the unique identification codes related to e-Mobility actors" and it was subsequently given the name IDACS, or "ID and Data Collection for Sustainable fuels in Europe." The 15 member states of the consortium mandatorily have to collect data related to alternative fuels infrastructure, namely electric charging points and hydrogen refuelling stations (HRS). Other alternative fuels, such as CNG, LNG, LPG and highly-blended biofuels are optional.

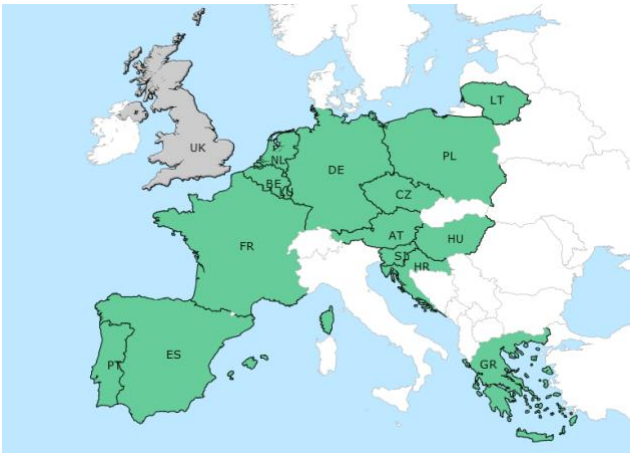


Figure 18: Overview of participating Member States

9.2 Background and goals

For a successful uptake of alternative fuels it is essential that there is clear, reliable and up-to-date information for consumers about the location, availability and the cost of recharging and refuelling points. Therefore, Member States will address and transpose Article 7.7 of the Directive 2014/94/EU (AFID) of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure which states that, when available, data about the location and availability of publicly available refuelling and recharging points for alternative fuels needs to be accessible on an open and non-discriminatory basis to all users. As defined in directive 2010/40/EU (ITS) on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport data collection mandatorily has to be made available through the National Access Points (NAPs). This combined assignment originating from both the AFID and the ITS directive makes the PSA IDACS a linking pin between two fields of expertise.

In order to make the exchange of data possible for electric mobility, an efficient and error-free system of unique identification of chargers and e-mobility contracts is required to enable interoperability and simplify roaming between networks, and thus make cross border data exchange and payment possible. Therefore, each contract and each charge point needs a unique ID with an agreed syntax, which is allocated to Charging Point Operators (CPOs) and to Electric Mobility Service Providers (EMSPs) respectively.

Figure 19 shows an overview of the PSA IDACS project. The green elements are defined elements within the Grant Agreement. The white elements should be arranged in order to be able to execute the project.

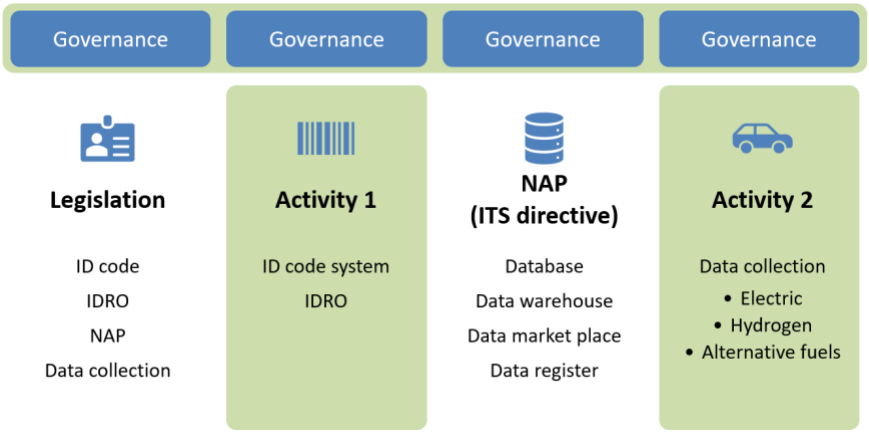


Figure 19: Overview from PSA IDACS

The objectives of PSA IDACS are:

- to support better consumer awareness and buy-in to the use of alternative fuels through *better information about the location/availability* of alternative fuel infrastructure;
- to support a structured market development through an EU-wide approach for the *assignments of ID codes* to e-mobility actors.

9.3 Activities

During the project the following work packages are being carried out:

1. **Coordination of ID Registrations for e-mobility actors**
   - Development of a format for the establishment of the first 5-digits of the e-mobility IDs for CPOs and EMPs and an EU-wide/coordinated approach regarding the remaining digits of the e-mobility IDs;
   - Establishment of ID registration organisations (IDROs) at national level responsible for issuing and management of e-mobility IDs within each of the participating Member States;
   - Establishment of a common ID Registration Repository (IDRR) allowing for exchanging with national IDROs;
   - Development of an approach to ensure the continuity of the common ID Registration Repository as well as of the national IDROs.
2. **Data collection for Alternative Fuels**
   - Collection of data on location and availability of electric charging points and hydrogen stations (mandatory) and LNG/CNG/LPG/Biofuels filling stations (optional);
   - Making collected data accessible through the National Access Points (or NAPs);

- Development of a model for continuation of data collection and financing of national databases and NAPs beyond the period of the PSA.

DATA EXCHANGE THROUGH NAP			
STATIC DATA			
Location (GNSS/Address)	●	●	●
Opening hours	●	●	●
Payment methods	●	●	●
Contact information operator	●	●	●
Available charge solutions	●		
Available connectors	●		
Emobility / ID codes	●		
DYNAMIC DATA			
Availability (operational)	●	●	
Occupation status	●		
Price for adhoc charging	●		

Figure 20: Overview of the required data

9.4 Timeframe

The project lasts for three years, from 1 January 2019 until 31 December 2021. In the first year of the project an extensive guideline has been developed to help Member States draft their national implementation plan to collect the data and make it available through the NAP, as well as their national procedure for ID registration. The focus of this second year was the set-up of the data collection and the establishment of an ID Registration Organization. In 2021, the exchange of data between national access points will be tested and an overarching ID Registration Repository (IDRR) to monitor the IDROs will be set up.

The IDACS projects (2019-2021) has two main activities:

- Coordination of ID Registrations for e-mobility actors;
- Data collection for Alternative Fuels and making this information available through the NAPs.

10 A data exercise in NAPs

In this chapter we describe a practical exercise about the content of NAPs. This exercise was quite a challenge.

It helps to get a better understanding of the vision on NAPs of each Member State.

10.1 Introduction

The biggest challenge in this exercise was the fact that the NAPs do not have a common architecture at European level and are structured in different forms such as: data warehouses, market places, metadata registries, web portals; each has its own access features, some require registration of data consumers and some do not.
To perform this exercise we chose to try to find data sets, metadata and information by taking a look in almost all known NAPs that were obtained based on the report made in the previous year. A detailed study was conducted on NAPs from Austria, Denmark, Germany, Italy, The Netherlands and Sweden.

10.2 Research in Safe and Secure Truck Parking NAPs

If NAPs are to help stimulate development of new data services and open up datasets to new data users, they need meet user needs and expectations.
So far the focus of the WG NAP has been on set up and implementation based on the Delegated Regulation text, not covering the data or NAP contents. Now we consider what it's like to be a new NAP user looking for data.
To gain further insight into the user experience we have set up a WG NAP Data Content Analysis task. This task has explored several European Truck Parking NAPs from an "outsiders" point of view. A detailed study was conducted on NAPs from Austria, Denmark, Germany, Italy, The Netherlands and Sweden examining the following aspects:

- How to search the NAP
- How to access the data (guest, registration)
- Description of data /metadata (language)
- Format / language of datasets
- How to use the data (API existence, push/pull services)

The exercise was performed on the existing information in March 2020 (there is a possibility that some results of the exercise may not be up to date due to the modifications made in the meantime).

