Second Report on NAP Data Availability

NAPCORE Working Group 3

NAP content and accessibility

This report provides information about the progress of NAP implementations across Europe and data availability in 2021 - 2022. It provides further insight into the implemented data standards and other topics related to NAP design and operation.

It serves as a knowledge centre and basis for achieving a harmonized NAP deployment and operation across Europe.

Version: 2.0

Date: 18 May 2023

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Document Information

Authors

Name	Organisation
Chrysostomos Mylonas	CERTH-HIT
Maria Stavara	CERTH-HIT
Evangelos Mitsakis	CERTH-HIT
Mihai Niculescu	ITS Romania
Catalin-Alexandru Trandafiridis	Electronic Solutions
Anastasia Founta	ITxPT
David Ariño Montoya	ITxPT
Madiha Shahzad	CY-KIOS
Irena Čačić	Croatian Roads (Hrvatske ceste)
Benjamin Witsch	AustriaTech
Gema Leiro García	Dirección General de Tráfico (DGT)
Rocío López	Dirección General de Tráfico (DGT)

Distribution

Date	Version	Dissemination
22/12/2022	0.1	Internal
06/01/2023	0.2	Internal
14/02/2023	0.3	Internal
13/03/2023	1.0	Internal
22/03/2023	1.1	Final Draft
18/05/2023	2.0	Final

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Preface

This report provides insight on the status of National Access Points across Europe, including the actual level of implementation of NAPs among Member States. It constitutes the second version of a series of periodic reports providing increased insight into geographical, network, and transport mode coverage of NAP data across Europe.

Preface: Commission Delegated Regulations and corresponding 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 (SSTP)
(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 (EU) 2022/670*	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)

*applies from 2023 (some part) and 2025

Overview

By sharing the knowledge and experiences of Member States (MSs) that have already implemented NAPs, other MSs can benefit. This exchange may also lead to a more harmonized implementation of NAPs across Europe.

Harmonization

The NAPCORE harmonization initiative represents one of the most ambitious harmonization projects that has been executed in the field of ITS-related data exchange in Europe. It brings together more than 30 mobility data platforms all over Europe.

Monitoring

This report provides an overview of:

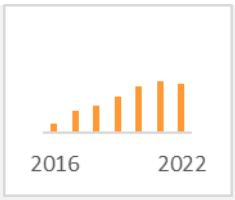
- NAPCORE project and monitoring activities (Chapter 1)
- Status of NAPs implementation, data availability, and geographical/network/mode coverage of NAP data (Chapter 2)
- Standards and common formats including the status of national implementations and profiles (Chapter 3)
- The status of NAPs considering other crucial aspects, such as metadata availability, description of data quality, provision of terms and conditions for data re-use, compliance assessment, number of data providers and consumers (Chapter 4)

This report also contains several Annexes that provide a detailed picture of European NAPs, including geographical/network/mode coverage of NAP data and the implemented data exchange standards.

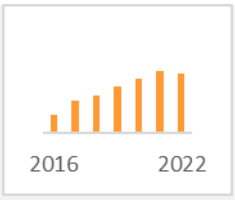
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

30
NAP implementers provided survey feedback in 2023

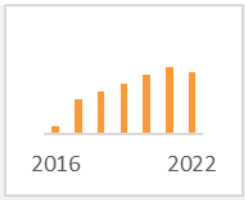
Number of operational NAPs



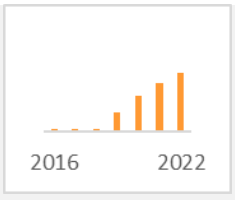
SSTP



SRTI



RTTI



MMTIS

NAPCORE WG3

- Monitors development and data availability of European NAPs, identifies gaps, improvement needs, & makes recommendations.
- Works towards enhanced data quality, harmonized terminology-data provision, and increased added value.

DATA AVAILABILITY

- Static SSTP-related data are made available by the NAP of 16 to 21 countries.
- Only 6 countries appear to make available through their NAP dynamic SSTP-related data.
- SRTI-related data are made available by the NAP of 23 countries.
- Static & dynamic RTTI-related data are made available by the NAP of up to 23 countries (excluding traffic circulation plans and freight delivery regulations).
- Big diversity on the availability of MMTIS-related data.

NAP STATUS

- Most European countries operate a NAP for SRTI and RTTI.
- The status of European NAPs for SSTP depends on the availability of safe & secure truck parking areas.
- Several countries are in the process of developing a new NAP interface (with status impact).
- The status of European NAPs for MMTIS has evolved since 2021.

IMPLEMENTED STANDARDS

- SSTP-SRTI-RTTI: DATEX II constitutes the most frequently implemented data standard.
- MMTIS: Big diversity on the standards/formats implemented (NeTEx, GTFS, TN-ITS, INSPIRE, DATEX II, and other national formats).
- Frequently used location referencing methods: Coordinates & ALERT C point (point), Alert C linear & linear along linear element (line), Alert C area & Open LR area (area)

METADATA & NAP ARCHITECTURE

- Provision of metadata per operational NAPs: SSTP:75%, SRTI:83%, RTTI:88%, MMTIS:82%
- 1/3 of NAPs for SSTP are purely web-link type while another 1/3 are only database type.
- 13 NAPs for SRTI are purely web-link type, 1/3 are purely database type, and only six are mixed type.
- NAPs for RTTI have an almost equal distribution between the three types of NAP architectures.
- 15 NAPs for MMTIS are purely web-link type while only three are purely database type.

OPEN DATA

- The "Open data" trend is maintained in the NAP ecosystem, since 20 countries estimate that more than 86% of their datasets conform to open licensing models.
- CC0 and CC BY-SA are the most frequently used licensing models.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Table of Contents

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

List of figures

This project has received funding from the European Commission’s Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

This project has received funding from the European Commission’s Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

List of tables

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

List of abbreviations

CEN	European Committee for Standardization
DRs	Delegated Regulation(s)
DRT	Demand responsive transport
EC	European Commission
GBFS	General Bikeshare Feed Specification
GDPR	General Data Protection Regulation
GTFS	General Transit Feed Specification
ITS	Intelligent Transport Systems
JSON	JavaScript Object Notation
MMTIS	Multimodal Travel Information Services
MS	EU Member States
NAPs	National Access Point(s)
NBs	National Bodies
NeTEx	Network Timetable Exchange (CEN Technical standard)
PIM	Platform Independent Model
PSM	Platform Specific Model
RRP	Recommended Reference Profile(s)
RSP	Recommended Service Profile(s)
RTTI	Real-Time Traffic Information
SIRI	Standard Interface for Real-time Information (CEN Technical Standard)
SRTI	Safety-Related Traffic Information
SSTP	Safe and Secure Truck Parking
TMC	Traffic Management Center
Transmodel	Public Transport Reference Data Model (EN 12896)
UML	Unified Modelling Language
XML	eXtensible Markup Language
W3C	World Wide Web Consortium
WFS	Web Feature Service
WMS	Web Map Service
WG	Working Group

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

1 Introduction

Working Group 3 titled “NAP content and accessibility” aims to assess and enhance the content and accessibility of European NAPs.

1.1 Scope & objectives of NAPCORE WG3

The activities of WG3 contribute to the harmonization of European NAPs content by taking into consideration the existing developments and potential future progress in the ITS domain. The activities aim to facilitate the fair, trusted, and enhanced accessibility to ITS-related data through the investigation of aspects related to data availability (technical and procedural), data quality, data reuse and data visualisation. Its specific objectives are as follows:

- Support Member States towards a common understanding on the current and future content of European NAPs considering existing, planned, and foreseen European legislative and technological developments.
- Monitor and assess the availability of ITS-related data at both national and Pan-European NAP level.
- Identify data gaps and provide guidelines to mitigate these gaps.
- Set a robust framework for and bring into practice the evaluation of European NAP platforms’ data quality.
- Investigate commonly accepted frameworks and technical options to achieve fair, trusted, and enhanced accessibility to ITS-related data through European NAPs.
- Create added value visualisation tools to be used by NAP operators, data providers, and data consumers.
- Support the enhanced use of NAPs in key application areas of priority and added value for EU Member States.
- Align the achievements on the NAP content and accessibility level with the remaining activities and needs of the project, including training.

Table 1.1 enlists the tasks of WG3. The current report falls under the scope of Task 3.1.

Table 1.1 Tasks of WG3 in NAPCORE

Task 3.1	Data content requirements arising from current and future developments
Task 3.2	European NAPs data quality
Subtask 3.2.1	Quality Frameworks
Subtask 3.2.2	Guidance & best practices for quality assessment
Subtask 3.2.3	Quality certification for NAP datasets
Task 3.3	Data access and reuse

This project has received funding from the European Commission’s Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Subtask 3.3.1	Technical options for data visualisation
Subtask 3.3.2	Terms and conditions of data reuse (incl. data pricing)
Subtask 3.3.3	Implications of GDPR
Task 3.4	Data Exchange Vision
Task 3.5	Training for NAP content and accessibility

1.2 Monitoring & Harmonization of NAPs – WG3 in NAPCORE

One of the activities of WG3 involves the monitoring of the on-going implementation of NAPs to assess their progress and content status, enable mutual learning, and pave the ground for their future EU-wide harmonization.

Currently, NAPs are being or have been implemented by almost all MS; however, the implementation of NAPs across Europe varies. For instance, some countries have separate NAPs to support different Delegated Regulations supplementing the ITS Directive, while some other support all Delegated Regulations through a single platform (point of access). Similarly, the type of NAPs (e.g., repository of links, databases, or both) and compliance assessment procedures differ significantly. Therefore, the current work aims at monitoring EU-wide NAP developments, contributing to harmonization, and acting as a knowledge centre for among others: Member States, NAP operators, and Nominated National Bodies (NB).

The objectives of the current report can be summarized as follows:

- Monitor the development and data availability of NAPs across Europe,
- Identify commonalities, substantial differences, and improvement needs.
- Enable knowledge exchange between/among various MS in the field of NAPs.

It should be noted that the current report constitutes the second version of a series of relevant reports to be published throughout NAPCORE. Its content and methodological approach is based on the first version, adapted to the provision of information of increased granularity as regards the spatial and network coverage of data made accessible through NAPs. Further details are provided in the following section(s).

1.3 Methodology

Multiple methodologies were deployed to achieve the goals of this report. Leveraging the fact that all MSs take part in the NAPCORE project, the primary data collection methodology was to conduct a second survey[1] targeting the recording of NAP status, data availability, and other implementation/operational aspects. Responses to this survey, were provided via e-mail by MS implementing bodies, operators of NAPs, responsible ministries, or representatives of nominated NBs. The survey approach was supported by extensive desk research. Any errors or conflicting data were resolved by one-on-one communication, online desk research, and, where possible, counter-

[1] The adopted structure of the questionnaire behind this survey is similar to the structure adopted during the preparation of the first version of the current report. However, additional questions have been asked for obtaining a clearer picture on the spatial and network/infrastructure coverage of available data. Additionally, the MMTIS-related data categories have been abstracted with an increased granularity targeting, among others, to provide transport mode specific insights.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

checked by data available from other projects, such as the Data4PT. The insights presented in this report are identified and substantiated during project workshops and meetings with experts.

The survey covered details about the status of NAP implementation, including the URL of each NAP, and a description of whether it is operational or planned. It also covered the availability of the data required by the DRs supplementing the ITS Directive (2010/40/EU), the supported language(s), and the presence of any quality requirements. It covered the type of each NAP (i.e., whether it hosts data or solely provides web links to data), the adopted data exchange standards (e.g., DATEX II), the support of metadata and/or discovery services, and the number of organizations (public or private) using NAP either as data providers or data consumers. The survey was circulated amongst 30 countries. One completed survey was received per country. In some cases, desk research was conducted using the online information on the NAPs to verify and enhance the information acquired through the survey. The survey is retrospective, and answers are interpreted as valid for 2022, i.e., columns related to 2022 represent this year's (2023) survey.

The feedback acquired, by following either approach, is presented and analysed in the current report in a both disaggregated and aggregated manner. The former provides support to European Commission (EC), relevant instruments and any other user to obtain a European-wide “operational picture” of NAPs. The latter facilitates further discussions to identify and assess important NAP gaps. Next versions of the current report will seek to provide information of further increased granularity (where necessary and possible) or provide insights on additional topics of interest.

This project has received funding from the European Commission’s Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

2 Status of NAPs

This chapter describes the **status of implementation** of National Access Points in Europe as well as their **data availability**, based on the NAPCORE research conducted in 2023.

Provided information will be updated frequently to reflect the progress made in the implementation of the Delegated Regulations supplementing the ITS Directive (**SSTP**, **SRTI**, **RTTI,** and **MMTIS).**

This chapter starts by describing the rationale applied for recording the status of NAP implementation across Europe. This is then followed by the status description of NAPs supporting (a) the provision of information services for safe and secure truck parking places (SSTP), (b) the provision of safety-related traffic information services (SRTI), (c) the provision of real-time traffic information services (RTTI), and (d) the provision of multimodal travel information services (MMTIS). Subsequently, it describes the methodology applied for recording data availability in the European NAPs, which is then followed by the presentation of the derived results.

2.1 Monitoring the status of European NAPs

With the aim of monitoring the status of implementation of NAPs across Europe, a survey-based research methodology was adopted. Relevant to this chapter questions were intended to receive information about the status of NAP implementation with regard to the requirements set by the DRs supplementing the ITS Directive (2010/40/EU). The following terminology is adopted for describing in a harmonized, consistent, and trackable manner the status of each NAP:

- "**Operational**", when data according to the DRs supplementing the ITS Directive are made available to the public through a NAP (dedicated or not), without recognition of completeness (of the exchanged data). Therefore, "Partly Operational" NAPs are addressed as operational (i.e., one part of data is made available while another not).
- "**Implementation**", when a designated NAP is in the phase of being tendered or implemented by a nominated contactor or by a public entity. This category also encompasses NAPs that are in the "test run".
- "**Planned**", when there is trackable activity towards the implementation of a NAP, the planning of NAP architecture, the arrangement of organizational structure and responsibilities, or the preparation of studies and tenders. "In Progress" responses and statuses are addressed as falling into this category.
- **"Not implemented"**, when there is neither NAP implemented nor implementation plan in place.
- "**Not Operational**", when a NAP has been implemented but is not fully operational (e.g., on-line accessible) or does not have any content to exchange.
- **"Not Applicable"**, when there is enough evidence to judge that data according to the DRs supplementing the ITS Directive (2010/40/EU) are not at all available, e.g., due to the absence of the required infrastructure. A typical example constitutes the absence of safe and secure parking areas within a specific MS that jeopardizes any possibility of a relevant NAP operation.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

The acquired information is checked for consistency, with responses provided in previous surveys and the information/evidence collected by the European Commission[2]. Where necessary, extra clarification was requested from the respective NAPCORE project partner. In some cases, desk research was conducted to gather, support and/or verify the acquired information. Information for the previous years (2016-2021) originates from similar analyses conducted under the EU EIP project (which produced the so-called annual NAP reports[3]) as well as from the first version of the current report. The URL links to access the NAPs and the NBs that are responsible for assessing the implementation of the ITS Directive per country are available in Annex I - National Access Points and National Bodies. It should be noted that the accumulated knowledge on the NAP status across Europe has been used to update the reported status for the previous years (2016-2021). In that sense, the current version of this report should be addressed as repealing the previous one.

2.1.1 Status of NAPs for Safe and Secure Truck Parking

This section presents the progress and status of implementation, per country, of the European NAPs with regard to the provision of information services for safe and secure parking places for trucks and commercial vehicles in line with the DR(EU) 885/2013 (in short 'NAPs for SSTP'). The DR (EU) 885/2013 was adopted by the EC on 18 September 2013 and applies (a) from 1 October 2015 to the provision of services already deployed on the date of entry into force of this DR and (b) from 1 October 2013 to the provision of services to be deployed after the date of entry into force of this DR. Table 2.1 presents the current status. This table also presents the status as of 2016. Mentioned within this table "EU portal" denotes the official portal for European data maintained by the EC[4].

Table 2.1. Status of NAPs for safe and secure truck parking information

Country	2016	2017	2018	2019	2020	2021	2022
Austria	Planned	Operational	Operational	Operational	Operational	Operational	**Operational**
Belgium	Operational (Flanders only)	Operational	Operational	Operational	Operational (via EU portal)	Operational	**Operational**
Bulgaria	-	-	-	Planned	Operational	Operational	**Operational**
Croatia	-	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	**Operational**
Cyprus	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	**Not applicable**
Czech Republic	-	Not Applicable	Operational (via EU portal)	Operational (via EU portal)	Operational (via EU portal)	Operational (via EU portal)	**Operational**
Denmark	Planned	Operational	Operational	Operational	Operational	Operational	**Operational**
Estonia	-	-	Planned	Planned	Operational	Operational	**Operational**
Finland	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Operational	**Operational**
France	-	Operational	Operational	Operational	Operational	Operational	**Operational***
Germany	Operational	Operational	Operational	Operational	Operational	Operational	**Operational**
Greece	-	Planned	Planned	Planned	Operational	Operational	**Operational**
Hungary	-	Planned	Implementation	Operational	Operational	Operational	**Operational**
Ireland	-	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	**Not applicable**
Italy	-	-	-	Operational	Operational	Operational	**Operational**
Latvia	-	-	Planned	Planned	Planned	Planned	**Planned****
Lithuania	-	-	-	-	-	Not applicable	**Not implemented**
Luxembourg	-	-	Operational	Operational	Operational	Operational	**Operational**
Malta	-	-	-	-	-	Not applicable	**Not applicable**
Netherlands	Operational	Operational	Operational	Operational	Operational	Operational	**Operational**

[2] https://transport.ec.europa.eu/transport-themes/intelligent-transport-systems/road/action-plan-and-directive/national-access-points_en
[3] https://www.its-platform.eu/achievement/monitoring-harmonisation-of-naps/
[4] https://data.europa.eu/data/datasets/etpa?locale=en

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Country	2016	2017	2018	2019	2020	2021	2022
Norway	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	**Not applicable**
Poland	Planned	Planned	Planned	Operational	Operational	Operational	**Operational**
Portugal	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	**Not applicable**
Romania	-	Planned	Planned	Planned	Operational	Operational	**Operational**
Slovakia	-	-	-	Operational	Operational	Operational	**Not Operational*** **
Slovenia	-	Operational	Operational	Operational	Operational	Operational	**Operational**
Spain	-	Operational	Operational	Operational	Operational	Operational	**Operational**
Sweden	Operational	Operational	Operational	Operational	Operational	Operational	**Operational**
Switzerland	-	-	-	-	-	Operational (via EU portal)	**Planned**** **
United Kingdom	-	-	-	-	Planned	Implementation	**Implementation ***** **

* In compliance with the evidence collected by EC.
** The current platform (lvceli.lv) provides access to SSTP data; however, another platform/interface is planned.
*** The implemented NAP is not fully operational.
**** SSTP data are currently made available through EU portal; however, a dedicated NAP platform is planned.
***** A new NAP platform/interface is under implementation.

The progress of the implementation of the DR (EU) 885/2013 is illustrated in Figure 2.1. In 2016 only 4 countries had an operational or partly operational NAP and another 3 had a planned NAP. In the following years there was a significant increase and in 2022 (2023 Survey) 20 out of 30 countries appear to have an operational or partly operational NAP, while 3 countries have planned or are in the phase of implementation of a new platform/interface to act as a NAP for SSTP (LV, CH, and UK). Five out of the seven remaining countries are considered as not operating at that time safe and secure truck parking places (Portugal, Norway, Malta, Cyprus, Ireland). Therefore, the implementation status of these countries is classified as "Not Applicable". Finally, one country appears to not have yet implemented a NAP for SSTP (Lithuania), while the implemented platform/interface of another country is not fully operational (Slovakia).

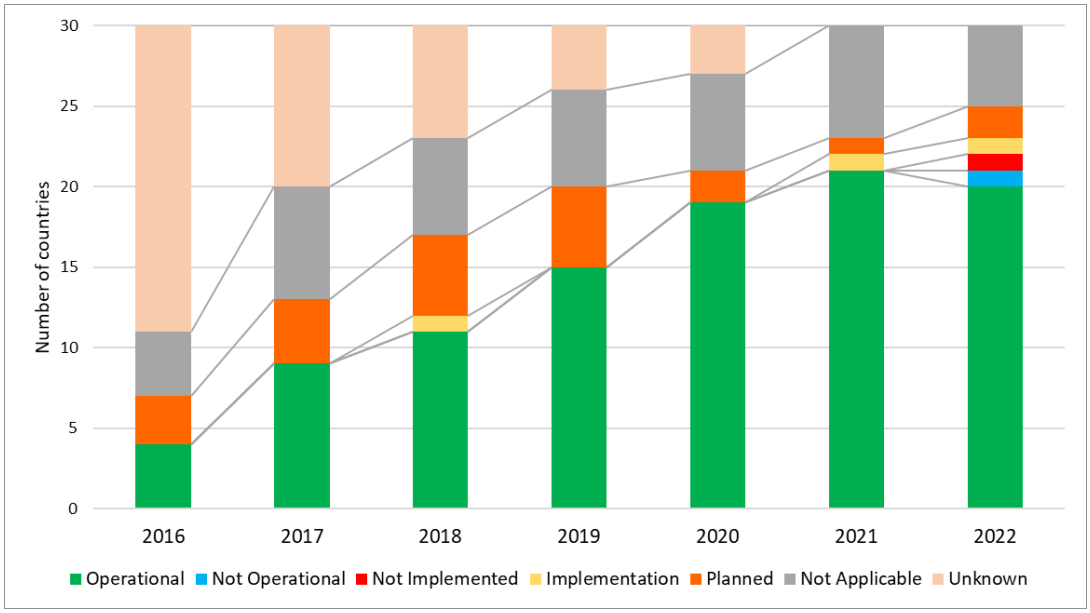


Figure 2.1 Implementation of DR (EU) 885/2013 – SSTP by the Member States.

2.1.2 STATUS OF NAPS FOR SAFETY-RELATED TRAFFIC INFORMATION

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

This section describes the progress and status of the European NAPs with regard to data and procedures for the provision of safety-related traffic information in line with the DR (EU) 886/2013 (in short 'NAPs for SRTI'). The DR (EU) 886/2013 was adopted by the EC on 18 September 2013 and applies from 1 October 2013. The status is presented in Table 2.2. The same table presents the status as of 2016.

Table 2.2 Status of NAPs for safety-related traffic information

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

* A new NAP has been developed that is not fully operational at the current state.
** In compliance with the evidence collected by EC.
*** The current platform (lvceli.lv) provides access to SRTI datasets; however, a new platform/interface is planned.
**** The implemented NAP is not fully operational.
***** A new NAP is under implementation.

The progress of the implementation of the DR (EU) 886/2013 is illustrated in Figure 2.4. It can be observed that there was an increase from 7 countries in 2016 to 24 countries in 2022, regarding the countries that had an operational or partly operational NAP. Moreover, there is one country that is in the process of implementing a new

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

interface/platform to act as a NAP for SRTI (UK). Similarly, there are/is: a) two countries (Latvia and Malta) that have planned the development of a NAP for SRTI, b) two countries that have developed a NAP for SRTI that is not currently fully operational (Cyprus and Slovakia), and c) one country that appears to not have implemented a NAP for SRTI (Switzerland). All in all, it seems that most European countries operate a NAP with regard to DR (EU) 886/2013.

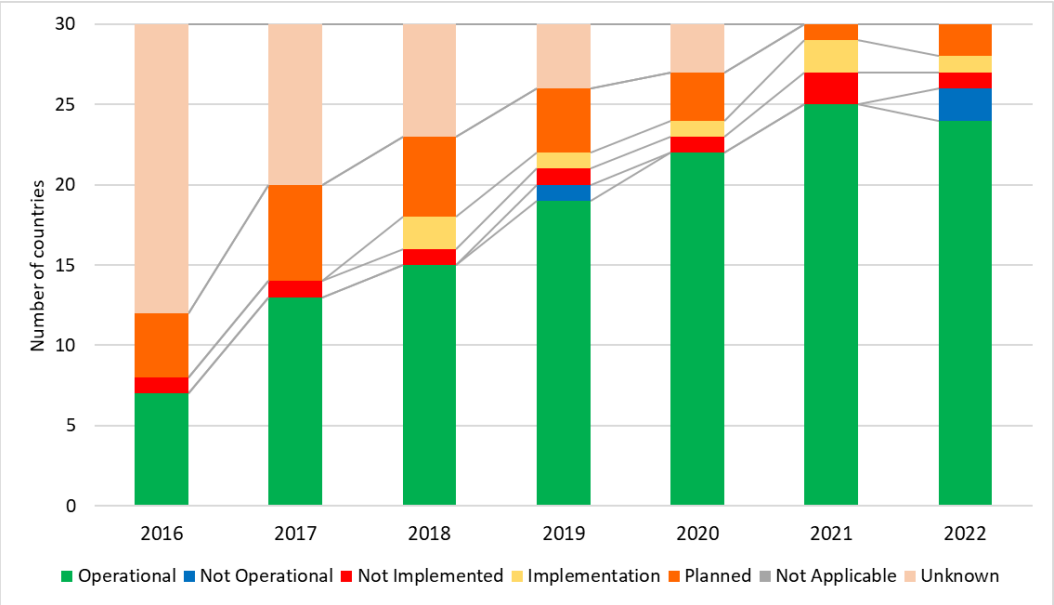


Figure 2.2 Implementation of the DR (EU) 886/2013 – SRTI by the Member States.

2.1.3 STATUS OF NAPS FOR REAL-TIME TRAFFIC INFORMATION

This section describes the status of implementation of the European NAPs with regard to the provision of EU-wide real-time traffic information services in line with DR (EU) 2015/962 (in short 'NAPs for RRTI'). The DR (EU) 2015/962 was adopted by the EC on 23 June 2015 and applies from 13 July 2017. Recently, a follow-up version of this DR is published as DR (EU) 2022/670 and comes in force from 2023 for some parts and fully from 2025[5]. The status is presented in Table 2.3. The same table presents the status as of 2016[6].

Table 2.3 Status of NAPs for DR for real-time traffic information

Country	2016	2017	2018	2019	2020	2021	2022
Austria	Planned	Operational	Operational	Operational	Operational	Operational	**Operational**
Belgium	-	-	Planned (in progress)	Planned (in progress)	Planned (in progress)	Operational	**Operational**
Bulgaria	-	-	-	Planned	Operational	Operational	**Operational**
Croatia	-	Planned	Planned	Planned	Planned	Operational	**Operational**
Cyprus	Operational (partly)	Operational (partly)	Operational (partly)	Operational (partly)	Operational (partly)	Operational (partly)	**Not operational***
Czech Republic	-	Operational	Operational	Operational	Operational	Operational	**Operational**

[5] Given that the current report is retrospective (i.e., it provides information about the NAP status and data availability in 2022), DR 2015/962 has been used as a reference (instead of DR 2022/670).

[6] Even though DR (EU) 2015/962 applies from 13 July 2017, some countries declared in the context of the EIP+ and EU EIP projects that they had as of 2016 an operational or planned NAP for the second priority action of the ITS Directive (2010/40/EU).

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Country	2016	2017	2018	2019	2020	2021	2022
Denmark	Planned	Operational	Operational	Operational	Operational	Operational	**Operational**
Estonia	-	-	Operational	Operational	Operational	Operational	**Operational**
Finland	Operational	Operational	Operational	Operational	Operational	Operational	**Operational**
France	-	Operational	Operational	Operational	Operational	Operational	**Operational****
Germany	Operational	Operational	Operational	Operational	Operational	Operational	**Operational**
Greece	-	Planned	Implementation (ongoing)	Operational (partly)	Operational	Operational	**Operational**
Hungary	-	-	Planned	Operational	Operational	Operational	**Operational**
Ireland	-	Operational	Operational	Operational	Operational	Operational	**Operational**
Italy	-	Operational	Operational	Operational	Operational	Operational	**Operational**
Latvia	-	-	Planned	Planned	Planned	Planned	**Planned*****
Lithuania	-	-	-	Operational	Operational	Operational	**Operational**
Luxembourg	-	-	Operational	Operational	Operational	Operational	**Operational**
Malta	Not implemented	Not implemented	Not implemented	Not implemented	Not implemented	Not implemented	**Planned**
Netherlands	Planned	Operational	Operational	Operational	Operational	Operational	**Operational**
Norway	Planned	Operational	Operational	Operational	Operational	Operational	**Operational**
Poland	-	-	-	-	-	Operational	**Operational**
Portugal	Planned	Planned	Planned	Planned	Planned (in progress)	Operational	**Operational**
Romania	-	Planned	Planned	Planned	Operational (partly)	Operational	**Operational**
Slovakia	-	-	Operational	Operational	Operational	Operational	**Not operational******
Slovenia	-	Operational	Operational	Operational	Operational	Operational	**Operational**
Spain	-	Operational	Operational	Operational	Operational	Operational	**Operational**
Sweden	Planned	Operational	Operational	Operational	Operational	Operational	**Operational**
Switzerland	-	-	-	Planned	Operational	Operational	**Operational**
United Kingdom	-	-	-	-	Operational	Implementation	**Implementation**

* A new NAP has been developed that is not fully operational at the current state.
** In compliance with the evidence collected by EC.
*** The current platform (lvceli.lv) provides access to RTTI datasets; however, a new platform/interface is planned.
**** The implemented NAP is not fully operational.
***** A new NAP is under implementation.

The progress of the implementation of the DR (EU) 2015/962 is illustrated in Figure 2.3. It can be observed that there was a significant increase from 4 countries in 2016, to 25 countries in 2022, with an operational or implemented (partly operational) NAP. Moreover, there are/is: a) two countries (Latvia and Malta) that have planned the development of a NAP for RTTI, b) one country that is in the process of developing a new NAP for RTTI (UK), and c) two countries that have developed a NAP for RTTI that is not currently fully operational (Cyprus and Slovakia). In similar to SRTI, it appears that almost all European countries operate a NAP for RRTI.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

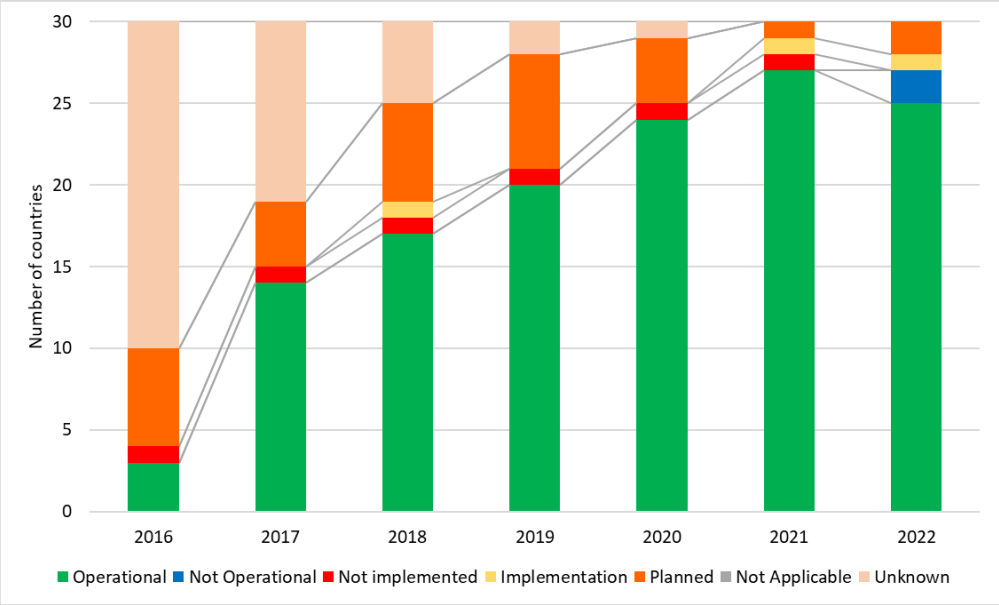


Figure 2.3 Implementation of the DR (EU) 2015/962 – RTTI by the Member States.

2.1.4 STATUS OF NAPS FOR MULTIMODAL TRAVEL INFORMATION SERVICES

This section describes the status of implementation of the NAPs with regard to the provision of multimodal travel information services, in short 'NAP for MMTIS'. The DR (EU) 2017/1926 was adopted by the EC on 21 October 2017. The application of the DR (EU) 2017/1926 is divided into four separate timeframes. The first timeframe (1 December 2019) encompasses the provision of static travel and traffic data associated with the '1st Level of Service' for the comprehensive TEN-T network. The second timeframe (1 December 2020) encompasses the provision of static travel and traffic data associated with the '2nd Level of Service' for the comprehensive TEN-T network. The third timeframe (1 December 2020) encompasses the provision of static travel and traffic data associated with the '3rd Level of Service' for the comprehensive TEN-T network, while the fourth timeframe (1 December 2023) encompasses the provision of static travel and traffic data associated with *all* levels of service for the *other parts of the Union transport network*. It should be noted that no specific timeframe is set with regards to the provision of dynamic travel and traffic data. This DR is currently under revision, while the EC proposal is expected within 2023. The current status is presented in Table 2.4. The same table presents the status as of 2016[7].

Table 2.4 Status of NAPs for DR for multimodal travel information services

Country	2016	2017	2018	2019	2020	2021	2022
Austria	Planned	Planned	Planned	Operational	Operational	Operational	**Operational**
Belgium	-	-	Planned	Planned	Operational	Operational	**Operational**
Bulgaria	-	-	-	-	-	Operational	**Operational***
Croatia	-	-	Planned	Planned	Planned (in progress)	Operational	**Operational**
Cyprus	Planned	Planned	Planned	Operational	Operational	Operational	**Operational**
Czech Republic	-	-	Planned	Planned	Operational	Operational	**Operational**

[7] Even though DR (EU) 2017/1926 was adopted in 2017, some countries declared in the context of the EIP+ and EU EIP projects that they had as of 2016 an operational or planned NAP for the first priority action (delegated act) of the ITS Directive (2010/40/EU).

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Country	2016	2017	2018	2019	2020	2021	2022
Denmark	Planned	Planned	Planned	Planned	Operational	Operational	**Operational**
Estonia	-	-	Planned	Planned	Operational	Operational	**Operational****
Finland	Planned	Planned	Implementation	Implementation	Operational	Operational	**Operational**
France	-	-	Implementation	Operational	Operational	Operational	**Operational**
Germany	-	-	Planned	Operational	Operational	Operational	**Operational**
Greece	-	Planned	Planned	Planned	Implementation	Operational	**Operational**
Hungary	-	-	Planned	Planned	Planned	Operational	**Planned*****
Ireland	Operational	Operational	Operational	Operational	Operational	Operational	**Operational**
Italy	-	-	-	Planned	Planned	Operational	**Operational**
Latvia	-	-	Planned	Planned	Planned	Planned	**Planned******
Lithuania	-	-	-	Operational	Operational	Operational	**Operational**
Luxembourg	-	-	Planned	Operational	Operational	Operational	**Operational**
Malta	Not implemented	Not implemented	Not implemented	Not implemented	Not implemented	Not implemented	**Planned**
Netherlands	-	-	Planned	Planned	Operational	Operational	**Operational**
Norway	-	Planned	Planned	Operational	Operational	Operational	**Operational**
Poland	-	-	-	-	-	Not implemented	**Not implemented *******
Portugal	-	-	-	-	-	Operational	**Operational**
Romania	-	-	-	-	Planned	Implementation	**Operational**
Slovakia	-	-	-	-	Planned	Planned	**Planned**
Slovenia	-	Planned	Planned	Planned	Planned	Planned	**Operational**
Spain	-	-	-	Planned	Planned	Operational	**Operational**
Sweden	Planned	Planned	Planned	Planned	Operational	Operational	**Operational**
Switzerland	-	-	-	-	-	Planned	**Operational**
United Kingdom	-	-	-	-	-	Implementation	**Implementation ********

* The Bulgarian NAP for MMTIS appears to be currently hosted on the website of the ministry of transport and communications.
** The NAP is accessible at http://peatus.ee/gtfs/ and provides datasets in GTFS format.
*** The link included in the EC list for Hungary leads to a platform that appears to not provide access to MMTIS-related datasets; the "MMTIS" features of this platform are expected to be available by the end of 2023.
**** The current platform (lvceli.lv) provides access to MMTIS datasets; however, a new platform/interface is planned.
***** The link included in the EC list for Poland leads to a governmental platform not necessarily including MMTIS-related datasets.
****** A new NAP is under implementation.

The progress of implementation of the DR (EU) 2017/1926 is illustrated in Figure 2.4. Ireland was the first country to provide MMTIS-related data early in 2016. Since then, there is a significant increase regarding the countries that have an operational or implemented (partly operational) NAP (24 countries in 2022). It should be noted that for several countries a link is included in the list maintained by the EC; however, it appears that in certain cases this link leads to a platform that does not provide access to MMTIS-related datasets or to a governmental platform that may either serve as a temporary interface for MMTIS data or provide a wide range of data not necessarily related to ITS in general and MMTIS in particular (e.g., statistical data).

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

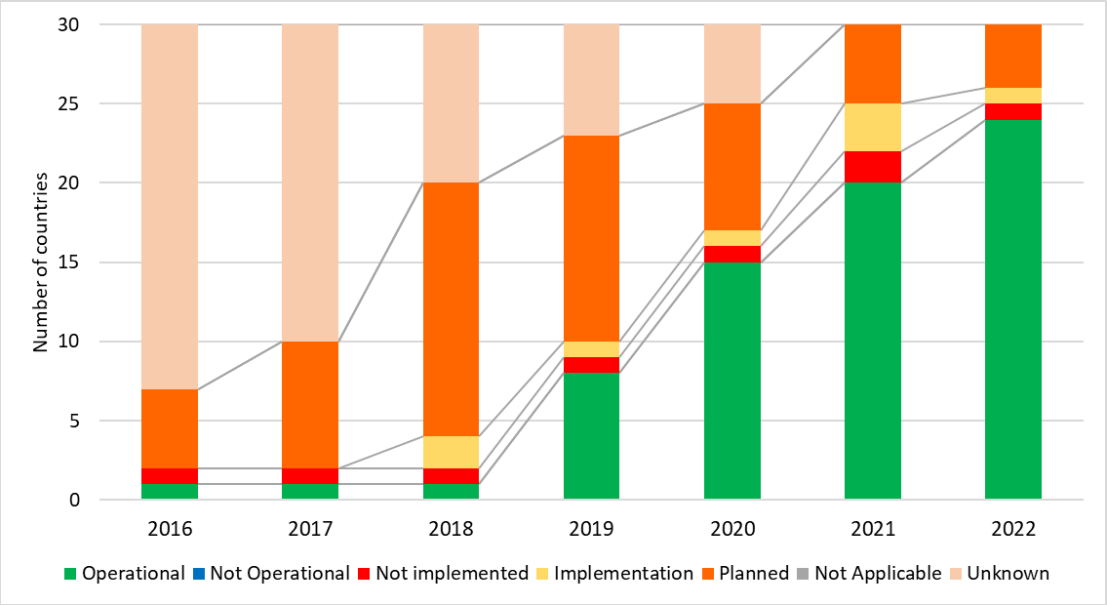


Figure 2.4 Implementation of the DR (EU) 2017/1926 – MMTIS by the Member States.

2.2 Monitoring data availability of European NAPs

Data availability monitoring of European NAPs is based on the categorization of the data elements specified in the annexes of the DRs supplementing the ITS Directive. In this respect, the second survey designed in the context of Task 3.1 asks national responders to indicate whether their NAP exchange (or not) data in relation to each of the adopted data categories. It is noteworthy that adopted categories for SSTP, SRTI and RTTI follow a similar categorization with the first survey, while the categories for MMTIS are expanded, i.e., abstracted with a finer granularity. This choice is attributed to the plurality of data elements/ontologies included in the previously utilized categories for MMTIS and the resulting need to provide insights of increased accuracy, considering, among others, the needs of other working groups and working structures of NAPCORE (e.g., ambassadors for cycling/parking/MaaS data).