10.2.1 HOW TO SEARCH THE NAP

We wanted to see how easy it is to find data/ metadata and information, what search tools are available in each NAP and how easy they are to use. Almost all NAPs provide many tools to facilitate search in the portal. Below are summarized the results on the six NAPs mentioned above:

Country	How to search the NAP
Austria	In the NAP we can find only metadata and information. There are many possibility to find it: 1. using the icon "parking & charging" from main page; 2. using the button "data search" from main menu and selecting "truck parking information" from "main category" sub-menu; 3. using the "Search" bar from main page.
Denmark	In the NAP we can find only information about the content of data sets. There are many possibility to find information about data sets: 1. using the "search" button from main page; 2. using the "Browse all" button from main page
Germany	In the NAP we can find information about data sets that are supplied in the MDM system and released for publication by owners. You can find all this information by using the "search" bar from main page."
Italy	In the NAP we can find a list will all parking place across Italy according with the Del. Reg. 885/2013 (if you use the link provided in our annual survey). If you use the "search" bar from main page you will find information but they are not reachable (error 404).
The Netherland	In the NAP we can directly find : 1. a map with Parking Areas across The Netherlands in GIS format; 2. a list with Parking Areas across The Netherlands that also contain all information about Parking Areas; 3. Data sets (table and status) with Truck Parking overview in DATEX II format that contain all available information.
Sweden	In the NAP we can find only metadata and information. There are many possibility to find it: 1. using the "Datasets" button from main page; 2. using the "Search" bar from main page.

Table 30: How to search into SSTP NAPs

10.2.2 HOW TO ACCESS THE DATA (GUEST / REGISTRATION)

We wanted to find out if it is necessary to register in the NAP in order to have access to the datasets or to the available information about the datasets. Moreover, we extended the exercise to the owners of the datasets to find out if this information can be accessed as visitors or only after we register.

Most NAPs provide free information about data sets (without registration on the NAP platform) but the data sets are accessible only to users registered in the datasets owner platform. Below are summarized the results on the six NAPs mentioned above:

Country	How to access the NAP´s DATA
Austria	In the NAP, metadata can be viewed both as a guest and as a registered user. Data are owned by ASFINAG and are not accessible like guest (need to register at ASFINAG platform)
Denmark	In the NAP, information can be viewed both as a guest and as a registered user. Data sets about Lorry Parking (Geo and Status) are published by Vejdirektoratet and are accessible only after you subscribe for them and your subscription is approved by the publisher.
Germany	In the NAP, information can be viewed both as a guest and as a registered user. Most of the publication details are accessible only for the registered users. Data sets about Truck Parking (static and dynamic) are owned by different stakeholders and are accessible only after you subscribe to the owner.
Italy	The list can be viewed without registration. The list contain following information about Truck Parking Areas: Region, Type Area, Name of Stop / Parking Area, Location (address), Services available, Type of loads allowed, Parking area equipment, Free of charge, Contact details, Number of parking places.
The Netherland	Everything published in this section of the NAP is available without registration as a user (including download for files in DATEX II format)
Sweden	In the NAP, metadata and information can be viewed both as a guest and as a registered user. Data are owned by Trafikverket and are not accessible like guest (need to register in their platform)

Table 31: How to access data into SSTP NAPs

10.2.3 DESCRIPTION OF DATA /METADATA (LANGUAGE)

We were interested if metadata/ datasets information can be easily understood by all users. In this sense, we performed an analysis on the languages in which information is available. The vast majority of NAPs are at least in two languages (national language plus English but not for all contents).

Country	Description of data/metadata (Language)
Austria	NAP is available in English and German. Menus and metadata are available in both languages. Names of data categories and their descriptions are available only in German
Denmark	NAP is available in English. All the information is available in English.
Germany	NAP is available in English and German. Menus, metadata and information are available in both languages.
Italy	NAP is available in Italian. English, French and German are available only for menu "Traveling"
The Netherland	NAP is available in Dutch and English. All the information is available in both languages.
Sweden	NAP is available in English. All the information is available in English.

Table 32: Description of data/metadata (Language) into SSTP NAPs

10.2.4 FORMAT / LANGUAGE OF DATASETS

We considered it quite important for the development of an application to know in which language are data from the datasets. Searching for this, we also found some additional information regarding the DATEX 2 profiles used or the updating frequency of the data sets.

Country	Format/Language of datasets
Austria	"From technical description we find out: Content language: German Publication structure: DATEX II Profile Data format – Syntax: XML Access interface: HTTP/HTTPS Update frequency: Up to 1min"
Denmark	Language is unspecified. From "Attached Documents" we find out: The provided data adheres to the DATEX II version 2.2.3 specification with the approved extension for parking.
Germany	Language is unspecified.
Italy	All the information provided in the list are in Italian.
The Netherland	In the .xml files is written that the language is Dutch.
Sweden	Language is unspecified.

Table 33: Format/Language of datasets into SSTP NAPs

10.2.5 HOW TO USE THE DATA (API EXISTENCE, PUSH/PULL SERVICES)

It is very important to know when you want to develop an application how you can use certain data sets. That's why we searched the NAP for information on how to use the available data sets.

Country	How to use the data
Austria	From technical description we find out: Communication method: pull
Denmark	From "About NAP" section we find out: The National Access Point (NAP) is a web portal (single point of access) for machine to machine exchange of traffic data. You can subscribe to any "public" data feed found on the NAP. Some data feeds are "moderated", and you will need to await accept from the data owner before you can access the data feed.
Germany	"From ""User manual"" we find out:

	To be able to use the Web interface, you must first create a user account. This includes a registration process during which you will receive a certificate, which must be installed in your web browser. Machine certificates are required to authenticate the machines involved in the M2M communication. They can be requested via the web interface. So that interested users can become data clients, the MDM platform provides a search functionality that is used to establish contact with the data supplier. The necessary negotiations (e.g. conclusion of a contract) are bilaterally conducted between the data supplier and the data client, independent of the platform. If both parties agree, the subscription can be set by the data supplier."
Italy	List can be used do make your own application/ data sets.
The Netherland	Unspecified (DATEX II files can be used)
Sweden	Unspecified (DATEX II files can be used)

Table 34: How to use the data from SSTP NAPs

10.3 Research in Safety Related Traffic Informations NAPs and Real Time Traffic Information NAPs

After the experience of the exercise performed in Safe and Secure Truck Parking NAPs, we also made a short exercise trying to find information about "**temporary slippery roads surface**" in SRTI NAPs and "**speed limits**" in RTTI NAPs. It should be mentioned that the methods of search, access, fomat/ language and how to use the data are the same as in the case of SSTP NAPs. The exercise was performed in the same six NAPs as in the case of SSTP and in the table below you will find the information about the existence of these types of data / information in those NAPs:

Country	RTTI/SRTI	Information
Austria	Temporary slippery road surface	There is information about temporary slippery road surface. Data sets are stored on other platforms and are not accessible as guest.
	Speed limits	There is information about speed limits. Data sets are stored on other platforms and are not accessible as guest.
Denmark	Temporary slippery road surface	NAP was unavailable when we made the research.
	Speed limits	NAP was unavailable when we made the research.
Germany	Temporary slippery road surface	We found information about road weather conditions/ weather conditions affecting road surface and visibility (not about temporary slippery road surface).

	Speed limits	We found information about average speed and number of vehicles (not about speed limits).
Italy	Temporary slippery road surface	No information found.
	Speed limits	No information found.
The Netherland	Temporary slippery road surface	There are information and data sets about temporary slippery road surface.
	Speed limits	There are information and data sets about speed limits.
Sweden	Temporary slippery road surface	There is information about temporary slippery road surface. Data sets are stored on other platforms and are accessible on demand.
	Speed limits	There is information about speed limits but the link to the Trafikverket site was not working.

Table 35: Information existence in SRTI and RTTI NAPs

10.4 Assets and tools to guide the users when navigating in NAPs across Europe

This chapter provides a brief overview and summary*) of the NAPs solutions within Europe. The purpose of the next table is to provide an understanding of which tools are implemented to help NAPs users – both data user and data providers.

Country	Assets and tools
Austria	The Austrian solutions provides the user with three different solutions for getting started and understanding the National Access Point. It contains a tutorial section, a FAQ section and a download section. The tutorial section helps the user understand the most common issues encountered in their NAP, while it also contains a walk-through of the essential topics within the NAP. The FAQ is like a FAQ should be – an answer for each question. It is provided in a neat and tidy overview, which makes it easy for the user to understand and locate relevant questions and answers. The downloads section provides the users with an array of downloadable files, which can help the user in the right direction, when using the NAP.
Belgium	The Belgian solution provides a brief "About" section, but also offers the opportunity to visit forums dedicated to the NAP. A thing worth noting about the Belgian solution is the decision to link directly to the source code of the NAP via Github – this provides a nice transparency for the access point, while it also allows developers to investigate the solution.
Cyprus	Does not provide any tools for helping the end user.
Czech Republic	The Czech Republic has decided to integrate their access point in a total solution between public institutions, thus providing a complete overview of data in the public sector. From the looks of it, the solution is still under development, thus making it difficult to assess the means of help available.
Denmark	In the footer you can find under "Help" and under "Documentation" a link to the EU Datex II website, it is stated you can find further help under each dataset description depending on what the dataset owner has provided. Under "Contact Support" there is an official email, where you can direct questions. No FAQ. The user is encouraged to contact the data provider for questions related to a specific dataset.
Estonia	Estonia provides a (very) brief help section for the user, outlining the most common issues encountered.
Finland	Finland provides a NAP instructions page, which leads to a NAVICOM website, that outlines the basics of their NAP.
France	Provides a FAQ, which goes through essential questions that might arise when using the NAP. France has also decided to link to their Github. This NAP does not provide information in English.
Germany	The German solutions provides the user with a downloadable user-manual, which is available directly on the landing page of their NAP.
Hungary	Provides a link to a FAQ but is not developed and the text on the FAQ page is not translated to English.

Country	Assets and tools
Ireland	Ireland has also decided to go with a total overview solution, thus integrating their NAP solution with other public datasets. What is noticeable about the Irish NAP is their "Guide for Publishers", as well as their decision to implement a showcase section. The showcase section provides an overview of good solutions using the data available, which can provide inspiration for users wanting to investigate the data at hand.
Lithuania	Lithuania provides very little information about their NAP and provides a tiny solution.
Luxembourg	The Luxembourg solution contains a FAQ, Usage Guidelines and Publishing Guidelines. Furthermore, the Luxembourg solution links to "latest reuse of data", Github and the open data strategy, under which the NAP is implemented.
Netherlands	Cannot find help (only an contact form), but the site has a simple setup.
Norway	Norway has decided to implement two specific guideline sections: one for end users and one for publishers. Many of the guidelines are backed up with short video animations to maximize the understanding of the sections.
Poland	Poland also provides a FAQ and a knowledge bank.
Slovakia	Slovakia uses a demonstration of how the NAP can be utilized, but the user has to dig a bit further into the site to find help.
Sweden	The Swedish means for help is based on a downloadable user manual, which helps the user understanding the platform and getting started.
The United Kingdom	The UK provides a point of contact, in which you can use direct communication and contact, in case you need/want help. This is also a total solution, in which different data from the UK public sector is available.

*) information provided by Christian Rantzow von Huth, Danish Road Directorate

Table 36: Assets and tools to guide the users when navigate in NAPs

10.5 NAP Consumer Registration

Registration and user accounts also apply to NAPs. We had previously agreed that those supplying their traffic and travel data (or metadata) to the NAP should be required to register; but more recently we discussed registration for anyone that wanted to consume the NAP data, a user account model.

For the NAP, a *user account model* can be defined as:

> *A system that permits the user to register for an account or profile which uniquely identifies them in the NAP. Such a system provides a way to sign in to a previously-created account. Typically, in order to create an account, the user will be required to provide identification details such as a name, email address, phone number.*

There are both advantages and disadvantages of requiring NAP consumers to register:

Consumer registration	
Pros	**Cons**
• Captures information about users that enables NAP providers to present relevant services & information to them immediately, and then during subsequent visits • User preferences and profiles can be saved • NAP providers can communicate with users when they are not interacting with the NAP, i.e. let them know about planned NAP maintenance, events, changes to any datasets they are using • Privacy and security for sensitive transactions • Gives the user a sense of involvement, the anonymous user becomes a NAP community member, this can facilitate a conversation between data consumers, NAP providers and data providers • NAP operator has more control over access and can increase NAP security	• Registration can be perceived as a barrier to potential NAP users, and can frustrate users who want to get information quickly • Mandatory registration can lead to the creation of dummy contact data from visitors who want to investigate the NAP but don't want to share real contact details • GDPR regulation compliance, with respect to personal data and privacy • It requires secure storage and back-up of personally identifiable information • Resources required to provide users with forgotten usernames and passwords

Table 37: NAPs consumer registration (pros and cons)

Across Europe NAPs have different structures; for example, there are data warehouses, market places, metadata registries, web portals; each has its own access features, some require registration of data consumers and some do not.

We concluded that the user registration model depends on existing services, national guidance and the way data access has been carried out previously. In many cases there are existing systems or procedures in place, or an existing precedence that led to a service being delivered in a specific way.

Even so, it should be possible for any user to read or view basic information, in order to gain a level of access to the NAP without going through a registration procedure, with any mandatory registration requirements being straightforward and clearly communicated.

This exercise helped us better understand the technical part of how to use / reuse data provided through NAPs.

In 2021 this activity are likely to be undertaken under the new CEF PSA. In 2021, EU EIP WG NAP will facilitate activity handover if required.

11 Data initiatives relevant for NAPs

To complement to the earlier chapters, this section describes **new NAP elements**.

These are identified within **WG NAP**, from **NAP stakeholder** feedback and from related **NAP initiatives**.

11.1 High Level Data Task Force and Data for Road Safety

11.1.1 OVERVIEW

The High Level Data Task Force has been a public-private partnership to discuss data exchange in the field of Safety Related Traffic Information, founded by the Transport Ministers at the High Level Meeting on Connected and Automated Driving in Amsterdam at February 2017. The HL Data Task Force has now fulfilled it's work and a final report[42] has been produced for the online High Level meeting organized by Finland the 7th of October 2020. The cooperation platform Data for Road Safety is a Safety Related Traffic Information (SRTI) Ecosystem created by the Data Task Force.

11.1.2 SRTI USE-CASES

SRTI use-cases according to delegated act c (EU886/2013)

- temporary slippery road
- animal, people, obstacles, debris on the road
- unprotected accident area
- short-term road works
- reduced visibility
- wrong-way driver
- unmanaged blockage of a road
- exceptional weather conditions

11.1.3 FINAL RECOMMENDATIONS

The final recommendations from HL Data Task Force are:

[42] See https://www.dataforroadsafety.eu/images/Documenten/DTF-REPORT-OCTOBER-2020-021020.pdf

- To establish a scalable solution where any industry partner in the transportation, mobility and traffic data domain and public authorities can join
- Support the Programme Support Action on a Coordination Mechanism to Federate National Access Points and National Bodies
- Use the established Multi Party Agreement as a solid foundation for the data exchange in the ecosystem
- Safeguard research, development and innovation
- Enhance insight into the creation of data to increase the usability of data
- Keep developing the National Access Points in the member states
- Strengthen public-private collaboration
- Increase the use of vehicle data for road safety
- Transparency towards to road user

11.1.4 THE SRTI ECOSYSTEM DATA FOR ROAD SAFETY

The SRTI Ecosystem Data for Road Safety is created to enable the exchange of data and information under the terms and conditions of the Multi Party Agreement and thus creating a trust domain for that exchange. Within the Ecosystem, five roles are identified:

- A Data Source shares or provide access to its data;
- An Aggregator uses the data from the data source(s) and creates and enriches the data e.g. by harmonizing and cleansing data from multiple data sources;
- A National Access Point is a regulated role;
- A Creator uses the available data to create Safety Related Traffic Information (SRTI);
- A Service Provider renders and distributes SRTI directly to an End User.