With respect to **SSTP**, the following data categories are adopted:

- Data for the provision of **static** information about safe & secure truck parking areas (e.g., truck parking place location, parking capacity, access road identifiers)
- Data for the provision of **static** information about the safety conditions and equipment of safe & secure truck parking areas (e.g., description of security or service equipment)
- Data for the provision of **dynamic** information about the availability of safe and secure truck parking areas

With respect to **SRTI**, the following data category is adopted:

- Data for the provision of **dynamic** information about road safety-related events/conditions (e.g., location of event, category of event, provided driving behaviour advice)

With respect to **RRTI**, the following data categories are adopted:

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

- Data for the provision of **static** information about the road network (e.g., road network links and their physical attributes, road classification, speed limits)
- Data for the provision of **static** information about the usage of the road network (e.g., traffic circulation plans, freight delivery regulations)
- Data for the provision of **static** information about roadway and roadside infrastructure (e.g., location of tolling stations, location of parking places and service areas, location of public transport stops and interchange points)
- Data for the provision of **dynamic** road status information (e.g., road closures, lane closures, roadworks)
- Data for the provision of **dynamic** traffic information (e.g., traffic volume, travel times, location, and length of traffic queues)

Finally, with respect to **MMTIS**, the following data categories are adopted:

- Data for the provision of **static** information for location search (e.g., address identifiers, topographic places, points of interest)
- Data for the provision of **static** information for location search – scheduled modes (e.g., identified access nodes, geometry/map layout structure of access nodes)
- Data for the provision of **static** information for location search – DRT services (e.g., location of stops/stations)
- Data for the provision of **static** trip plan information – scheduled modes (e.g., operational calendar, mapping day types to calendar dates)
- Data for the provision of **static** trip plan information – scheduled modes (e.g., fare network data, standard fare structures)
- Data for the provision of **static** auxiliary information – scheduled modes (e.g., vehicle facilities, such as classes of carriage, on-board Wi-Fi)
- Data for the provision of **static** trip plan information – cycling (e.g., detailed cycle network attributes, such as surface quality, side-by-side cycling, shared surface, on/off road, scenic route, 'walk only', turn/access restrictions)
- Data for the provision of **static** information for trip plan computation – scheduled modes (e.g., connection links between interchanges, transfer times, network topology, routes/lines topology, transport operators, timetables, planned interchanges, hours of operation, facilities of access nodes, etc.)
- Data for the provision of **static** information for trip plan computation – personal modes (e.g., network topology and attributes)
- Data for the provision of **static** information for trip plan computation – multimodal (e.g., estimated travel times by day type and time band by transport mode/combination of transport modes)
- Data for the provision of **static** information for detailed common standard and special fare queries – scheduled modes (e.g., passenger classes, common fare products, special fare products, basic commercial conditions)

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

- Data for the provision of **static** information for traveller services – scheduled modes (e.g., where and how to buy tickets, including retail channels, fulfilment methods, payment methods)
- Data for the provision of **static** information for traveller services – DRT modes (e.g., where and how to book, including retail channels, fulfilment methods, payment methods)
- Data for the provision of **static** information for traveller services – other mobility services and infrastructure (e.g., where and how to pay, including retail channels, fulfilment methods, payment methods)
- Data for the provision of **static** environmental information (e.g., parameters needed to calculate an environmental factor, such as carbon per vehicle/passenger mile, and parameters needed to calculate cost, such as fuel consumption)
- Data for the provision of **dynamic** passing time, trip plan, and operational information – scheduled modes (e.g., disruptions, real-time status, status of access nodes features, estimated departure and arrival times)
- Data for the provision of **dynamic** passing time, trip plan, and operational information – DRT modes (e.g., disruptions, real-time status)
- Data for the provision of **dynamic** information about current road link travel times
- Data for the provision of **dynamic** information about future predicted road link travel times
- Data for the provision of **dynamic** information about cycling network status (e.g., closures, diversions)
- Data for the provision of **dynamic** information about the availability of mobility services and relevant infrastructure

A high-level overview of what types of data are available on the NAP of each country is provided in Table 2.5 - Table 2.7. Table 2.5 provides insight into the availability of SSTP, SRTI, and RTTI data. Table 2.6 provides insight into the availability of static MMTIS data, while Table 2.7 provides insight into the availability of dynamic MMTIS data. Similarly, Figure 2.5 - Figure 2.8 provide an aggregated picture of the number of countries publishing data per adopted data category. It should be noted that NAP status is considered in the information included in these tables and figures (i.e., for this reason no availability is reported for countries in which a NAP has not yet been operated or is in the process of a substantial technical update). Beyond that, the second survey designed in the context of Task 3.1 has been also expanded to provide further insight into both the spatial and network coverage of European NAP data. The collected evidence combined with additional desk research is presented in the following section.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Table 2.5: Overall picture of data availability (SSTP, SRTI, RTTI)

Country	Static information about safe & secure parking areas	Static information about the safety & equipment of safe & secure parking areas	Dynamic information about the availability of safe & secure parking areas	Dynamic information about road safety-related events/conditions	Static information about the road network	Static information about the usage of the road network	Static information about roadway and roadside infrastructure	Dynamic road status information	Dynamic traffic information
Austria	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Belgium	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Bulgaria	Yes	Yes	No	Yes	No	No	Yes	Yes	No
Croatia	Yes	Yes	No	Yes	No	No	No	Yes	No
Cyprus	No	No	No	No	No	No	No	No	No
Czech Republic	Yes	Yes	No	Yes	No	No	No	Yes	Yes
Denmark	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
Estonia	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Finland	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes
France	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes
Germany	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Greece	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Hungary	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Ireland	No	No	No	Yes	Yes	No	Yes	Yes	Yes
Italy	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Latvia	No	No	No	No	No	No	No	No	No
Lithuania	No	No	No	Yes	Yes	No	Yes	Yes	Yes
Luxembourg	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Malta	No	No	No	No	No	No	No	No	No
Netherlands	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Norway	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Poland	Yes	Yes	No	Yes	No	No	Yes	Yes	No
Portugal	No	No	No	Yes	No	No	Yes	Yes	Yes
Romania	Yes	No	No	No	Yes	No	No	No	No
Slovakia	Yes	Yes	No	No	Yes	No	No	Yes	No
Slovenia	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Spain	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Sweden	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No
Switzerland	No	No	No	No	No	No	No	No	Yes
United Kingdom	No	No	No	No	No	No	No	No	No

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Table 2.6: Overall picture of data availability (static MMTIS)

Country	Static information for location search (address identifiers)	Static information for location search – scheduled modes (identified access nodes)	Static information for location search – DRT services (location of stops/stations)	Static trip plan information – scheduled modes (operational calendar)	Static trip plan information – scheduled modes (fare network data)	Static auxiliary information – scheduled modes (vehicle facilities)	Static trip plan information – cycling	Static information for trip plan computation – scheduled modes (connection links between interchanges)	Static information for trip plan computation – personal modes (e.g., network topology and attributes	Static information for trip plan computation – multimodal (estimated travel times by day type and time band by transport mode/combination of transport modes)	Static information for detailed common standard and special fare queries – scheduled modes (passenger classes)	Static information for the provision of traveler services – scheduled modes (where and how to buy tickets)	Static information for the provision of traveler services – DRT modes (where and how to book)	Static information for the provision of traveler services – other mobility services and infrastructure	Static environmental information (parameters needed to calculate an environmental factor)
Austria	No	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	No	No	No	Yes
Belgium	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bulgaria	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No
Croatia	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	No	No	No	No	No	No
Cyprus	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	No	No	No	No
Czech Republic	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No
Denmark	Yes	Yes	No	Yes	No	No	No	Yes	Yes	No	No	No	No	No	No
Estonia	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes	No	Yes	No	No	No
Finland	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No
France	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Germany	No	Yes	Yes	Yes	No	No	No	No	Yes	No	No	No	Yes	No	No
Greece	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	No
Hungary	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Ireland	No	Yes	No	No	No	No	No	Yes	No	No	No	No	No	No	No
Italy	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Latvia	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Lithuania	Yes	Yes	No	Yes	No	No	No	Yes	No	No	No	No	No	No	No
Luxembourg	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
Malta	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Netherlands	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
Norway	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Poland	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Portugal	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	No	No	No	No	No	No
Romania	Yes	Yes	No	No	No	No	No	No	Yes	No	Yes	Yes	No	No	No
Slovakia	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Slovenia	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Spain	No	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No
Sweden	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Switzerland	Yes	Yes	No	Yes	No	No	No	Yes	No	No	No	No	No	No	No
United Kingdom	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Table 2.7: Overall picture of data availability (dynamic MMTIS)

Country	Dynamic passing time, trip plan, and operational information – scheduled modes (disruptions)	Dynamic passing time, trip plan, and operational information – DRT modes (disruptions)	Dynamic information about current road link travel times	Dynamic information about future predicted road link travel times	Dynamic information about cycling network status (closures)	Dynamic information about the availability of mobility services and relevant infrastructure
Austria	No	No	Yes	Yes	No	No
Belgium	Yes	Yes	Yes	No	No	Yes
Bulgaria	No	No	No	No	No	No
Croatia	No	No	No	No	No	No
Cyprus	Yes	No	No	No	No	Yes
Czech Republic	No	No	No	No	No	No
Denmark	No	No	No	No	No	No
Estonia	No	No	No	No	No	No
Finland	Yes	No	No	No	No	Yes
France	Yes	Yes	No	No	No	Yes
Germany	No	No	No	No	No	Yes
Greece	No	No	Yes	No	No	No
Hungary	No	No	No	No	No	No
Ireland	Yes	No	Yes	No	No	No
Italy	No	No	No	No	No	No
Latvia	No	No	No	No	No	No
Lithuania	Yes	No	Yes	No	No	No
Luxembourg	Yes	Yes	Yes	No	Yes	Yes
Malta	No	No	No	No	No	No
Netherlands	Yes	No	Yes	No	Yes	Yes
Norway	Yes	Yes	Yes	No	No	Yes
Poland	No	No	No	No	No	No
Portugal	No	No	No	No	No	Yes
Romania	No	No	No	No	No	No
Slovakia	No	No	No	No	No	No
Slovenia	No	No	Yes	Yes	No	Yes
Spain	No	No	No	No	No	No
Sweden	Yes	Yes	Yes	No	No	Yes
Switzerland	Yes	No	No	No	No	No
United Kingdom	No	No	No	No	No	No

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

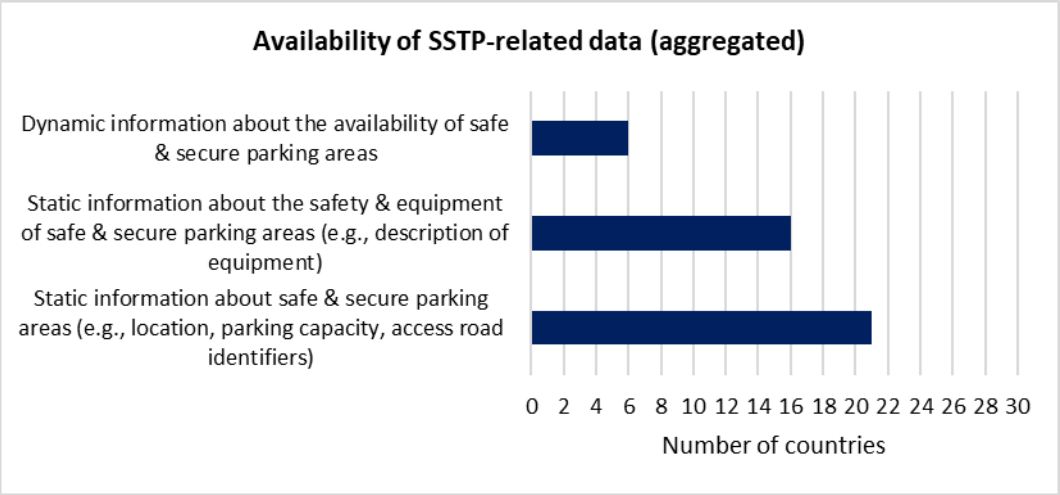


Figure 2.5: Availability of SSTP-related data (aggregated)

As it can be observed from Figure 2.5, there are only 6 countries that provide data about the availability of safe and secure parking areas. On the other hand, for the remaining two data categories, which are related to the provision of static information, the countries that have relevant publications on their NAPs are much more. In particular, 16 countries provide data regarding the safety conditions and equipment of safe & secure truck parking areas, while 21 countries provide static data about the safe & secure truck parking areas.

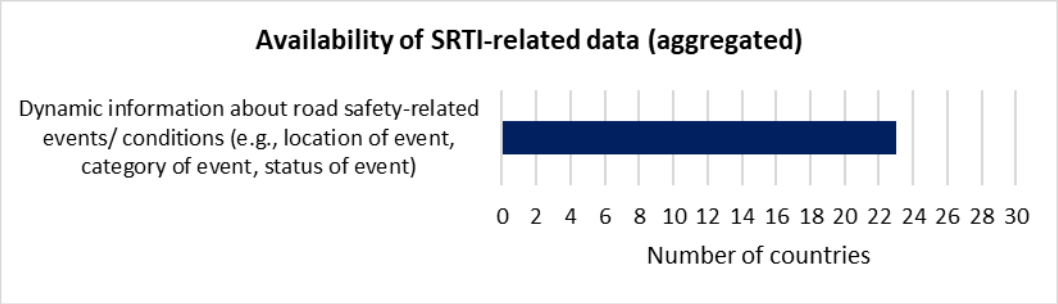


Figure 2.6: Availability of SRTI-related data (aggregated)

As it can be seen from Figure 2.6, there are 23 countries which provide dynamic data about road safety-related events and conditions, while the remaining 7 countries do not provide such information through their NAP. This output does not come as a surprise since the status of European NAPs with regard to DR (EU) 886/2013 seems to be consistent with the provision of safety-related traffic information. Specifically, the status of NAP of 6 out of 7 countries that do not publish SRTI data, is considered as planned, not operational, not implemented, or under implementation. This status justifies the lack of provision of SRTI-related data.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

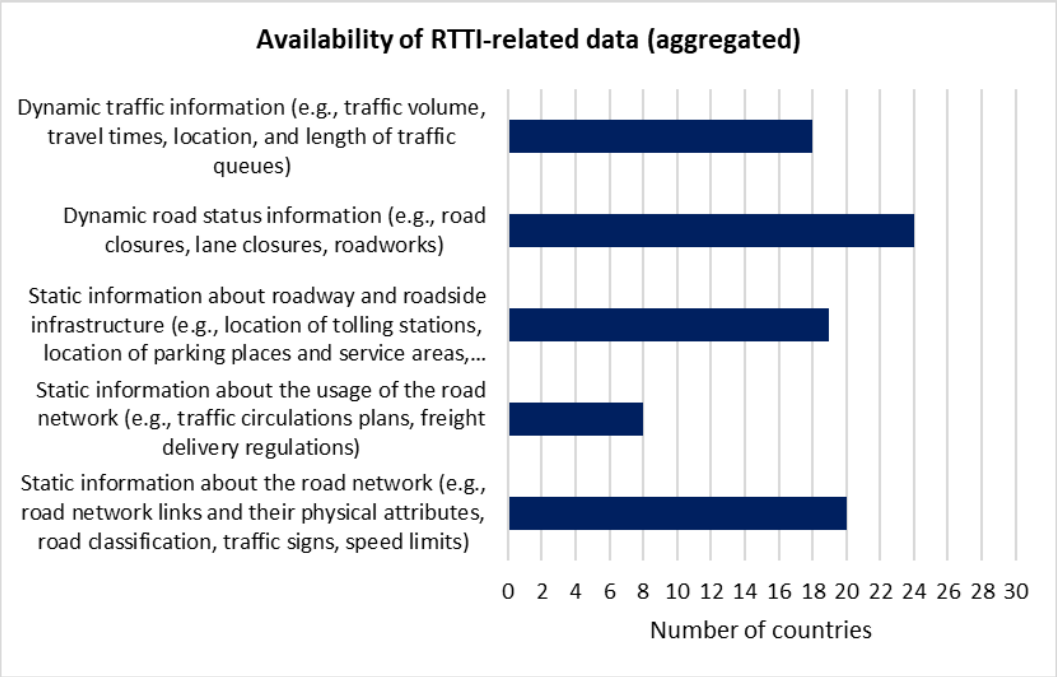


Figure 2.7: Availability of RTTI-related data (aggregated)

As can observed in Figure 2.7, the number of countries that provide data about the road network and about roadway and roadside infrastructure is 19 and 20, respectively. Furthermore, 24 countries provide dynamic data about road status, while 18 countries make available dynamic data about prevailing traffic (flow) conditions. Static information about the usage of the road network is less available, with only 8 countries providing relevant data through their NAP. This is to be expected since traffic circulation plans and freight delivery regulations constitute two challenging data elements/ontologies of the RRTI Delegated Regulation (in terms of providing a harmonious and easy to follow/apply definition).

Finally, as it can be seen from Figure 2.8, there is an observable discrepancy regarding which types of MMTIS data are made available through the European NAPs. In particular, certain data categories, such as static information for location search, static information for trip plan computation, and static trip plan information are fairly covered by the European NAPs (at least by 8 to 12 NAPs depending on the applicable transport mode). On the other hand, there are data categories for which only few countries provide data through their NAP. For instance, 5 countries provide static information as regards the provision of traveller services in DRT modes, 4 countries provide static environmental information, 2 countries provide dynamic information about the cycling network status, and only 1 country makes available future predicted road link travel times.

Comparing to the deadlines set by the DR, delays can be observed especially for some static data under the level of service 1 (LOS 1), which was expected to be provided by the end of 2019. However, the published information in several countries might concern already the urban network which is a requirement for a later stage of implementation. This fact can be expected as in MMTIS the required information is very rich, concerns all modes (some of them relevant only for urban network), and needs to be collected by many different operators, from different mobility sectors.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

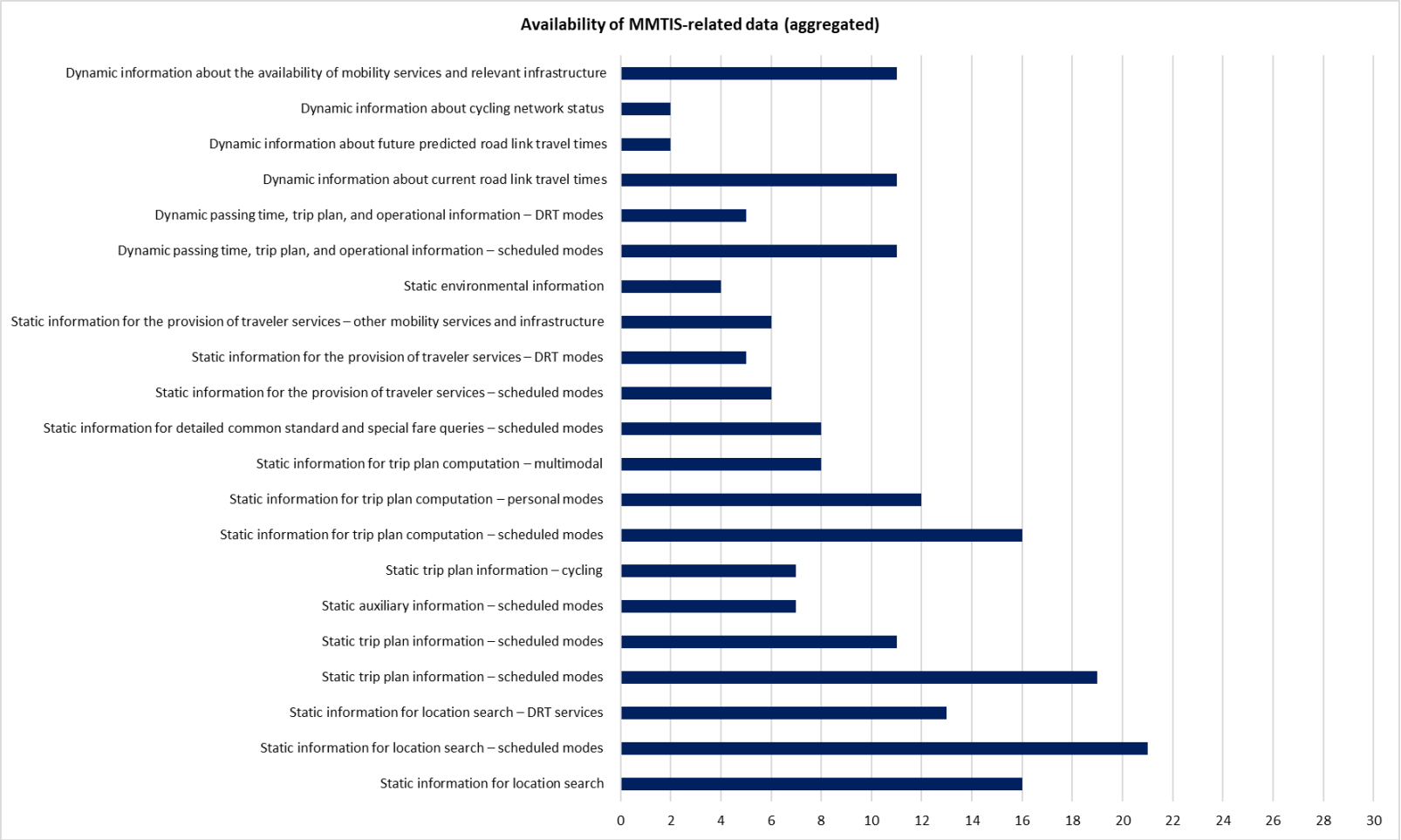


Figure 2.8: Availability of MMTIS-related data

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

2.3 Lower-level monitoring of European NAP data availability

As mentioned in the previous section, the second survey on NAP data availability monitoring has been extended to provide further insight into both spatial and network coverage of European NAP data. Specifically, the following information has been inquired/investigated:

- For SSTP: the territorial units covered per adopted data category; the number and percentage of parking areas for which data are made available per adopted data category.
- For SRTI/RTTI: the territorial units covered per adopted data category; the length and percentage of the TEN-T road network covered per adopted data category.
- For MMTIS: the relevant transport modes or type of infrastructure covered per adopted data category; the territorial units covered per adopted data category per covered mode or type of infrastructure.

The current section presents the results of this survey augmented (where necessary and possible) with desktop research.

2.3.1 GEOGRAPHICAL AND PARKING PLACES COVERAGE – SSTP

The geographical availability of SSTP data is presented in the maps included in Annex II. In line with the evidence presented in the previous section, static information about the truck parking areas exhibits the widest geographical availability, while dynamic availability information exhibits the narrowest. Several countries appear to not publish SSTP data for any territorial unit and for any data category (e.g., Norway, Latvia, Lithuania, Switzerland, Portugal, Cyprus, Malta, Ireland, Slovakia, and UK). In these countries, a NAP is not implemented or is addressed as not applicable due to the absence of safe and secure truck parking areas.

As regards static information about safe and secure truck parking areas and in terms of intranational geographical coverage, there are three countries that exhibit limited homogeneity, i.e., Italy, Greece, and Finland. This can be attributed to the lack of safe and secure truck parking areas in certain territorial units. For instance, SSTP data do not cover the Greek islands, which is to be expected given that the national motorway network does not pass through any island (except for Creta).

As regards static information about the safety conditions and equipment of truck parking areas and in terms of intranational geographical coverage, a pretty similar picture can be observed except for Finland that does not provide relevant data at all.

Finally, as regards dynamic information about the availability of safe and secure truck parking areas and in terms of intranational geographical coverage, Netherlands and Denmark exhibit limited homogeneity. These two countries together with Austria, Germany, Luxembourg, and Hungary are amongst the very few ones making available through their NAP such type of data.

Table 2.8 presents the number and percentage of truck parking areas covered by European NAPs. As it can be observed, there are several countries that publish data for all (or almost all) operated truck parking areas, except for Italy, Bulgaria, and Denmark that publish data for the 28%, 40%, and 75% of operated truck parking areas, respectively. Moreover, just one country (i.e., Netherlands) makes clear that a significant amount of data is associated with private parking areas. Additionally, it appears that the vast majority of countries that publish through their NAPs information about the operated truck parking areas (such as their location and access

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

conditions) also publish information about their safety conditions and equipment. Finally, it appears that dynamic availability information is published by the NAP of a very few countries and this information covers only a fraction of operated truck parking areas (i.e., ranging from 2% to 40% except for Luxembourg the NAP of which covers only one truck parking area).

Table 2.8: Number and percentage of safe and secure truck parking areas covered by European NAPs.

Country	Static information about safe & secure truck parking areas		Static information about safety conditions & equipment		Dynamic availability information	
	# of areas covered	% of (total) areas covered	# of areas covered	% of (total) areas covered	# of areas covered	% of (total) areas covered
Austria	238	100%	238	100%	41	17%
Belgium	179	100%	N/A	N/A	N/A	N/A
Bulgaria	59	40%	59	40%	N/A	N/A
Croatia	130	100%	130	100%	N/A	N/A
Cyprus	N/A	N/A	N/A	N/A	N/A	N/A
Czech Republic	131	92%	131	92%	N/A	N/A
Denmark	9	75%	9	75%	4	40%
Estonia	4	100%	4	100%	N/A	N/A
Finland	37	Unknown	N/A	N/A	N/A	N/A
France	1482	Unknown	N/A	N/A	N/A	N/A
Germany	2105	99%	Unknown	Unknown	Unknown	2,5%
Greece	71	90%	71	90%	N/A	N/A
Hungary	71	35 %	71	35 %	40	19 %
Ireland	N/A	N/A	N/A	N/A	N/A	N/A
Italy	17	28%	17	28%	N/A	N/A
Latvia	N/A	N/A	N/A	N/A	N/A	N/A
Lithuania	N/A	N/A	N/A	N/A	N/A	N/A
Luxembourg	1	100%	N/A	N/A	1	100%
Malta	N/A	N/A	N/A	N/A	N/A	N/A
Netherlands	357	Public: 100% Private: >50%	357	Public: 100% Private: >50%	5	2%
Norway	N/A	N/A	N/A	N/A	N/A	N/A
Poland	327	100%	327	100%	N/A	N/A
Portugal	N/A	N/A	N/A	N/A	N/A	N/A
Romania	Unknown	Unknown	N/A	N/A	N/A	N/A
Slovakia	81	100%	81	100%	N/A	N/A
Slovenia	65	100%	65	100%	N/A	N/A
Spain	42	Unknown	42	Unknown	N/A	N/A
Sweden	Unknown	Unknown	Unknown	Unknown	N/A	N/A
Switzerland	N/A	N/A	N/A	N/A	N/A	N/A
United Kingdom	N/A	N/A	N/A	N/A	N/A	N/A

It is noted that the term "N/A" is used in Table 2.8 to indicate the countries that do not publish relevant data through their NAP, while the term "unknown" indicates that NAP operators are not aware of either the number or percentage of covered truck parking areas.

2.3.2 GEOGRAPHICAL AND NETWORK COVERAGE – SRTI

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

The geographical availability of SRTI data is presented in the map included in Annex III. In line with the evidence included in the previous section the vast majority of countries publish SRTI data. In terms of intranational geographical coverage, there are only two countries that do not exhibit perfect homogeneity (i.e., Spain and Greece). This may be attributed to various reasons, such as major parts of the national motorway networks do not pass through some territorial units or lack of field equipment required to make available the necessary data along the whole road network.

Table 2.9: Length and percentage of the TEN-T road network covered by the SRTI data made available through European NAPs

Country	Dynamic information about road safety-related events/conditions	
	Length of TEN-T road network covered	% of TEN-T road network covered
Austria	2200 km	100%
Belgium	820 km	100%
Bulgaria	2460 km	100%
Croatia	1577,9 km	100%
Cyprus	N/A	N/A
Czech Republic	2400 km	100%
Denmark	1559 km	100%
Estonia	1291 km	100%
Finland	345 km	40%
France	Unknown	Unknown
Germany	13141 km	100%
Greece	1583 km	34%
Hungary	2447 km	100%
Ireland	Unknown	Unknown
Italy	3500 km	100%
Latvia	N/A	N/A
Lithuania	583 km	100%
Luxembourg	N/A	N/A
Malta	N/A	N/A
Netherlands	650 km	100%
Norway	4852 km	100%
Poland	7400 km	100%
Portugal	Unknown	Unknown
Romania	N/A	N/A
Slovakia	1750 km	Unknown
Slovenia	598 km	100%
Spain	Unknown	100%
Sweden	N/A	100%
Switzerland	N/A	N/A
United Kingdom	N/A	N/A

Table 2.9 presents the length and percentage of road network covered by the SRTI data made available through European NAPs. It can be easily observed that the vast majority of countries that publish relevant data through their NAP declare to cover the whole TEN-T road network. The length of road network covered is dependent on the extent of each national motorway network, thus not being comparable between/among different countries.

2.3.3 GEOGRAPHICAL AND NETWORK COVERAGE – RTTI

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

The geographical availability of RRTI data is presented in the map included in Annex IV. In line with the evidence provided in the previous section, the data categories that represent the widest geographical data availability are static information about the road network and dynamic road status information. On the other hand, static information about roadway and roadside infrastructure as well as dynamic traffic information represent fair geographical data availability, while static information about the usage of the road network represents the narrowest. This is to be expected since that latter data category is associated with two data elements of the RTTI Delegation Regulation that are not still well defined and commonly understood by all Member States (i.e., traffic circulation plans and freight delivery regulations).

In terms of intranational geographical coverage, there are very few countries exhibiting limited homogeneity and only for certain data categories (e.g., Belgium for static information about the road network and its usage; Greece for static information about roadway/roadside infrastructure and for dynamic road status/traffic information; as well as Spain and Sweden for dynamic road status/traffic information). This may be attributed again to the fact that the national motorway network does not pass though certain territorial units or to the lack of the necessary equipment for making the respective data types available.

Table 2.10 and Table 2.11 present the length and percentage of road network covered by the SRTI data made available through European NAPs. The former provides this information for the static data categories, while the latter does so for the dynamic data categories. In similar to SRTI, the vast majority of countries that publish relevant data through their NAP declare to cover the whole TEN-T road network.

Table 2.10: Length and percentage of the TEN-T road network covered by the static RTTI data made available through European NAPs

Country	Static information about the road network		Static information about the usage of the road network		Static information about roadway/roadside infrastructure	
	Length of TEN-T road network covered	% of TEN-T road network covered	Length of TEN-T road network covered	% of TEN-T road network covered	Length of TEN-T road network covered	% of TEN-T road network covered
Austria	2200 km	100%	N/A	N/A	2200 km	100%
Belgium	820 km	100%	0 km	0%	820 km	100%
Bulgaria	N/A	N/A	N/A	N/A	2460 km	100%
Croatia	N/A	N/A	N/A	N/A	N/A	N/A
Cyprus	N/A	N/A	N/A	N/A	N/A	N/A
Czech Republic	N/A	N/A	N/A	N/A	N/A	N/A
Denmark	1559 km	100%	N/A	N/A	N/A	N/A
Estonia	1291 km	100%	1291 km	100%	1291 km	100%
Finland	860 km	100%	N/A	N/A	860 km	100%
France	Unknown	Unknown	Unknown	Unknown	N/A	N/A
Germany	13141 km	100%	N/A	N/A	13141 km	100%
Greece	4685 km	100%	N/A	N/A	2974 km	100%
Hungary	2447 km	100%	2447 km	100%	2447 km	100%
Ireland	Unknown	Unknown	N/A	N/A	Unknown	Unknown
Italy	3150 km	90%	N/A	N/A	1750 km	50%
Latvia	N/A	N/A	N/A	N/A	N/A	N/A
Lithuania	583 km	100%	N/A	N/A	1746 km	100%
Luxembourg	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Malta	N/A	N/A	N/A	N/A	N/A	N/A
Netherlands	650 km	100%	N/A	N/A	650 km	100%
Norway	4852 km	100%	4852 km	100%	4852 km	100%
Poland	N/A	N/A	N/A	N/A	7400 km	100%
Portugal	N/A	N/A	N/A	N/A	Unknown	Unknown

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Country	Static information about the road network		Static information about the usage of the road network		Static information about roadway/roadside infrastructure	
	Length of TEN-T road network covered	% of TEN-T road network covered	Length of TEN-T road network covered	% of TEN-T road network covered	Length of TEN-T road network covered	% of TEN-T road network covered
Romania	Unknown	Unknown	N/A	N/A	N/A	N/A
Slovakia	1750 km	100%	N/A	N/A	N/A	N/A
Slovenia	598 km	100%	N/A	N/A	598 km	100%
Spain	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Sweden	6407 km	100%	Unknown	Unknown	Unknown	Unknown
Switzerland	N/A	N/A	N/A	N/A	N/A	N/A
United Kingdom	N/A	N/A	N/A	N/A	N/A	N/A

Table 2.11: Length and percentage of the TEN-T road network covered by the dynamic RTTI data made available through European NAPs

Country	Dynamic road status information		Dynamic traffic information	
	Length of TEN-T road network covered	% of TEN-T road network covered	Length of TEN-T road network covered	% of TEN-T road network covered
Austria	2200 km	100%	N/A	N/A
Belgium	820 km	100%	820 km	100%
Bulgaria	2460 km	100%	N/A	N/A
Croatia	1577,9 km	100%	N/A	N/A
Cyprus	N/A	N/A	N/A	N/A
Czech Republic	2400 km	100%	2400 km	100%
Denmark	1559 km	100%	N/A	N/A
Estonia	1291 km	100%	1291 km	100%
Finland	860 km	100%	860 km	100%
France	Unknown	Unknown	Unknown	Unknown
Germany	13141 km	100%	Unknown	Unknown
Greece	1583 km	34%	2007 km	42.8%
Hungary	2447 km	100%	N/A	N/A
Ireland	Unknown	Unknown	Unknown	Unknown
Italy	3500 km	100%	3500 km	100%
Latvia	N/A	N/A	N/A	N/A
Lithuania	583 km	100%	583 km	100%
Luxembourg	Unknown	100%	Unknown	Unknown
Malta	N/A	N/A	N/A	N/A
Netherlands	650 km	100%	650 km	100%
Norway	4852 km	100%	4852 km	100%
Poland	7400 km	100%	N/A	N/A
Portugal	Unknown	Unknown	Unknown	Unknown
Romania	N/A	N/A	N/A	N/A
Slovakia	1750 km	100%	N/A	N/A
Slovenia	598 km	100%	598 km	100%
Spain	Unknown	Unknown	Unknown	Unknown
Sweden	Unknown	Unknown	N/A	N/A
Switzerland	N/A	N/A	1325 km	100%
United Kingdom	N/A	N/A	N/A	N/A

2.3.4 GEOGRAPHICAL AND MODE/INFRASTRUCTURE COVERAGE – MMTIS

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

The geographical availability of MMTIS data per adopted data category and relevant transport mode or infrastructure (where and as applies) is presented in the maps included in Annex V. This section provides a brief discussion of the main results per adopted data category.

With respect to static information for location search (including address identifiers, topographic places, and points of interest) and in line with the evidence provided in the previous section, it appears that almost the half of Member States have relevant publications on their NAPs. In terms of intranational geographical coverage, the countries that provide such information represent perfect homogeneity.

With respect to static information for location search – scheduled transport, it seems that the transport modes that are more adequately covered by European NAPs are rail transport, long-distance coach, metro, tram, and bus/trolley. On the other hand, the transport modes that are less covered by European NAPs are air transport and maritime transport. In terms of intranational geographical coverage, there are few countries that exhibit limited homogeneity. This can be attributed, among others, to the fact that several transport modes are not operated in certain territorial units. Characteristic examples constitute the lack of location search information for rail transport services within certain territorial units of Greece through which the national rail network does not pass. Similarly, location search information for maritime transport services is not available within certain territorial units of Croatia or Belgium that do not possess any sea front. Finally, location search information for metro or tram services is not available within certain territorial units of various countries not encompassing major urban centres.

With respect to static information for location search – demand responsive transport modes (including location of stops/stations), it appears that static location information for park & ride stops, bike-sharing stations, car-sharing stations, and alternative fuel stations is made available through the NAP of a limited number of countries. The NAP of even less countries appears to provide static location search information for secure bike parking stations. The homogeneity of intranational geographical coverage is dependent on the extent to which relevant mobility services are operated within certain territorial units, but also on the nature of operated services (e.g., in some cities the operated services may be based on a free-floating model).

With respect to static trip plan information – scheduled transport modes (including operational calendars and mapping day types to calendar dates), it appears the transport modes that are more adequately covered by European NAPs are rail transport, long-distance coach, metro, tram, and bus/trolley. On the other hand, the transport modes that are less covered by European NAPs are air transport and maritime transport. In terms of intranational geographical coverage, there are few countries that exhibit limited homogeneity. This can be attributed, among others, to the fact that several transport modes are not operated in certain territorial units.

With respect to static trip plan information – scheduled transport modes (including fare network data and standard fare structure), it appears that almost all modes are not adequately covered by European NAPs. This can be attributed to the nature of this type of information, which is in certain cases dependent on the pricing policy of transport service providers (including international ones). In terms of intranational geographical coverage, there are few countries that exhibit limited homogeneity, considering, among others, that several transport modes are not operated in certain territorial units (except for long-distance coach services that exhibit almost perfect homogeneity).

With respect to static auxiliary information – scheduled transport modes (including vehicle facilities, such as classes of carriage, on-board Wi-Fi), it is noteworthy that a very few countries make available through their NAP information of this type. This is the case for all applicable scheduled transport modes. In terms of intranational geographical coverage,

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

auxiliary information for rail transport and bus/trolley services exhibits perfect homogeneity, while auxiliary information for the remaining modes exhibits a varying homogeneity.

With respect to static trip plan information about cycling (including detailed cycle network attributes, such as surface quality, side-by-side cycling), a limited number of countries makes available through its NAP this type of information. In terms of intranational geographical availability, there are countries that exhibit perfect (e.g., Norway, Netherlands, Slovenia) and countries that exhibit limited homogeneity (e.g., France, Belgium, Portugal).

With respect to static information for trip plan computation – scheduled transport modes, it appears that the transport modes that are more adequately covered by European NAPs are rail transport, long-distance coach, tram, and bus/trolley. On the other hand, metro is moderately covered, while air and maritime transport are significantly less covered. In terms of intranational geographical coverage, there are several countries that exhibit limited homogeneity (of varying extent per analyzed transport mode). Similar with above, this can be attributed, among others, to the fact that several transport modes are not operated in certain territorial units.

With respect to static information for trip plan computation – personal modes (including network topology and attributes), it appears that cycling and road networks are slightly more adequately covered compared to pedestrian networks. In terms of intranational geographical coverage, static trip plan information for road and pedestrian network exhibit perfect homogeneity, while static trip plan information for cycling networks exhibits a more limited one.

With respect to static information for trip plan computation – multimodal (including estimated travel times by day type and time band by transport mode/combination of transport modes), it appears that 8 countries provide this type of information with a perfect homogeneity in terms of intranational geographical coverage.

With respect to static information for detailed common standard and special fare queries – scheduled modes (including passenger classes, common fare products, special fare products, basic commercial conditions), it appears that all transport modes are low covered by European NAPs. However, surface (and underground) transport modes appear to be covered at a slightly increased extent. The homogeneity of intranational geographical coverage is, among others, dependent on the analyzed transport mode and the conditional existence/operation of relevant services within each territorial unit.

With respect to static information for the provision of traveler services – scheduled modes (including where and how to buy tickets, retail channels, fulfilment methods, payment methods), a very similar picture to the previous data category can be observed.

With respect to static information for the provision of traveler services - demand responsive transport modes, it appears that all analyzed mobility modes (i.e., shuttle bus, shuttle ferry, taxi, car sharing, car pooling, car hire, bike sharing, bike hire) have low coverage. However, the ones that exhibit a slightly increased level of coverage appear to be shuttle bus, shuttle ferry, car hire, and bike sharing. The homogeneity of intranational geographical coverage is, among others, dependent on the analyzed transport mode and the conditional existence/operation of relevant services within each territorial unit. A noteworthy example is the case of France which appears to make available data for bike sharing services in almost the half of its territorial units. Another example is Belgium that appears to make available data for shuttle ferries only in the territorial units that do possess a seafront. It is noted that a perfect intranational coverage homogeneity is observed for the following mobility modes: car pooling, car hire, and bike hire.

With respect to static information for the provision of traveler services – other mobility services and infrastructure, it appears that all types of analyzed mobility services and infrastructure are low covered by European NAPs. However, the mobility services that are most covered are public charging and refueling (relevant data are made available by the NAP of

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

4 countries). On the other hand, data for tolls and car parking are made available by the NAP of 1 and 2 countries, respectively. The homogeneity of intranational geographical coverage is almost perfect for all analyzed mobility services and infrastructure.

With respect to static environmental information (including parameters to calculate an environmental factor), it appears that the NAP of 4 countries make available this type of information (i.e., Netherlands, Belgium, France, Austria). The first two countries report a perfect intranational coverage homogeneity, while the exact coverage in the remaining two countries is not known to NAP operators.

As regards dynamic passing time, trip plan, and operational information – scheduled transport modes (including disruptions, real-time status, status of access nodes features, estimated departure and arrival times), it appears that all analyzed transport modes are covered to an almost equal extent (5 to 9 countries) except for air and maritime transport that are covered by only 1 country (Finland and Sweden respectively). Data for rail transport, long-distance coach, metro, tram, and bus/trolley appears to exhibit a varying (non-perfect) intranational coverage homogeneity, while data for air and maritime transport appears to exhibit a perfect intranational coverage homogeneity.

As regards dynamic passing time, trip plan, and operational information – demand responsive transport modes (including real-time status and disruptions), it seems that the analyzed mobility services are covered by the NAP of very specific countries. An exemption constitutes taxi services for which no data are made available by any European NAP. The mobility service that appears to be mostly covered by European NAPs is bike sharing (i.e., for this service information is provided by the NAP of Sweden, Luxembourg, Belgium, and France). The homogeneity of intranational geographical coverage is perfect for all mobility services (bike hire, car hire, car pooling, car sharing, shuttle bus, shuttle ferry, and taxi) except for bike sharing (the French NAP appears to cover almost the half territorial unit for this mobility service).

As regards dynamic information about current road link travel times, it occurs that 7 countries provide this type of information through their NAP. In terms of intranational geographical coverage, Luxemburg, Slovenia, and the Netherlands represent perfect homogeneity, while Belgium, Greece, Norway, and Sweden provide such type of information only for specific territorial units.

As regards dynamic information about future predicted road link travel times, it seems that the only country that provide this type of information is Slovenia exhibiting perfect homogeneity in terms of intranational coverage.

As regards dynamic information about cycling network status (including closures and diversions), a very similar situation to the previous data category can be observed. In particular, only the NAP of Luxemburg and the Netherlands make available this type of information. In terms of intranational geographical coverage, the two countries that provide such information represent perfect homogeneity.

As regards the dynamic information about the availability of mobility services and relevant infrastructure, it seems that all types of analyzed mobility services and infrastructure are low covered by European NAPs. However, the mobility service that appears to be mostly covered by European NAPs is bike sharing (i.e., Norway, Belgium, France, Slovenia and Cyprus make available relevant publications in their NAP). On the other hand, published data for relevant infrastructure seems to be quite limited in European NAPs. Nevertheless, data for public charging stations and for refueling points seems to be the dominant category (i.e., data is provided by the NAP of Norway, the Netherlands, Germany, Belgium, France, and Portugal). The homogeneity of intranational geographical coverage is perfect for all analyzed mobility services and infrastructure. An exemption to that constitutes the bike sharing service, for which the intranational geographical coverage is not perfect for all countries. Specifically, while Norway, Belgium, and Cyprus appear that they make available data for all territorial units, on the other hand, France and Slovenia cover almost the half territorial units.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

3 Common formats, standards, and profiles

The first part of this chapter provides an overview of the key data standards adoption across the Member States. A detailed implementation status is conducted per Delegated Regulation. An overview of standard profiles, along with some recommendations, is provided in the latter part.