More information can be found at https://www.dataforroadsafety.eu

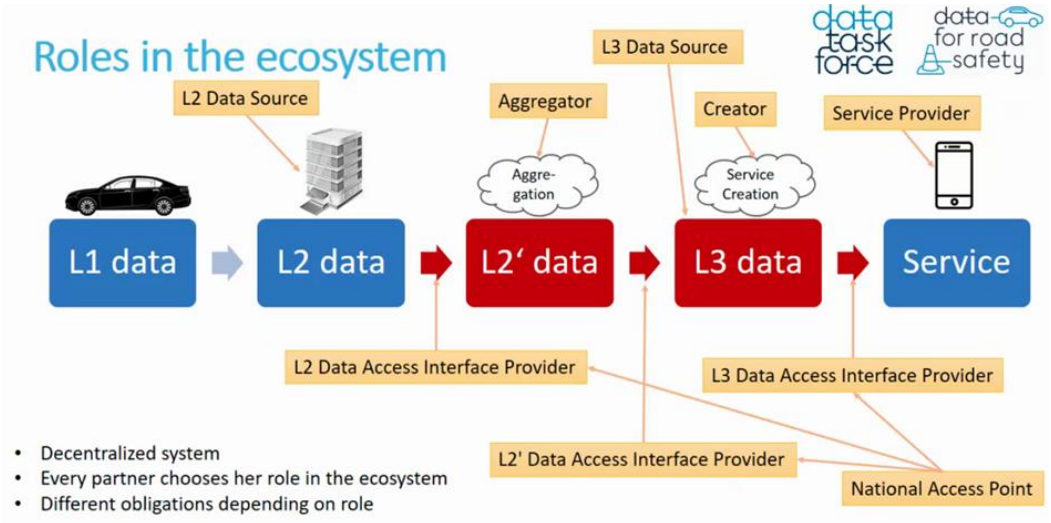


Figure 21: The SRTI roles in the ecosystem

11.2 Multimodal Travel Information Services

11.2.1 ODIN and the Nordic NeTEx profile

The ODIN working group consists of several organisations concerned with national open data from the Nordics' public transport sector. One of ODIN's core objectives is to implement the Delegated Regulation 2017/1926 to ensure that all countries are compliant with the Regulation and a more attractive mobility market for service providers in the Nordics. One essential cornerstone is to have a shared representation of public transport entities in NeTEx through a shared NeTEX profile. During summer 2019, Norway, Finland, Denmark, and Sweden agreed to adopt the Norwegian NeTEx profile and revamp it into a Nordic NeTEx profile[43]. Besides the new name, the Nordic profile serves under a change control board (CCB) and associated governance rules[44] (regulating how the CCB can implement changes to the profile). Currently, the Nordic NeTEx profile handles part 1 (Public Transport Network topology) and part 2 (Scheduled Timetables). There is ongoing work to include part 3 (Fare information).

ODIN consists of Entur A/S (NO), Samtrafiken AB(SE), the Swedish Transport Administration(SE), Research Institutes of Sweden (RISE) (SE), The Danish Transport, Construction and Housing Authority (DK), Rejsekort & Rejseplan A/S (DK), SFMCon (DK), Helsinki Region Transport (HSL)(FI), Traffic Management Finland (FI), TVV lippu- ja maksujärjestelmä Oy (LMJ) (FI), the Finnish Transport and Communications Agency (Traficom) (FI), and the Estonian Road Administration (EST).

11.2.2 Connecting Europe Facility (CEF) Programme Support Actions (PSA)

Programme Support Actions (abbr. PSA) are dedicated CEF grants to achieve a specific and targeted objective including public and private collaboration. They are an effective and suitable funding instrument to support

[43] See https://enturas.atlassian.net/wiki/spaces/PUBLIC/pages/728891481/Nordic+NeTEx+Profile

[44] See https://docs.google.com/document/d/159M5Hn-Na3esHEoStIekQ75XL5eSls-uNx4VA-qbD6w/edit#heading=h.fv79towcntnd

the implementation of MMTIS. In the context of implementing the real-time traffic information specifications of the ITS Directive, the DATEX II and TN-ITS GO CEF PSAs were launched.

Below you will find a list of the relevant CEF PSAs to support the early implementation of MMTIS . For a more detailed description of the activities, please refer to The MMITS Implementation handbook chapter 3 and 4 which you will find here:

https://ec.europa.eu/transport/sites/transport/files/2020-02-implementation-handbook-delegated-reg20171926.pdf

Member States' MMTIS Projects (2018)

A dedicated CEF PSA was launched in May 2017 to award grants to Member States for national-led coordination projects to support the early implementation of MMTIS which apply to the TENT network including urban nodes.

DATA4PT (2019)

The action consists of technical and organisational activities to facilitate the development and deployment of the European public transport data standards Transmodel, NeTEx and SIRI for the provision of Union-wide multimodal travel information services. For more information see also section 7.3 of this report

TN-ITS Digital Maps (2018)

The core objective of the dedicated PSA is to support the implementation of Delegated Regulations under Directive 2010/40/EU regarding the requirements to make road, traffic and transport services data used for digital maps accurate and available to digital map producers and service providers through national access points.

Alternative Fuel Stop ID

The objective of this PSA is to assist Member States with collection of the data related to the alternative fuels infrastructure and coordination and establishment of repository concerning unique Identification Codes (IDs) of e-mobility actors, which are an essential part for a future harmonised development of electro mobility services in Europe. For more information see chapter 9 of this report.

Transmodel/NeTEx Extension – Data Models and Definitions for New Modes (2018)

This standardisation activity shall define a harmonised data model for 'new modes' such as bike-sharing, car-sharing etc. which Transmodel and NeTEx do not currently support.

INSPIRE-MMTIS Project (2018)

The datasets listed in Annex I of MMTIS include spatial datasets and as such, several of the standards and technical specifications prescribed in MMTIS all cover the same spatial datasets.

In February 2018 an EU JRC funded project started in order to investigate this overlap and produce recommendations to Member States on how to address this issue within the National Access Points.

TN-ITS

TN-ITS (ITS Spatial Data – Data Exchanges on Changes in Road Attributes CEN/TS 17268) is a European technical specification for the exchange of road-related spatial data, and especially updates thereof.

A number of changes were made to the technical specification which is of relevance for the MMTIS Delegated Regulation.

As mentioned at the beginning of the paragraf, for more information please refer to The MMITS Implementation handbook chapter 3 and 4 which you will find here:

https://ec.europa.eu/transport/sites/transport/files/2020-02-implementation-handbook-delegated-reg20171926.pdf

12 The NAP-NB community

The EC/DG MOVE has launched to call for a Programme Support Action for the **coordination mechanism to federate the NAPs**.

EU EIP partners are actively involved in the **NAP &NB Harmonisation Group** to respond to this call for proposals.

12.1 NAP & NB Harmonisation Group

During the EU EIP - ITS Forum 2018 in Utrecht, a first meeting was organised of the NAP & NB Harmonisation Group.

It was noticed by some National Access Points (NAPs) and National Bodies (NBs) that although the NAP's should be „up and running" in all EU Member States, this was actually not the case. The status of the NAP and NB operational level and readiness varied greatly among Member States for various reasons:

- Still a lot of open questions
- Lack of best practice exchange and discussion forum for NAPs and NBs on an operational level
- Lack of common approaches.

Therefore, the group formulate some primary goals and objectives:

- Strengthening the position and role of NAPs
- Address NAP and NB specific issues with international dialogue
- Work for harmonizing implementation of Delegated Regulations
- Exchange of experience and best practice
- Define and support NB processes for compliance assessment
- Common communication strategies ("single voice") and promote NAPs.