3.1 Data standards implemented in NAPs

3.1.1 ANALYSIS PER COUNTRY

The DRs recommend data standards, such as DATEX II, NeTEx, SIRI, etc. to publish and exchange the respective data categories and data elements. Table 3.1 presents the implemented data standards for each European NAP. The results were extracted from the countries' responses presented in Annexes VI – IX. As it can be observed DATEX II is implemented in almost all NAPs, while NeTEx is implemented in noticeably fewer. SIRI and WMS/WFS, on the other hand, is even less used. These results come without surprise when considering the data availability of NAPs. Specifically, as it becomes evident from the aggregated figures presented in Section 2, the number of NAPs including at least one MMTIS-related publication are less than the number of NAPs including at least one RTTI-, SRTI-, or SSTP-related publication. Similarly, dynamic MMTIS-related datasets are published to considerably less degree in European NAPs compared to static MMTIS-related datasets. Furthermore, the standards TN-ITS and INSPIRE seem to apply in certain countries or not available via their NAPs. Moreover, there were also many other formats in Annexes mentioned as "Other" category. Nevertheless, this table only presents the official standards described in the European legislative documents. Exception to that constitutes the Web Map Service and Web Feature Service (WMS/WFS) standard, that agreed to be presented in the table, since it is commonly used by digital map providers. However, popular formats also include XML and JSON representing non-specific syntaxes though. Finally, the use of GTFS and sister-products (e.g., GTFS-RT and GBFS) is reported by a significant number of countries.

Table 3.1 Overview of data standards implemented in European NAPs

Country	DATEX	NeTEx	SIRI	TN-ITS	INSPIRE	WMS/WFS
Austria	✓	✓				
Belgium	✓	✓		✓	✓	✓
Bulgaria	✓					
Croatia	✓	✓				
Cyprus			✓			
Czech Republic	✓					✓
Denmark	✓				✓	
Estonia	✓				✓	✓
Finland	✓	✓	✓			✓
France	✓	✓				

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Country	DATEX	NeTEx	SIRI	TN-ITS	INSPIRE	WMS/WFS
Germany*	✓	✓				
Greece	✓					
Hungary	✓			✓		✓
Ireland*		✓				
Italy	✓	✓				✓
Latvia	A new NAP is under development					
Lithuania	✓	✓				
Luxembourg	✓	✓			✓	✓
Malta	No operational NAP					
Netherlands	✓	✓	✓			
Norway	✓	✓	✓			
Poland	✓					
Portugal	✓				✓	
Romania	✓					✓
Slovakia*	✓					
Slovenia	✓			✓		
Spain*	✓					
Sweden	✓			✓		✓
Switzerland*	✓					
United Kingdom	A new NAP is under development					

* Based on the outputs of the previous survey.

3.1.2 Analysis per Delegated Regulation

The current section provides an overview of the standards implemented in accordance with each of the DR supplementing the ITS Directive (2010/40/EU). In particular, it presents in an aggregated manner the main findings of the part of the survey targeting this topic, while information about the data standards implemented in each country and in accordance with each Delegated Regulation is available in Annexes VI to IX.

It is important to note that the information requested by the survey is based on the data elements as mentioned exactly in the Annexes of each of the DRs supplementing the ITS Directive (2010/40/EU). Responders were asked to indicate the utilized data standard for each data element, but also the utilized location referencing method.

It is also important to mention that provided information encompasses NAPs implemented as databases or both metadata repositories and databases (see Chapter 4).

3.1.2.1 Standards implemented for SSTP

For SSTP, the DR recommends using DATEX II data standard. Figure 3.1, Figure 3.2, Figure 3.3, Figure 3.4 present the data standards used for the exchange of static information about safe and secure truck parking places, static information about the safety conditions and equipment of safe and secure truck parking places, contact information of the operators of safe and secure truck parking places, and dynamic information about the availability of safe and secure truck parking places, respectively. As it can be observed DATEX II constitutes the mainly used standard for the exchange of static information (around 90% of SSTP datasets conform to DATEX II). Contact information of the operators of safe and secure truck parking places appears to be exchanged by using other standards beyond DATEX II (to a significant extent). With regard to the exchange of dynamic information about the availability of safe and secure truck parking places DATEX II is the only dominant standard. In this case,

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

the number of countries that responded to the questionnaire were quite limited. Nevertheless, it could not be expected to receive more responses, given the low availability of relevant datasets in European NAPs.

Figure 3.5 presents the utilized methods for encoding point and linear location information. For the former purpose, coordinates are the mostly utilized method. For the latter purpose, the linear along linear elements method is the mostly utilized one.

Country specific information about the standards implemented for SSTP in relation to each data element/ontology can be found in Annex VI – Implemented data standards for SSTP per country.

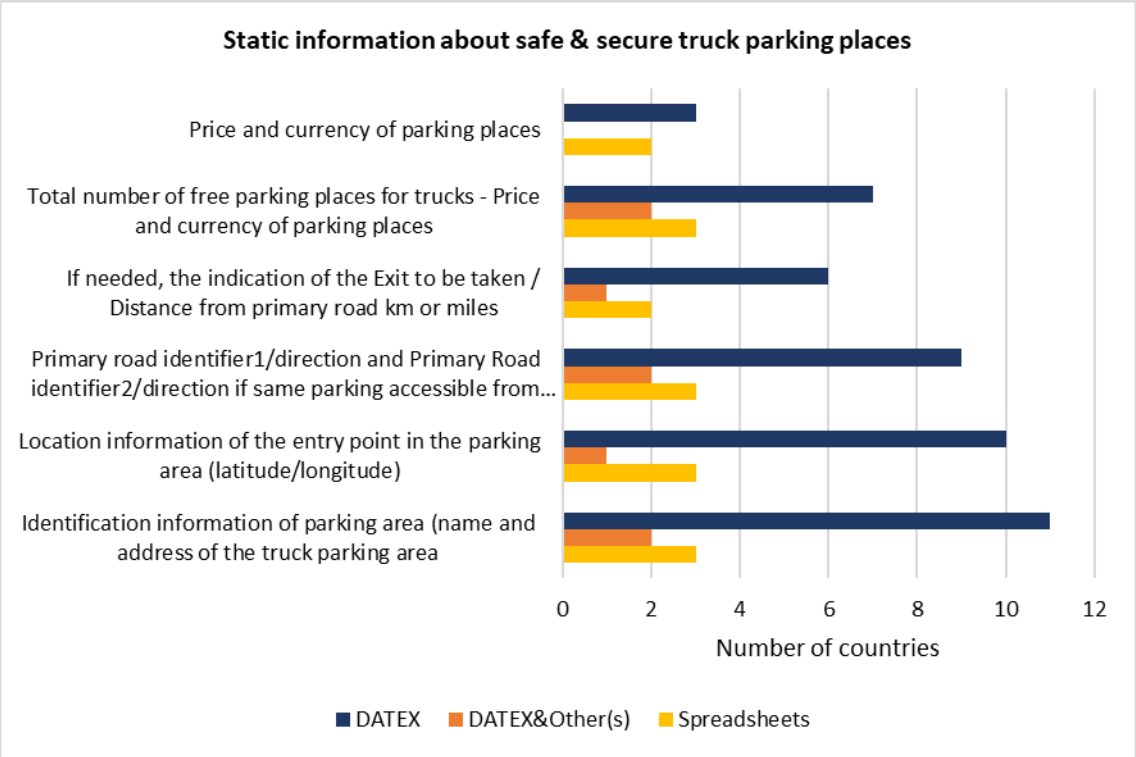


Figure 3.1 Data standards used for the exchange of static information about safe and secure truck parking places.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

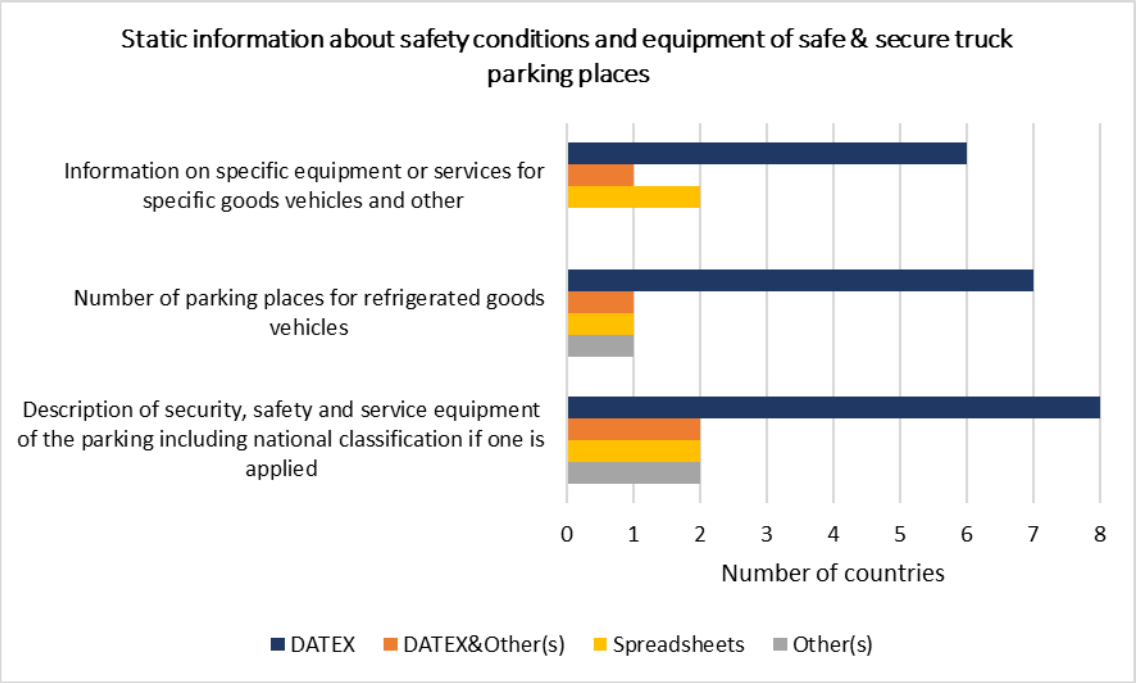


Figure 3.2 Data standards used for the exchange of static information about the safety conditions and equipment of safe and secure truck parking places.

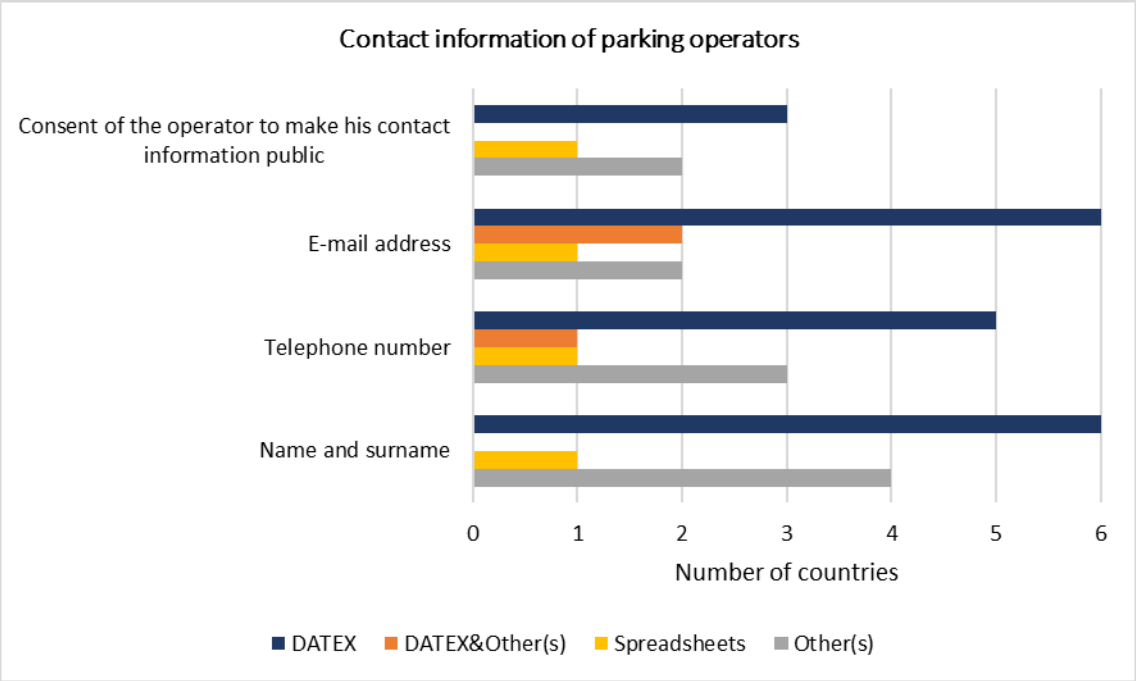


Figure 3.3 Data standards used for the exchange of contact information of the operators of safe and secure truck parking places.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

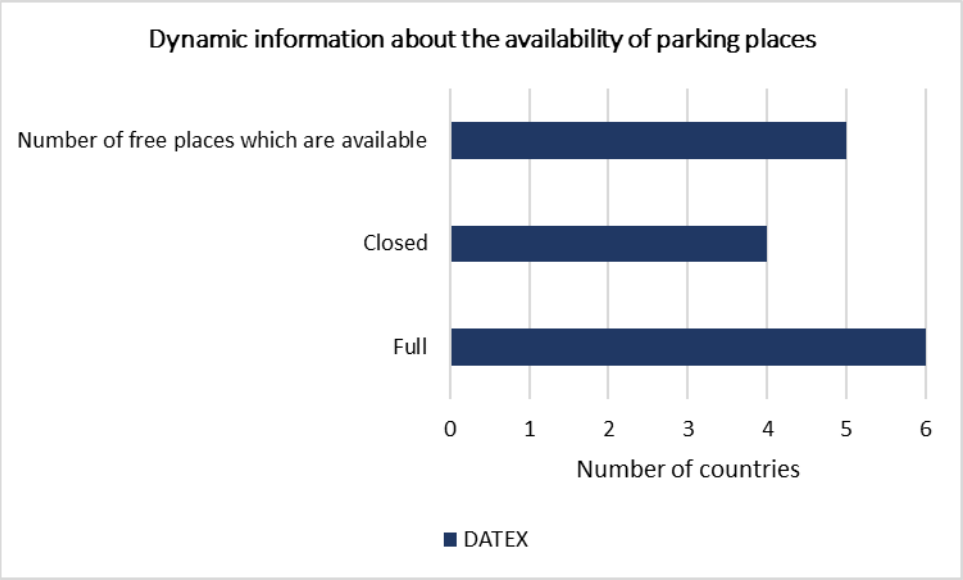


Figure 3.4 Data standards used for the exchange of dynamic information about the availability of safe and secure truck parking places

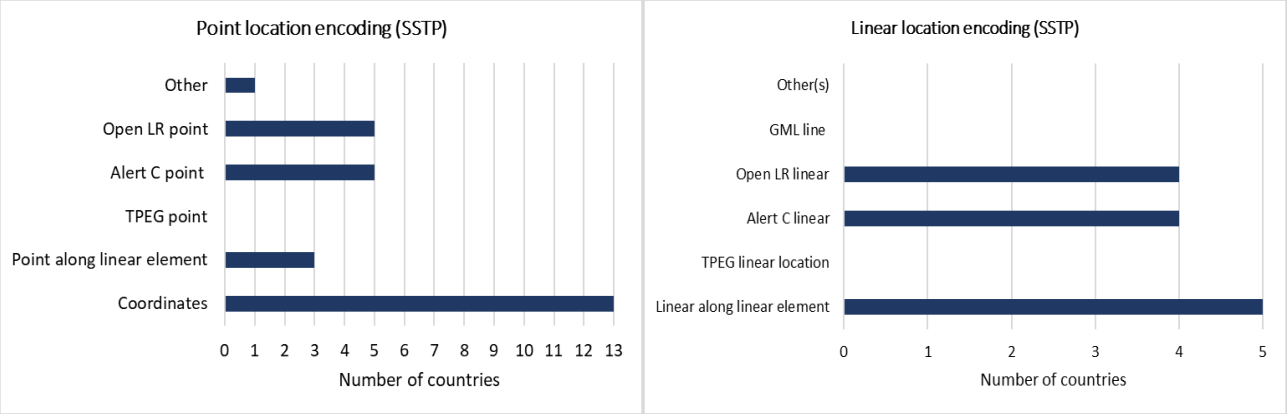


Figure 3.5 Location referencing methods used for the exchange of SSTP-related information

3.1.2.2 STANDARDS IMPLEMENTED FOR SRTI

For SRTI DR, the recommended data standard is DATEX II as well. Figure 3.6 presents the data standards used for the exchange of dynamic information about road safety-related events/conditions. As it can be easily observed, almost all countries that have relevant publications in their NAP and use DATEX II for this purpose. Examples of other data formats constitute (DDR) XML and custom JSON/RSS.

Figure 3.7 presents the utilized methods for encoding point, linear, and area location information. The encoding of point locations is accomplished through various methods with the most widely utilized methods being coordinates, Alert C point, Open LR point and point along linear element. The encoding of linear locations is also accomplished through various methods with the most widely utilized methods being linear along linear element, Alert C linear, and Open LR linear. Finally, the encoding of area locations is mainly accomplished through the Alert C area method, as also illustrated in Figure 3.7.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Country specific information about the standards implemented for SRTI in relation to each data element can be found in Annex VII – Implemented data standards for SRTI per country.

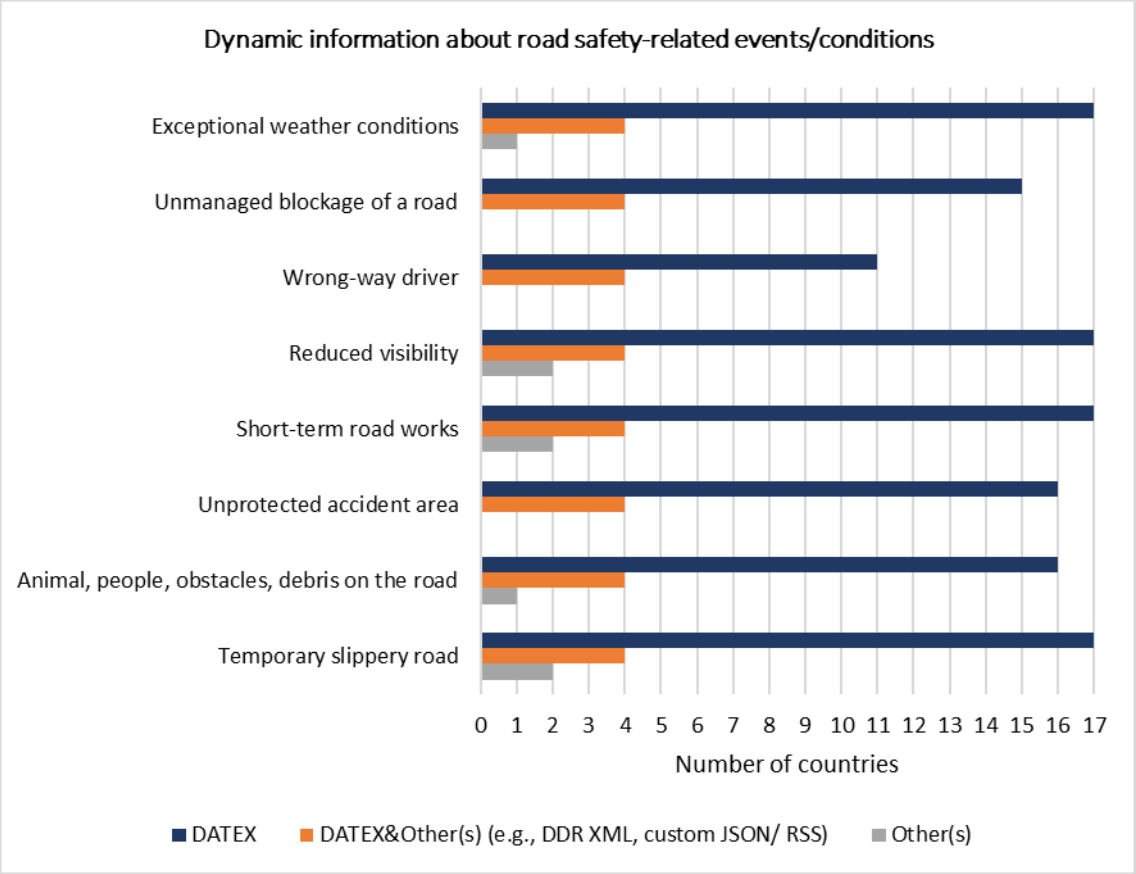


Figure 3.6 Data standards used for the exchange of dynamic information about road safety-related events/conditions

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

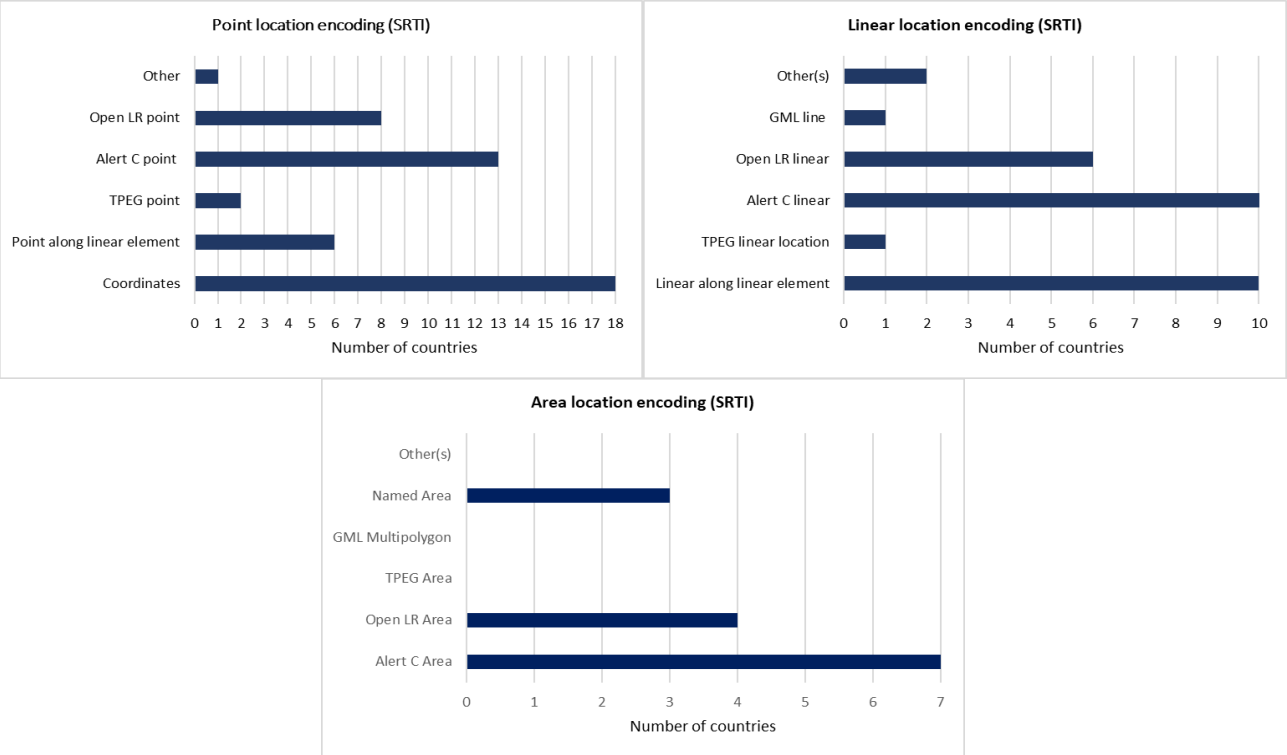


Figure 3.7 Location referencing methods used for the exchange of SRTI-related information

3.1.2.3 STANDARDS IMPLEMENTED FOR RTTI

Figure 3.8, Figure 3.9, Figure 3.10, present the data standards used for the exchange of static information about the road network, its usage, and roadway/roadside infrastructure, dynamic road status information, and dynamic road traffic information, respectively. As regards the exchange of static information about the road network, its usage, and roadway/roadside infrastructure, the most widely used standard constitutes DATEX II. In addition, a significant number of countries has mentioned the use of WMS/WFS standard for this purpose, while a less number has mentioned TN-ITS. Examples of other mentioned formats (not necessarily standardized) include Geopackage/SHP, Elveg, and NVDB. Concerning the exchange for dynamic road status information, DATEX II is the dominant used data standard. Examples of other mentioned formats constitute (DDR) XML, JSON, RSS, and CSV. As regards the exchange of dynamic road traffic information, the picture is pretty similar to the exchange of dynamic road status information.

Figure 3.11 presents the utilized methods for encoding point, linear, and area location information. The most prominent methods used for encoding point locations are coordinates, Alert C point, point along linear element, and Open LR point. The encoding of linear locations, on the other hand, is mainly based on liner along linear element, Alert C linear, and Open LR linear methods. Finally, the encoding of area locations appears to be mainly accomplished through the Alert C area and Open LR area method. However, a significant number of countries has mentioned the GML multipolygon and named area method as well. None of the countries though has mentioned the use of and TPEG Area methods.

Country specific information about the standards implemented for RTTI in relation to each data element can be found in Annex VIII – Implemented data standards for RTTI per country.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

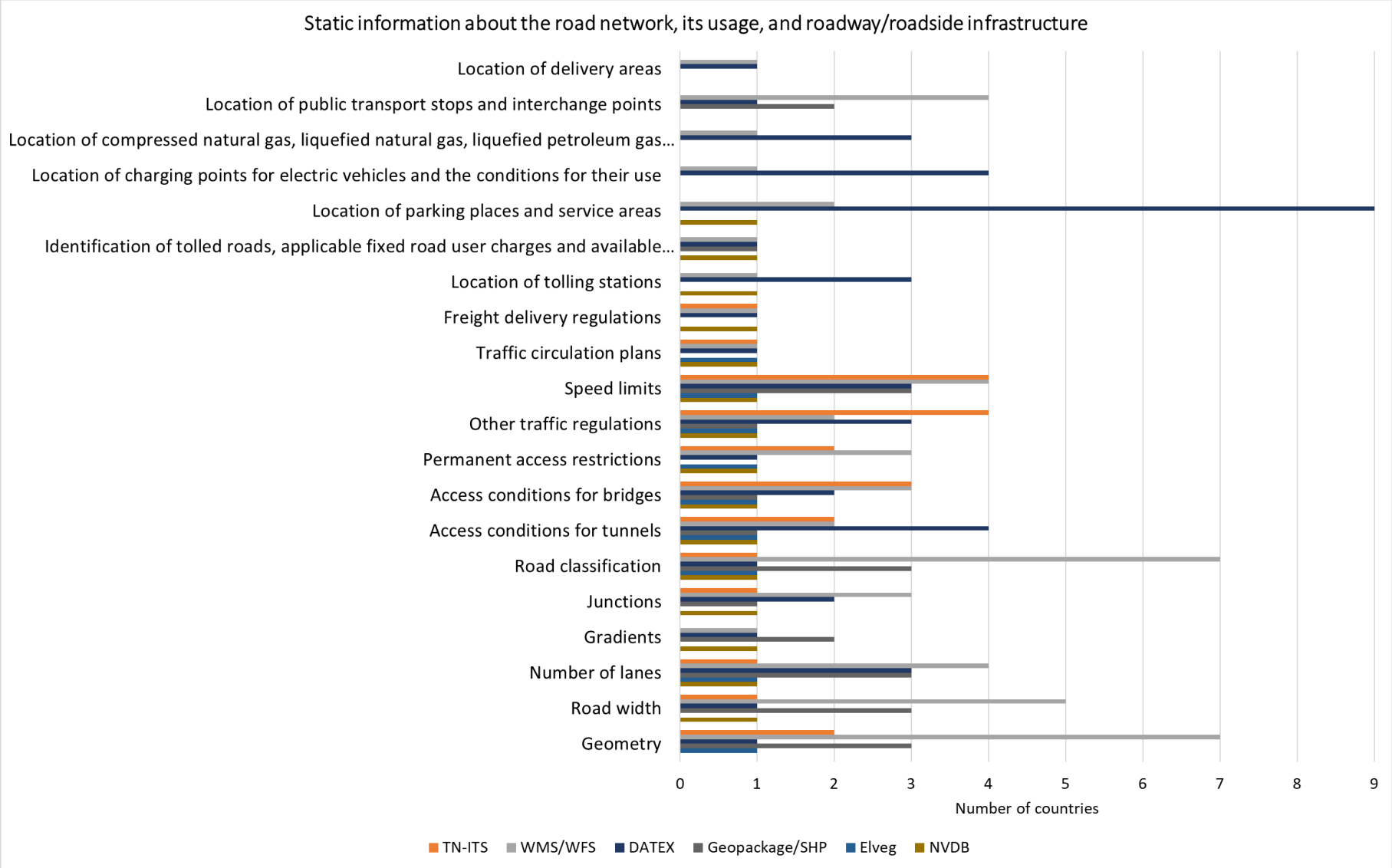


Figure 3.8 Data standards used for the exchange of static information about the road network, its usage, and roadway/roadside infrastructure

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

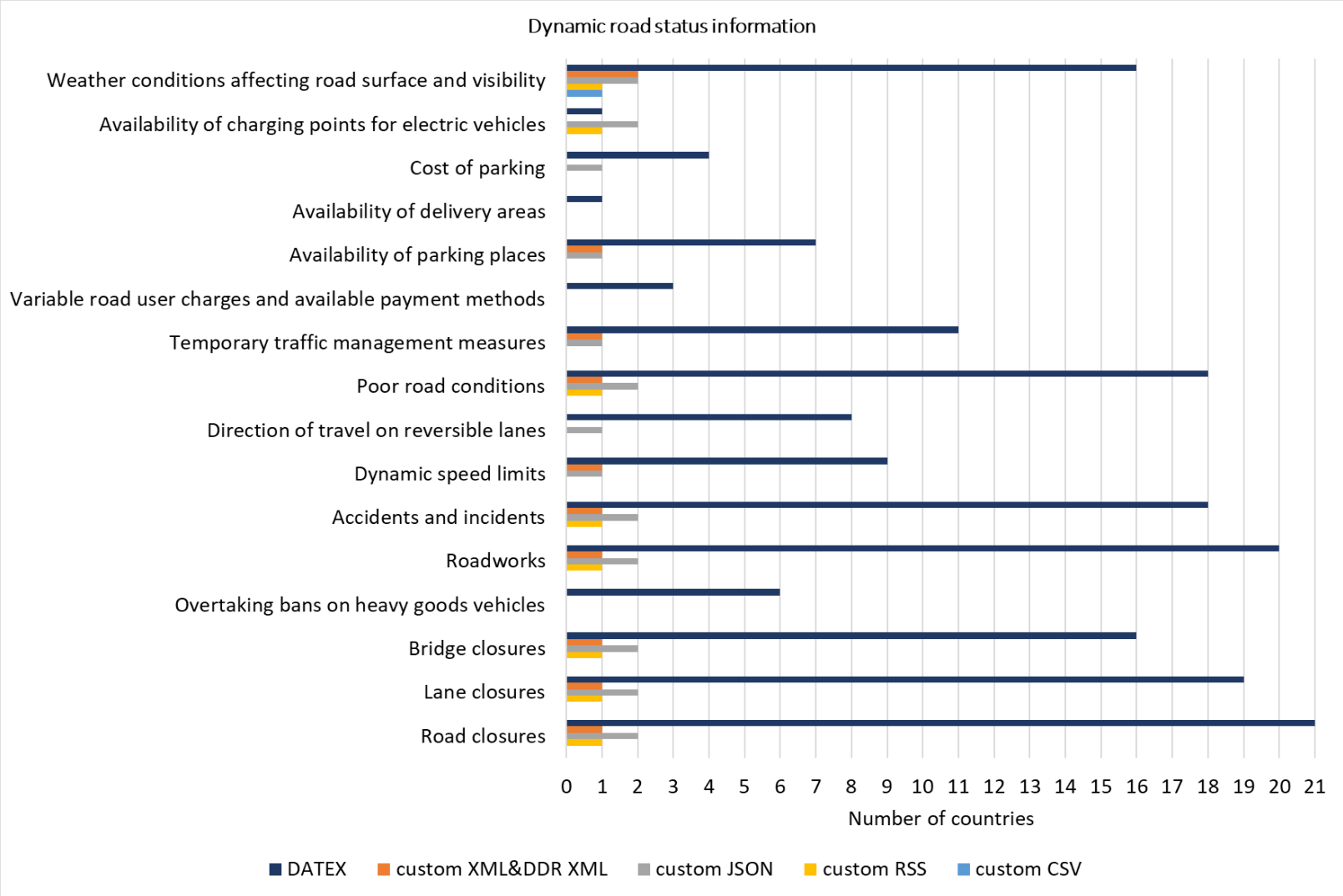


Figure 3.9 Data standards used for the exchange of dynamic road status information

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

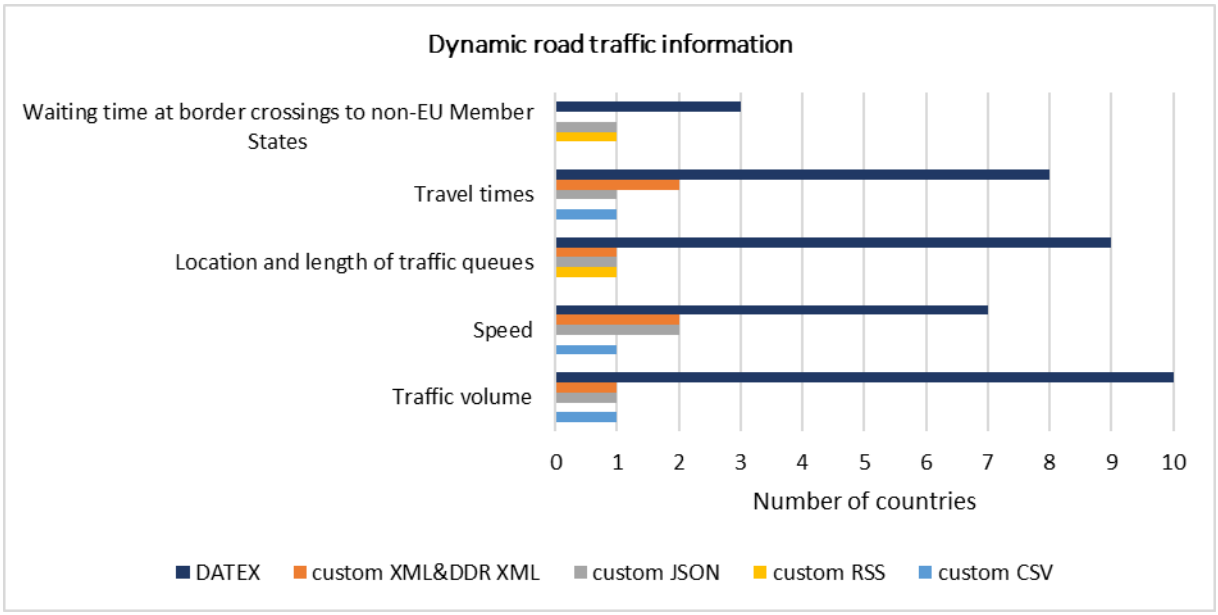


Figure 3.10 Data standards used for the exchange of dynamic road traffic information

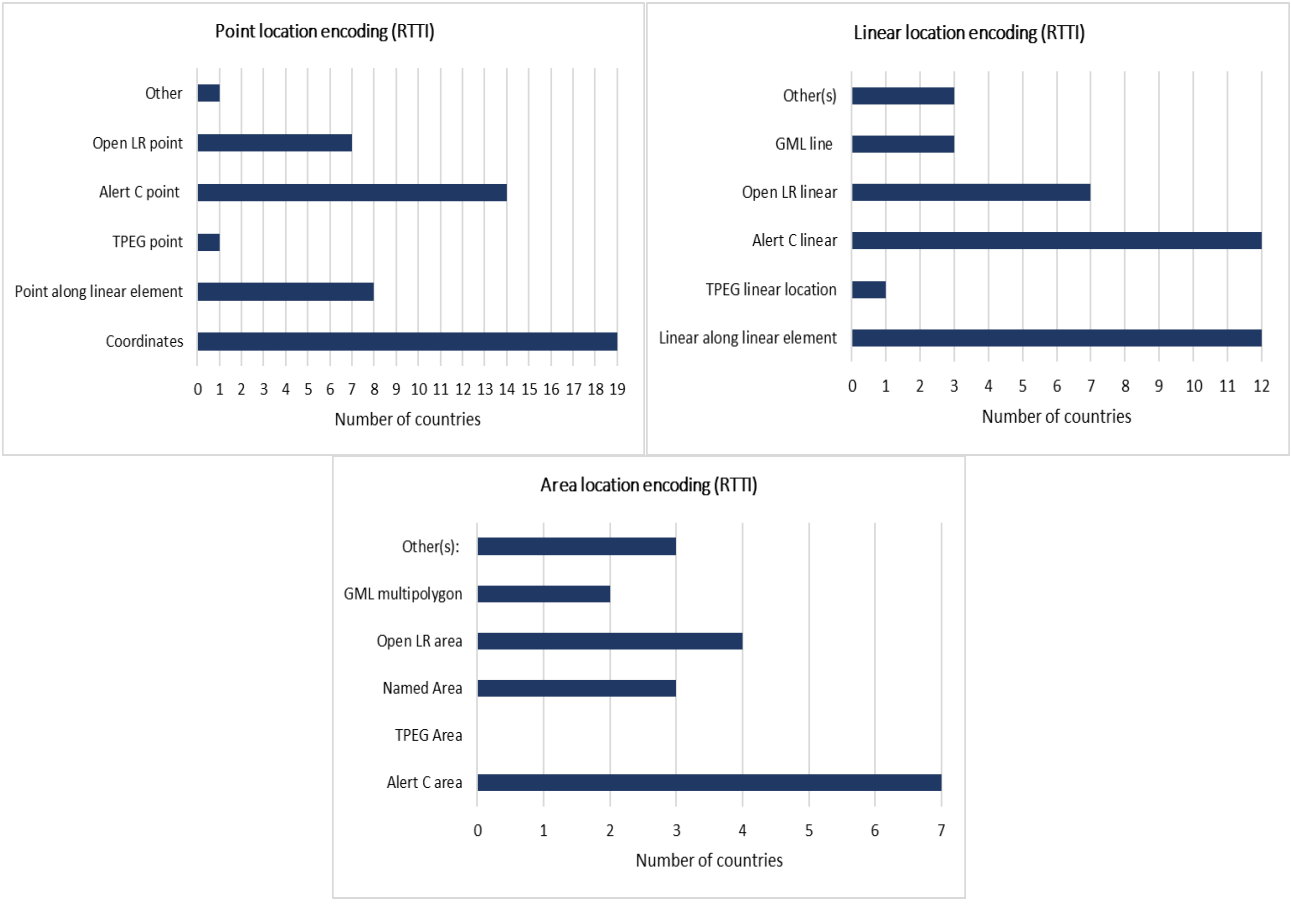


Figure 3.11 Location referencing methods used for the exchange of RTTI-related information

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

3.1.2.4 STANDARDS IMPLEMENTED FOR MMTIS

Figure 3.12, Figure 3.13, Figure 3.14, Figure 3.15, Figure 3.16, Figure 3.17, Figure 3.18, Figure 3.19, and Figure 3.20 present the data standards used for the exchange of static and dynamic information related to MMTIS. A significant observation in the most data categories falling under the MMTIS DR is that the number of the countries which exchange relevant information through their NAP is quite low. Therefore, the majority of countries has mentioned either that the specific data category is not applicable, or that they have no standards implemented for that data category. In addition, many countries declared the use of "other standards" without providing concrete examples. However, it is worth mentioning that in specific data categories, there are countries indicating the use of different data standards and formats. In particular, for the exchange of static information supporting location search services, five countries mentioned the use of NeTEx and INSPIRE. These countries are Austria, Belgium, Italy, Luxemburg, and Norway in relation to NeTEx and Belgium, Denmark, Estonia, Luxemburg, and Portugal in relation to INSPIRE. As regards the exchange of static information supporting detailed common standard and special fare querying services, specific data standards have been mentioned including NeTex, JDF, and XLS. As regards the exchange of static information for traveller services, Portugal and Slovenia mentioned DATEX while France and Norway GBFS. As regards the exchange of static information for trip plans, the most dominant data standard is NeTEx used by nine countries. Nevertheless, it is only associated with two data elements which are the operational calendar and detailed cycle network attributes. As regards the exchange of auxiliary static information for trip plans and availability check, the specific data standard mentioned is NeTEx, NPR, and SHP. As regards the exchange of static information for trip plan computation (scheduled modes of transport and road transport), specific data standards have been mentioned including NeTex, GTFS, INSPIRE, OSM, SHP, JDF, XLS, and NVDB. Finally, as regards the exchange of dynamic MMTIS-related information, DATEX II, SIRI, GTFS-RT, JSON, custom API, BISON, and NVDB are the relevant data standards and formats.

Figure 3.21 presents the utilized methods for encoding point, linear, and area location information. The most prominent methods used for encoding point locations are, in ascending order, coordinates, Alert C, point along linear and open LR elements. On the other hand, the encoding of liner locations is mainly accomplished through the linear along linear element method, but also through the Alert C linear and GML line method. Finally, the encoding of area locations is accomplished through varying methods, including Alert C area, GML polygons, and Named Area.