Further ambitions of the NAP & NB Harmonisation Group are:

- Advise and consult the EC on harmonized adaptation of legislation
- Support steps towards the creation of European-wide solutions to facilitate the use of EU-wide data
- Identify approaches to evaluate and quantify benefits of international harmonization of NAPs and NB processes for cost benefit analysis
- Improve visibility of importance of NAPs in current and future digital transport infrastructure and hereby supporting CCAM, MaaS, traffic centers and Smart Mobility

The organisational structure of the NAP & NB Harmonisation Group is shown in the figure below.

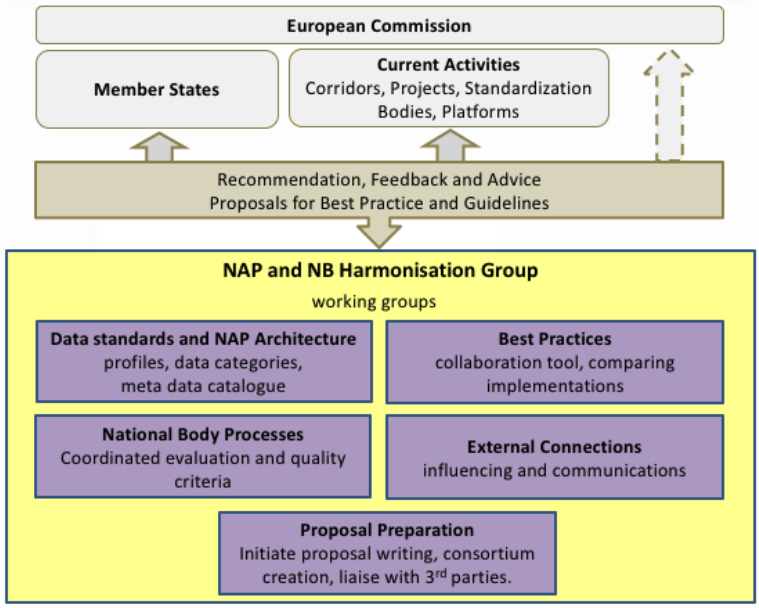


Figure 22: Organisational structure of the NAP & NB Harmonisation Group

The NAP&NB Harmonisation Group has published its first newsletter in September 2020 and a second Newsletter in December 2020.

12.2 European Strategy for data and coordination mechanism to federate the NAPs

On 19 February 2020, the Commission adopted the European Strategy for data, which provides in particular for the establishment of EU-wide common, interoperable data spaces in strategic sectors including a Common European mobility data space, which will facilitate access, pooling and sharing of data from existing and future transport and mobility databases. Concretely, such spaces aim at overcoming legal and technical barriers to data sharing across organisations, by combining the necessary tools and infrastructures and addressing issues of trust, for example by way of common rules developed for the space. The spaces will include:

(i) the deployment of data-sharing tools and platforms;

(ii) the creation of data governance frameworks;

(iii) improving the availability, quality and interoperability of data – both in domain-specific settings and across sectors.

In addition to the review of the ITS Directive and its Delegated Regulations which will further contribute to data availability, reuse and interoperability, and in addition to other transport-related actions, the creation of this Common European mobility data space includes the establishment of a stronger coordination mechanism to federate the National Access Points established under the ITS Directive through a EU-wide CEF Programme Support Action (2020).

12.3 Coordination mechanism to federate the NAPs

A Concept Paper for the Programme Support Action for a 'coordination mechanism to federate the National Access Points' was first published in February 2020, and an updated version was published in June 2020[45]. On 8th of December 2020 the Call for proposals concerning the PSA for the implementation of a Coordination mechanism to federate the NAPs established under the ITS Directive (2010/40/EU)II was published. The proposed action should aim to:

- enable the interoperable exchange of travel and traffic data in accordance with the requirements outlined in ITS Directive and its Delegated Regulations listed above,
- stimulate and accelerate the coordinated provision of road, traffic and transport data to enhance the quality of services based on these data,
- reflecting the continuous development of ITS services, and include user-oriented activities to ensure support, training, outreach and promotion,
- enhance multi-stakeholder cooperation and partnerships amongst public authorities and ITS information service providers.

The aim is to stimulate and accelerate the coordinated provision of ITS data to enhance the quality of the services based on these data, through the setting-up of a long-term governance and the facilitation of national & EU wide operational co-ordination for the implementation of the European specifications. It should in particular address the harmonisation of the development and evolution of the NAPs, in order to improve the compatibility and interoperability of the features, the design and development of common tools related to data accessibility and exchange, as well as the planning and coordination of data collection initiatives.

main activities of the PSA:

- Governance
- Monitoring and evaluation
- Interoperability of NAP architectures
- Data accessibility and exchange
- Compliance assessment
- Data collection and creation
- Dissemination – outreach activities

The Programme Support Action is expected to start in May 2021 and will run until December 2024. The maximum funding by the European Commission will be approx. 12 million euro.

The **NAP & NB Harmonisation Group** has initiated the creation of a proposal, through liaison with projects such as DATEX II, TN-ITS GO, Data Task Force, DATA4PT, IDACS, EU EIP and FRAME-NEXT. It is explicitly written in the PSA call that the proposed project should integrate the current projects DATEX II and TN-ITS, whereas

[45] Coordination mechanism to federate the National Access Points established under the ITS Directive, Concept Paper, June 2020 (EC, DG MOVE)

the project should coordinate with the projects DATA4P and IDACS and FRAME-NEXT.

At the time of writing of this report (December 2020) this group is formulating a proposal in response to the mentioned call for the PSA. A first kick-off meeting was held on 15th and 17th of December to inform Member States and NAP operators about the call and to identify the interest of Member States and NAP operators to participate in the proposal for this Programme Support Action.

For further information on the PSA call and on the developments of the project proposal follow the Linkedin Group of the NAP & NB Harmonisation Group: https://www.linkedin.com/groups/12432452/

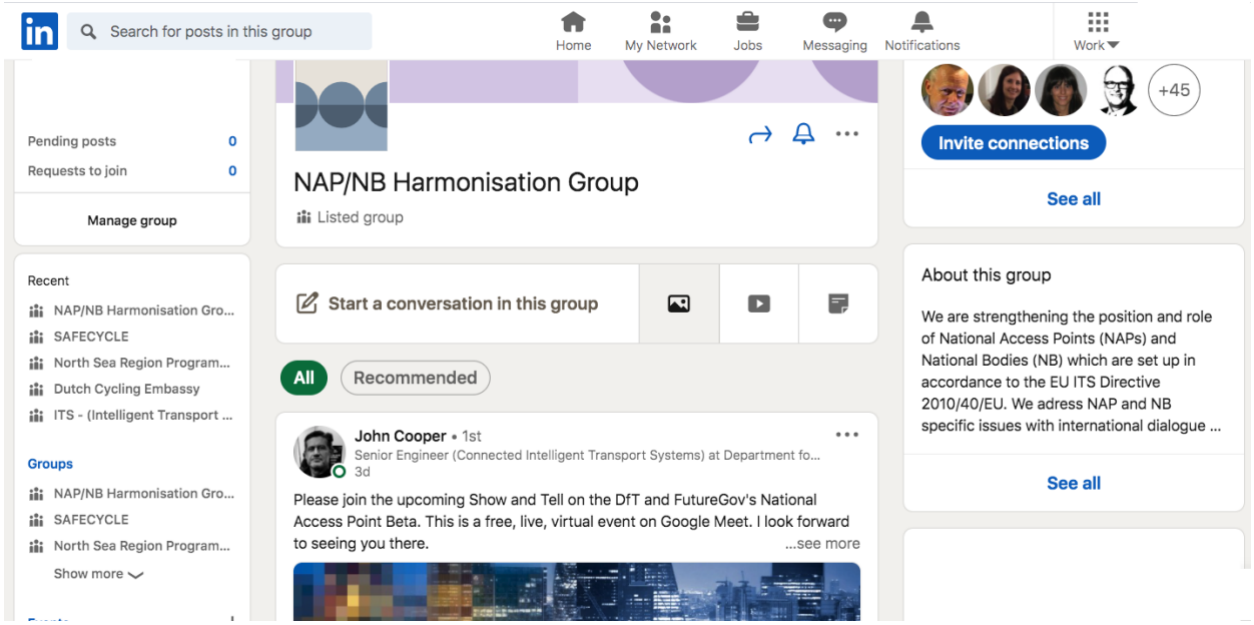


Figure 23:Print screen of the NAP/NB Harmonisation Group on LinkedIn

- EC/DG MOVE sees a need to empower NAPs as the backbone for ITS digital infrastructure, to which all current and future activities should be linked. And to facilitate national & EU wide operational co-ordination for the implementation of the European specifications.