Country specific information about the standards implemented for MMTIS in relation to each data element can be found in Annex IX – Implemented data standards for MMTIS per country.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

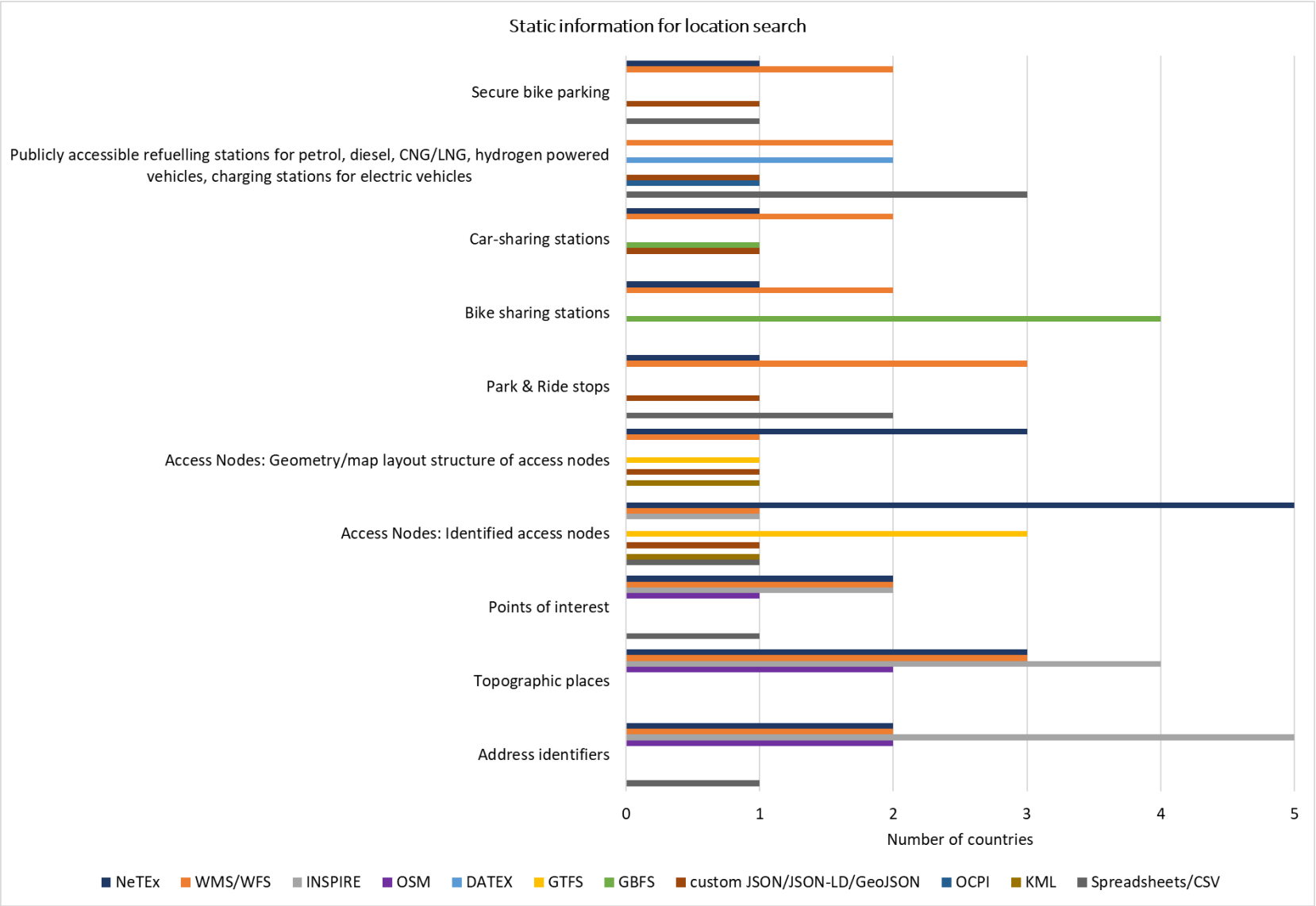


Figure 3.12 Data standards used for the exchange of static information for "location search"

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

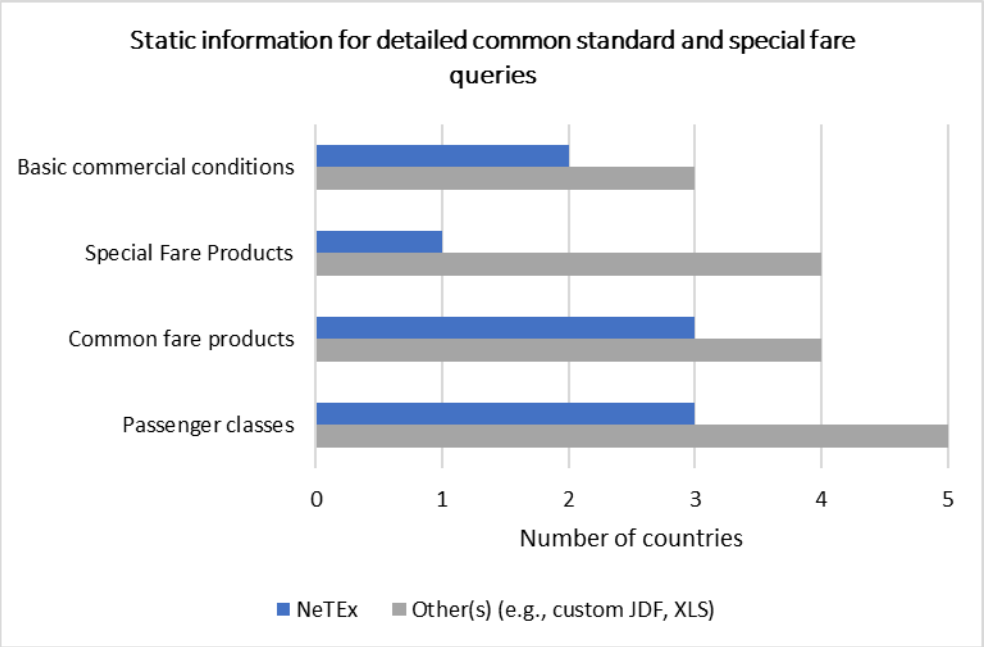


Figure 3.13 Data standards used for the exchange of static information for "detailed common standard and special fare queries"

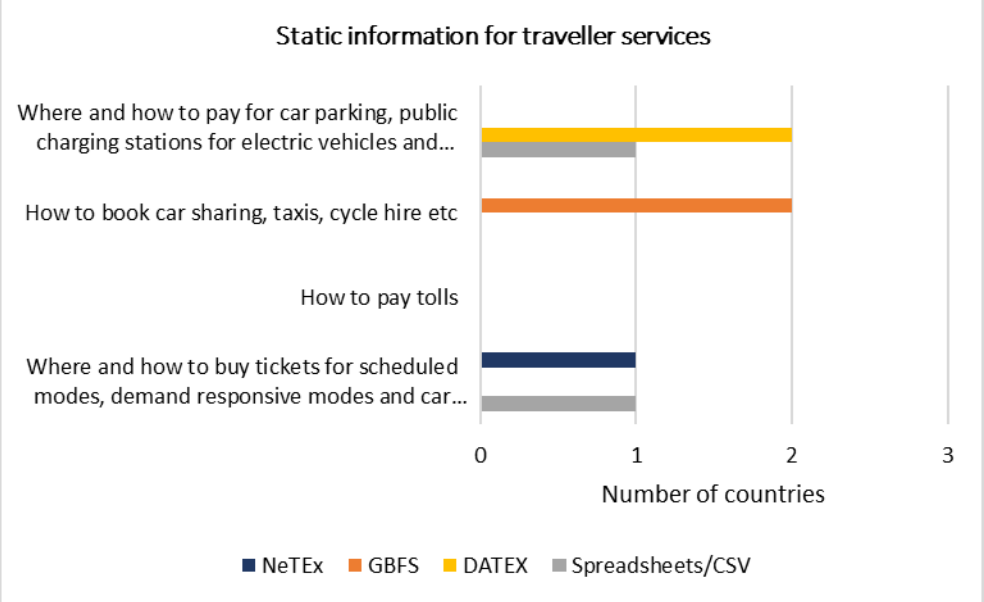


Figure 3.14 Data standards used for the exchange of static information for "traveller services"

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

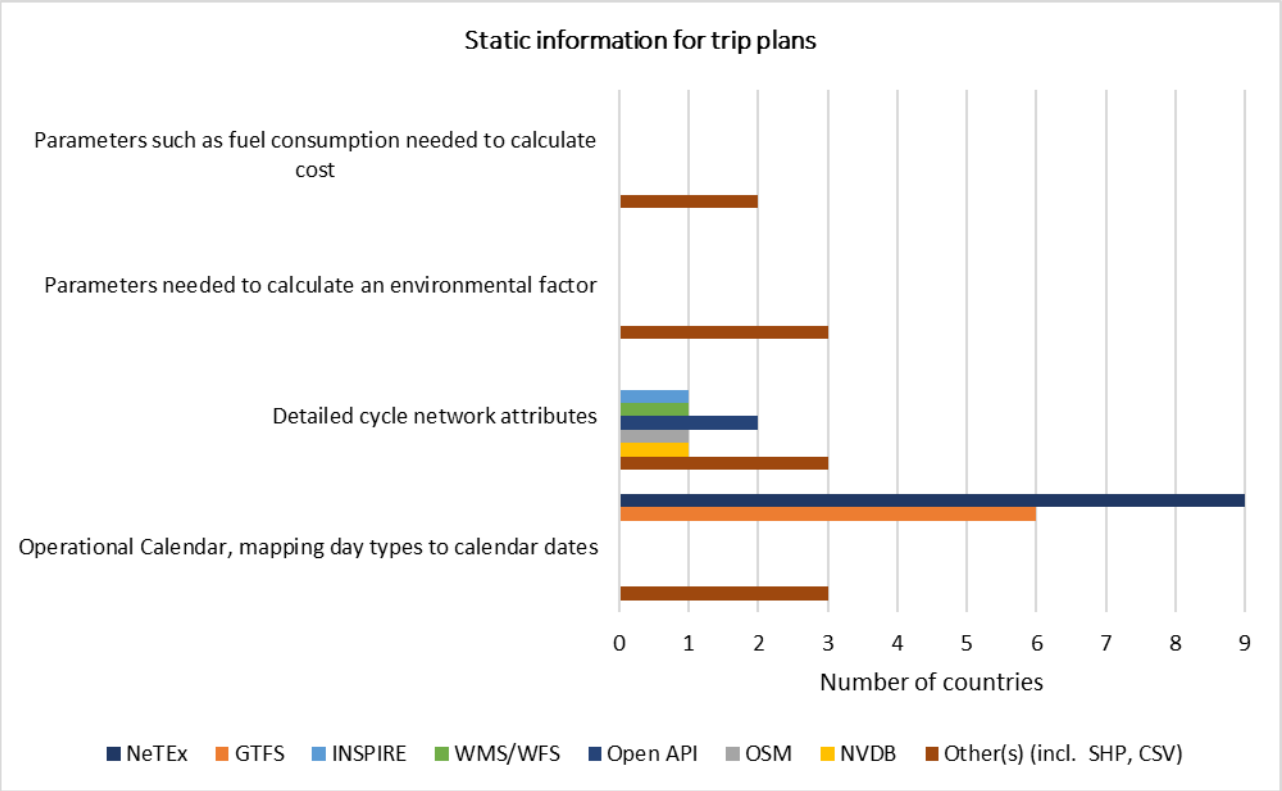


Figure 3.15 Data standards used for the exchange of static information for "trip plans"

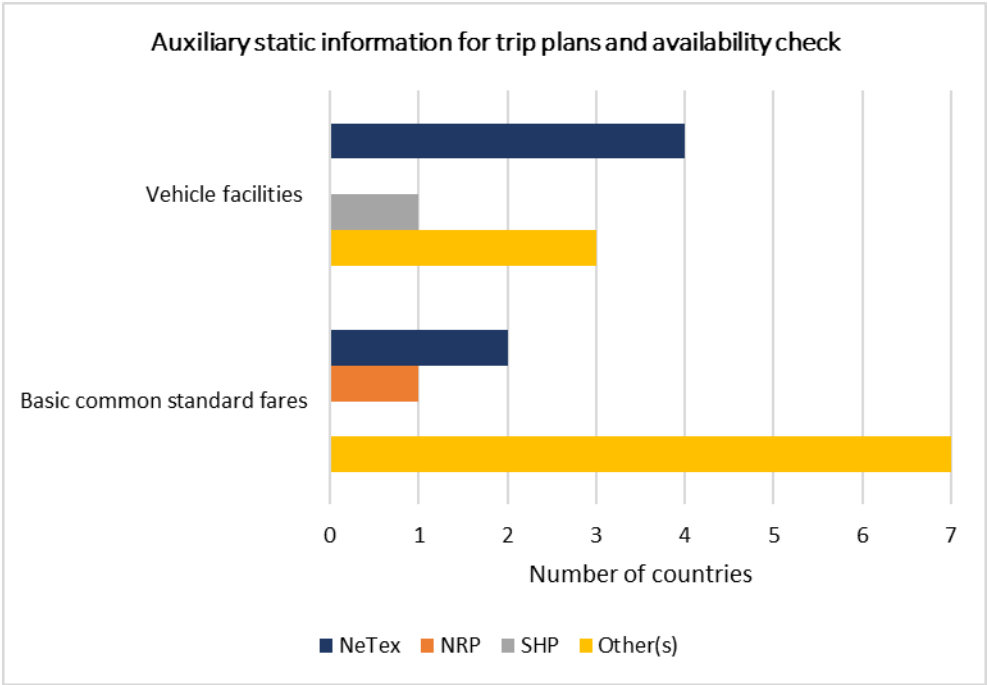


Figure 3.16 Data standards used for the exchange of auxiliary static information for "trip plans and availability check"

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

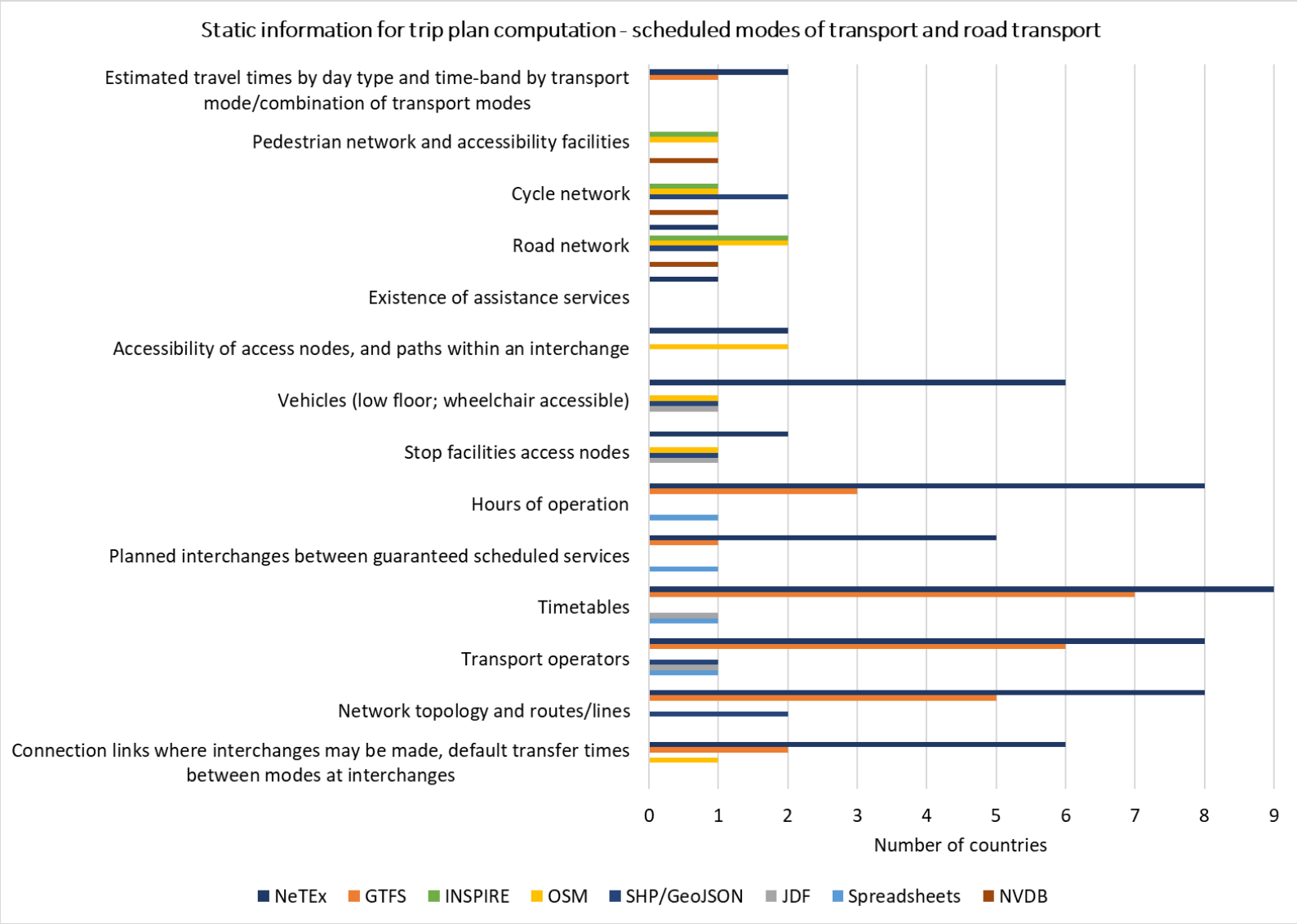


Figure 3.17 Data standards for the exchange of static information for "trip plan computation – scheduled modes of transport and road transport"

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

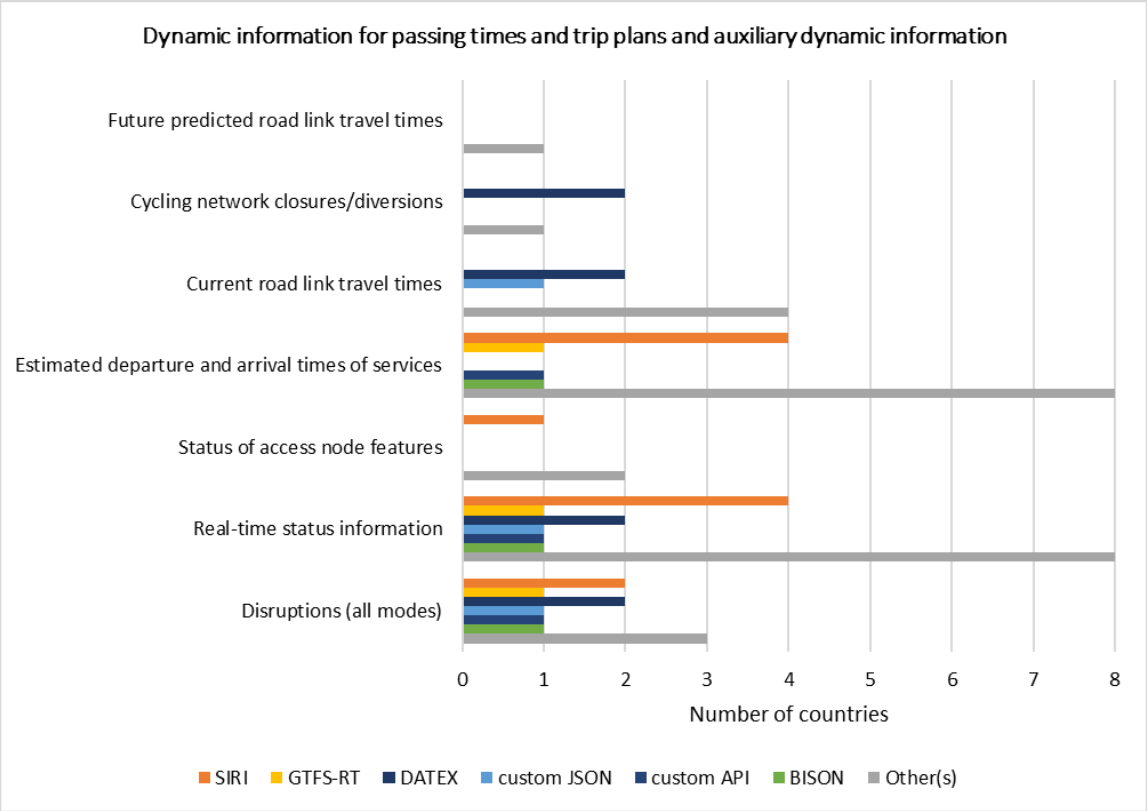


Figure 3.18 Data standards for the exchange of dynamic information for "passing times and trip plans" and dynamic auxiliary information

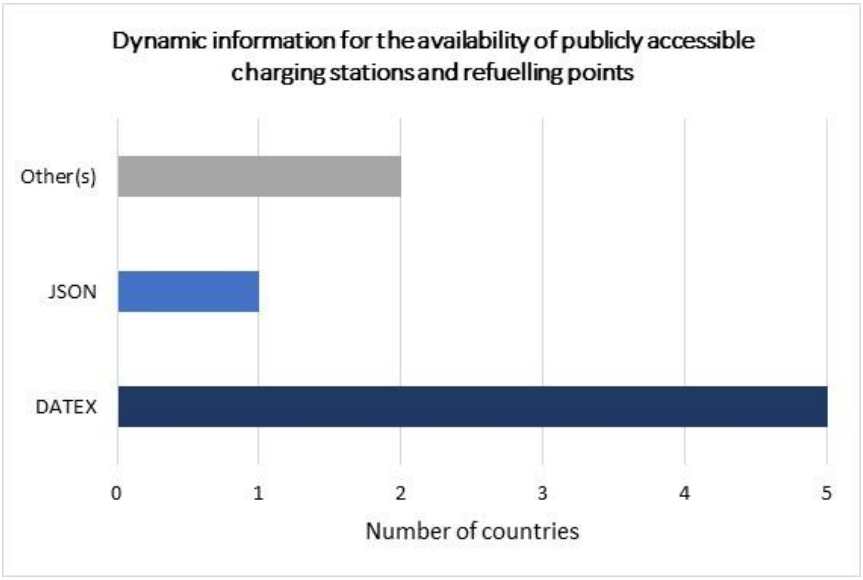


Figure 3.19 Data standards for the exchange of dynamic information for the "availability of publicly accessible charging stations and refuelling points"

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

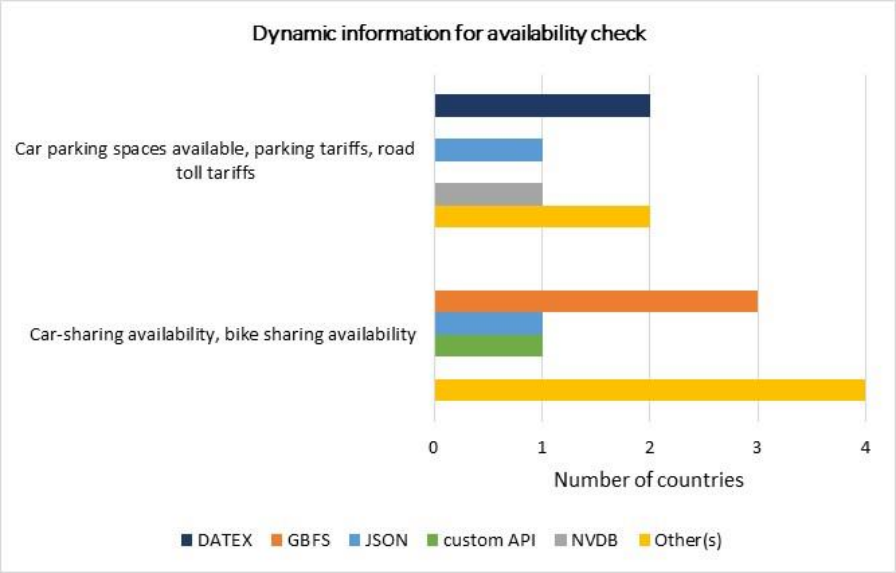


Figure 3.20 standards for the exchange of dynamic information for availability check

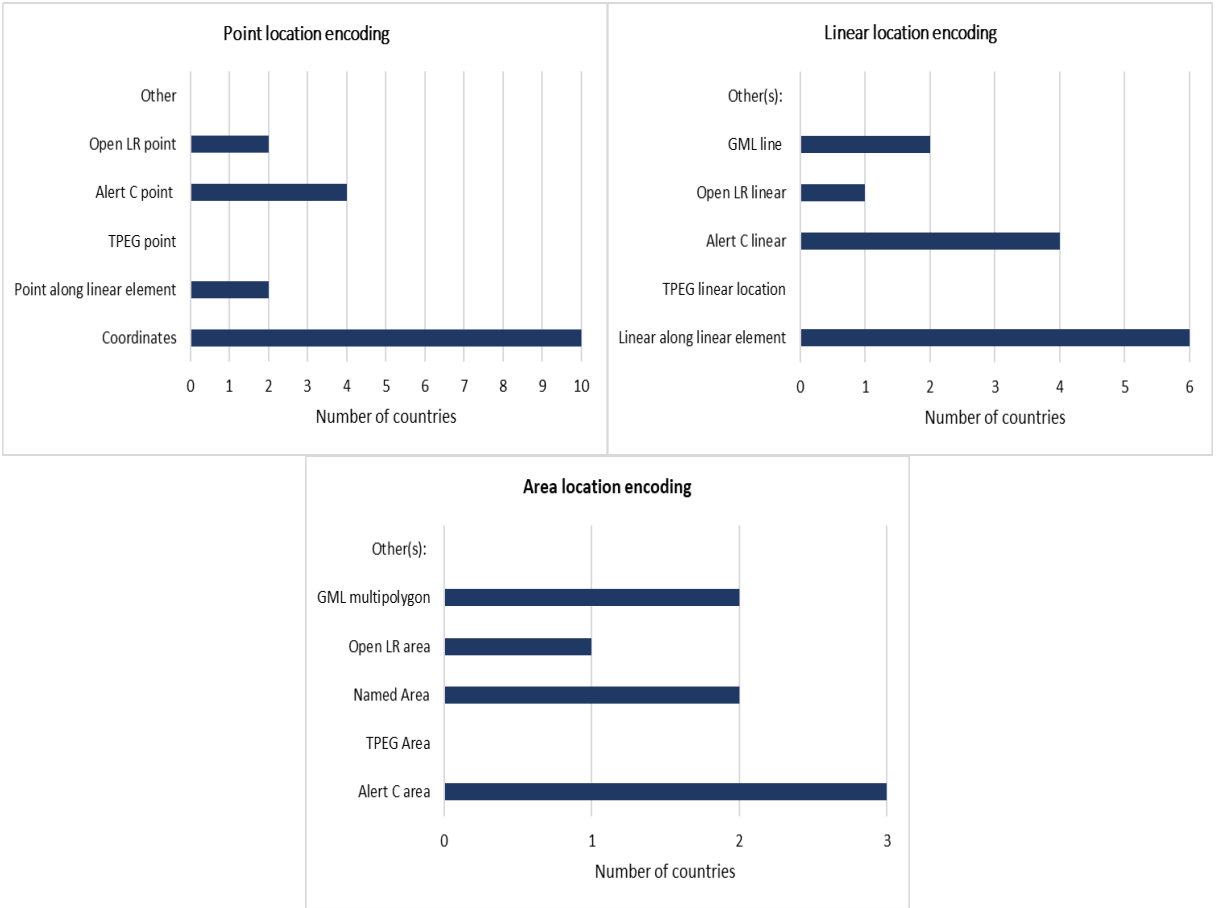


Figure 3.21 Location referencing methods used for the exchange of MMTIS-related information

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

3.2 Data standards' versions and profiles

3.2.1 DATEX II VERSIONS AND PROFILES

As it can be observed in the analysis of the acquired feedback that is presented in the previous sections of the current chapter, DATEX II is the most widely used data standard in European NAPs. Moreover, data sources in DATEX II can be "profiled" or extend the general DATEX II model. DATEX II also exists in **several versions:** 1.x (historic implementations of first DATEX II nodes), 2.x (most of the current implementations) and 3.x (current standard). Providers usually make available their data in more than just one DATEX II version because major versions are not backwards compatible. A number of providers also created their own extensions to the DATEX II model to fit their specific needs (i.e., location, quality framework, road belt description). Therefore, the survey prepared in the context of the current report asked countries to provide information about the utilized DATEX II versions and profiles. The acquired feedback is presented in Table 3.2.

Table 3.2 Overview of DATEX II used versions and profiles for each country

Country	DATEX II version used	Information about custom/standard profiles used
Austria	2.3, 3.3	Austrian Elementary Profile UNPLANNED EVENTS, which encompasses the RECOMMENDED REFERENCE PROFILE "SRTI" Austrian Elementary Profile TRAFFIC TRAVEL TIMES, which will encompass the RECOMMENDED REFERENCE PROFILE "RTTI" Austrian Elementary Profile REST AREAS, which will encompass the RECOMMENDED REFERENCE PROFILE "SSPA" Austrian Elementary Profile TRAFFIC SIGNS, which will encompass the RECOMMENDED REFERENCE PROFILE "TR" Austrian Elementary Profile PLANNED EVENTS, which includes Roadworks Austrian Elementary Profile TRAFFIC DATA, which holds data from traffic counters Austrian Elementary Profile TOLLING, which holds the location of the tolling stations
Belgium	3.0, 2.3	The relevant datasets are published as web-link to a third party website where the DATEX II datasets are hosted.
Bulgaria	2.0	There is no an external data provider yet
Croatia	2.3	Standard profiles for Events, Counters, Travel times, VMS, Weather, Wind and, and VMS. Level B extension for Cameras. (https://www.promet-info.hr/hr/datexii)
Cyprus	-	No datasets are published in DATEX II format
Czech Republic	2.3, 3.3	For all data source types, we provide separate profile, all profiles have Czech location extension
Denmark	2.3, 3.2	We are not fully aware of the profile used now, but starting May 2023 we are planning on using a tweaked version of the SRTI and RTTI profiles combined.
Estonia	2.3	No information provided
Finland	2.3	Datex profile available at https://github.com/tmfg/metadata/blob/master/schema/DATEXIISchema_2_2_3_with_definitions_FI.xsd
France	2.3*	No information provided
Germany	All possible/depends on data provider	DATEX Profiles (or schemas) can be defined by the data provider. He can select a standard schema or upload an own schema file. We are providing a few prescribed DATEX II profiles for some of the data categories. These are mandated by the Ministry when road authorities act as data providers, or by other regulations.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Country	DATEX II version used	Information about custom/standard profiles used
Greece	2.3	The Greek NAP includes DATEX II publications related to road weather data, rwis locations, vca traffic volumes, vca locations, vms messages, and vms locations. These publications make use of custom profiles that are based on DATEX II schema 2_0.
Hungary	2.3, 3.3	All the datasets are used in Datex covered by the previous answers
Ireland	2.3	No information provided
Italy	2.0	No information provided
Latvia	3.1 planned	N/A
Lithuania	Data sets available thru NAP are not in DATEX II format	N/A
Luxembourg	2.0	No information provided
Malta	Not operational NAP	
Netherlands	2.3	Dutch profile 2015
Norway	3.1 (as of 1st July 2023; now also 2.3)	NAP in Norway are covering SRTI and partly RTTI recommended reference profiles and support partly the recommended service profiles as follows: Forecast and Realtime Event Information ; Traffic Condition and Travel Time Information ; Speed Limit Information ; Road Weather Information ; Variable Speed Limits ; Incident Warning and Management
Poland	2.3	Standard profiles - https://kpd.gddkia.gov.pl/index.php/en/download/
Portugal	3.0	There is no formal profile schema, but some agreed upon requirements are satisfied for RTTI and SRTI. For RTTI, DATEX II's Situation Publication, Parking Publication, Measured Data Publication, and Measurement Site Table Publication are used. The required parameters are the type of data, the location, the period of occurrence of the event or condition, and the quality of the data. For SRTI, DATEX II's Situation Publication is used. The required parameters are the category of the event or condition, the location, and, if appropriate, driving behaviour advice.
Romania	2.3	No information provided
Slovakia	Older than 2.0	Data are disponible in related 2015/962 https://www.datex2.eu/sites/default/files/DATEX%20II%20PIM-METR-DLM-package-6.xml
Slovenia	3.2 (for energy infrastructure) and 2.3	All profiles are published with content samples and metadata
Spain	3.2, 2,2, 1.0	N/A
Sweden	2.3	No information provided
Switzerland	2.3	Swiss profile available here: Real time data from road traffic counters | Open data platform mobility Switzerland - https://opentransportdata.swiss/en/cookbook/rt-road-traffic-counters/
United Kingdom	Unknown	Unknown

*Based on information provided in the previous version of the survey, no changes have been reported for the current version

The evidence included in Table 3.2 show that, apart from Slovakia, just three countries (Luxembourg, Italy, and Bulgaria) support only the old version 2.0 of DATEX II (released in June 2011). Most countries support version 2.3 (released in 2014) and eight support one of the versions 3.x. So, the range of DATEX II variants is broad but there is a clear improvement from the previous survey when much more countries reported using versions 2.0 to 2.2. In Germany, where the NAP offers special broker interfaces, the DATEX II version and profile is not dependent on the NAP itself, but instead they are agreed between the information provider and user.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Analysing the responses regarding DATEX II profiles, there is only little use of harmonized profiles across Europe. Austria and Norway reported they use national profiles which are to some extend based on the European Reference Profiles or the European Recommended Service Profile. Denmark is also planning a similar solution starting from May 2023. Most of the other countries are using some form of profile/extension, and four of them (Czechia, Finland, The Netherlands, and Switzerland) have a national profile(s).

Considering the use of different DATEX II versions and the number of national extensions and profiles in place, it is clear that European traveller would benefit if these were harmonized among the data providers.

Regarding DATEX II, countries were also asked about issues they faced in using the standard. The answers will be used as input for the activities of NAPCORE WG4.1 which deals with DATEX II development and harmonization.

Hungary reported they have some issues with publishing metadata properly. Switzerland mentioned that DATEX II contains too much overhead for real time data, therefore a "DATEX light" format would be helpful or moving to a general JSON-format.

Germany reported that the NAP operator does not directly monitor the satisfaction with the DATEX II profiles. However, from the perspective of a data provider, they say “we often hear about problems of ambiguity with some of the data elements proposed by a DATEX profile. As NAP operators, we would encourage further EU-wide harmonization of DATEX II profiles for interoperability reasons, as well as user support to make DATEX II more productive and efficient.”

Norway indicated to the need:

- To make the model more consistent as regards mandatory fields, standardising RSP in this context could be valuable
- To declare a minimum set of profiles required as part of making NAP data standardized
- To modernize data exchange mechanisms including broker-based architectures

Finally, Belgium mentioned that the NAP is set up as yellow pages providing references to the DATEX II datasets hosted on other websites/portals. Therefore, “the NAP operator is not notified when DATEX II datasets are consulted or exchanged between a data provider and a data user. The data user can file a complaint regarding the dataset to the NAP by sending an email to contact@transportdata.be. So far, no complaints regarding the DATEX II datasets were received by the NAP operator”.

3.2.2 National NeTEx profile status

Another part of the survey executed in the context of the current report seeks to acquire information about the status of the implementation of national NeTEx profiles. For a better understanding of this status, we labelled the answers to the question “If NeTEx/SIRI is used: Do you have a NeTEx national profile?” as follows:

A1 = Yes, it is specified and already in use

A2 = Yes, it is specified but not yet in operation

A3 = No, but we are in the development process

A4 = No, we are about to use the EU profiles

This project has received funding from the European Commission’s Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

A5 = No, we have not yet any plan or strategy decided

Not Applicable

Figure 3.22 presents the acquired feedback following the above classification. The countries that mentioned that a national NeTEx profile is specified and already in use (A1) are Austria, Croatia, Germany, Lithuania, Netherlands, Norway, Portugal and Switzerland. On the other hand, Finland, France, Ireland, Italy, Slovenia and Sweden mentioned that a national profile is specified but it is not in operation (A2). Belgium, Hungary, Malta, Romania and Spain stated that a national profile is under development (A3). Denmark, Estonia and Latvia informed us that they do not have a NeTEx profile but are planning to use the EU profiles (A4). In the case of Estonia, NeTEx Nordic profile is also being considered. Finally, Bulgaria, Cyprus, Czech Republic, Greece, Luxembourg and Slovakia indicated that they do not have a NeTEx profile nor a decided strategy (A5). This piece of information was impossible to collect under desk research for Poland and United Kingdom, for this reason, it appears as “Not Applicable”.

The frequency of the labelled answers is shown in Figure 3.23. As the approval and implementation of NeTEx profiles progresses the number of countries in A1 and A2 increases. The main selected answer (8 countries) is that a national NeTEx profile is specified and already in use (A1). Followed by A2, a national profile is specified but not in operation (A2) and A5 we have not decided a plan or strategy (both 6 countries). Third most selected option is A3, national NeTEx profile is under development at the moment. Finally, the least selected option was we do not have a NeTEx profile, but we will use the EU profile, with only 3 countries.

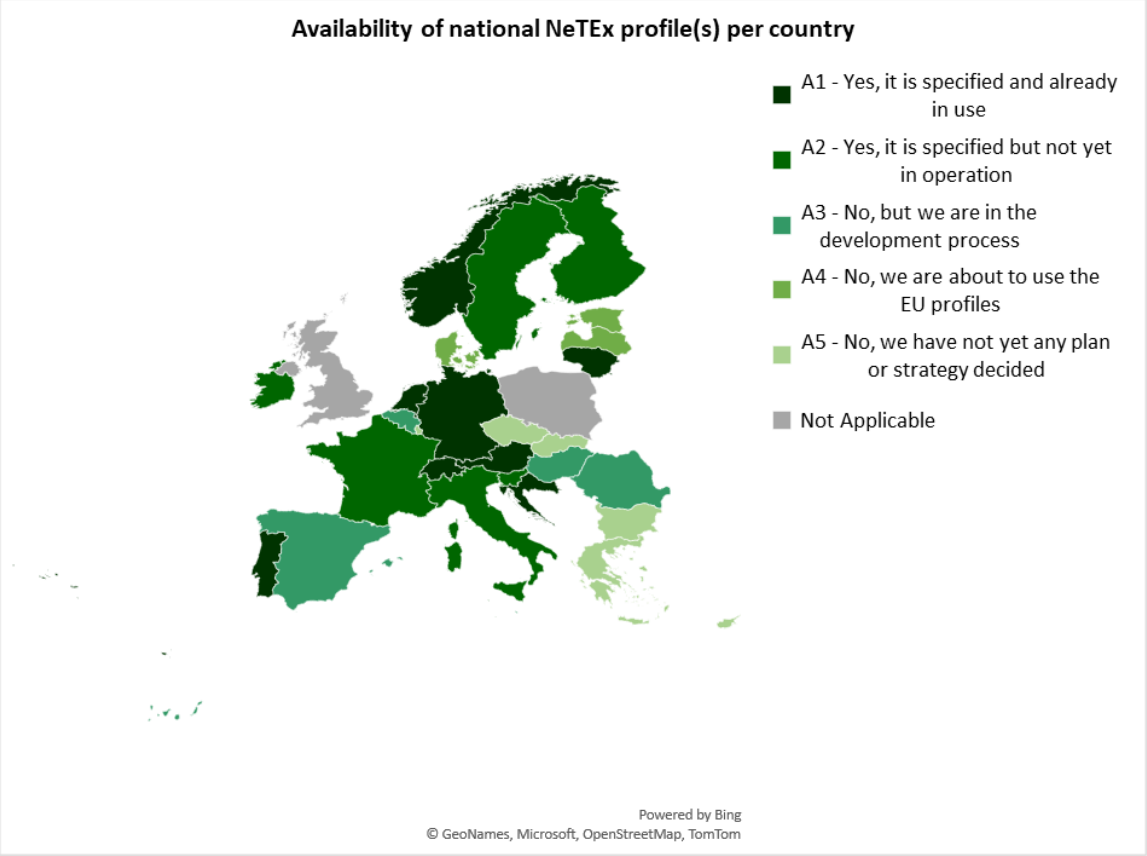


Figure 3.22 Availability of a national NeTEx profile(s) per country.

This project has received funding from the European Commission’s Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

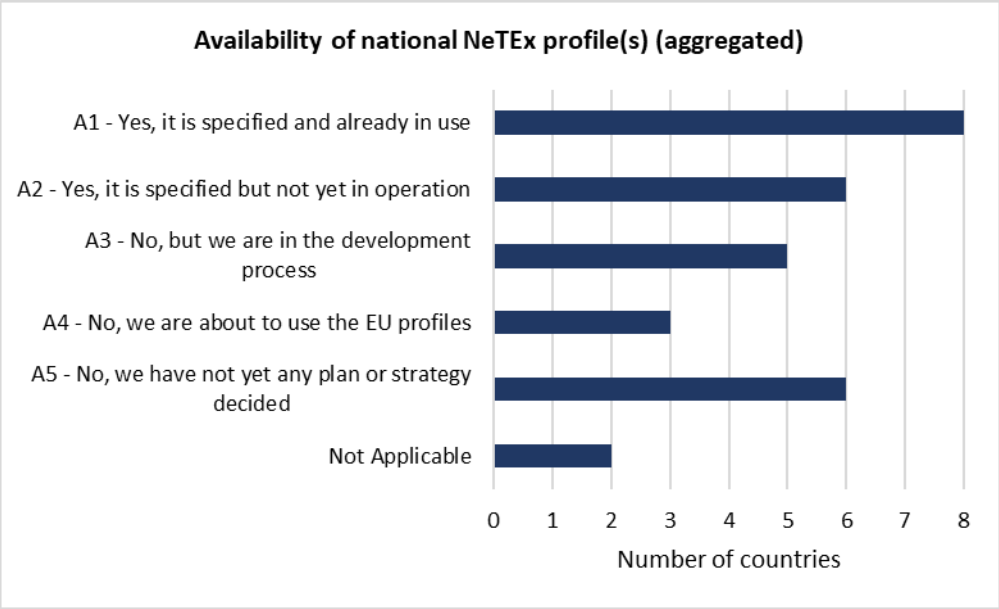


Figure 3.23 Overview of national NeTEx profile availability

Another question of the survey was devoted to the understanding of the extent to which currently existing national NeTEx profiles are based on the European Passenger Information Profile (EPIP). Ideally, all the NeTEx profile of all Member States should comply to the data structure and format suggested by EPIP, which is described in SIST-TS CEN/TS 16614-4:2020. EPIP has been initially developed for the exchange of public transport data in all EU countries and it represents a subset of the full NeTEx profile. For that reason, we have included the following two questions into the survey:

- "Is your NeTEx national profile based on EU minimum profile (e.g., European Passenger Information Profile (EPIP))?"
- "Is your NeTEX profile compatible with EPIP (European Passenger Information Profile)?"

The possible answers related to the first question were "Yes", "No" and "Other", while in the second question the possible answers were "Yes", "No, but we would like to know if we need to update it and ask for help", "No, no updates planned to make it compatible" and "Other".

Table 3.3 presents the acquired feedback considering the aforementioned questions. As it can be observed, a considerable number of NeTEx profiles are based on EPIP (10 countries). Based on the answer received from Norway, we can imply that the Nordic profile is heavily based on the French and, thus, on EPIP to a considerable extent (but not fully). Some other countries declared that their national profile is either an extension of EPIP or based on the Nordic profile (e.g., Sweden). With respect to compatibility concerns, the majority of NeTEx profiles are compatible with EPIP. This is attributed to the fact that a considerable number of NeTEx profiles are based either on EPIP or the Nordic profile, which is compliant with EPIP. The Netherlands, Portugal and Slovakia stated out that they would like to know if there is a general need to update the NeTEx profile and make it compatible with EPIP.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Table 3.3 Correlation of NeTEx national profile(s) availability with EPIP compatibility

Country	NeTEx national profile based on EPIP	NeTEx profile compatible with EPIP
Austria	Yes	Yes
Belgium	Yes	Yes
Bulgaria	-	-
Croatia	Yes	Yes
Cyprus	-	-
Czech Republic	-	-
Denmark	-	-
Estonia	-	-
Finland	Yes	Yes
France	-	Yes
Germany	Yes	-
Greece	-	-
Hungary	Yes	-
Ireland	Yes	-
Italy	Yes	Yes
Latvia	-	-
Lithuania	Yes	Yes
Luxemburg	-	-
Malta	-	-
Netherlands	No	No, but we would like to know if we need to update it and ask for help
Norway	Other (Nordic profile is based on the French, EU profile is based on the Nordic)	Yes
Poland	-	-
Portugal	No	No, but we would like to know if we need to update it and ask for help
Romania	-	-
Slovakia	No	No, but we would like to know if we need to update it and ask for help
Slovenia	Yes	Yes
Spain	-	-
Sweden	Other (Nordic profile)	Yes
Switzerland	No	-
United Kingdom	-	-

3.2.3 NATIONAL SIRI PROFILE STATUS

Beyond the questions concerning national NeTEx profiles, the executed survey also sought to acquire information about the status of the implementation of national SIRI profiles. As previously done with NeTEx a similar question was asked in the questionnaire: “Do you have a SIRI national profile?”. The answers to this question were labelled as follows:

A1 = Yes, it is specified and already in use

A2 = Yes, it is specified but not yet in operation

A3 = No, but we are in the development process

This project has received funding from the European Commission’s Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

A4 = No, we are about to use the EU profiles

A5 = No, we have not yet any plan or strategy decided

Not Applicable

Figure 3.24 shows the availability of national SIRI profile(s) per country. The countries that have a SIRI profile specified and already in use (A1) are Croatia, Norway, Slovenia and Switzerland. The option that SIRI profile is specified but not yet in use (A2) was selected by Finland, France, and Sweden. The member states Austria, Germany, Hungary, Italy, Malta, Netherlands and Romania informed us that they are in the development process of their national SIRI profile (A3). The option we do not have a national SIRI profile, but we will use the EU profiles (A4) was chosen by Cyprus, Denmark, Estonia, Latvia and Portugal. Finally, there are countries that do not have any plan or strategy decided regarding their national SIRI profile (A5) such as Belgium, Bulgaria, Czech Republic, Greece, Ireland, Lithuania, Luxembourg and Slovakia. This information was not possible to collect under desk research for Poland, Spain and United Kingdom and because of that it appears as “Not Applicable”.

The frequency of the labelled answers appeared represented in the Figure 3.25. Opposed to the answers received regarding NeTEx, the majority of countries has mentioned that there is no plan or strategy decided on the implementation of SIRI national profiles (8 countries). The second option most selected is “No, but we are in the development process” (A3) as chosen by 7 countries. We found 4 countries with a SIRI national profile specified and it use and 3 more countries that specified it but is not yet in operation. Compared to the previous year the increment of countries that specified their SIRI national profile is notable and it encourages that in future iterations of this report more countries will follow the same trend.

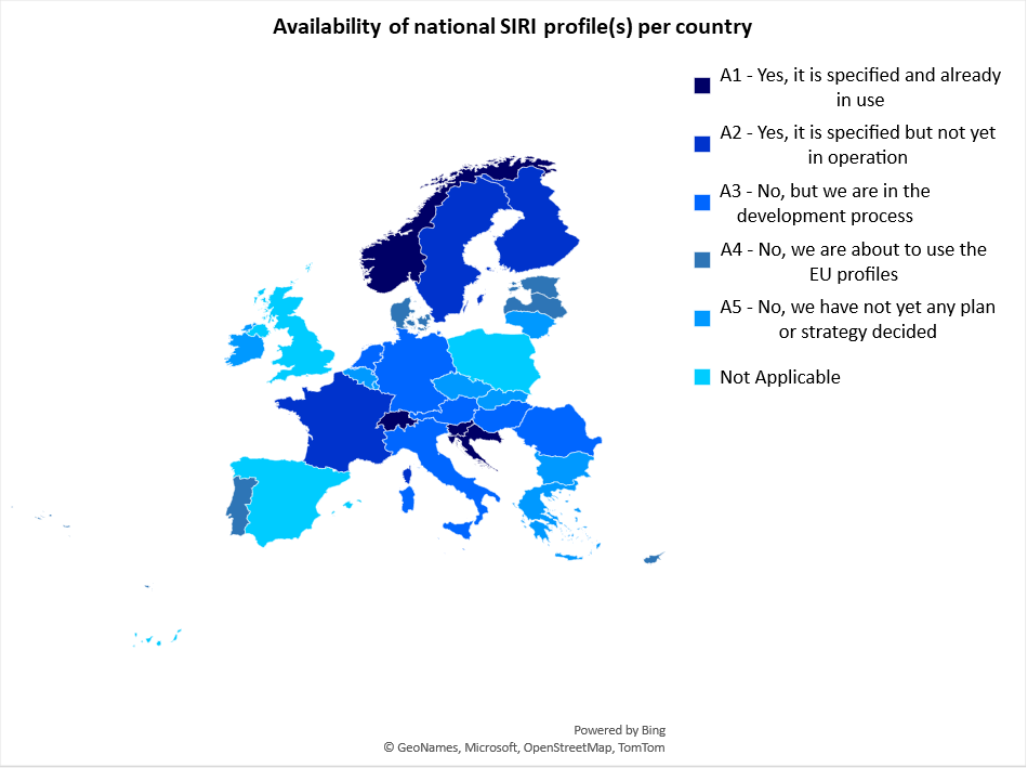


Figure 3.24 Availability of national SIRI profile(s) per country.

This project has received funding from the European Commission’s Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

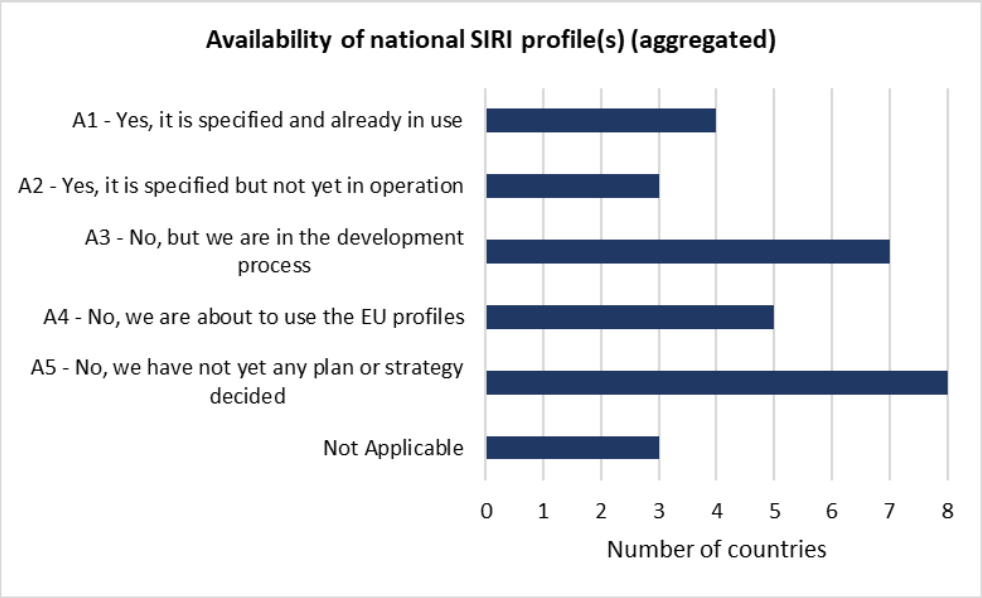


Figure 3.25 Overview of national SIRI profile availability

3.2.4 RECOMMENDATIONS FOR NETEX & SIRI

Finally, MS were asked to provide their feedback regarding the relevant data standards NeTEx and SIRI. The aim of this question was to retrieve information about whether there are any technical challenges faced by the countries that have implemented NeTEx and/or SIRI and record their experiences. The only countries that have provided feedback in this question are Denmark, Germany, Lithuania, the Netherlands, Norway and Portugal. Such feedback is summarized in Table 3.4.

Table 3.4 Technical issues and experiences/challenges recorded in relation to NeTEx & SIRI

Country	Technical issues and recorded experiences regarding NeTEx & SIRI
Denmark	I think these questions should be raised in working group 4.3 dealing with MMTIS.
Germany	As a NAP provider, we don't directly monitor the satisfaction with NeTEx/SIRI. I would need to ask our public transport data providers / data users, if necessary.
Lithuania	No technical issues yet.
Netherlands	The standards should be freely and publicly available from the European Commission.
Norway	Too many profiles have been made, data will not be interoperable. Limit the numbers of profiles, if someone is developing new ones, make them stop and choose an existing one that fulfil your needs. Go for plug & play NeTEx and SIRI data files/feeds. A coherent validator. Development of open source services working in the eco-system of MMTIS are ongoing, need to make frequent and efficient changes and enhancements to the NeTEx/SIRI standards and profiles. CEN construction is not suitable for that today.
Portugal	Our experience using NeTEx has largely benefited from the participation on the DATA4PT project, that provided guidelines, technical support, training and tools to facilitate the adaptation of PTO and PTA to this standard.

Interestingly, the Norwegian partners stress very emphatically that a plethora of NeTEx/SIRI profiles already exist and the challenge to achieve data interoperability still remains since the previous iteration of the report. Therefore, they suggest the use of one of the existing profiles and not the development of new ones.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Even if the plethora of profiles is due the fact that several national profiles have been developed before EPIP, and other EU minimum profiles, it is highlighted the need for coordination and collaboration between MS and between national standardisation organisations across EU. NAPCORE aims to enable this coordination and to lead alignment in different levels. Moreover, the main recommendation is to adopt EU minimum profiles for the data types that are available. Currently European Passenger Information Profile is available, and under voting in CEN premises is European Passenger Information Accessibility Profile (to be available in the second half of 2023).

Alignment of national profiles with the European ones as well as relevant guidance to the MS is currently supported, for some MS, by CEF action DATAPT. Portugal is one of them as reported by their feedback. Further recommendations and guidance are expected to be provided through NAPCORE outputs. Another important need, stressed by the Norwegian partners, is the provision of a coherent validator that will enable the further and precise deployment of NeTEx/SIRI across Europe. Currently, this matter is addressed by DATA4PT and the development of NeTEx validator Greenlight[8] It currently supports NeTEx validation against full NeTEx schema, EPIP (profile), and includes validation rules content wise. The tool is under further enhancement to embed more validation rules regarding consistency and accuracy of provided data, to optimise performance and to extend features for SIRI validation.
Finally, another comment made by the Norwegian partners, which also made by the partners from Netherlands, involves the need to make NeTEx/SIRI standards freely and publicly available to the relevant ecosystems (and this need does not conform to the existing CEN structure). This is a remaining issue, reported by the previous iteration of the survey.

In fact, the official documentation of each CEN standard is made available by each National Standardisation Body (NSB), which decides the conditions of its acquisition[9]. Besides the detailed documentation available in PDF files by NSBs, technical documentation and implementation guidelines are needed for such standards. In this respect, technical artefacts such as the XML schema of NeTEx and SIRI (XSDs), the relevant Unified Modeling Language diagrams (UML), XML examples, and white papers are freely and publicly available in relevant websites and repositories[10]. Nevertheless, the received comments underline the need to make access easier and more unified, facilitate the purchase process and to better communicating.

An easy way could be that links towards the NSBs from where the documentation needs to be purchased by each country was communicated through the existing channels of communication of the standards (websites, technical repositories and forums such as GitHub).

Some comments of a different aspect have been also done by Lithuania, Germany and Denmark. Lithuania reported no technical issues regarding the standards at this stage of the implementation in their country. Germany commented the fact that issues and experiences from the users of the standards are not provided to the NAP provider, therefore feedback is not available. This might also be the case for most of the countries that did not provide any feedback. Finally, Denmark commented the fact that technical issues and experiences can be collected and further discuss through NAPCORE activity subWG4.3. Scope of suWG4.3 is aligned with this request.

[8] Web interface available here https://greenlight.atomite.io/. Source folders available here https://github.com/ITxPT/DATA4PTTools.
[9] The pricing varies from country to country.
[10] Examples of sources where information is available: https://github.com/NeTEx-CEN, https://github.com/SIRI-CEN, https://netex-cen.eu/?page_id=14, https://www.netex-cen.eu/model/conceptual/part1/index.htm, https://data4pt.org/

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

4 Additional survey results

This chapter provides insight into the outcomes of the remaining parts of the executed survey. Provided information encompasses types of NAPs, data quality, data licensing, compliance assessment, and foreseen new publication in NAPs.

4.1 Types of NAPs, metadata and discovery services

The survey includes an examination of NAPs classified by their architecture, either as a database, web-link, or a combination of both. A database or data broker NAP serves as a central hub for uploading, downloading, and/or accessing data through an API. Conversely, a web-link or metadata repository NAP offers metadata descriptions and links to published datasets hosted on external platforms, functioning as a decentralized data platform without participating actively in the data exchange between providers and consumers.

The survey also raises the issue of metadata and data discovery services availability, which is mandated by the Delegated Regulations supplementing the ITS Directive. According to this requirement, NAPs are expected to facilitate the search and retrieval of relevant information through the provision of well-defined metadata and data discovery services.

This report aims to provide a more comprehensive perspective through a thorough analysis of each country's response to each DR individually. In this way, we can efficiently analyse how NAP types, metadata, and discovery services are divided both among the Delegated Regulations and among the participating countries in this project.

Besides the options to indicate the type of NAP or to select Yes/No regarding availability of discovery services and metadata, in the questionnaire there was also the possibility to answer with “not applicable” or “will be implemented in …. months”. The former is meant for the situation when there is no NAP operational while the latter indicates that the feature (metadata or discovery services) is not available but there are plans to implement it within a given timeframe. In the following subchapters which show the results of the survey, we also used the status “unknown” to indicate situations when it was not possible for the Member States to assess whether their NAP is providing metadata or discovery services which would fulfil the requirements of the Delegated Regulations.

By examining the response of each country to each Delegated Regulation, this report offers a detailed analysis of how NAP types, metadata, and discovery services are distributed and utilized in the participating countries.

This is the reason why sub-chapter 4.1 is divided further into four sub-chapters, each dedicated to one of the Delegated Regulations: SSTP, SRTI, RTTI, and MMTIS. In each of these sub-chapters, the functional NAP type in each country will be explained, as well as the availability of metadata and discovery services for each country. Additionally, the sub-chapters 4.2 to 4.5 will examine the level of compliance with each Delegated Regulation, any challenges or difficulties encountered in implementing the requirements, and any best practices or innovative solutions adopted by the participating countries.

This project has received funding from the European Commission’s Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

4.1.1 STATUS FOR SSTP

The results regarding NAPs for SSTP show that about a third are purely web-link type while another third is only database type. There are 9 answers “not applicable” which is much higher than the other DR, but it is to be expected as many countries chose to provide information through the European NAP and not develop a national interface. The situation regarding metadata and discovery services is good considering that both are implemented by 15 of the 21 countries where a NAP is available.

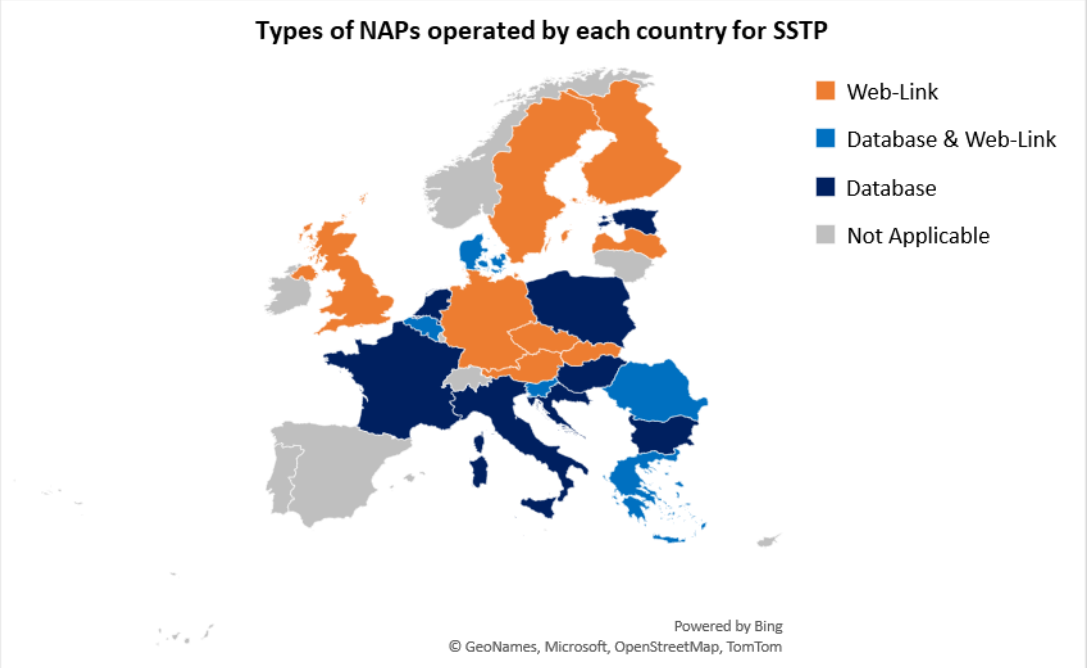


Figure 4.1 Types of NAPS operated by each country for SSTP

This project has received funding from the European Commission’s Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

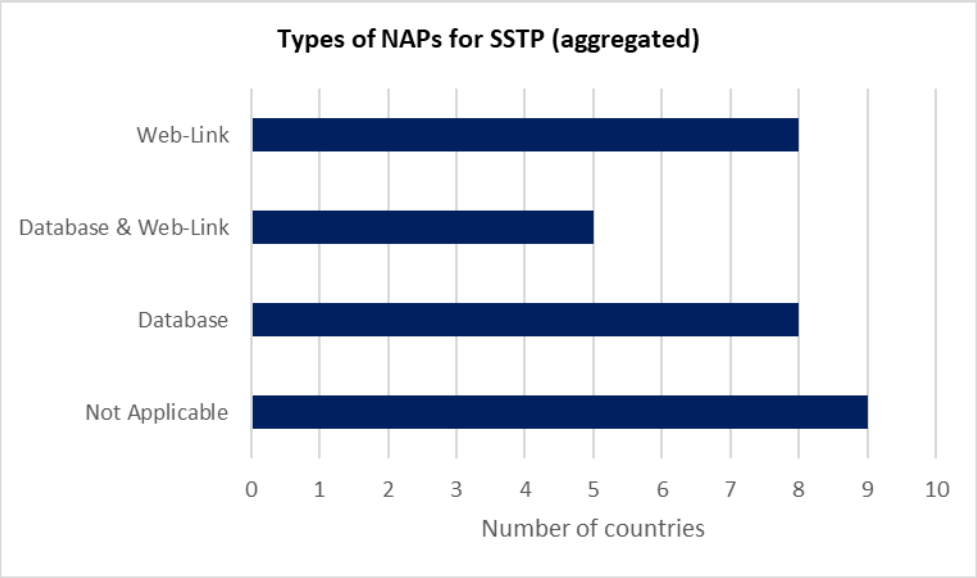


Figure 4.2 Types of NAPS for SSTP (aggregated)

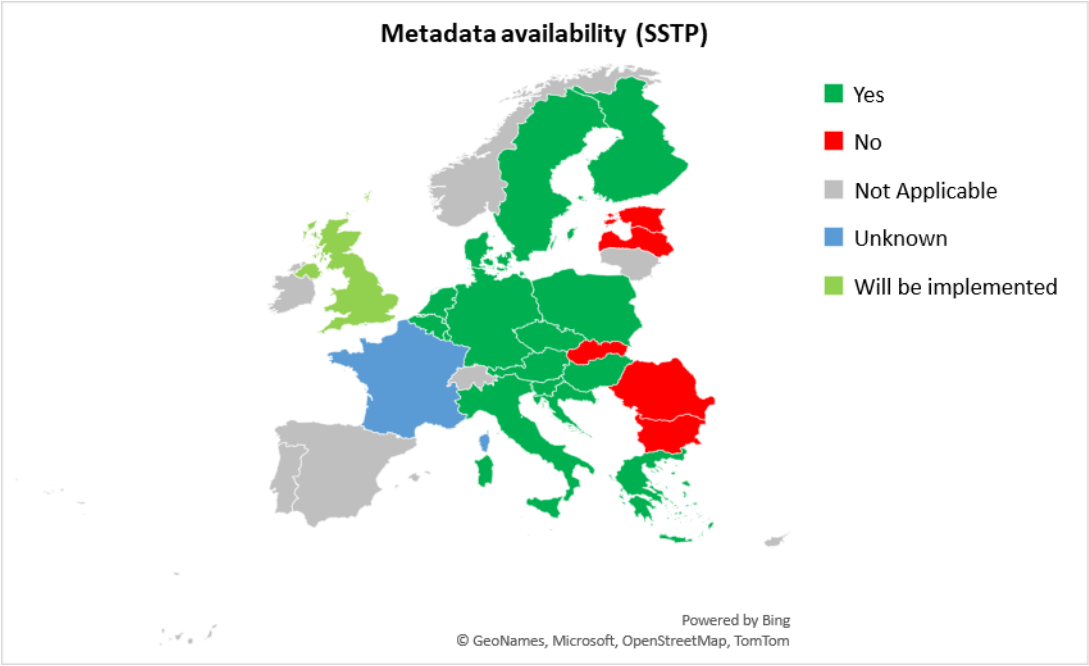


Figure 4.3 Metadata availability presented in each country for SSTP

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

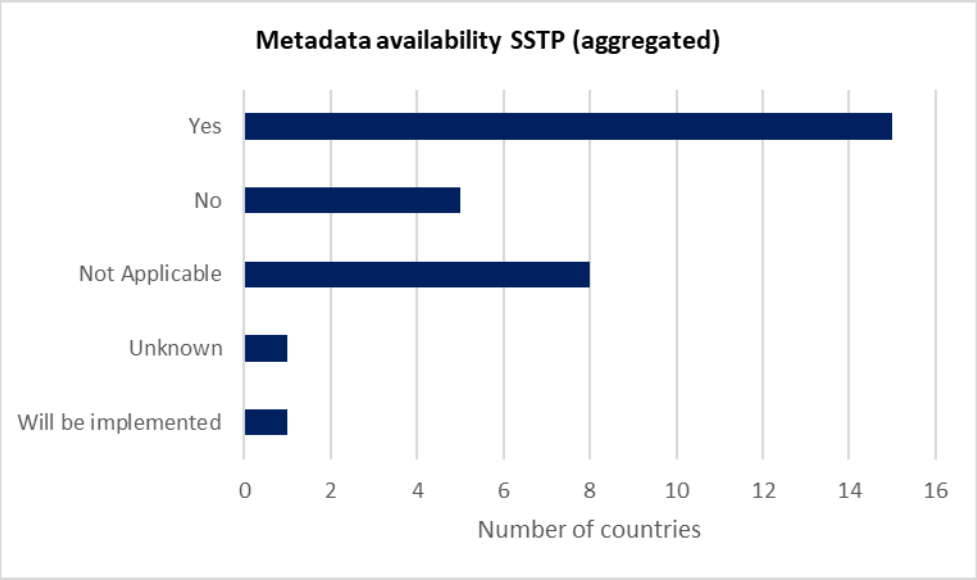


Figure 4.4 Metadata availability for SSTP (aggregated)

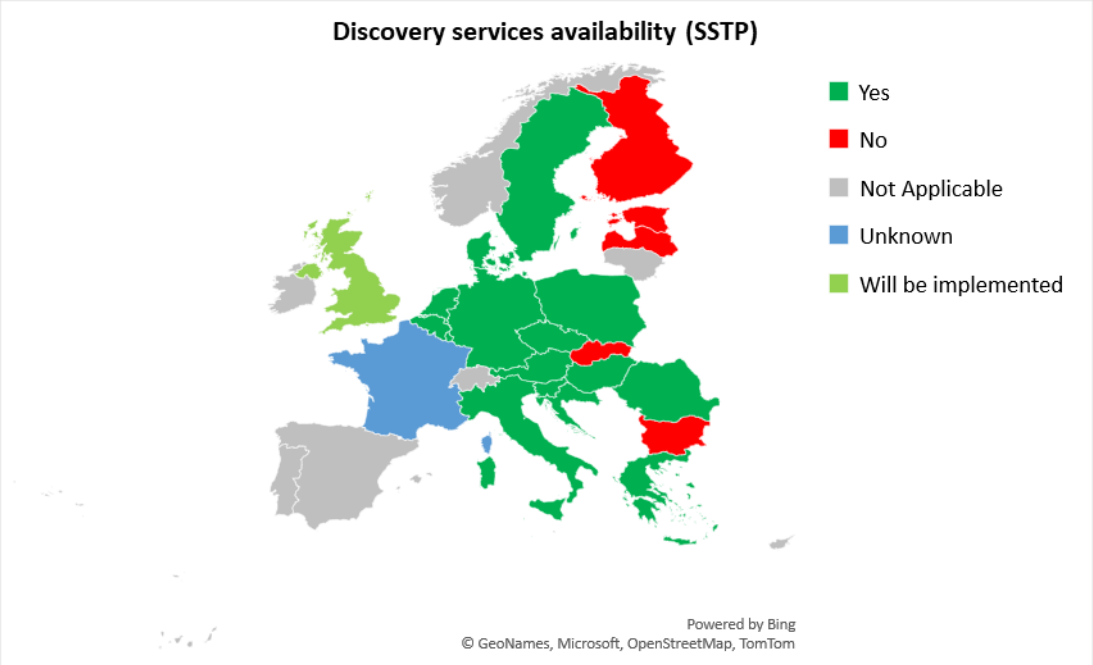


Figure 4.5 Discovery services availability in each country for SSTP

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

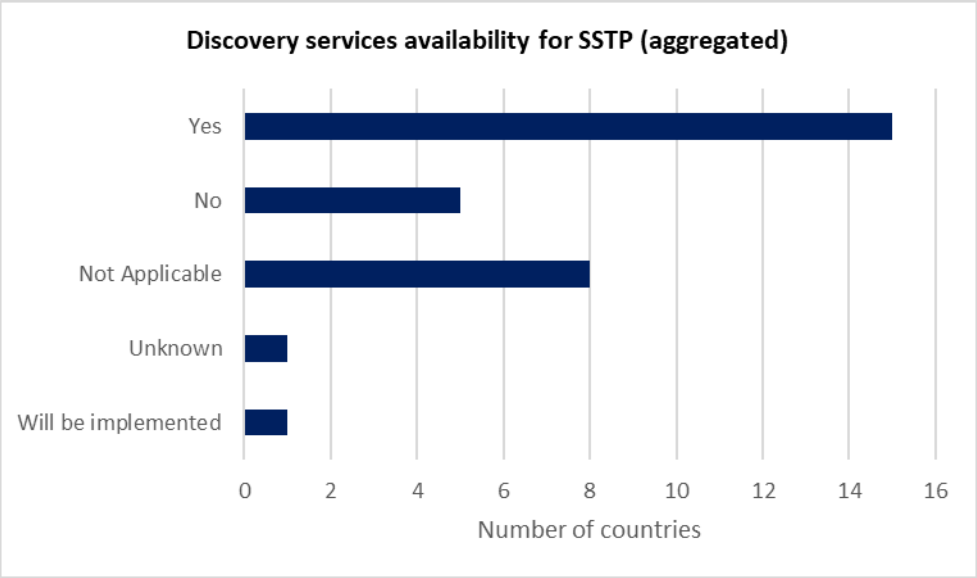


Figure 4.6 Discovery services availability for SSTP (aggregated)

4.1.2 STATUS FOR SRTI

The results regarding NAPs for SRTI show that almost half (13) are purely web-link type, a third are purely database type, and only six are mixed type. The situation regarding metadata and discovery services is good, as metadata is implemented in 20 NAPs and discovery services are available in 18 NAPs.

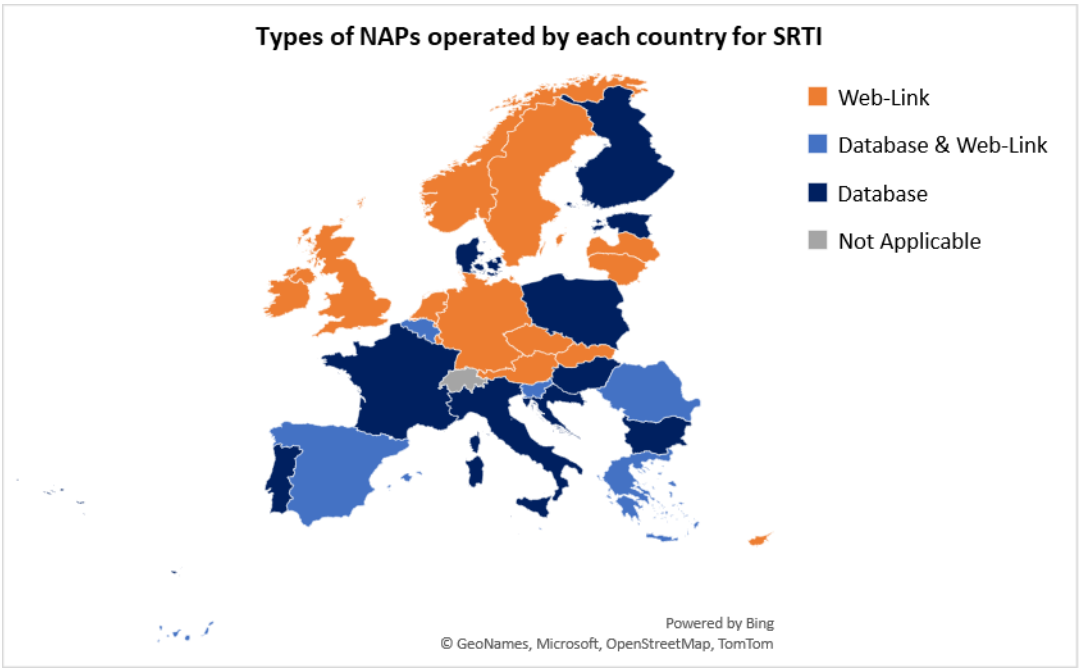


Figure 4.7 Types of NAPS operated by each country for SRTI

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

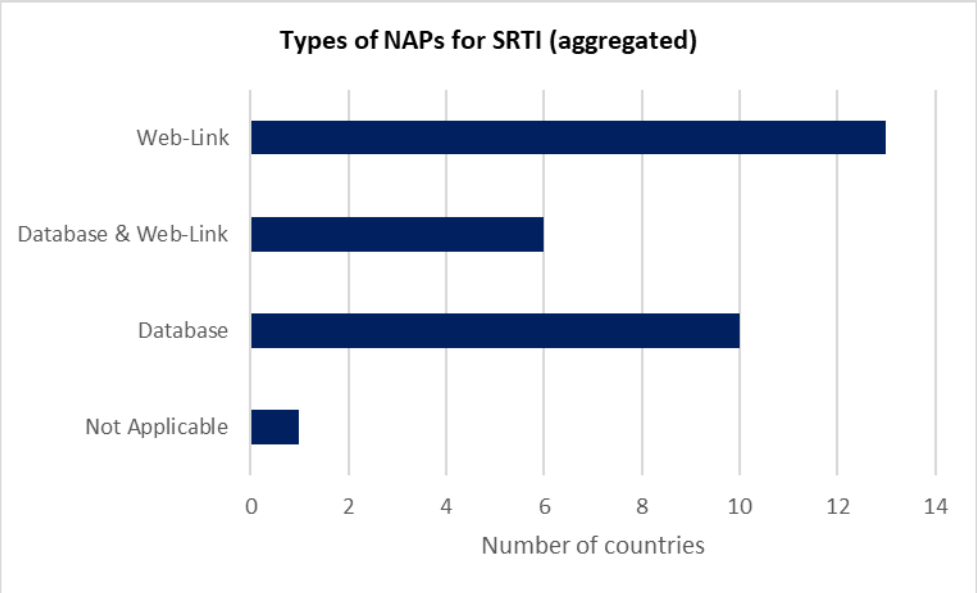


Figure 4.8 Types of NAPS for SRTI (aggregated)

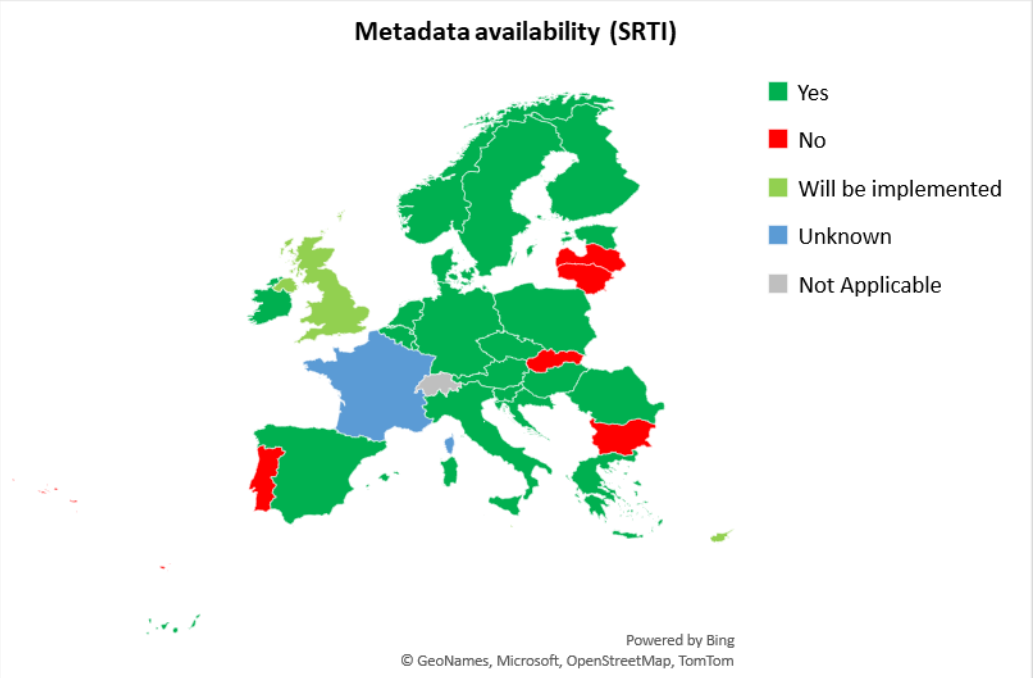


Figure 4.9 Metadata availability presented in each country for SRTI

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

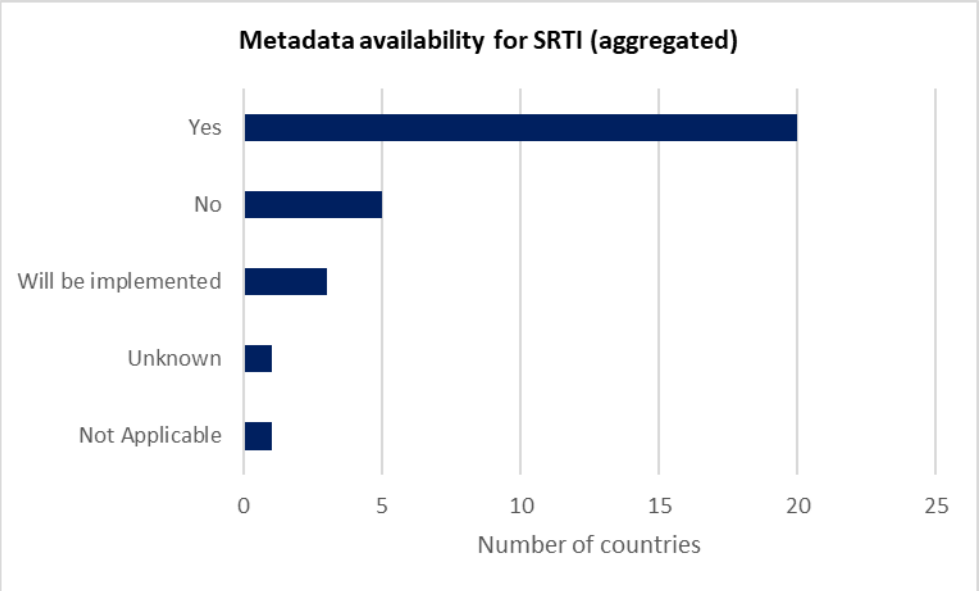


Figure 4.10 Metadata availability for SRTI (aggregated)

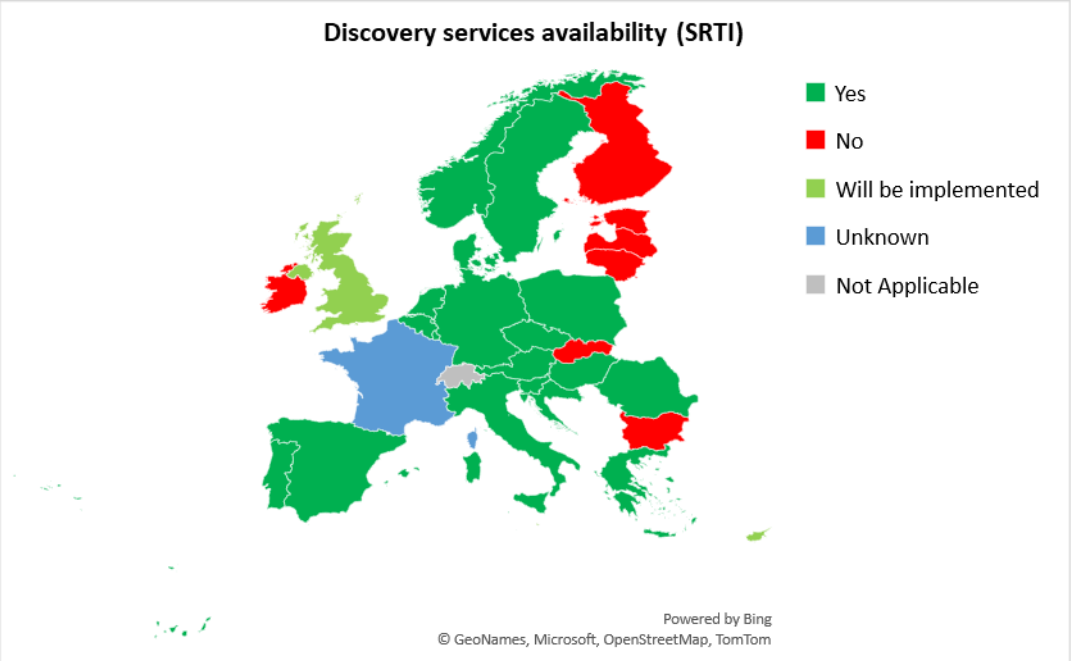


Figure 4.11 Availability of discovery services in each country for SRTI

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

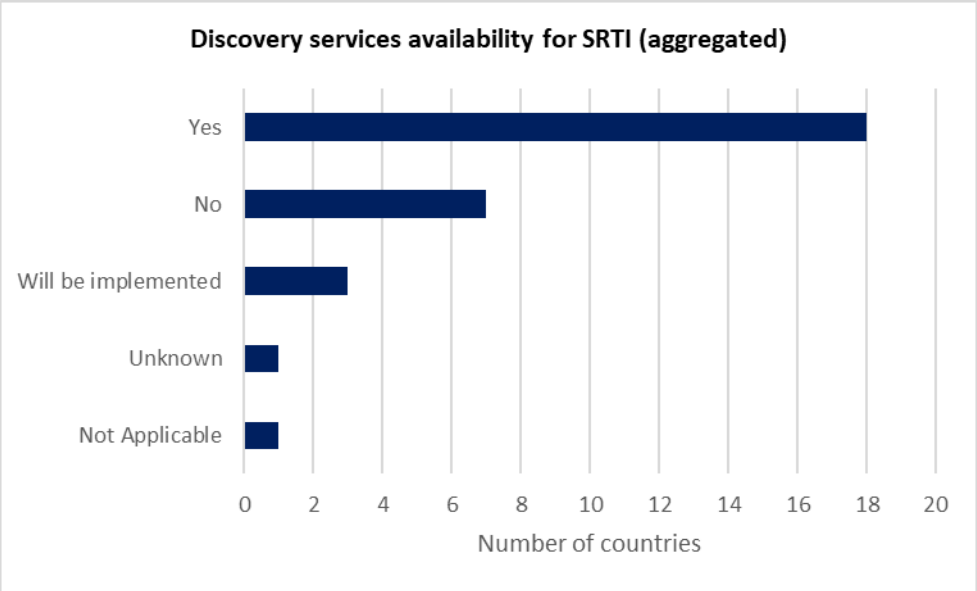


Figure 4.12 Discovery services for SRTI (aggregated)

4.1.3 STATUS FOR RTTI

The results regarding NAPs for RTTI show an almost equal distribution between the three types of NAP architectures. Only four countries do not have metadata, and the situation regarding discovery services is good as it is implemented in 18 countries.