- To this end the EC/DG MOVE has launched a call for a coordination mechanism to federate the NAPs.

- The NAP & NB Harmonisation Group has started an initiative to align all relevant parties and projects to submit a proposal in response to abovementioned call.

13 Declaration of Compliance

The Delegated Regulations for safe and secure truck parking, SRTI, RTTI and MMTIS request MS to manage NAPs and to carry out an **assessment of compliance** for these Delegated Regulations.

This task involves **harmonising** the process, developing **common templates** and guidance.

Without a harmonised approach, road authorities, road operators, digital map producers, service providers, truck parking operators, public transport companies, etc. run the risk that -if operating in more than one country- they will have to submit a declaration of compliance in different formats, different languages, under a variety of different rules.

Similarly, the organisations responsible for carrying out the assessment of compliance could possibly be facing discussions with a whole range of actors (road authorities, road operators, digital map producers, service providers, parking operators, public transport companies, etc.) that operate within their territory that might submit their own declarations of compliance in different languages and in a variety of formats.

13.1 Previous activities & initial findings

Through a joint effort of EU EIP and TISA in 2016 and 2017 Uniform Declarations of Compliance Forms have been developed for Delegated Regulations (EU) 886/2013 for SRTI, and (EU) 2015/962 for RTTI.

In 2019, in a joint effort of EU EIP with ESPORG, a Uniform Declaration of Compliance has been developed for Delegated Regulation (EU) 885/2013, safe and secure truck parking.

These three Uniform Declarations of Compliance, together with introductory letters and explanatory notes can be downloaded from the WG NAP website[46].

The Uniform Declaration of Compliance Form is supported by TISA, ESPORG, the EU EIP project, and the European Commission (DG MOVE).

For the Delegated Regulations (EU) 2017/1926 for MMTIS, a uniform Declaration of Compliance does not (yet) exist.

The stakeholders recommend that these Uniform Declaration of Compliance Forms will be used from now on by all relevant actors across Europe as the only form for declaration of compliance. Similarly, the national organisations responsible for the assessment of compliance can use this Uniform Declaration of Compliance Form as the standard Declaration of Compliance form in their country.

It is proposed to use the Uniform Declaration of Compliance Form for a pilot period of three years. Shortly before the completion of this three-year period, an evaluation shall be carried out with national organisations

[46] https://eip.its-platform.eu/activities/monitoring-and-harmonisation-national-access-points

responsible for the assessment of compliance, road authorities, road operators, digital map producers, and service providers, in order to assess whether the form has addressed the identified challenges or if it needs to be modified.

13.2 Next Steps

End of 2020 the EC/DG MOVE has launched a call for the coordination mechanism to federate the NAPS (see section 12.3). It is expected that this call for proposals will lead to a Programme Support Action (PSA), which will start early 2021 and last until early 2025.

Within this PSA the Working Group 'National Bodies and Compliance Assessment' is likely to cover the following activities:

- Development and management of uniform Declaration(s) of Compliance and associated documents.
- Development of harmonised approaches and processes for compliance assessment, with focus on the assessment of international organisations.
- Definition of (common) evaluation and quality criteria to be used by national bodies/competent authorities.
- Identification and implementation of necessary actions to motivate actors to accelerate the implementation of the Delegated Regulations.
- Identification and implementation of necessary actions to ensure that terms and conditions for data-reuse are reasonable and proportionate.
- Identification of best practices to support proper compliance and implementation, including existing national legislations.

- In 2016 and 2017 Uniform Declarations of Compliance for (EU) 886/2013 SRTI and (EU) 2015/962 RTTI were published.
- In 2019 the Uniform Declaration of Compliance for (EU) 885/2013, safe and secure truck parking was, published.
- 2021-2025: PSA on coordination mechanism to federate NAPs will comprise of number of activities covering Asessment of Compliance.

14 Summary & conclusions

NAPs in an European context

Recent NAP related policy developments from the EC are:

- **New Open Data Directive:** definitions of transport related high-value datasets, development of APIs and bulk downloads, licensed metadata; to be passed into MS law by 16 July 2021
- **Strategy for a Sustainable and Smart Mobility:** progressed under the European Green Deal, strategy due to be published late 2020, anticipated to include roadmap and policy framework covering digitisation, mobility platforms, alternative fuel infrastructure
- **European strategy for data:** key areas include digitisation, data sharing, federated platforms and NAPs, creation of Common European mobility data space, and implemented act covering high-value datasets.

The majority of the actions and developments have data related commonalities, and are to be progressed between the end of 2020 and 2022, therefore NAP activities should maintain a watching brief and assess the implications and impacts when more detail becomes available.

Current status of NAP implementation

Based on the EU EIP - NAP survey conducted in 2020 it can be concluded that MS are increasingly complying with the Commission Delegated Regulations for safe and secure truck parking ((EU) 885/2013), SRTI ((EU) 886/2013), RTTI ((EU) 2015/962) and MMTIS ((EU) 2017/1926). However, there are still quite a few countries who have work to do.

Nineteen countries currently have an operational NAP for safe and secure truck parking and three countries have concrete plans to implement the NAP. The European NAP for safe and secure truck parking has truck parking data from 12 countries.

Twenty-three countries have an operational NAP for safety-related traffic information, and the same holds for NAPs for realtime traffic information. Three countries have concrete plans to implement a NAP for SRTI, whereas 4 countries have concrete plans to implement a NAP for RTTI.

Sixteen Member States report a NAP for multi-modal travel information services, either fully or partially operational. In eight other Member States the NAPs are in progress or there are concrete plans to implement them.

From the above it can be concluded that NAPs for safety-related and for real time traffic information are the most implemented NAPs, whereas the number of NAPs implemented for multi modal travel information services is significantly lower.

Common features & Level of Service

This task aims to identify and develop agreement of NAP common features and Level of Service (LoS). These are intended to facilitate effective NAP functioning and make the NAP a straightforward, valuable resource for users. The Common Features and Level of Service Support Document was updated.

Based on MS feedback the focus of the future NAP feature developments and improvements are in the areas of compliance to webdesign standards, data protection and data security, enhancing discovery services and metadata.

Metadata

Metadata describes the administration, organisation, and content of a dataset and of a data service. Metadata datasets are therefore crucial elements to make NAPs accessible and searchable. This task examines the status of metadata in NAPs and provides recommendations.

The Coordinated Metadata Catalogue is established as a blueprint for NAP Metadata for each priority action of the EU ITS Directive.

As a follow-up, a NAP Metadata model has been initiated, covering aspects of interoperability and linked data

Standards & common formats

All Delegated Regulations supplementing the ITS Directive refer to certain standards to be used when exchanging information with NAPs. While DATEX II is prevalent, the NeTEx CEN/TS 16614 and SIRI CEN/TS 15531 standards are also stated. This task highlights relevant developments and implementer feedback.

The EU EIP – NAP survey confirms an increase of the knowledge about DATEX II in national implementations. Compared to 2019, more countries have operational NAPs which contributes to an even better picture of the DATEX II, and other standards, usage NAPs. A very positive conclusion is that some countries are already planning and working towards implementing DATEX II v3, the latest version of the standard.

MMTIS

Within the scope of this task, the main objective was to identify the developments in the field of the implementation of NAPs for MMTIS, focusing on road traffic. Major questions, issues and barriers have been identified for the adoption of MMTIS NAPs by the different Member States.

From the experience of other European projects, the group have identified the outstanding issues, the underlying data quality need urgently and effective action since MMTIS are data intensive. From these pieces of work WG NAP hasstarted the first steps of guidelines for the improvement and harmonization of MMTIS NAPs.

Architecture for NAPs

To support harmonisation of NAPs in Europe it is of value to explain the concept of architecture. A first important step in setting up a NAP is defining the architecture.

FRAME NEXT is a project that extends the European ITS Framework Architecture, now known as the FRAME Architecture, with the activities of the different member states in Europe, within the priority actions of the ITS Directive (Directive 2010/40/EU) and with the methodologies and tools that make a modern ITS architecture attractive and appealing for ITS. FRAME NEXT project has moved toward implementation of the NAP Architecture reference architecture. The FRAME NEXT repository will be published early 2021.

Data collection related for recharging-refuelling points for alternative fuels

The European Commision has set up a PSA in order to support Member States in setting up data collection for alternative fuels and make the data available through the NAPs.

IDACS is the final name associated to this PSA in which 15 Member States are involved. The project has two main activities: coordination of ID Registrations for e-mobility actors and data collection for alternative fuels and making this information available through the NAPs

A Data exercise in existing NAPs

Across Europe NAPs have different structures data warehouses, web portals, market places, metadata registries. Users experience and feedback is very important for NAP operators. If NAPs are to help stimulate development of new data services and open up datasets to new data users, they need to meet user needs and expectations. The conclusions of this exercise highlight the following pros and cons:

- NAPs user friendly interfaces
- Easy to search and find metadata, information and data sets on all NAPs
- Existence of a map with GIS information
- Well-defined data security procedures
- Not all category of information are available in English
- Difficult to register on the platform - too many procedures, no information about registration

Data initiatives relevant for NAPs

The High Level Data Task Force has fulfilled it's work and a final report has been produced for the online High Level meeting organized by Finland the 7th of October 2020. In addition, a list of the relevant CEF PSAs to support the early implementation of MMTIS has been identified.

The NAP-NB community

The EC/DG MOVE sees a need to empower NAPs as the backbone for ITS digital infrastructure, to wich all current and future activities should be linked. To this end it has launched a call for a coordination mechanism to federate NAPs. The NAP & NB Harmonisation Group is carrying out a initiative to align all relevant parties and projects to submit a proposal in response to this call.

Declaration of compliance

The Delegated Regulations for safe and secure truck parking, SRTI, RTTI and MMTIS request MS to manage NAPs and to carry out an assessment of compliance for these regulations. This task involves harmonising the process, developing common templates and guidance. In 2016 and 2017 Uniform Declarations of Compliance for (EU) 886/2013, SRTI, and (EU) 2015/962, RTTI, were published. In 2019 the Uniform Declaration of Compliance for (EU) 885/2013, STTP was published. From 2021 to 2025 PSA on coordination mechanism to federate NAPs will develop activities covering Assessment of Compliance.

15 Annex 1

Overview of National Access Points and National Bodies

This annex gives an overview of the National Access Points and National Bodies responsible for assessment of compliance in Europe with respect to the Commission Delegated Regulations 885/2013 (safe and secure truck parking), 886/2013 (SRTI), 2015/962 (RTTI) and 2017/1926 (MMTIS).

Status per December 2020.

National Access Points

Country	Safe and Secure Truck Parking	Safety Related Traffic Information (SRTI)	Real Time Traffic Information (RTTI)	Multimodal Travel Information Services (MMTIS)
Austria	http://www.mobilitydata.gv.at/	http://www.mobilitydata.gv.at/	http://www.mobilitydata.gv.at/	http://www.mobilitydata.gv.at/
Belgium	For Flanders: https://www.transportdata.be/dataset/truck-parkings-vlaanderen and https://opendata.vlaanderen.be/dataset/datex2-truck-parkings-vlaanderen For Wallonia: https://data.europa.eu/euodp/data/dataset/etpa/resource/b9ffcb80-f095-44ab-a647-fd546a98b94c	X	X	https://www.transportdata.be/
Bulgaria	https://datasheet.api.bg/?lang=en	https://lima.api.bg/dashboard	https://lima.api.bg/dashboard	X
Croatia	X	www.promet-info.hr (planned for June 2021)	www.promet-info.hr (planned for June 2021)	X
Cyprus	X	X	www.traffic4cyprus.org.cy (contains some RTTI, but is not a NAP)	www.traffic4cyprus.org.cy (contains some MMTIS (bus, bike) but is not a NAP)

Country	Safe and Secure Truck Parking	Safety Related Traffic Information (SRTI)	Real Time Traffic Information (RTTI)	Multimodal Travel Information Services (MMTIS)
Czech Republic	http://data.europa.eu/euodp/data/dataset/etpa	http://registr.dopravniinfo.cz/en/	http://registr.dopravniinfo.cz/en/	https://data.gov.cz/datová-sada?iri=https%3A%2F%2Fdata.gov.cz%2Fzdroj%2Fdatové-sady%2FMDopravy%2F701563102
Denmark	http://nap.vd.dk/	http://nap.vd.dk/	http://nap.vd.dk/	http://nap.vd.dk/
Estonia	https://tarktee.mnt.ee/#/en/datex	https://tarktee.mnt.ee/#/en/datex	https://tarktee.mnt.ee/#/en/datex	https://www.mnt.ee/eng/public-transportation/public-transport-information-system
Finland	X	https://www.digitraffic.fi/en	http://www.digiroad.fi/ https://www.digitraffic.fi/en/	http://www.finap.fi
France	https://www.bison-fute.gouv.fr/directive-sti,id_sous_rubrique10423,langen.html	https://www.bison-fute.gouv.fr/directive-sti,id_sous_rubrique10402,langen.html	https://www.bison-fute.gouv.fr/directive-sti,id_sous_rubrique10401,langen.html	https://transport.data.gouv.fr
Germany	https://service.mdm-portal.de/	https://service.mdm-portal.de/	https://service.mdm-portal.de/	https://service.mdm-portal.de/
Greece	www.nap.gov.gr	www.nap.gov.gr (not completely filled yet)	www.nap.gov.gr (not completely filled yet)	www.nap.gov.gr (not completely filled yet)
Hungary	https://napportal.kozut.hu/	https://napportal.kozut.hu/	https://napportal.kozut.hu/	X
Ireland	X	X	https://data.gov.ie	https://data.gov.ie
Italy	https://www.cciss.it/documents/20926/25539/Aree+sosta+-+veicoli+commerciali+e+mezzi+pesanti/2cb653d4-ba2b-4905-a87d-92e46335a373	https://www.cciss.it	https://www.cciss.it	X
Latvia	X	X	X	X

Country	Safe and Secure Truck Parking	Safety Related Traffic Information (SRTI)	Real Time Traffic Information (RTTI)	Multimodal Travel Information Services (MMTIS)
Lithuania	X	https://maps.eismoinfo.lt/portal/apps/sites/#/npp	https://maps.eismoinfo.lt/portal/apps/sites/#/npp	https://maps.eismoinfo.lt/portal/apps/sites/#/npp
Luxembourg	http://data.europa.eu/euodp/data/dataset/etpa	https://data.public.lu/fr/datasets/cita-donnees-trafic-en-datex-ii/	https://data.public.lu/fr/datasets/cita-evenements-trafic-en-datex-ii/	https://data.public.lu/fr/organizations/mobiliteitszentral/
Malta	X	X	X	X
The Netherlands	https://nt.ndw.nu/#/parking-overview	https://nt.ndw.nu/#/traffic-overview	https://nt.ndw.nu/#/actual-traffic-overview	https://nt.ndw.nu/#/multimodaal-reisinformatie-overview
Norway	X	www.transportportal.no	www.transportportal.no	www.transportportal.no
Poland	https://kpd.gddkia.gov.pl/index.php/en/download/	https://kpd.gddkia.gov.pl	X	X
Portugal	X	https://nap-portugal.imt-ip.pt (under development)	https://nap-portugal.imt-ip.pt (under development)	X
Romania	X	X	X	X
Slovakia	www.odoprave.info	www.odoprave.info	www.odoprave.info	X
Slovenia	http://data.europa.eu/euodp/en/data/dataset/etpa	https://www.promet.si/portal/en/etd.aspx	https://www.promet.si/portal/en/etd.aspx	https://www.ncup.si/en/multimodal (not yet operational, will be operational in 2021)
Spain	https://apps.fomento.gob.es/AparcamientosSeguros/en	http://nap.dgt.es	http://nap.dgt.es	X
Sweden	https://trafficdata.se	https://www.trafikverket.se/en/startpage/operations/ITS/spa--data-on-the-road-transport-system/road-safety-related-traffic-information/access-to-data/	https://trafficdata.se	https://trafficdata.se
United Kingdom	X	www.data.gov.uk	www.data.gov.uk	X