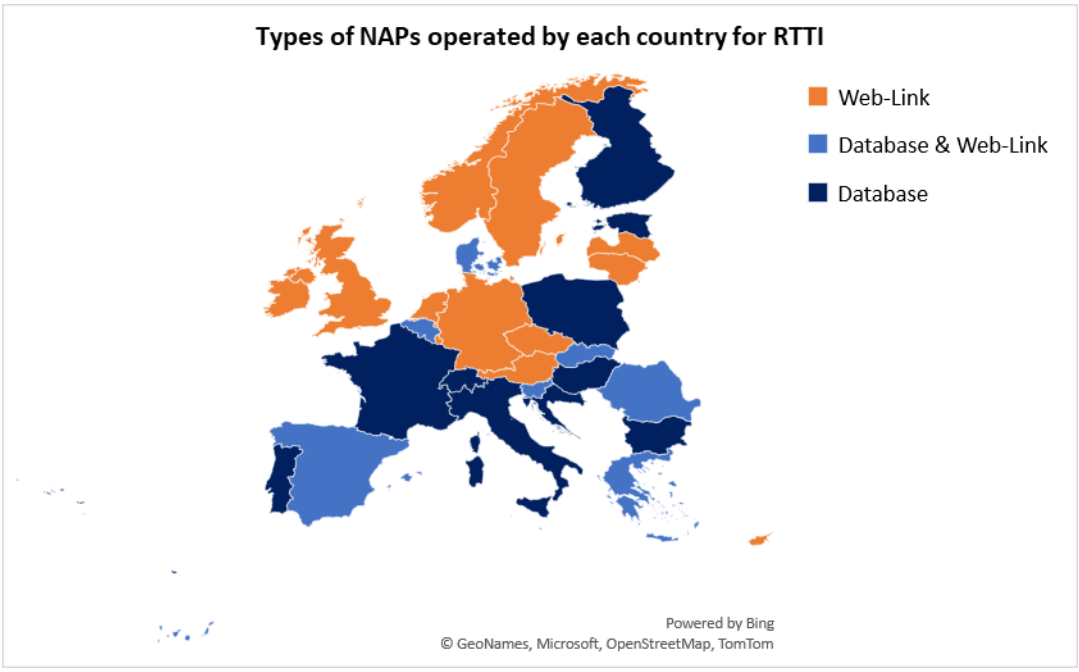


Figure 4.13 Types of NAPs operated by each country for RTTI

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

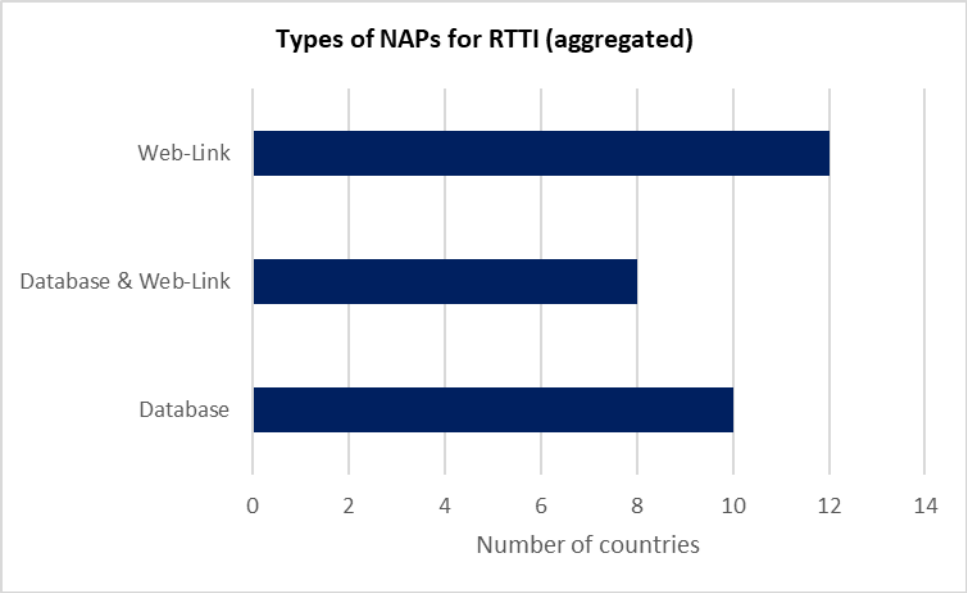


Figure 4.14 Types of NAPS for RTTI (aggregated)

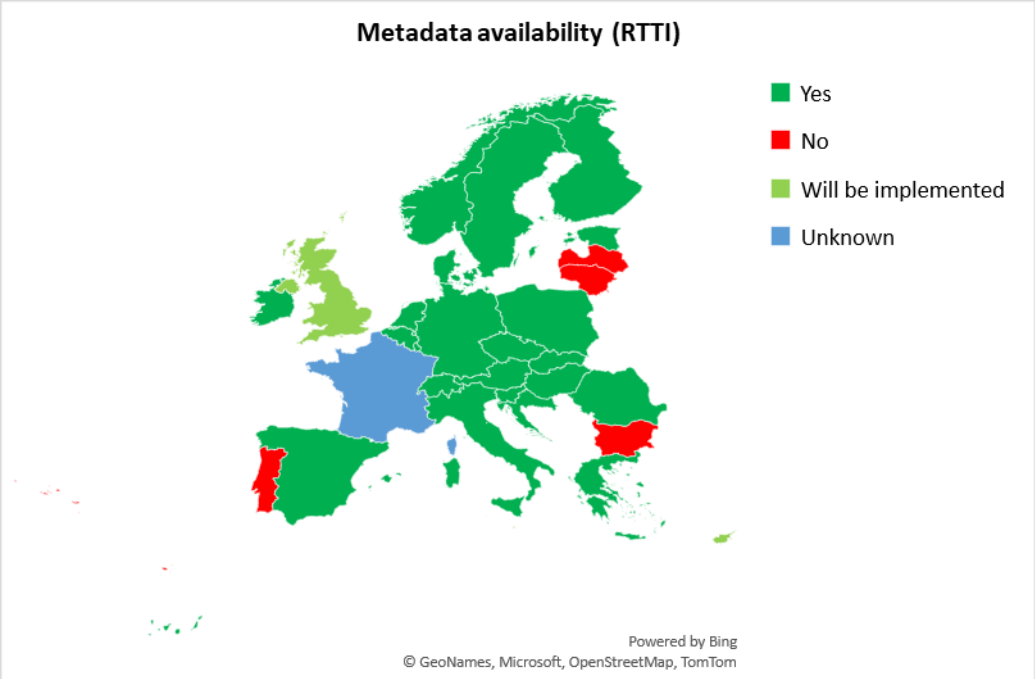


Figure 4.15 Metadata availability presented in each country for RTTI

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

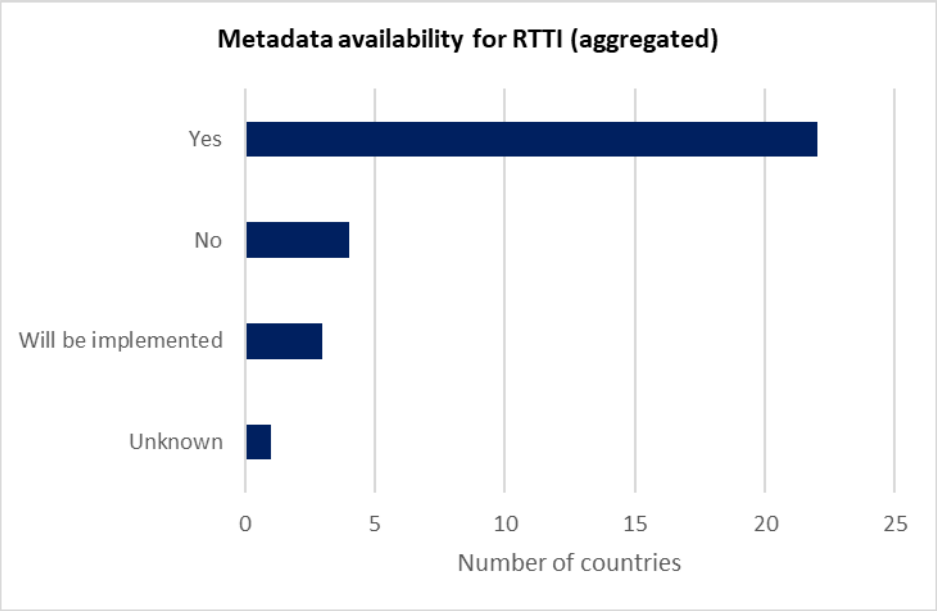


Figure 4.16 Metadata availability for RTTI (aggregated)

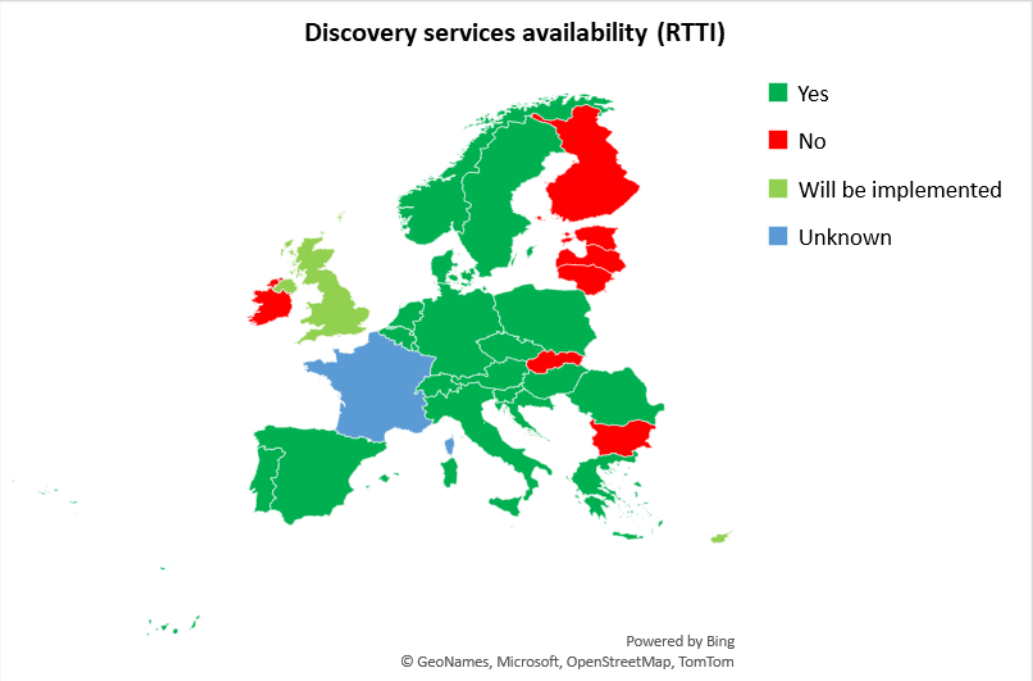


Figure 4.17 Discovery services availability in each country for RTTI

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

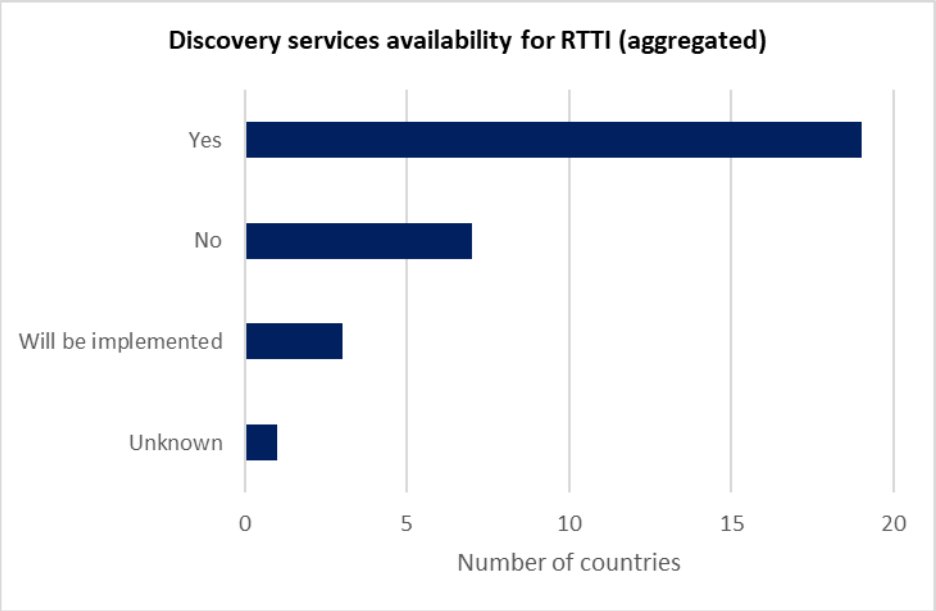


Figure 4.18 Discovery services availability for RTTI (aggregated)

4.1.4 STATUS FOR MMTIS

The results regarding NAPs for MMTIS show that most of them (15) are purely web-link type while only three are purely database type. This is consistent with previous findings, and it is a result of the very complex and varied MMTIS dataset which makes it very difficult to store all the information in a single common database. The situation regarding metadata and discovery services is good: 18 NAPs have metadata and 17 implement discovery services.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

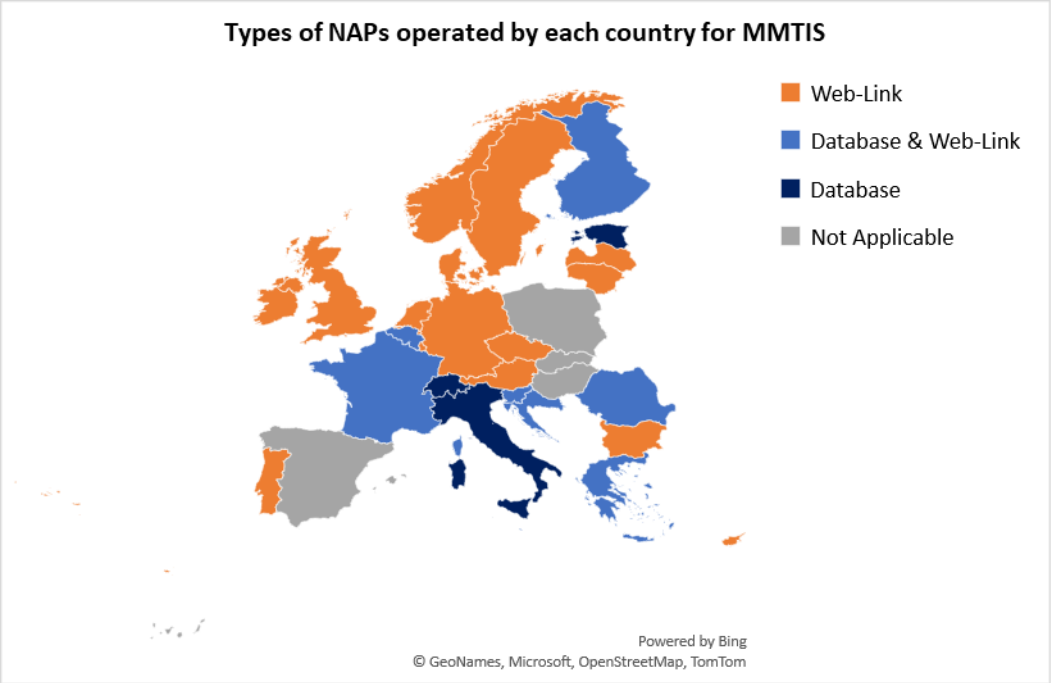


Figure 4.19 Types of NAPs operated by each country for MMTIS

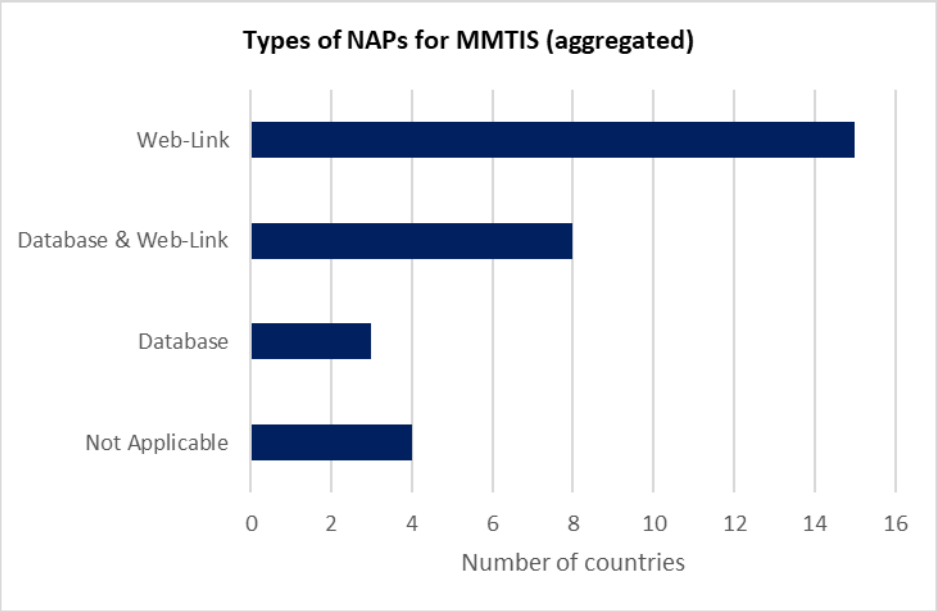


Figure 4.20 Types of NAPS for MMTIS (aggregated)

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

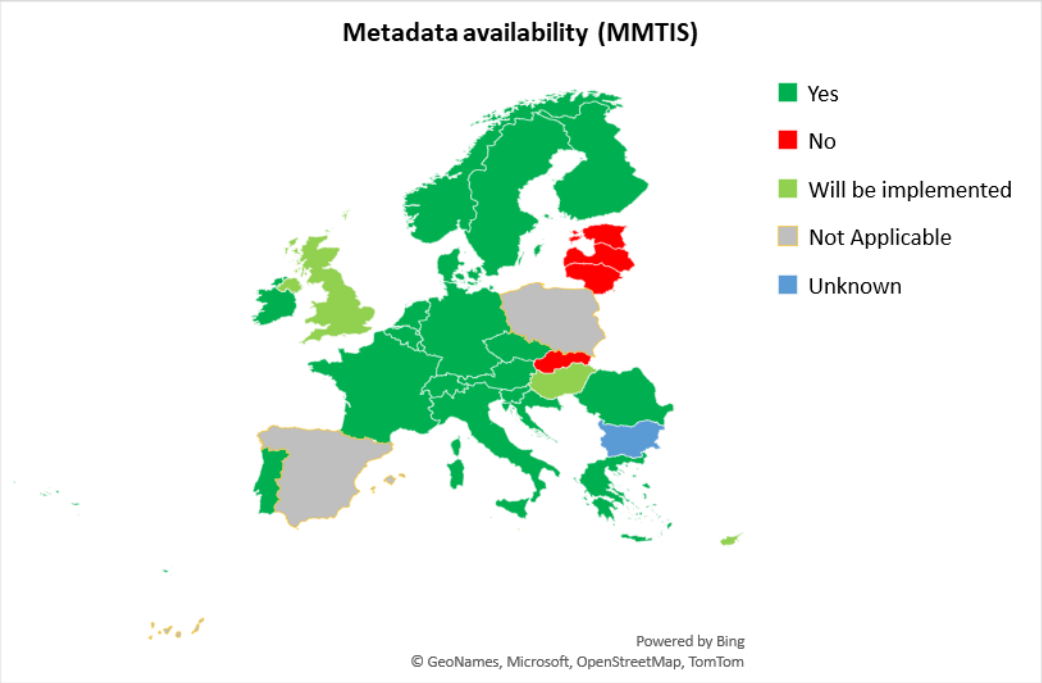


Figure 4.21 Metadata availability presented in each country for MMTIS

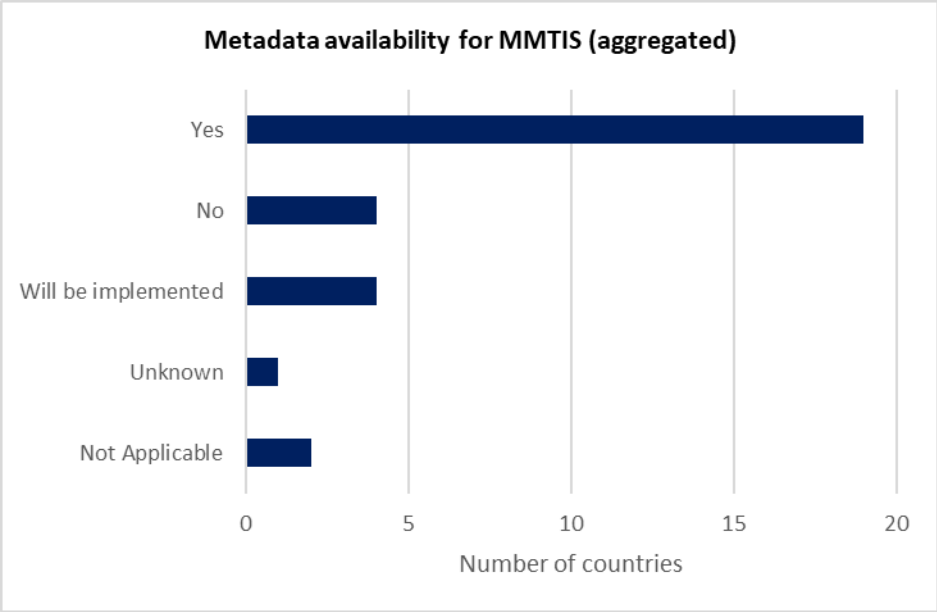


Figure 4.22 Metadata availability for MMTIS (aggregated)

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

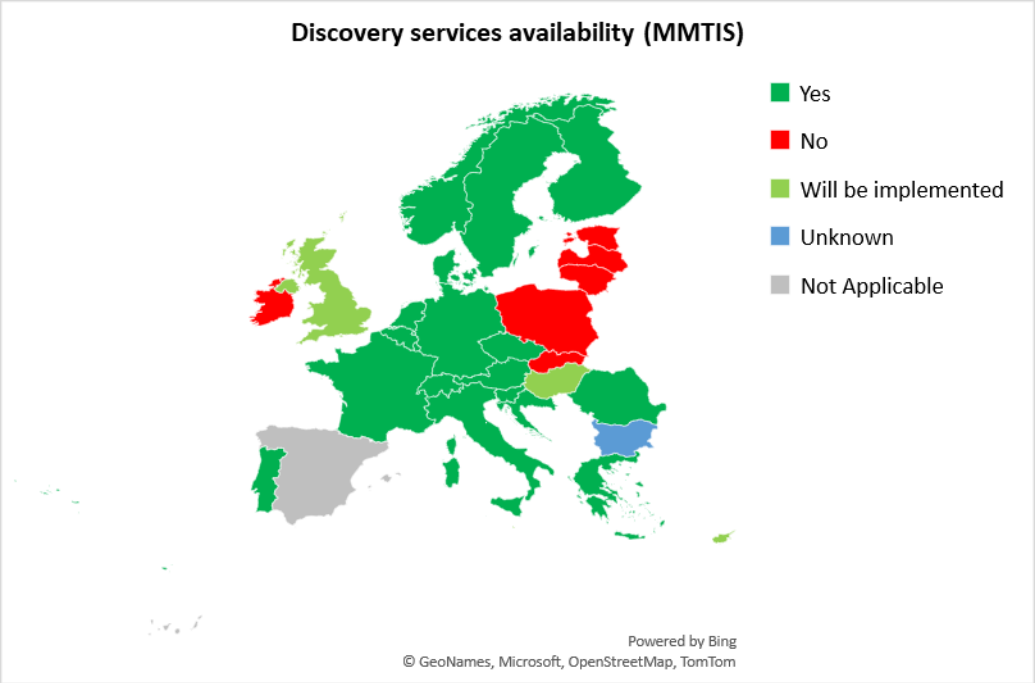


Figure 4.23 Discovery services availability in each country for MMTIS

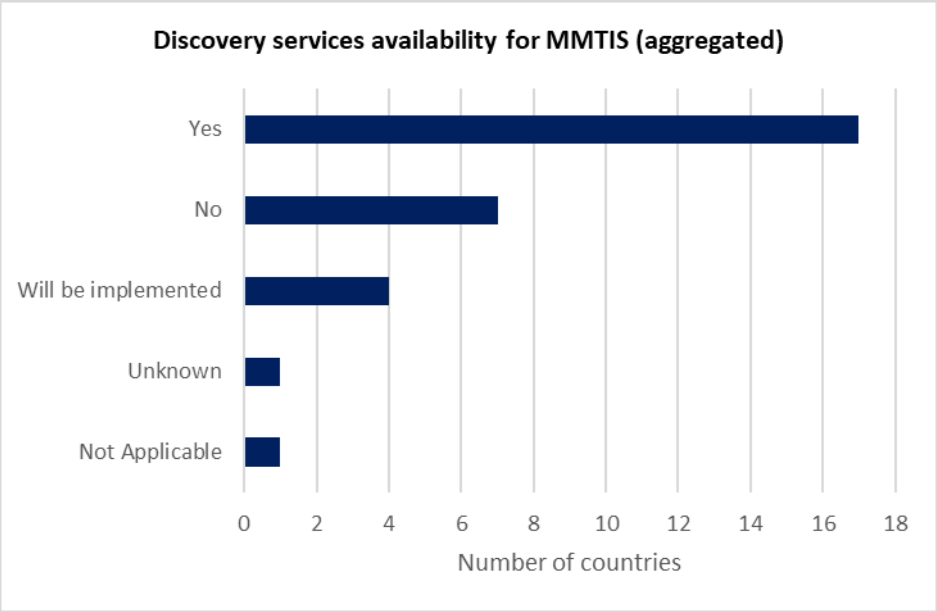


Figure 4.24 Discovery services availability for MMTIS (aggregated)

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

4.2 Quality of data published by NAPs

The future of transportation is being shaped by Intelligent Transport Systems (ITS), which are transforming the sector with their innovative approach. The success of ITS services, such as traveler acceptance, relies heavily on the quality of data used to provide them. The ITS Directive, as well as its supplementary Delegated Regulations (EU) 2015/962, (EU) 2017/1926, and updated (EU) 2022/670, recognize the importance of data quality and emphasize the need for defining quality criteria. The responsibility for ensuring the timely renewal and quality of data lies with the data providers and authorities responsible for data compliance. This survey aimed to explore the extent to which ITS providers include information about data quality in their metadata and whether specific quality criteria are adopted.

Table 4.1 Overview of responses regarding the quality of data published through NAPs.

Country	Data quality
Austria	Completeness of Meta Data, Textual quality description by publisher
Belgium	This process includes a (partial) quality check of the provided (meta)data.
Bulgaria	Unknown
Croatia	Unknown
Cyprus	At present, no quality assessment procedures are in place.
Czech Republic	The quality is NOT reported at the moment (just as a written report accompanying self-declaration form = available to MS as authority). Traffic Information are internally checked for their consistency by operators at National Traffic Information Centre (NTIC). Some data sources (i.e., police) are trusted implicitly, other data i.e., from municipalities are checked. Error in data, if found are internally logged as issues into the reporting system and then dealt with (reaction and correction time being one of the KPIs). There is a room for improvement in structural quality and completeness of the published data sources.
Denmark	The document: “Procedures for establishing quality” will be forwarded via email and can be found below described by screenshots
Estonia	Unknown
Finland	No quality information provided
France	List of validation tools (MMTIS): https://transport.data.gouv.fr/validation
Germany	We recommend using the quality requirements defined by the “Quality Packages”, as published by EU EIP and NAPCORE WG 3. We also provide a voluntary metadata field “quality information” that can be filled for each data set. However, this is rarely used, and we are not aware of data providers that actually provide any quality information so far
Greece	The quality of accommodated data is freely assessed by data providers. Relevant predefined (fixed) fields in the metadata page of each publication include the update frequency of data resources (applicable for dynamic data) and date of the last publication update.
Hungary	Update frequency
Ireland	Unknown
Italy	Unknown
Latvia	Not applicable
Lithuania	The datasets published in the NAP’s are formed on the basis of data captured in the following state information systems: - Traffic Information System accumulating dynamic traffic data (traffic counter data, road weather station data, Traffic registration data, EV charging stations data, etc.); - Road asset management information system accumulating static road data (roads elements, road parameters, environmental protection, traffic safety, speed cameras, traffic data, road works, road statistics, etc.); - Public transport multimodal journey planning system accumulating journey planning data (public transport timetables, routes, stops, stations, airports, etc.). In the information systems listed above there are implemented the data quality validation tools such as e. g. completeness of mandatory fields, compliance of the data format with the requirements of the data specification, etc.

This project has received funding from the European Commission’s Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Luxembourg	There are no formal quality indicators published on the NAP
Malta	NAP is not operational yet
Netherlands	Not yet available
Norway	Metadata quality is indicated for each dataset on the NAP. Metadata quality is meant to be an indicator data owners can use to evaluate the quality of their data. Work in progress on assessment of data quality for selected datasets.
Poland	Not applicable
Portugal	The multimodal travel information metadata includes the quality information elements specified by the coordinated metadata catalogue, namely the update frequency, the quality description, and the national body assessment status. These elements are, however, provided by the data publishers and are not controlled by IMT – Instituto da Mobilidade e dos Transportes, I.P.
Romania	Unknown
Slovakia	We would welcome methodological materials and specifications for the harmonization of data in the NAP
Slovenia	Data quality is not reported at the moment. For the time being, only quality measure is the feedback from the data receivers (service providers). Data receivers create their profile on the NAP, through which they can contact us whenever they have issues.
Spain	Data quality is not reported
Sweden	Unknown
Switzerland	Unknown
United Kingdom	Unknown

Table 4.1 offers an overview on data quality assessment in each country. The results show a diverse range of responses, indicating progress in the field. Half of the countries responded that they have no comments regarding ways of improving the data quality for the NAPs. Some countries have already implemented measures to provide information about data quality in their NAPs, such as update frequency and latest update dates, while others are still in the process of adopting quality criteria. Germany suggests the use of a systematic framework for assessing data quality and recognizes the responsibility of data providers in implementing such a framework. The actors responsible for the quality of data published through NAPs vary and include data providers, TMC, road operators, future "control bodies," and state information system operators. Despite some NAPs not yet providing data quality information and criteria, there is a growing interest in harmonizing these criteria and assessment methods. This is seen as a step towards providing NAP users with better quality-related information and falls under the scope of the dedicated NAPCORE activity within WG3.

The answer from Denmark is presented below since it has a higher level of complexity and through screenshots it can be better described:

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

The Danish Road Directorate is working on describing the quality of some of the SRTI and RTTI data by first describing the use case of whish the quality should be "measured" and here after we describe the quality using the 4 well-established quality criteria: 1) Completeness, 2) Correctness, 3) Timeliness and 4) Reuseability. To this we add the quality assessment from the work done in the EU-EIP choosing either Basic, Enhanced or Advanced for each subset (also from the EU-EIP-quality pack) referring to one of the 4 overall quality criteria. The overall picture looks like this, at the moment, when we look at the SRTI information (the unplanned events):

Completeness:

Criteria	* Basic	** Enhanced	*** Advanced
Geographical coverage	Best effort	80%	95%
Event coverage (Highways and other state roads)	Best effort	80%	95%

Correctness:

Criteria	* Basic	** Enhanced	*** Advanced
Classification correctness	> 85 (75) %	> 90 (85) %	> 95 (90) %

Timeliness:

Criteria	* Basic	** Enhanced	*** Advanced
Timeliness (start)	Best effort	For 95 % of all events: Time between event occurrence and first detection: Best effort Acceptance after first detection: < 10 (5) min	For 95 % of all events: Detection & acceptance: < 5 (2) min after event occurrence
Timeliness (update)	Best effort	Best effort	For 95 % of all events: Detection & acceptance: < 10 (5) min after event change/end
Latency (content side)[1]	For 80 % of all events: < 10 (5) min	For 80 % of all events: < 5 (2) min	For 95 % of all events: < 5 (2) min

Reusability:

Criteria	* Basic	** Enhanced	*** Advanced
Availability	95% (347 days/year)	99% (361 days/year)	99,5% (363 days/year)

The use case is described as:

A Service Provider would like to collect SRTI messages from one official source to use it in a traffic information service that enables their users to make decision regarding his or hers route in ample time to reduce travel time and avoid incidents.

To make it more user friendly (and in time perhaps more comparable across countries) we use a 0 to 5 star scale, also found in the work done by the Danish Agency for Digitalisation (Scource: https://arkitektur.digst.dk/node/1092)

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Quality Level	Description
☆☆☆☆☆	Considered unsuitable for the given use case
★☆☆☆☆	Rated to be of little use in the given use case
★★☆☆☆	Can be used subject to a greater number of errors/unintended results
★★★☆☆	Can be used subject to errors/unintended results
★★★★☆	Can be used subject to individual errors/unintended results
★★★★★	Can be used immediately and without reservation

The estimated overall quality level for the 4 different overall quality parameters, when looking at data set with in the use case described above in mind.

Completeness	Correctness	Timeliness	Reusability
★★★★★	★★★★★	★★★★☆	★★★★★

NB! Please note that the this is work in progress and that it is not yet published on the Danish NAP.

4.3 Usage of NAPs

One of the most important indicators of a data platform involves its practical utility as a data exchange mechanism, but additionally (and potentially more importantly) its impact on the relevant ecosystem. To this end, a specific part of the executed survey aims to track the number of parties providing ITS-related data to NAPs as well as the number of parties that use data provided through NAPs for the development and provision of ITS applications and services. Furthermore, a distinction is made between public and private entities in an effort to acquire further evidence about the usage rate of NAP both by the public and the private sector. Specifically, countries were asked to indicate the number of public and private organisations providing and using data to/from the NAP. The responses to this question are summarized in Finally, other countries like Slovenia or France also stand out for the volume of organisations using/consuming information from the respective NAPs.

Table 4.2.

As regards the data providers, it appears that in several countries the provision of data to the NAP follows a centralized pattern. A typical example constitutes the case of Austrian NAP, which provides a broad range of data (at least according to the adopted categories), but these data are made available by 13 data providers in total (i.e., 7 public providers and 6 private data providers). On the opposite side stand, for instance, the NAPs of Germany and France which also provide a wide variety of data, but these data are made available by multiple data providers.

With respect to the sector to which providers belong (i.e., public versus private), the acquired feedback is quite heterogeneous. In particular, in certain countries data providers belong solely to the public sector (e.g., Bulgaria, Croatia, Czech Republic, Denmark, etc.). In some others, the share of public and private data providers is more or less the same (e.g., Austria, Finland, Greece, Poland). Nonetheless, there are several countries in which the private data providers clearly outweigh the public data providers (e.g., Belgium, Italy and Netherlands). As a result, it can be generally deduced that NAPs are supported by both the public and private sector (at least in some countries). However, such a statement requires further validation because there is no available information about the amount of data (or the geographical coverage of data) made available by either type of data providers.

Concerning the users of data, it seems that only a few countries are able to estimate their number. This can be attributed to many reasons. Firstly, the NAP of several countries provides open data for the download/consumption which does not require registration on behalf of the NAP users. Secondly, registration is not necessarily equal with data usage. With respect to the countries that are able to track this information, the

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

figures are promising. For example, the estimated number of users/consumers of the German NAP data is approximately 400 different companies. In Czech Republic, there are more than 200 subscribers to the NTIC (National Traffic Information Centre). Similarly, in Hungary the number of data users/consumers is estimated to 81 that clearly outweighs the number of data providers. Finally, other countries like Slovenia or France also stand out for the volume of organisations using/consuming information from the respective NAPs.

Table 4.2 Overview of responses regarding the number of organizations providing and using data to/from NAPs.

Country	Number of public and number of private organisations providing data to the NAP		Number of public and number of private organisations using data from the NAP	
	Public	Private	Public	Private
Austria	7	6	-	-
Belgium	16	36	-	-
Bulgaria	1	-	-	-
Croatia	8 in total EU 2015/962 (RTTI) – 3 public org EU 886/2013 (SRTI) – 3 public org EU 2017/1926 (MMTIS) – 5 public org	-	-	-
Cyprus	1	6	-	-
Czech Republic	All public organizations gathering road traffic information, as required by Czech law, are providing to the National Traffic Information Centre (NTIC), the NTIC publishes concentrated data as several data sources by topic via distribution interface (https://mobilitydata.rsd.cz) and its metadata via NAP (https://registr.dopravniinfo.cz/en), --- all public organizations responsible for public transport are, as required by Czech law, are sharing data at the MS level (complicated governance), data available at https://data.gov.cz/datasets theme: transport, owner: ministry of transport, original data producers are not present as the data are integrated but there is plenty (all counties, municipalities, public services, emergency services, ...), none of the	-	Road traffic data: NTIC reports to have more than 200 subscribers (subscription requires registration) Multimodal data: there is no recording of unique data access nor registration, but data are definitely used by travel planning services (several Czech idos, seznam,...) and global i.e. google	Road traffic data: NTIC reports to have more than 200 subscribers (subscription requires registration) Multimodal data: there is no recording of unique data access nor registration, but data are definitely used by travel planning services (several Czech idos, seznam,...) and global i.e. google

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Country	Number of public and number of private organisations providing data to the NAP		Number of public and number of private organisations using data from the NAP	
	Public	Private	Public	Private
	private organization provides data through NAP			
Denmark	3	-	1	12
Estonia	80 (State and local government institutions)	State contracted public transport companies, Waze	80 (State and local government institutions)	State contracted road maintenance companies, Navigation Service providers
Finland	4 (1 SRTI, 2 RTTI, 1 SSTPA)	2 (1 SRTI, 1 RTTI)	-	-
France	350	23-30	30	50
Germany	600 data-providing organizations (Not divided public VS private)		400 data-consuming organizations on our NAP, we don't divide public vs private	
Greece	4	2	This information is unknown, considering that the Greek NAP provides only open data and is developed on a data management system designed for open data exchange (i.e., CKAN).	
Hungary	2 (Hungarian Public Roads, Budapest Roads)	-	17	64
Ireland	16	3	-	-
Italy	3 public organizations (it includes also ANAS, a public society which manages a large part of the national road network, and Traffic Police).	19	1 major public organization (RAI - Italian radio and television).	4 private organizations + digital applications and social channels
Latvia	2	-	-	-
Lithuania	Lithuanian Road Administration for SRTI and RTTI; Lithuanian transport safety administration and seven transport operators for MMTIS)	-	The registration for data consumers is not required. All data in the NAP are published as open data. Currently there is no information how many organisations using data from the NAP.	-
Luxembourg	3	-	1	-
Malta	-	-	-	-
Netherlands	4	35	-	-
Norway	3 (1. The NPRA (approx. 20 datasets I total covering state-, county- and municipal roads), 2. Entur (approx. 60 public and private data providers), 3. Enova (1 dataset - charging stations),	No private organisations providing data, some private data providers are included in the Entur dataset (National dataset for public transport information in Norway).	NAP and national hubs (e.g. DATEX) more than 500 users, Entur encourage open and free use of MMTIS data, no registration required (approx. 200 users) Information to differentiate between public and private users are not available	
Poland	4	3	5	18
Portugal	-	-	PTA are using it. Unknown exact number	-
Romania	-	-	-	-
Slovakia	3 (Slovak road administration, National	-	Universities	-

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Country	Number of public and number of private organisations providing data to the NAP		Number of public and number of private organisations using data from the NAP	
	Public	Private	Public	Private
	railway company, Slovak Hydrometeorological Institute)			
Slovenia	3	-	11	147
Spain	NAP DGT: 7 NAP MITMA: 27 public organisations	NAP DGT: 3 NAP MITMA: 12 private organisations and 5 transport consortia and authorities	-	-
Sweden	-	-	-	-
Switzerland	-	-	-	-
United Kingdom	-	-	-	-

4.4 Data licenses and contracts

Both licenses and contracts set a reference basis that describes in an accurate manner the terms and conditions under which data can be shared and re-used with/by parties other than their provider. In other words, both data licenses and contracts operate as a mechanism to protect the data that is being exchanged. The crucial difference between data exchange licenses and data exchange contracts is that the latter should be signed by the data consumers or subscribers to data exchange interfaces.

Taking into consideration the observed trend for open data as well as the usefulness of open data for the enlargement of ITS ecosystem, a part of the executed survey sought to acquire information about the amount of open data that is exchanged through NAPs. Figure 4.25 presents the acquired information per country, while Figure 4.26 indicates the frequency of estimated percentage ranges. As it can be observed in both figures, the vast majority of data that is exchanged through NAPs does so under an open license.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

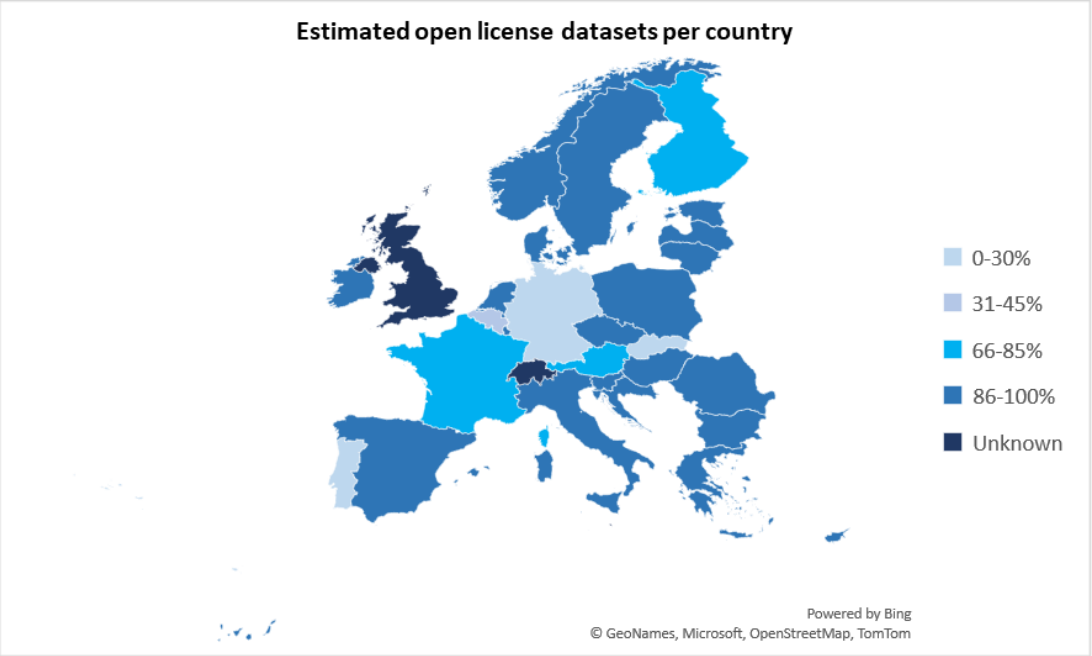


Figure 4.25 Estimated open license datasets per country.