Table A 1: Overview of European NAP Links

National Bodies

Please note: for all e-mail addresses the [at] should be replaced with an '@'

Country	Safe and Secure Truck Parking	Safety Related Traffic Information (SRTI)	Real Time Traffic Information (RTTI)	Multimodal Travel Information Services (MMTIS)
Austria	AustriaTech – Gesellschaft des Bundes für technologiepolitische Maßnahmen GmbH Contact details: https://ivs-stelle.at kontakt[at]ivs-stelle.at Mag. (FH) Damaris Anna Gruber, MA T: +43 1 26 33 444 - 36 Benjamin Witsch, MSc (FH) T: +43 1 26 33 444 - 31 Raimundgasse 1/6, 1020 Wien	Same	Same	Same
Belgium	x	x	x	x
Bulgaria	Road Infrastructure Agency 1606 – Sofia, bld. „Macedonia" 3 Contact details: Mrs. Dobromira Zarankova Chief Expert, Directorate "Information Technologies and Systems" +359 2 9173 299 d.s.zarankova[at]api.bg Mr. Ivan Danchev Expert Coordinator of IT, Directorate "Information Technologies and Systems" +359 2 9173 312 i.danchev[at]api.bg	Same	x	x
Croatia	x	x	x	x
Cyprus	x	x	Ministry of Transport Communications and Works Contact details: Aristotelis Savva Executive Engineer Public Works Department Strovolou Avenue 165 Nicosia, T.K. 2048, Cyprus Tel: 00357-22806646	Same

Country	Safe and Secure Truck Parking	Safety Related Traffic Information (SRTI)	Real Time Traffic Information (RTTI)	Multimodal Travel Information Services (MMTIS)
			Mob: 00357 – 99318561 Fax: 00357 - 22498935 email: asavva[at]pwd.mcw.gov.cy	
Czech Republic	Ministry of Transport of the Czech Republic. Contact details: MartinPichl martin.pichl[at]mdcr.cz	Same	Same	x
Denmark	DRD, Planning and Traffic Division, Department for Administration Contact details: Mads Hedegaard mhed[at]vd.dk	Same	Same	Danish Transport, Construction and Housing Authority
Estonia	Ministry of Economic Affairs and Communications Contact details: Suur-Ameerika 1, Tallinn, 10122 Phone: +372 625 6342, E-mail: info[at]mkm.ee	Same	x	Same
Finland	x	The Finnish Transport and Communications Agency Contact details: Anna Schirokoff anna.schirokoff[at]traficom.fi	Same	Same
France	Ministry of Ecological Transition DGITM/MINT (Innovation, Digital & Territories Task Force) Contact details: Tour Séquoia F-92055 LA DEFENSE Cedex afimb.sags.dgitm[at]developpement-durable.gouv.fr	Same	Same	Same
Germany	NASt - Nationale Stelle für VerkehrsdatenContact	Same	Same	x

Country	Safe and Secure Truck Parking	Safety Related Traffic Information (SRTI)	Real Time Traffic Information (RTTI)	Multimodal Travel Information Services (MMTIS)
	details: Nationale Stelle für Verkehrsdaten Bundesanstalt für Straßenwesen Brüderstraße 53 51427 Bergisch Gladbach nast[at]bast.de https://nationalestelleverkehr.de/			
Greece	Independent Agency of Road Tolls Contact details: Mr. Yiannis Androulakis yot[at]yme.gov.gr	Same	Same	Same
Hungary	Ministry for Innovation and Technology Contact details: Tibor Feller tibor.feller[at]itm.gov.hu	Same	Same	Same
Ireland	The National Standards Authority of Ireland (NASI)	Transport Infrastructure Ireland Contact details: David Laoide-Kemp David.Laoide-Kemp[at]tii.ie	x	National Transport Authority Contact details: Cian O'Connor cian.oconnor[at]nationaltransport.ie
Italy	ART (Autorità di Regolazione dei Trasporti) Contact details: https://www.autorita-trasporti.it/	Same	x	x
Latvia	Ministry of Transport of the Republic of Latvia, Gogoļa iela 3, Rīga, Latvia, LV-1743, satiksmes.ministrija[at]sam.gov.lv	Same	x	Same
Lithuania	x	Lithuanian Road Administration lra[at]lra.lt	Same	Same
Luxembourg	Ministère de la Mobilité et des Travaux publics Département des transports Planification de la Mobilité 4, Place de l'Europe L-1499 Luxembourg	Same	x	Same
Malta	x	x	x	x

Country	Safe and Secure Truck Parking	Safety Related Traffic Information (SRTI)	Real Time Traffic Information (RTTI)	Multimodal Travel Information Services (MMTIS)
The Netherlands	Rijksdienst Wegverkeer (RDW) Contact details: RDW, attn. ITS Toezicht IV PO Box 30 000 9640 RA Veendam The Netherlands	Same	no	no
Norway	x	Norwegian Road Supervisory Authority (RSA) Contact details: post[at]vegtilsynet.com, ingebjorg.midthun[at]vegtilsynet.com	Same	Planned: The Norwegian Railway Directorate Contact details: Kjell-Erik Eilertsen, kjell-erik.eilertsen[at]jernbanedirektoratet.no
Poland	General Directorate for National Roads and Motorways (GDDKiA)	Same	x	x
Portugal	IMT Contact details: Avenida Elias Garcia, 103 1050-098 LISBOA, PORTUGAL Phone - +351 217 949 143 imt[at]imt-ip.pt	Same	Same	Same
Romania	Romanian Road Authority 38 Dinicu Golescu Blvd. District 1, Bucharest, Romania, 010873	Same	Ministry of Transport and Infrastructure 38 Dinicu Golescu Blvd. District 1, Bucharest, Romania, 010873	Same
Slovakia	MTC SR Contact details: Námestie slobody 6 Bratislava	x	x	x
Slovenia	National Traffic Management Centre, Contact details: Dean Herenda, Secretary, Head of Unit Land Transport Directorate Ministry of Infrastructure - SI, Dragomelj 116, 1230 Domžale, Slovenia	Same	Same	Same
Spain	Ministry of Transport, Mobility and Urban Agenda Contact details:	Dirección General de Tráfico Contact details: sgmovilidad[at]dgt.es	Dirección General de Tráfico Contact details: sgmovilidad[at]dgt.es	Ministry of Transport, Mobility and Urban Agenda Contact details:

Country	Safe and Secure Truck Parking	Safety Related Traffic Information (SRTI)	Real Time Traffic Information (RTTI)	Multimodal Travel Information Services (MMTIS)
	Luis Gómez Díez-Madroñero dgc.aparc.seguros[at]mitma.es https://apps.fomento.gob.es/AparcamientosSeguros/en	http://nap.dgt.es	http://nap.dgt.es	Francisco Javier Alejandre Mínguez . fjalejandre[at]mitma.es nap@fomento.es
Sweden	Swedish Transport Agency Contact details: Ingela Svensson Ingela.Svensson[at]transportstyrelsen.se	Same	Same	Same
United Kingdom	Department for Transport Contact details: John Cooper	Same	x	Same

NOTES:
x = 'not known' or 'to be decided'
no = there is/will be no National Body (NB)

Table A 2: Overview of National Body contact details