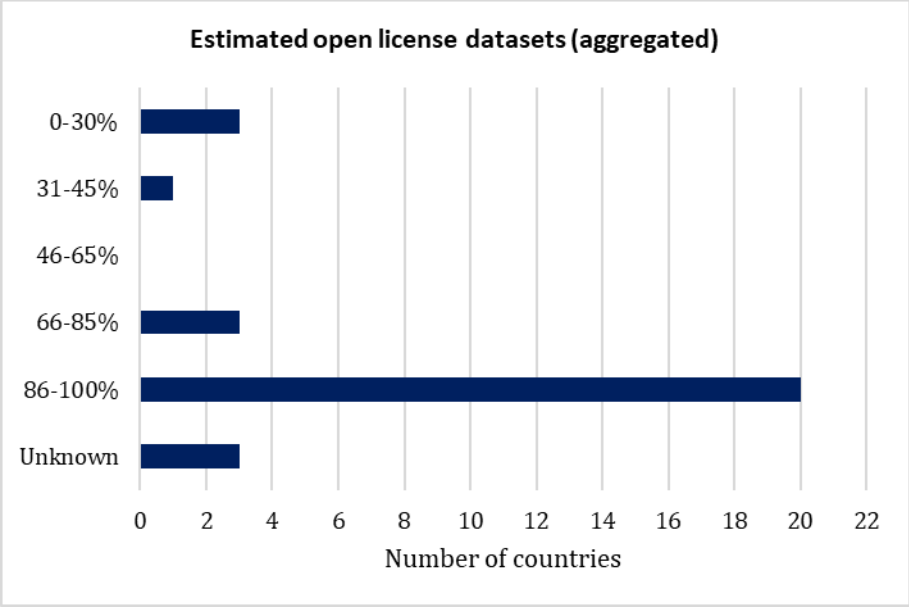


Figure 4.26 Frequency of answers concerning the estimated percentage of open license datasets.

Beyond the estimated percentage of data that is exchanged under an open license, another part of the executed survey sought to collect information about the datasets based on commonly used standards per country. This is done for two main reasons. Firstly, to understand the extent to which NAPs promote the harmonized provision of terms and conditions for data reuse and, secondly, to gain insight into whether national or universal licensing frameworks are utilized by data providers across Europe. In both Figure 4.27 and Figure 4.28 it is possible to

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

appreciate how when it comes to datasets based on the most common standards the distribution in the percentages of the frequency of answers changes with respect to the one in Figure 4.26, but still at least one third of the countries studied show percentages between 86-100%, for example Croatia, Denmark, Sweden, etc.

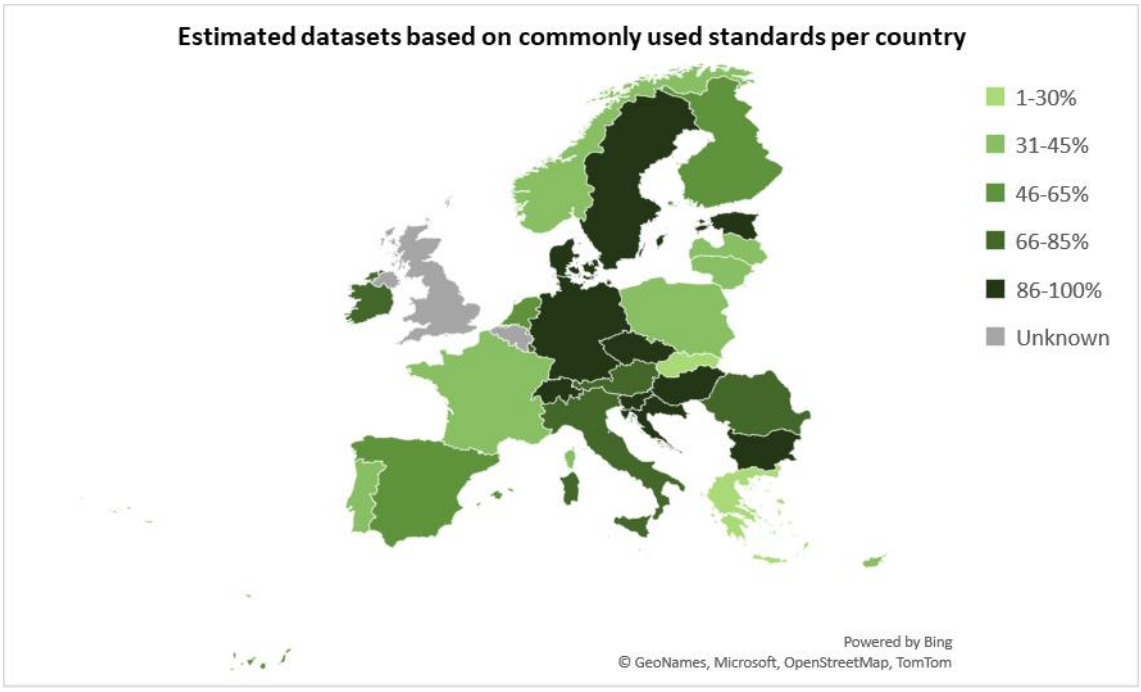


Figure 4.27 Estimated datasets based on commonly used standards per country.

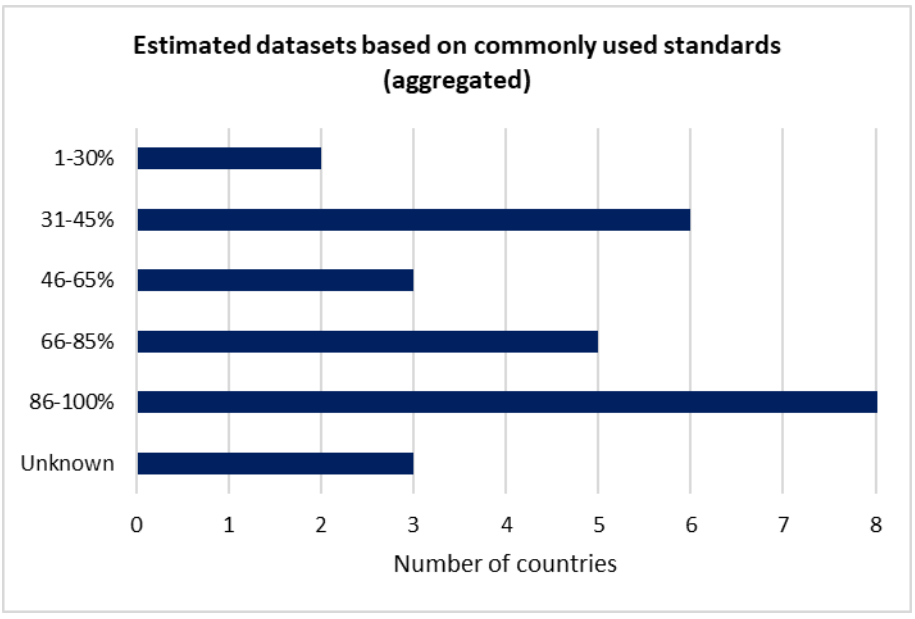


Figure 4.28 Frequency of answers concerning the estimated datasets based on commonly used standards.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

An overview of the collected information is provided in Table 4.3. As it seems, the most countries make use of Creative Commons licensing framework, such as the Creative Commons Zero (CC0) and the Creative Commons Share-Alike (CC BY-SA). Furthermore, some countries like Norway, declared the usage of national open licenses, as the Nordic Open Government Licenses (NLOD), and others like Croatia, Netherlands and Portugal, for example declared simply the use of "open data policy", "open access licensing", "public and free", respectively. Finally, countries, such as Germany and Austria, mentioned that the data license model is individually defined between data providers and data consumers and therefore, their NAP does not prescribe specific license types.

Table 4.3 Overview of all license types used in NAPs.

Country	Please provide a list of all license types of the datasets provided through the NAP			
	SSTPA (DR885/2013)	SRTI (DR886/2013)	RTTI (DR2015/962)	MMTIS (DR2017/1926)
Austria	There is no clear indication of the licence type at the NAP	There is no clear indication of the licence type at the NAP	There is no clear indication of the licence type at the NAP	There is no clear indication of the licence type at the NAP
Belgium	2	3	3	Based on the Harmonized metadata catalogue: License not specified (71), Creative Commons CCZero (33), Other(open) (16), UK open government license (OGL) (5), Other non-commercial (3), Creative Commons Non-commercial (2), Open Data Commons Attribution License (2), Other (not open), Creative Commons Attribution Share-Alike (1)
Bulgaria	-	-	-	-
Croatia	Open data policy	Open data policy	Open data policy	Open data policy
Cyprus	-	-	-	Creative Commons Attribution 4.0
Czech Republic	custom, similar to cc by 4.0	custom, similar to cc by 4.0	custom, similar to cc by 4.0	-
Denmark	Creative Commons Universal License	Creative Commons Attribution 4.0 International License	Creative Commons Universal License	Creative Commons Universal License
Estonia	Free for registered users	Free for registered users	Free for registered users	Free
Finland	CC BY 4.0, contract	CC BY 4.0, contract	CC BY 4.0, contract	CC BY 4.0, multiple custom licenses/contracts
France	-	-	-	https://www.etalab.gouv.fr/wp-content/uploads/2017/04/

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Country	Please provide a list of all license types of the datasets provided through the NAP			
	SSTPA (DR885/2013)	SRTI (DR886/2013)	RTTI (DR2015/962)	MMTIS (DR2017/1926)
				ETALAB-Licence-Ouverte-v2.0.pdf ; https://spdx.org/licenses/ODbL-1.0.html#licenseText ; https://download.data.grandlyon.com/licences/Licence_mobilit%C3%A9s_V_02_2021.pdf
Germany	Individually set by data provider, mostly used: "Datenlizenz Deutschland"	Individually set by data provider, mostly used: "Datenlizenz Deutschland"	Individually set by data provider, mostly used: "Datenlizenz Deutschland"	Individually set by data provider, mostly used: "Datenlizenz Deutschland"
Greece	Creative Commons Attribution 4.0, Open Data Commons Open Database License 1.0	Creative Commons Attribution 4.0, Open Data Commons Open Database License 1.0	Creative Commons Attribution 4.0, Open Data Commons Open Database License 1.0	Creative Commons Attribution 4.0, Open Data Commons Open Database License 1.0
Hungary	CC BY-ND 4.0	CC BY-ND 4.0	CC BY-ND 4.0	-
Ireland	-	CC by 4.0	CC by 4.0	-
Italy	-	-	-	-
Latvia	-	-	-	-
Lithuania	-	Creative Commons Attribution 4.0	Creative Commons Attribution 4.0	Creative Commons Attribution 4.0
Luxembourg	CC0	CC0	CC0	CC0
Malta	-	-	-	-
Netherlands	Open access licensing	Open access licensing	Open access licensing, restricted licensing	Open access licensing, restricted licensing
Norway	-	Open access licensing	NLOD, CC BY 3.0, CC BY 4.0.	NLOD, CC BY 3.0, CC BY 4.0.
Poland	-	-	-	-
Portugal	-	Public and free of cost; formal terms and conditions for data use are as of yet not defined	Public and free of cost; formal terms and conditions for data use are as of yet not defined	MMTIS data are linked to in the NAP; the associated licences are controlled by the data providers and provided according to the coordinated metadata catalogue
Romania	-	-	-	-
Slovakia	-	-	-	-
Slovenia	no special licences except required registration on NAP	no special licences except required registration on NAP	no special licences except required registration on NAP	no special licences except required registration on NAP
Spain	-	Licence and Free of charge/Licence and Fee	Licence and Free of charge/Licence and Fee	-

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Country	Please provide a list of all license types of the datasets provided through the NAP			
	SSTPA (DR885/2013)	SRTI (DR886/2013)	RTTI (DR2015/962)	MMTIS (DR2017/1926)
Sweden	CC0	CC0	CC0	CC0
Switzerland	-	-	-	-
United Kingdom	-	-	-	-

4.5 Compliance assessment

Member States are obligated to assess the compliance of road/transport operators, road/transport authorities, service providers, and other actors involved in the ITS ecosystem or providing data through NAPs against the requirements set out in the Delegated Regulations supplementing the ITS Directive. This responsibility does not lie with NAPs or NAP operators, but with authorities designated as competent by each Member State, as per these Delegated Regulations. Based on the contributions and proposals from the EU EIP, TISA, and ESPORG, this compliance assessment process can be broadly divided into two steps. The first step consists of the submission of self-declarations by the aforementioned actors, and the second step involves the assessment of these self-declaration forms by the competent authorities. The extent to which this process is carried out for each NAP dataset may serve as a data quality indicator and a relevant metadata field.

The survey aimed to investigate the number of datasets for which a self-declaration form has been submitted, as well as the number of datasets for which a compliance assessment process has been completed. This is because the compliance assessment is not the responsibility of NAPs or NAP operators, as mentioned before. The results of the survey are displayed in the following figures.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

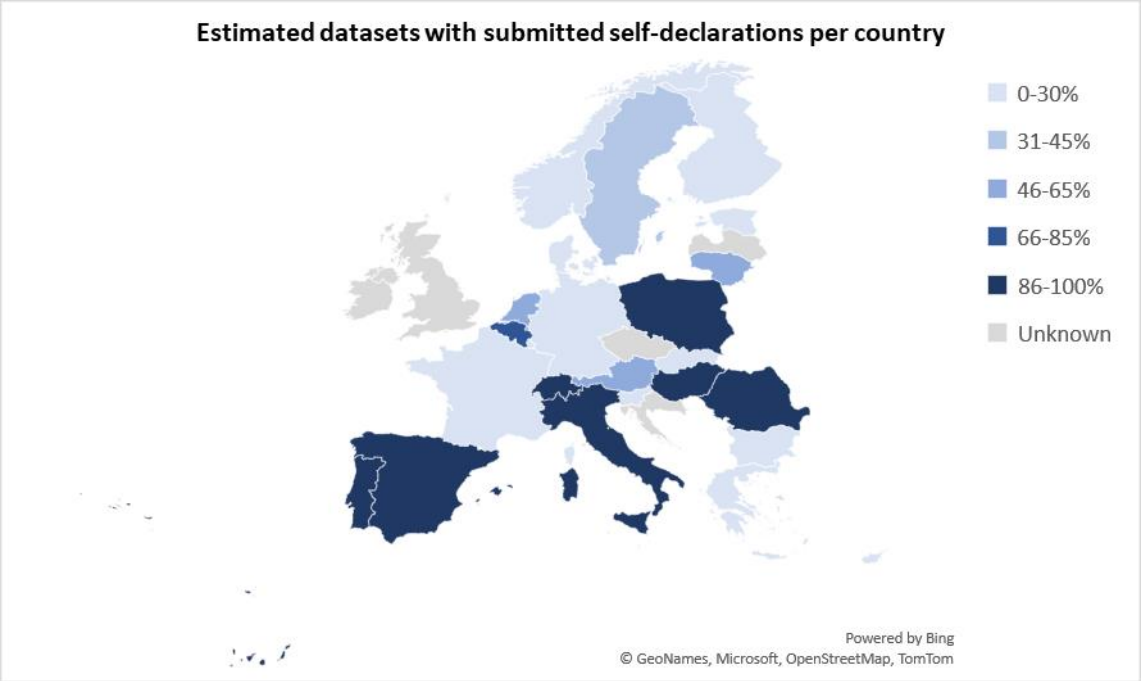


Figure 4.29 Estimated datasets with self-declaration per country.

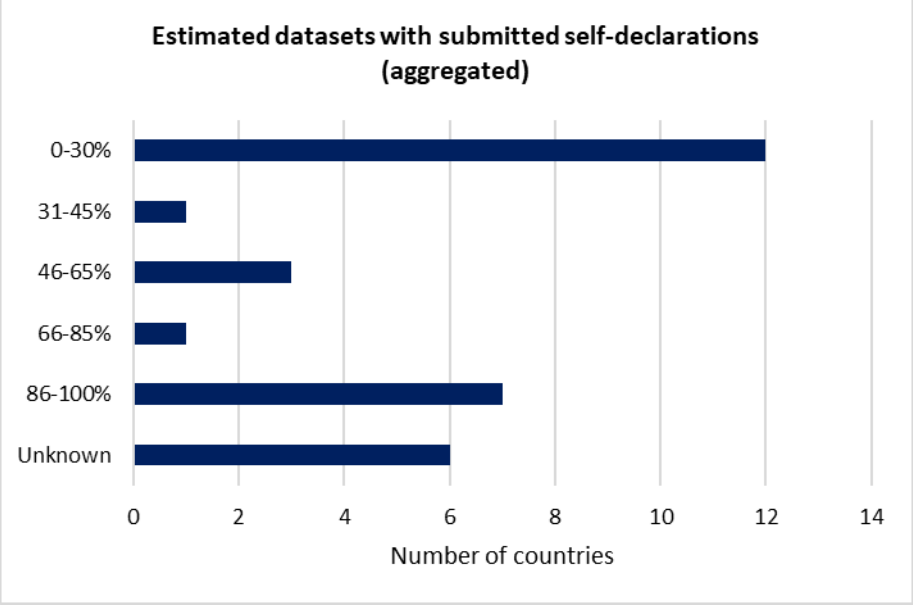


Figure 4.30 Estimated datasets with submitted self-declarations (aggregated)

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

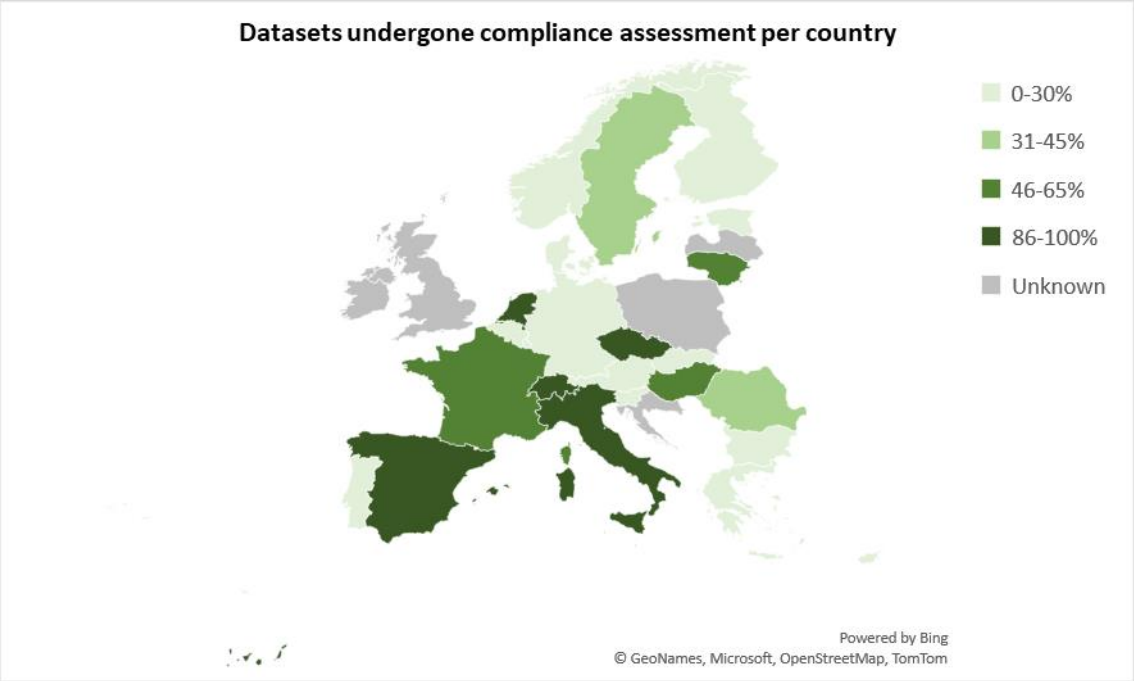


Figure 4.31 Datasets undergone compliance assessment per country

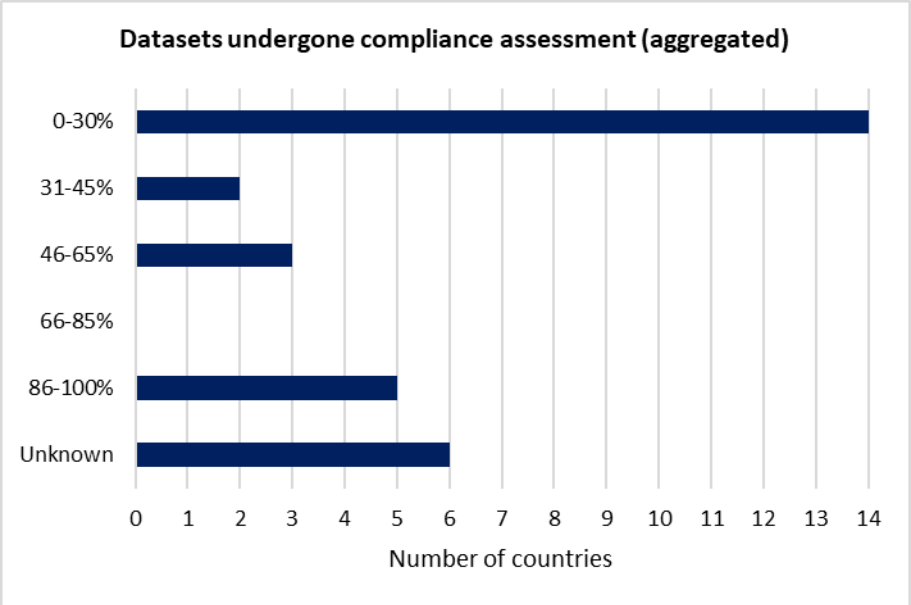


Figure 4.32 Datasets undergone compliance assessment (aggregated)

As it can be observed in Figure 4.29 and Figure 4.30, a self-declaration has been submitted for a limited number of datasets and for 6 of the participant countries it is not possible to assess the percentage. About a third of the answers were containing the first level of percentage (0-30%), there was just one answer between 31-45%, 3 answers are about 46-65%, one answer is 66-85% and the rest of the 7 answers pointed to the interval of 86-100%.

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

The situation changes when considering datasets undergone compliance assessment. Almost half of the countries are indicating the interval of 0-30% (14 countries) while only 5 countries are answering with the highest level (86-100%). In between, there are 6 countries where it is not possible to assess the percentage, 3 countries that pointed to the interval of 46-65% and 2 countries with 31-45%. Given the difficulty of compliance assessment for the ITS ecosystem (including National Bodies or other competent authorities), another NAPCORE Working Group will be dedicated to exploring this topic further.

4.6 Foreseen new publications

In order to keep up with the advancements in the transportation domain, the final part of the survey sought to acquire information about the foreseen new publications in European NAPs. This is done in an effort to identify and understand the ecosystems (beyond those strictly defined by the DRs supplementing the ITS Directive) in which NAPs should play a key role as a data exchange interface/mechanism. The acquired information is summarized in Table 4.4. The survey results showed that most European countries are not planning to add any new data type. However, some countries intend to make available data falling into the scope of the following domains/categories through their NAPs in the future:

- Data from national mobility research projects (reports, statistics)
- Data for mobility policies (e.g., LEZs) and new modes (e.g., bicycles, carpooling)
- Road maintenance data (e.g., snowplough fleet)
- Weather data, emergency alerts, and road temperature data
- Hydrology and waterways data
- Static data about transport infrastructure in line with INSPIRE and TN-ITS

Table 4.4 Overview of answers regarding datasets to be provided thru NAPs in the future

Country	Are there any new types of data planned to be provided in your country's NAP besides the ones required by DRs? Please briefly comment on these types of data
Austria	Data from research and development projects, statistics and model data
Belgium	Not yet planned
Bulgaria	Not yet planned
Croatia	Not yet planned
Cyprus	Not yet planned
Czech Republic	Not yet planned
Denmark	Yes. The Danish Road Directorate plans to use the same data sharing portal to publish all relevant data from the Danish Road Directorate – also for internal data sharing and data use. We expect it to become quite substantial and big
Estonia	Not yet planned
Finland	Road maintenance data (snow ploughing, sanding etc.), walking and cycling volume data
France	(MMTIS) Low-emission zones and bicycle counting/traffic
Germany	Taxi data, dynamic data on DRT, weather data, hydrology and waterways data
Greece	Not yet planned
Hungary	Multimodal data
Ireland	Not yet planned
Italy	Not yet planned
Latvia	Not yet planned

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Lithuania	Not yet planned
Luxembourg	Not yet planned
Malta	Not yet planned
Netherlands	Not yet planned
Norway	The NAP will be extended with information concerning the infrastructure and restriction according to a harmonized European structure as defined in INSPIRE Transport Networks and TN-ITS. The information is available in the NAP now according to the internal Road Database structure, but not in a harmonized European structure.
Poland	Not yet planned
Portugal	Not yet planned
Romania	Not yet planned
Slovakia	Multimodal data
Slovenia	Not yet planned
Spain	Not yet planned
Sweden	Not yet planned
Switzerland	Not yet planned
United Kingdom	Not yet planned

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

5 Summary & conclusions

This report presents the results of a NAPCORE survey and research regarding the status of NAPs implementation in Europe, organized as part of the activities of Task 3.1 of WG3. This work continues the legacy of similar endeavours carried out in the context of EIP+ and EU EIP projects. It also relies on the methodology and experience from the first iteration of data collection carried out in 2021, adapted to the provision of information of increased granularity as regards the spatial and network coverage of data made accessible through NAPs. **This level of granularity has proven to be a challenge both for data collection and data processing**. In terms of collection, **the feedback received from many countries was that it is very difficult to estimate the spatial and network coverage. Especially in the case of countries where the architecture of the NAP is web-link type, the NAP operators informed us they were struggling to provide coverage information or even other types of information, such as implemented data standards, licensing models or number of NAP data users and data providers**. In terms of data processing, the increased granularity in this survey has generated a huge volume of information for which interpretations and visualizations were generated mostly manually. In this respect, **for the next iteration of the survey we are planning to develop automated tools and platforms for data collection and data visualization**.

The survey was completed by responsible ministries, NAP operators, National Bodies, and/or other relevant actors participating in NAPCORE or who have been contacted by NAPCORE partners. **The survey was circulated to 30 countries and responses were received from all.** One completed questionnaire was received per country. In some cases, direct contact with national contact persons has been carried out in order to clarify or improve ambiguous or conflicting information.

The survey's questionnaire was divided into eight sections. Sections one to six requested general information about the NAPs, their implementation status, and availability of data categories defined at a medium to high level of aggregation of the data types required by the DRs supplementing the ITS Directive (2010/40/EU). In addition to that, each section has additional questions regarding the geographical and network coverage of the relevant data category. The target was to obtain a clearer picture on the spatial and network/infrastructure coverage of available data. Additionally, the MMTIS-related data categories have been abstracted with an increased granularity targeting, among others, to provide transport mode specific insights. Section seven of the questionnaire requested information about the implemented data standards per specific data type present in the DRs, for each of the DRs. The adopted structure of the questionnaire behind this survey is similar to the structure adopted during the preparation of the first version of the current report. Finally, section eight includes question which are relevant to data quality, types of licensing, and compliance assessment procedure.

Chapter 1 briefly presents the NAPCORE project, the activities of WG3, the objectives of the survey, as well as the methodology followed for this task.

Chapter 2 provides an overview with regard to the status of NAPs of each DR. More specifically, it presents the number of NAPs that are operational, planned or under implementation for all DRs. The results of the EIP+ and EU EIP projects are also included, thus **the evolution of the NAPs can be followed from 2016 to 2022.** As it appears, **almost all European countries operate a NAP for SRTI and RTTI** (24 and 25 countries respectively). Compared to the previous survey, there are two countries, Cyprus and Slovakia, that have developed NAPs for SRTI and RTTI but they are not currently fully operational. Also, in the previous report UK declared having an operational NAP for RTTI but it was actually not finalized therefore it is currently with the status "implementation".

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Furthermore, it appears that **20 countries have an operational NAP for SSTP**; however, it should be considered that most of the remaining countries did not operate in 2022 safe & secure truck parking places/areas. In this respect, their status is addressed as "Not Applicable". Compared to the previous report, two countries have planned or are in the phase of implementation of a new platform/interface to act as a NAP for SSTP (LV, CH). Therefore, their status is now considered "planned".

Finally, it appears that **24 countries operate a NAP for MMTIS**. This translates to significant evolution compared to 2019 (almost two years after the adoption by the EC of the MMTIS regulation) where the number of operational NAPs for MMTIS was 8. It should be noted that for several countries a link is included in the list maintained by the EC; however, it appears that in certain cases this link leads to a platform that does not provide access to MMTIS-related datasets or to a governmental platform that may either serve as a temporary interface for MMTIS data or provide a wide range of data not necessarily related to ITS in general and MMTIS in particular (e.g., statistical data).

Having in mind that an operational NAP does not *necessarily* imply data availability, the same chapter (Chapter 2) pays particular attention to the topic of data availability. This is done based on a medium to high level categorization of the data types mentioned within the DRs supplementing the ITS Directive (2010/40/EU). The extracted information is quite heterogeneous. Firstly, it appears that **static SSTP-related data are made available by the NAP of 16 to 21 countries**. Available data types encompass information about safe & secure truck parking places/areas, their safety conditions and equipment, as well as details of parking operators. To the contrary, **only 6 countries appear to make available thru their NAP dynamic SSTP-related data** (providing information about the availability and status of parking places/areas). Secondly, **SRTI-related data** (that are by definition dynamic) **are made available by the NAP of 23 countries**. Such a finding validates the initial assumption made according to which NAP status is not one-to-one related with data availability. The reason behind the observed difference between SRTI NAP status and SRTI data availability will be further investigated in the next version of the current report. At the moment, it is highly accepted that several countries may address datasets provided through their NAP as relevant with road safety and, thus, SRTI DR; however, provided datasets do not necessarily match with the data types specified by the SRTI DR. Thirdly, **static RTTI-related data are made available by the NAP of 19 to 21 countries**. However, this is the case for data types providing information about the road network (e.g., road network links and their physical attributes) and roadside/roadway infrastructure (e.g., tolls, rest areas, etc.). To the contrary, **static data providing information about the usage of the road network** (e.g., traffic circulation plans, freight delivery restrictions, etc.) **are made available by the NAP of only 7 countries**. Furthermore, **dynamic RTTI-related data are made available by the NAP of 18 to 23 countries**. Fourthly, as also stated within Chapter 2, there is an observable discrepancy amongst what types of MMTIS-related data are made available by European NAPs. In particular, **static MMTIS-related (a) supporting trip plan computation, (b) providing information about existing trip plans and auxiliary information (e.g., vehicle facilities), and (c) supporting location search are made available by the NAP of 10 to 12 countries**. On the other end of the spectrum, **static MMTIS-related data (a) regarding the provision of traveller services in DRT modes and (b) regarding environmental information are made available by the NAP of only 4 to 5 countries**. Finally, it is reported that **dynamic MMTIS-related information about the cycling network status is made available by the NAP of only 2 countries**. A wide picture of what is available per European country is presented in tables 2.5 to 2.7. It should be noted that specific countries, such as Malta, addressed this topic from the perspective of what is already available in terms of data irrespectively of NAP status, while some others, such as the UK, addressed this topic considering NAP status (for this reason they did not report any data availability).

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Sub-chapter 2.3 is dedicated to presenting a low-level monitoring of data availability in terms of geographic coverage and, in the case of MMTIS, mode of transport. Specifically, the following information has been inquired:

- For SSTP: the territorial units covered per adopted data category; the number and percentage of parking areas for which data are made available per adopted data category.
- For SRTI/RTTI: the territorial units covered per adopted data category; the length and percentage of the TEN-T road network covered per adopted data category.
- For MMTIS: the relevant transport modes or type of infrastructure covered per adopted data category; the territorial units covered per adopted data category per covered mode or type of infrastructure.

The sub-chapter contains an overview of the main findings while the collected data is available as detailed map representations in Annexes II to V.

Chapter 3 is completely devoted to data standards. Specifically, it provides an overview of the existing standards that are used at European level for data exchange through the NAPs and in general for the provision of traffic management and information services. Besides, it pays particular attention to the monitoring of (a) what data standards are implemented in each country per data element mentioned in the Annexes of the DRs supplementing the ITS Directive and (d) whether there is a national profile in place for the standards explicitly mentioned and suggested by these DRs. Finally, it gathers qualitative feedback about the extent to which actors involved in NAP ecosystem are satisfied with these standards or what open challenges exist and should be addressed in the future.

As regards what data standards are implemented in each country, it appears that **DATEX II is the dominantly implemented data standard in the context of SSTP, SRTI, and RTTI regulations**. Specifically, **the number of countries that exchange, by using DATEX II, information about (a) the attributes of safe & secure truck parking places/areas, (b) the safety conditions and equipment of safe & secure truck parking places/areas, (c) the contact details of parking operators, and (d) the availability and status of safe & secure truck parking places/areas are at least: 5 (excluding information about pricing), 5, 3, and 5, respectively**. The use of other data standards in the context of SSTP is very low (compared to DATEX II). Similarly, **the number of countries that exchange, by using DATEX II, dynamic road-safety related traffic information is at least 12**, while the use of other data standards in the context of SRTI is also very low (compared to DATEX II).

The number of countries that exchange, by using DATEX II, information about (a) the road network (including its attributes, usage, and roadside/roadway infrastructure), (b) the road status, and (c) prevailing traffic conditions is at least: 1, 1, and 3 respectively. The use of other data standards in the context of RTTI is significant (compared to the use of DATEX II) only with respect to the provision of static information about the road network. Frequently used standards, in this respect, constitutes WMS/WFS and TN-ITS. Even so, DATEX II **is dominant for three data categories: location of tolling stations, location of parking places and service areas, and location of charging points for electric vehicles**. **WMS/WFS is used for all data categories, while TN-ITS is used for approximately 2/3 of them. In most cases, there is an almost equal share between WMS/WFS and TN-ITS, however there are five data categories where WMS/WFS is dominant: road classification, junctions, number of lanes, road width, and geometry**. The significant use of WMS/WFS can be attributed to the widespread use of WMS/WFS by the developers/maintainers of map servers.

Concerning MMTIS, the obtained picture looks quite heterogeneous. In broad terms, it appears that **NeTEx is the mostly used data standard for the exchange of static MMTIS-related information**. This is especially the case for

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

the exchange of data (a) supporting location search, (b) supporting detailed common standard and special fare queries, (c) providing insight into existing trip plans and auxiliary aspects (e.g., vehicle facilities), and (d) supporting trip plan computation. However, the number of countries that have implemented NeTEx is quite low especially compared to the number of countries that have implemented DATEX II. It should also be noted that the use of INSPIRE is common for static information for location search. Concerning **the deployment and adoption rate of SIRI it is impossible to draw concrete conclusions mainly due to very low availability and exchange of dynamic MMTIS-related data**. Based on the existing figures, SIRI is the mostly used data standard for the exchange of dynamic passing time, trip plan, and auxiliary information. Interestingly, the use of DATEX II is also reported in the exchange of dynamic MMTIS-related information. This is the case for the exchange of dynamic information about the availability of charging/refuelling stations as well as the availability of car parking space. This finding validates the existence of overlaps in data standards, which is a topic under investigation by the WG4 of NAPCORE.

In terms of location referencing, **the mostly utilized methods for encoding point locations appear to be, in descending order, coordinates, Alert C point, Open LR point, and point along linear element**. Furthermore, **the mostly utilized methods for encoding linear locations are, in descending order, Alert C linear, linear along linear element, and Open LR linear**. Finally, **the mostly utilized methods for encoding area locations are, descending order, Alert C area, Open LR area, and GML multipolygon**.

Analysing the responses regarding DATEX II versions used, **there is some diversity**, however, apart from Slovakia which supports older than 2.0 version, there are three more countries (Luxembourg, Italy, and Bulgaria) supporting the version 2.0 of DATEX II (released in June 2011). **The dominantly used version, on the other hand, constitutes version 2.3**, which has been released in September 2014. The release date of this version correlates to a significant extent with the adoption dates by the EC of several DRs that are associated with and make explicit reference to DATEX II standard. **There are also ten countries that support one of the versions 3.x**. It should also be noted that **Austria and Norway reported they use national profiles which are to some extend based on the European Reference Profiles or the European Recommended Service Profile. Denmark is also planning a similar solution starting from May 2023**. **With respect to recorded experiences, it has been pointed out that DATEX II contains too much overhead for real time data, therefore a "DATEX light" format would be helpful or moving to a general JSON-format.** Furthermore, one country has mentioned the need to define mandatory fields and declare a minimum set of required profiles as a means of standardizing RSPs and data exchange through DATEX II. The same country has also mentioned the need to modernize data exchange mechanisms to conform to broker-based architectures. Another country has stressed the importance of location referencing methods and the necessity of reference profiles suggesting a preferred method. **In general, the feedback from the countries seems to support the need for harmonized reference profiles to be used by all NAPs**.

The number of countries that have reported the availability of a national NeTEx profile is 14 in total. From those, **8 are the countries that already use this profile, while the remaining 6 have not used it yet.** There are also **5 countries that have reported that the specification of a national NeTEx profile is on-going.** Furthermore, the number of countries the profile of which is based on the European one (EPIP) is 12, while the countries that profile of which is compatible with EPIP are 9. In particular, **the Nordic profile (jointly used by Norway and Sweden) is partially based on but fully compatible with EPIP.** On the other hand, the number of countries that report the availability and use of a national SIRI profile is less (compared to NeTEx). In particular, **4 countries mention that they have specified and use a national SIRI profile, 3 countries mention that they have specified but not yet used a national SIRI profile, while 7 more countries mention that the specification of a national SIRI profile is on-going.**

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Finally, it is suggested by several countries that there is a need to limit the number of national profiles, coordinate the harmonization of existing ones, and ease the access to these standards including their dependencies with other CEN products/artefacts.

Chapter 4 provides insight into the outcomes of the remaining parts of the executed survey. These parts revolve around the **classification of NAPs based on their architecture, the availability of metadata and discovery services, and the usage of NAPs.** Moreover, these parts entail additional information about **data quality, data licensing, compliance assessment, as well as foreseen new publication in NAPs.**

Firstly, the results regarding **NAPs for SSTP show that about a third are purely web-link type while another third are only database type**. There are 9 answers "not applicable" which is much higher than the other DR, but it is to be expected as many countries chose to provide information thru the European NAP and not develop a national one. Secondly, the results regarding **NAPs for SRTI show that almost half (13) are purely web-link type, a third are purely database type, and only six are mixed type**. Thirdly, the results regarding **NAPs for RTTI show an almost equal distribution between the three types of NAP architectures**. Finally, the results regarding **NAPs for MMTIS show that most of them (15) are purely web-link type** while only three are purely database type. This is consistent with previous findings, and it is a result of the very complex and varied MMTIS dataset which makes it very difficult to store all the information in a single common database.

With regard to the availability of metadata and discovery services, the results have shown that the vast majority of countries provides these functionalities. However, a minority of countries stated that they cannot provide this type of information through their NAPs. In some cases, the lack of metadata and discovery services can be attributed to a different operational approach. For instance, the Finish NAP for SSTP/RTTI can be addressed as a wide API service configurable to data requests. Furthermore, the Italian NAP for SSTP/SRTI seems to resemble a dashboard-like paradigm, providing insight into existing traffic events.

In terms of data quality, the results show that **data quality is interpreted differently by NAP operators**. Some of them mention that there is neither available information about the quality of the datasets nor implemented quality criteria/requirements. Some others **mention that the so-called Quality Packages implemented in the context of the EU EIP project should be the basis for defining quality criteria and requirements and feed accordingly the metadata fields of each dataset**. However, it is generally addressed that this is not solely or at all under the responsibility of NAP operators. **Responsible actors, according to the executed research, include data providers, TMC and road operators, relevant control bodies, and operators of information systems providing data to a NAP**. Overall, **all countries highlighted the importance of having implemented harmonized quality criteria following specific norms**. For that reason, and recognizing the necessity of the topic, another dedicated task of NAPCORE project, falling under WG3 activities, focuses on the definition of quality frameworks.

Regarding NAP users, the results of the executed research show that the **provision of data to the European NAPs follows both a centralized and decentralized pattern, i.e., datasets are provided by either few or multiple data providers.** It can also be concluded that **NAPs are supported (in terms of data provision) by both the public and private sector.** However, the respective share is case specific given that in some NAP the number of public data providers clearly outweigh the number of private data providers and vice versa. With respect to **data users/consumers**, it appears that **only few countries are able to estimate their number.** This is attributed to two main reasons. Firstly, several NAPs provide open data that do not require registration. Secondly, even in case a registration is required it is uncertain whether registered parties make use of the provided data. Considering only the countries that can make such an estimation, the provided figures are promising. A specific activity of WG3 will

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

seek to demonstrate use cases making use of NAP data in effort to further promote the added value and impact of NAPs in the ITS ecosystem.

Taking into account the usefulness of existing open data with the aim of enlarging the ITS community, a part of executed survey was orientated to obtain information about the amount of open data that is exchanged through NAPs. The results indicate that **most countries provide their datasets under open licensing frameworks**. However, some countries mentioned the difficulty of estimating the percentage of open datasets given the status of their NAP (e.g., not fully operational, under implementation). Finally, there were cases according to which countries provide their datasets under open conditions, but this happens after signing a required contract (i.e., Czech Republic). The most popular **licensing frameworks utilized are Creative Commons Zero (CC0) and the Creative Commons Share-Alike (CC BY-SA).**

Considering that a compliance assessment constitutes an important requirement of the DRs supplementing the ITS Directive (2010/40/EU), a specific part of the survey sought to acquire information about the estimated number of datasets for which a self-declaration form has been submitted and about the estimated number of datasets for which a compliance assessment process has been executed. The results about the first topic show that **in most countries a self-declaration has been submitted for a very limited number of datasets or not submitted at all.** However, there are some countries that break the rule. In these countries a self-declaration has been submitted for a significant number of datasets (i.e., there are 8 countries in which a self-declaration has been submitted by data providers for more than the 66% of published datasets). The results about the second topic indicate that the number of countries in which compliance assessment has been executed is much less than **the number of countries in which data providers have submitted self-declaration forms**. This finding highlights the importance for detailing and harmonizing compliance assessment processes, which constitutes a topic addressed by WG5 of NAPCORE.

Finally, NAP operators and other actors took part in the executed research pointed out **several data types to be provided through NAPs in the future**. These are associated with (a) data from national mobility research projects (reports, statistics), (b) data for mobility policies (e.g., LEZs) and new modes (e.g., bicycles, carpooling), (c) road maintenance data (e.g., snowplough fleet), (d) weather data, emergency alerts, and road temperature data, (e) hydrology and waterways data, and (f) static data about transport infrastructure in line with INSPIRE and TN-ITS (for more details please refer to Section 4.6).

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Annex I - National Access Points and National Bodies

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	https://mobilitydata.gv.at/	https://mobilitydata.gv.at/	https://mobilitydata.gv.at/	https://mobilitydata.gv.at/
Belgium	www.transportdata.be	www.transportdata.be	www.transportdata.be	www.transportdata.be
Bulgaria	https://datasheet.api.bg/	https://datasheet.api.bg/	https://lima.api.bg/ https://datasheet.api.bg/	https://www.mtc.government.bg/en/category/294/national-access-points-transport-related-data
Croatia	www.promet-info.hr/en/	www.promet-info.hr/en/	www.promet-info.hr/en/	www.promet-info.hr/en/
Cyprus	Not applicable	http://www.traffic4cyprus.org.cy/	http://www.traffic4cyprus.org.cy/	http://www.traffic4cyprus.org.cy/
Czech Republic	https://registr.dopravniinfo.cz/en/	https://registr.dopravniinfo.cz/en/	https://registr.dopravniinfo.cz/en/	https://data.gov.cz/datasets
Denmark	https://du.vd.dk	https://du.vd.dk	https://du.vd.dk	https://du.vd.dk
Estonia	https://www.tarktee.ee/#/en/datex	https://www.tarktee.ee/#/en/datex	https://www.tarktee.ee/#/en/datex	http://peatus.ee/gtfs/ https://web.peatus.ee/
Finland	https://www.avoindata.fi/data/fi/dataset/rekkaparkit-tiella-e18	https://www.digitraffic.fi/	https://www.digitraffic.fi/ https://vayla.fi/en/transport-network/data/digiroad	https://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	Mobilithek.info	Mobilithek.info	Mobilithek.info	Mobilithek.info
Greece	http://data.nap.gov.gr/	http://data.nap.gov.gr/	http://data.nap.gov.gr/	http://data.nap.gov.gr/
Hungary	https://napportal.kozut.hu/	https://napportal.kozut.hu/	https://napportal.kozut.hu/	Under implementation
Ireland	Not applicable	https://data.gov.ie/	https://data.gov.ie/	https://data.gov.ie/

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Country	Safe and Secure Truck Parking	Safety Related Traffic Information (SRTI)	Real Time Traffic Information (RTTI)	Multimodal Travel Information Services (MMTIS)
Italy	https://www.cciss.it/web/cciss/homepage	https://www.cciss.it/web/cciss/homepage	https://www.cciss.it/web/cciss/homepage	Not applicable
Latvia	https://lvceli.lv/en/sakumlapa-english/	https://lvceli.lv/en/sakumlapa-english/	https://lvceli.lv/en/sakumlapa-english/	https://lvceli.lv/en/sakumlapa-english/
Lithuania	Not applicable	http://nap.lakd.lt/	http://nap.lakd.lt/	http://nap.lakd.lt/
Luxembourg	https://data.public.lu/fr/datasets/?tag=its	https://data.public.lu/fr/datasets/?tag=its	https://data.public.lu/fr/datasets/?tag=its	https://data.public.lu/fr/datasets/?tag=its
Malta	Not applicable	https://geoservices.transport.gov.mt/egis	https://geoservices.transport.gov.mt/egis	https://geoservices.transport.gov.mt/egis
The Netherlands	https://nt.ndw.nu/#/home	https://nt.ndw.nu/#/home	https://nt.ndw.nu/#/home	https://nt.ndw.nu/#/home
Norway	Not applicable	https://transportportal.no/en/	https://transportportal.no/en/	https://transportportal.no/en/
Poland	https://kpd.gddkia.gov.pl/index.php/en/homepage/	https://kpd.gddkia.gov.pl/index.php/en/homepage/	https://kpd.gddkia.gov.pl/index.php/en/homepage/	Not applicable
Portugal	https://nap-portugal.imt-ip.pt/nap/	https://nap-portugal.imt-ip.pt/nap/	https://nap-portugal.imt-ip.pt/nap/	https://nap-portugal.imt-ip.pt/nap/
Romania	https://pna.cestrin.ro	https://pna.cestrin.ro	https://pna.cestrin.ro	https://pna.cestrin.ro
Slovakia	https://www.ndsas.sk/i-love-dialnica/mobilna-aplikacia-1	https://www.zjazdnost.sk/map/view.htmlhttps://www.datex2.eu/sites/default/files/DATEX%20II%20PIM-METR-DLM-package-6.xml	www.odoprave.info, (mobile application) https://www.ndsas.sk/i-love-dialnica/mobilna-aplikacia-1	Not applicable
Slovenia	https://nap.si/en	https://nap.si/en	https://nap.si/en	https://nap.si/en
Spain	https://nap.dgt.es/	https://nap.dgt.es/	https://nap.dgt.es/,	https://apps.fomento.gob.es/AparcamientosSeguros/es
Sweden	Trafficdata.se	Trafficdata.se	Trafficdata.se	Trafficdata.se
Switzerland	Not applicable	Not applicable	https://opentransportdata.swiss/en/rt-road-traffic-counters/	https://openmobilitydata.swiss
United Kingdom	https://findtransportdata.dft.gov.uk	https://findtransportdata.dft.gov.uk	https://findtransportdata.dft.gov.uk	https://findtransportdata.dft.gov.uk

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

National Bodies

Country	Safe and Secure Truck Parking	Safety Related Traffic Information (SRTI)	Real Time Traffic Information (RTTI)	Multimodal Travel Information Services (MMTIS)
Austria	AustriaTech GmbH	AustriaTech GmbH	AustriaTech GmbH	AustriaTech GmbH
Belgium	anyways.eu	anyways.eu	anyways.eu	anyways.eu
Bulgaria	Unknown/currently not existing	Unknown/currently not existing	Unknown/currently not existing	Unknown/currently not existing
Croatia	Not existing	Not existing	Not existing	Not existing
Cyprus	Not existing	Public Works Department, Ministry of Transport Communications and Works	Public Works Department, Ministry of Transport Communications and Works	Public Works Department, Ministry of Transport Communications and Works
Czech Republic	The Ministry of Transport of the Czech Republic	The Ministry of Transport of the Czech Republic	The Ministry of Transport of the Czech Republic	The Ministry of Transport of the Czech Republic
Denmark	Not existing	Danish Road Directorate Legal division	Danish Road Directorate Legal division	Not existing
Estonia	Estonian Ministry of Economic Affairs and Communications	Estonian Ministry of Economic Affairs and Communications	Estonian Ministry of Economic Affairs and Communications	Estonian Ministry of Economic Affairs and Communications
Finland	Finnish Transport and Communications Agency Traficom	Finnish Transport and Communications Agency Traficom	Finnish Transport and Communications Agency Traficom	Finnish Transport and Communications Agency Traficom
France	To be specified following internal reorganization	To be specified following internal reorganization	To be specified following internal reorganization	Direction générale des infrastructures, des transports et des mobilités (DGITM)
Germany	Federal Highway Research Institute (BASt)	Federal Highway Research Institute (BASt)	Federal Highway Research Institute (BASt)	Federal Highway Research Institute (BASt)
Greece	Road Toll Service - Ministry of Infrastructure and Transport	Road Toll Service - Ministry of Infrastructure and Transport	Road Toll Service - Ministry of Infrastructure and Transport	Road Toll Service - Ministry of Infrastructure and Transport
Hungary	Ministry for construction and Traffic	Ministry for construction and Traffic	Ministry for construction and Traffic	Ministry for construction and Traffic
Ireland	Not existing	https://data.gov.ie/	https://data.gov.ie/	https://data.gov.ie/
Italy	ART – Autorità di regolazione dei Trasporti	ART – Autorità di regolazione dei Trasporti	Not existing	Not existing
Latvia	Ministry of Transport Republic of Latvia representing policy level and SJSC Latvian State Roads representing operational level	Ministry of Transport Republic of Latvia representing policy level and SJSC Latvian State Roads	Ministry of Transport Republic of Latvia representing policy level and SJSC Latvian State Roads	Ministry of Transport Republic of Latvia representing policy level and SJSC Latvian State Roads

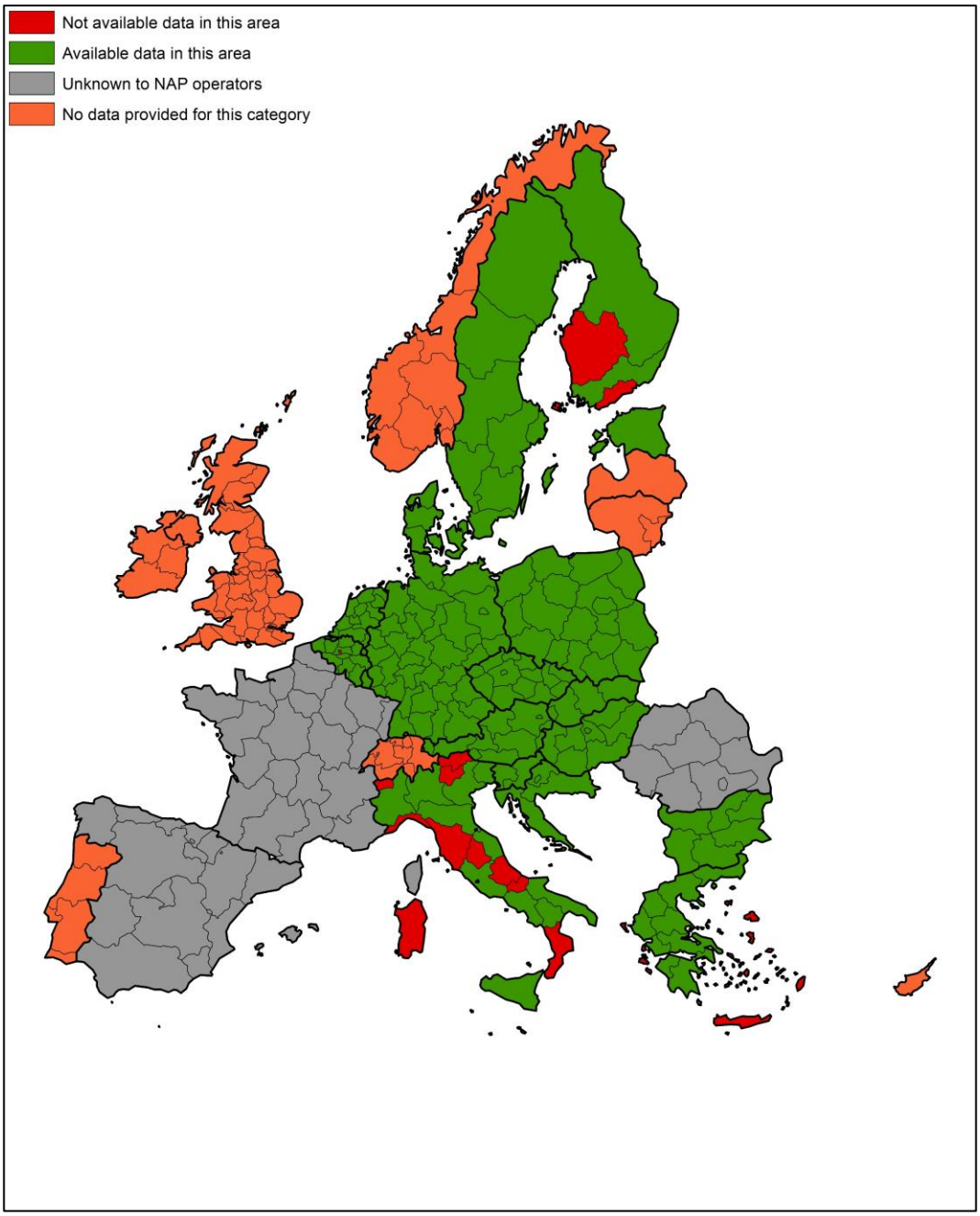
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

		representing operational level	representing operational level	representing operational level
Lithuania	Not existing	State Enterprise Lithuanian Road Administration	State Enterprise Lithuanian Road Administration	Lithuanian transport safety administration
Luxembourg	Ministry of mobility and public works	Ministry of mobility and public works	Ministry of mobility and public works	Ministry of mobility and public works
Malta	Not existing	Not existing	Not existing	Not existing
The Netherlands	RDW (Netherlands Vehicle Authority)	RDW (Netherlands Vehicle Authority)	Not existing	Not existing
Norway	Not existing	Road Supervisory Authority	Road Supervisory Authority	Not yet appointed
Poland	"Główny Inspektorat Transportu Drogowego" (eng. Chief Road Transport Inspectorate)	"Główny Inspektorat Transportu Drogowego" (eng. Chief Road Transport Inspectorate)	"Główny Inspektorat Transportu Drogowego" (eng. Chief Road Transport Inspectorate)	Not existing
Portugal	The activities foreseen for the National Body are currently embedded in the activities of IMT – Instituto da Mobilidade e dos Transportes, I.P	The activities foreseen for the National Body are currently embedded in the activities of IMT – Instituto da Mobilidade e dos Transportes, I.P	The activities foreseen for the National Body are currently embedded in the activities of IMT – Instituto da Mobilidade e dos Transportes, I.P	The activities foreseen for the National Body are currently embedded in the activities of IMT – Instituto da Mobilidade e dos Transportes, I.P
Romania	Autoritatea Rutiera Romana	Autoritatea Rutiera Romana	Autoritatea Rutiera Romana	Autoritatea Rutiera Romana
Slovakia	Ministry of Transport and Construction of the Slovak Republic	Ministry of Transport and Construction of the Slovak Republic	Ministry of Transport and Construction of the Slovak Republic	Ministry of Transport and Construction of the Slovak Republic
Slovenia	Slovenian National Traffic Management Centre	Slovenian National Traffic Management Centre	Slovenian National Traffic Management Centre	Slovenian National Traffic Management Centre
Spain	Ministry of Transport, Mobility and Urban Agenda	General Directorate for Traffic of Spain (Dirección General de Tráfico -DGT). Ministry of Interior (Ministerio del Interior)	General Directorate for Traffic of Spain (Dirección General de Tráfico -DGT). Ministry of Interior (Ministerio del Interior)	Ministry of Transport, Mobility and Urban Agenda
Sweden	The Swedish Transport Agency (Transportstyrelsen)	The Swedish Transport Agency (Transportstyrelsen)	The Swedish Transport Agency (Transportstyrelsen)	The Swedish Transport Agency (Transportstyrelsen)
Switzerland	Not existing	Not existing	Not existing	Not existing
United Kingdom	Department for Transport	Department for Transport	Department for Transport	Department for Transport

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

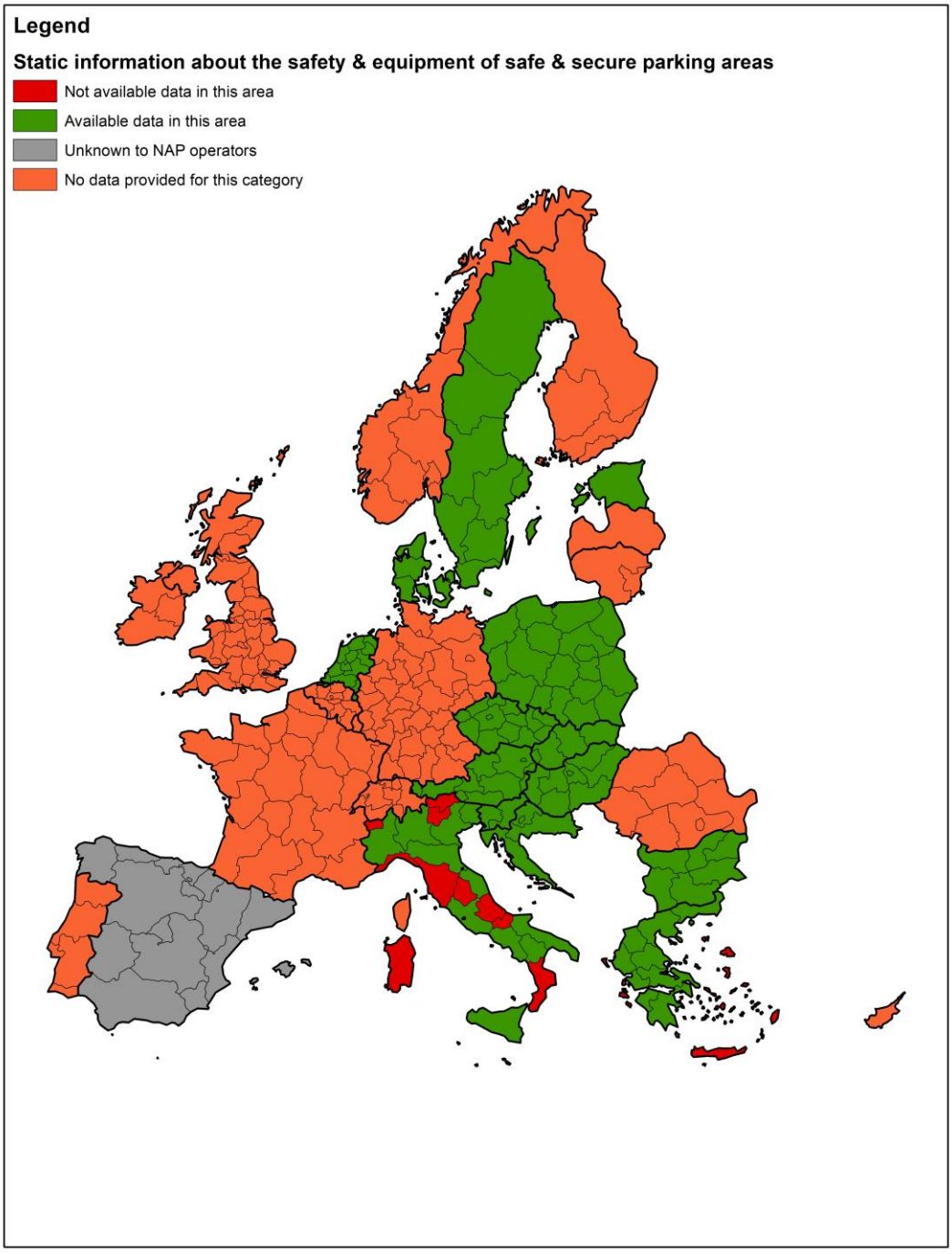
Annex II - Geographical availability SSTP

Static information about safe & secure truck parking areas (e.g., truck parking place location, parking capacity, access road identifiers)



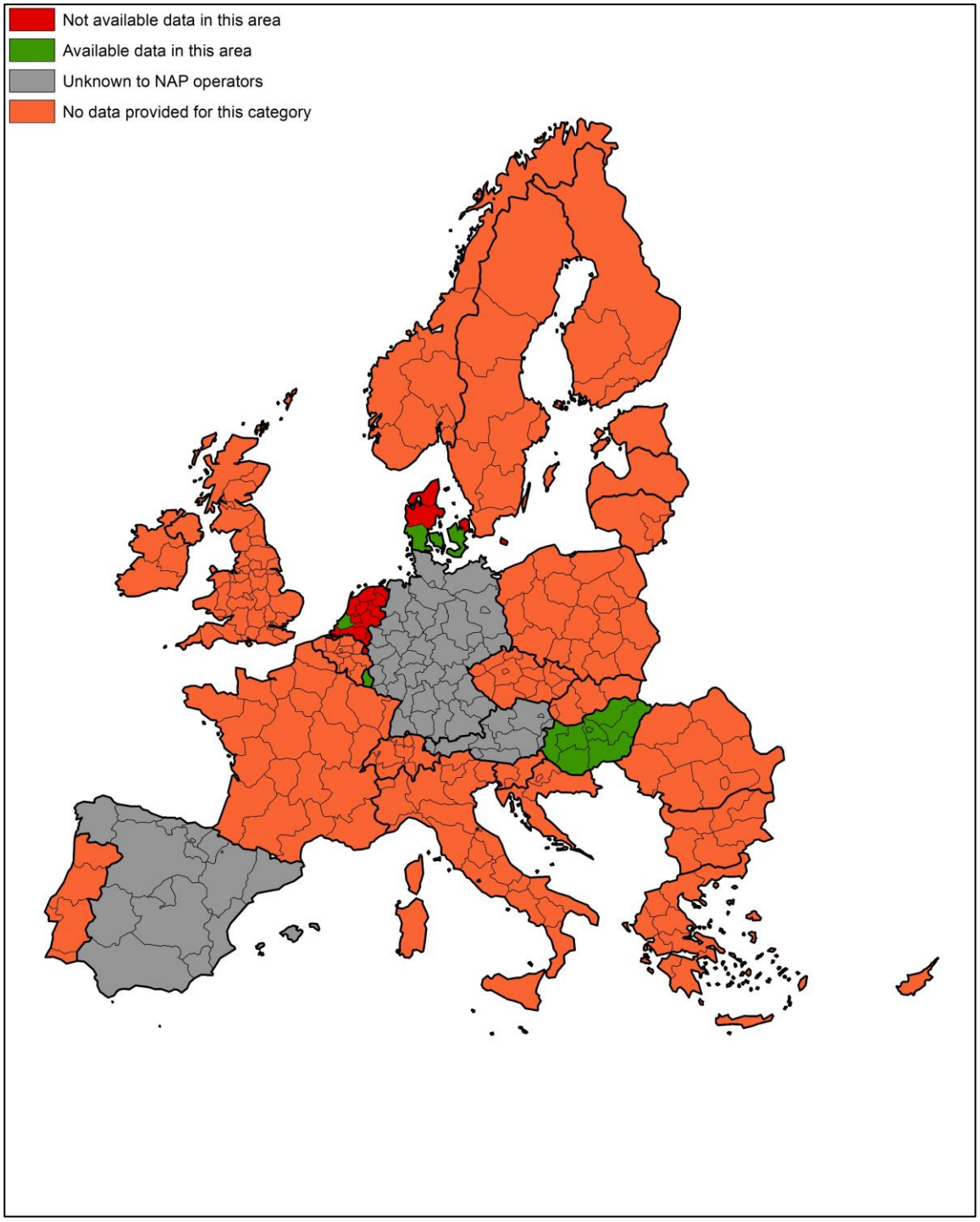
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information about the safety conditions and equipment of safe & secure truck parking areas (e.g., description of security or service equipment)



This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

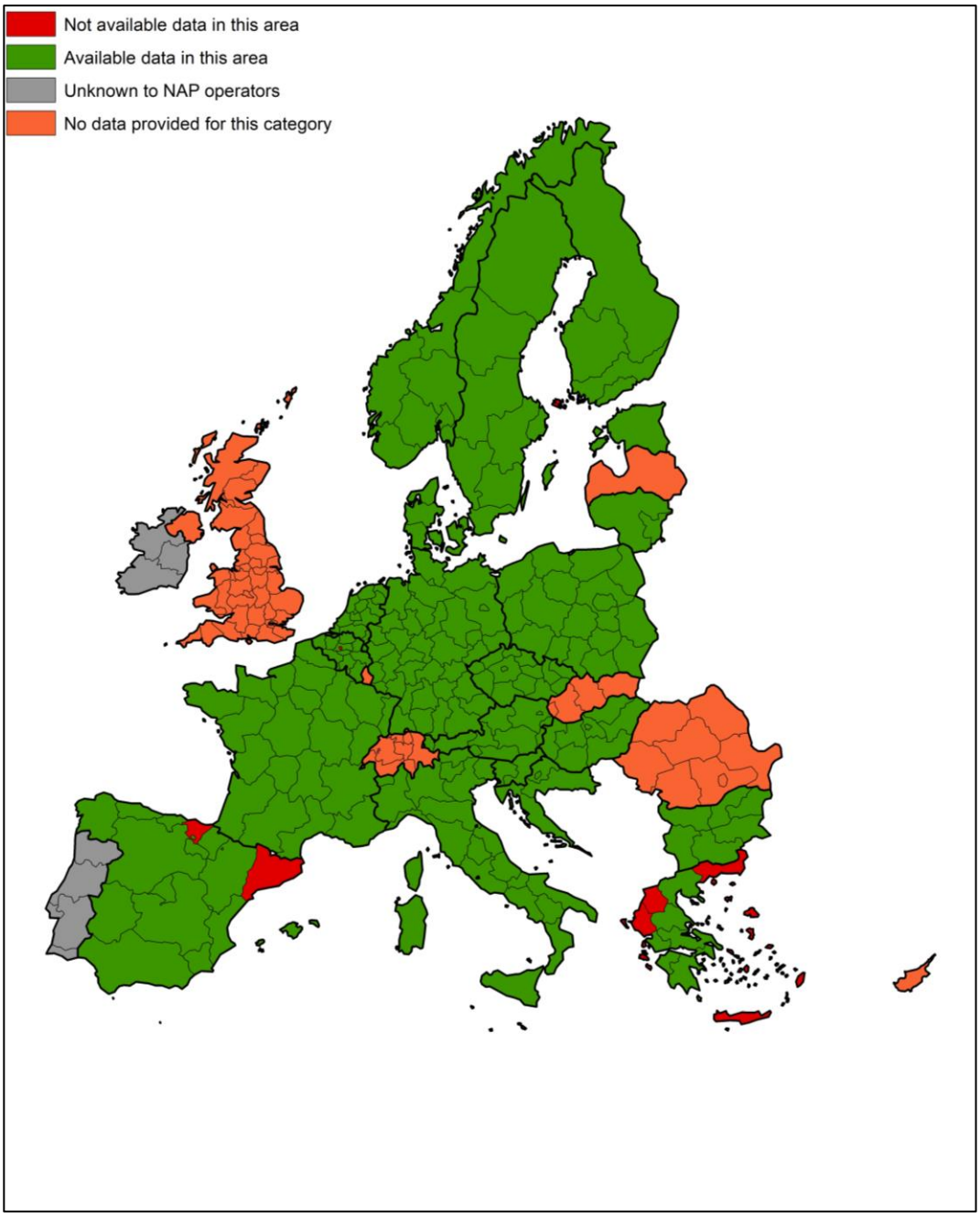
Dynamic information about the availability of safe and secure truck parking areas



This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Annex III - Geographical availability SRTI

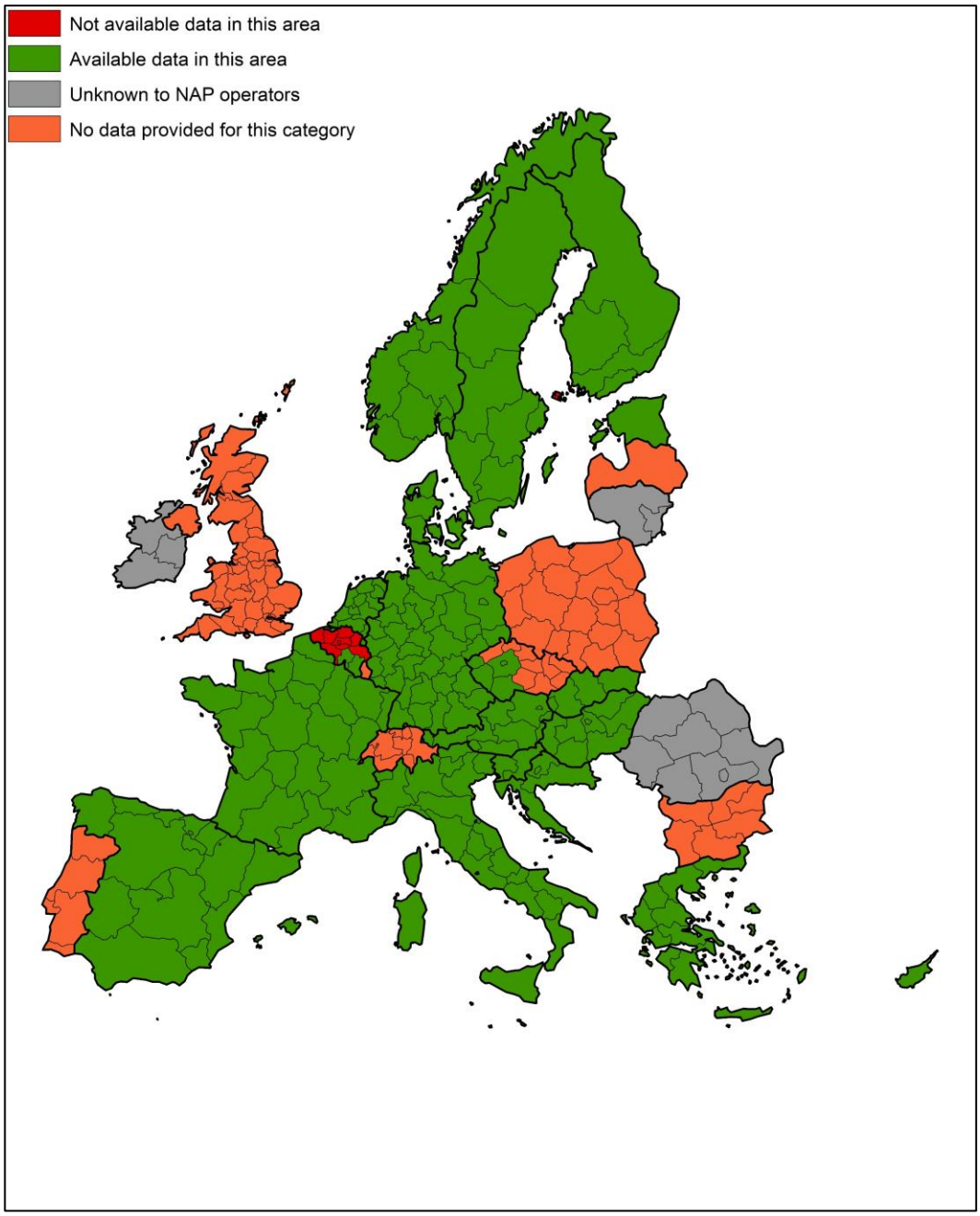
Dynamic information about road safety-related events/conditions (e.g., location of event, category of event, provided driving behaviour advice)



This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

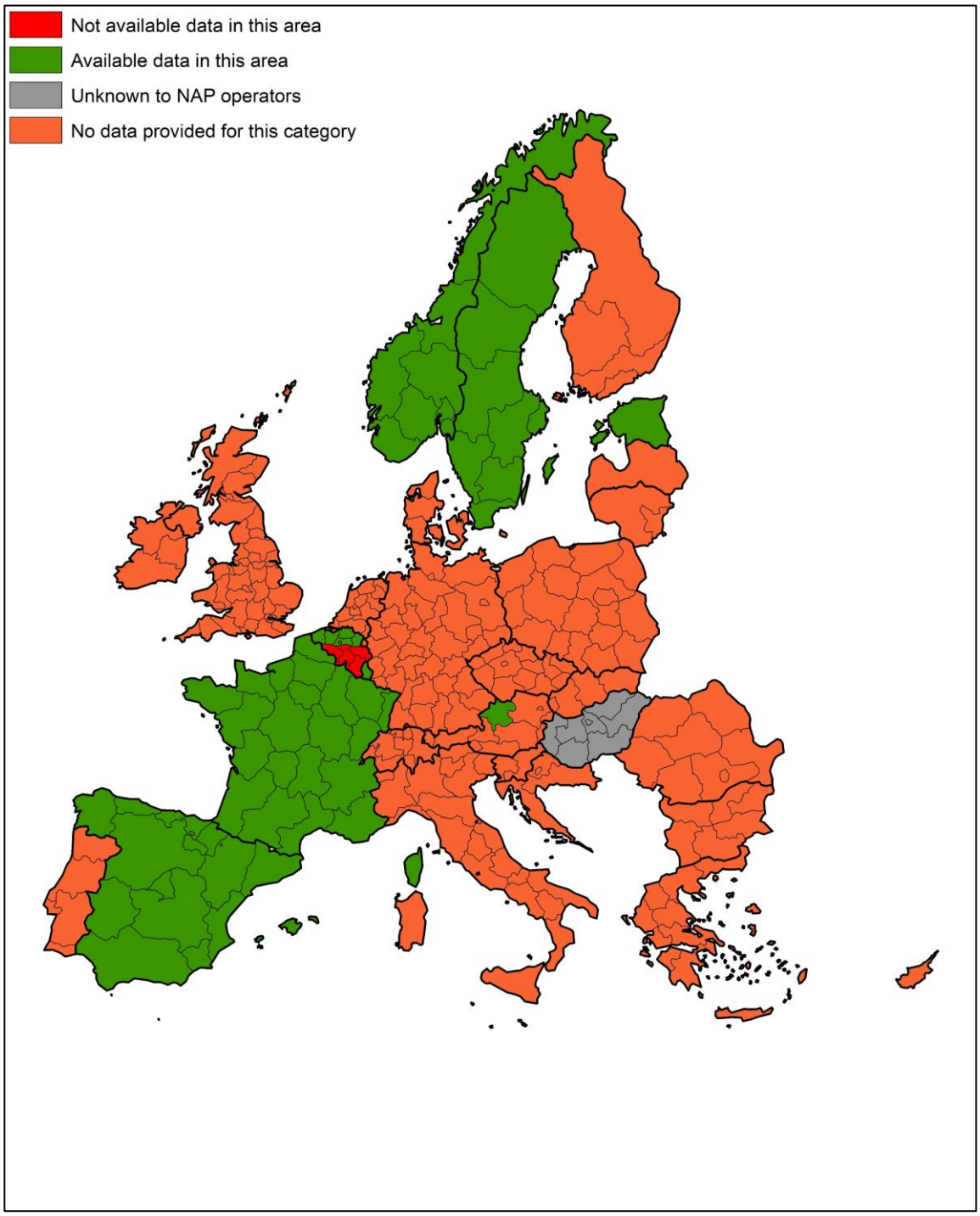
Annex IV - Geographical availability RTTI

Static information about the road network (e.g., road network links and their physical attributes, road classification, speed limits)



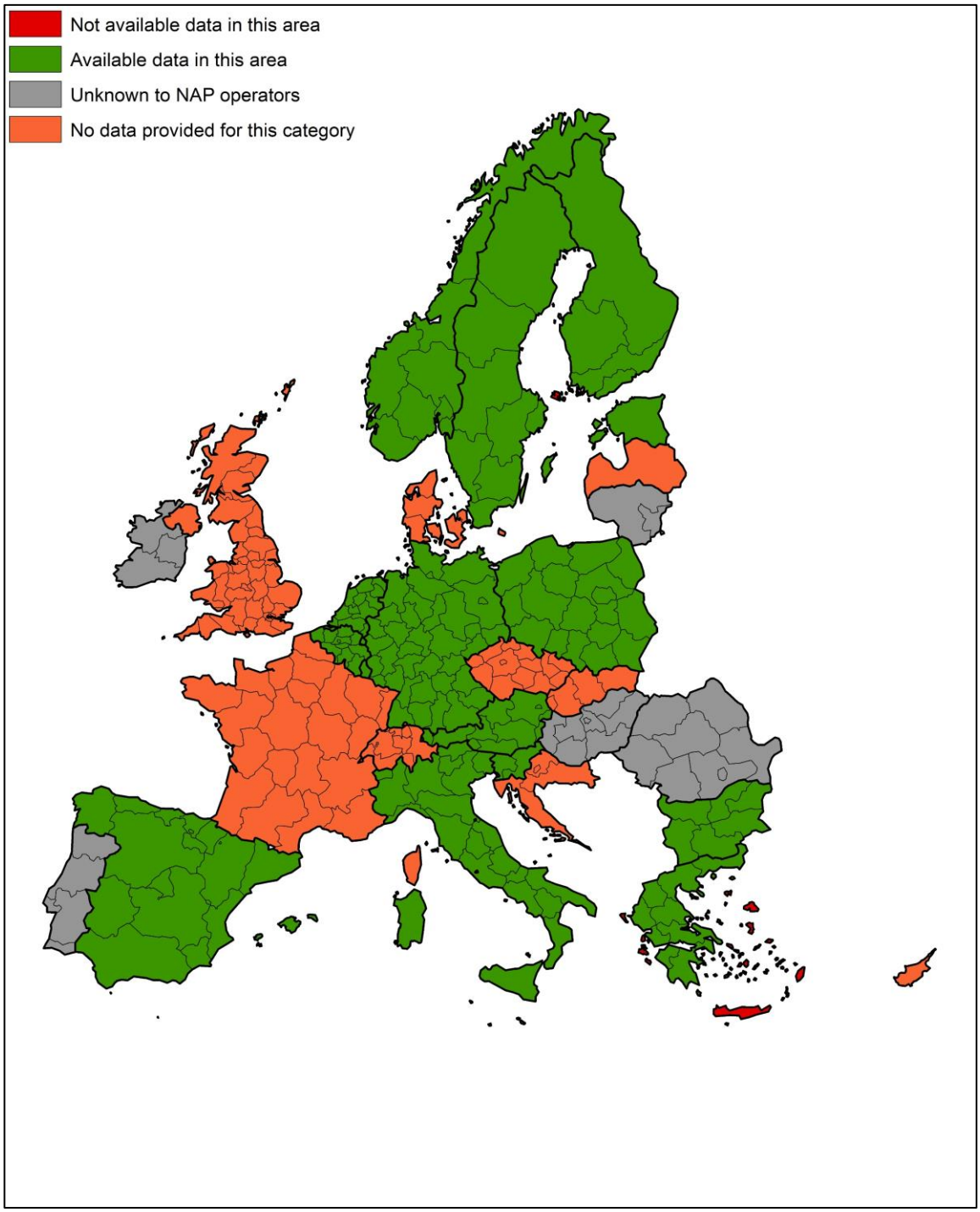
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information about the usage of the road network (e.g., traffic circulation plans, freight delivery regulations)



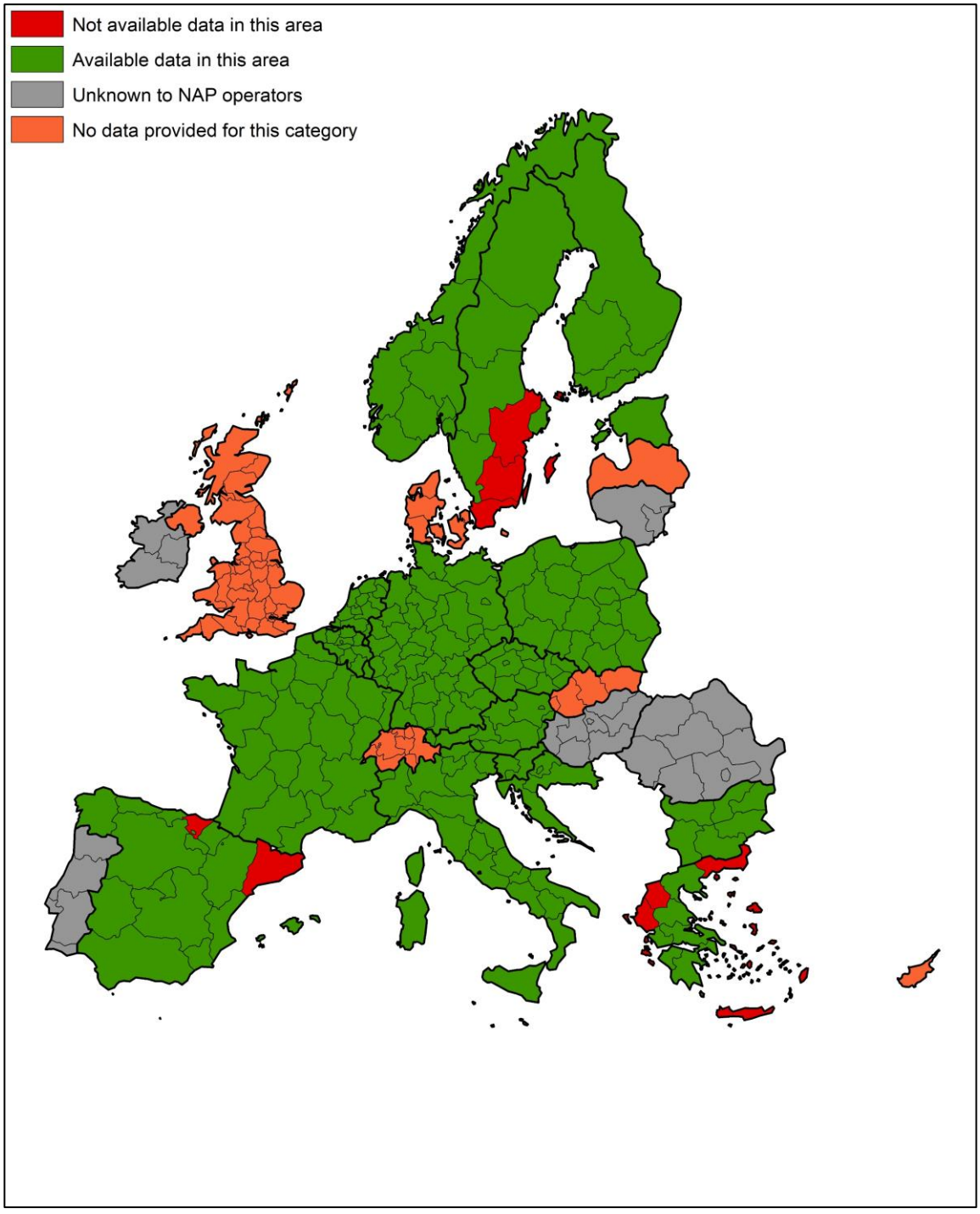
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information about roadway and roadside infrastructure (e.g., location of tolling stations, location of parking places and service areas, location of public transport stops and interchange points)



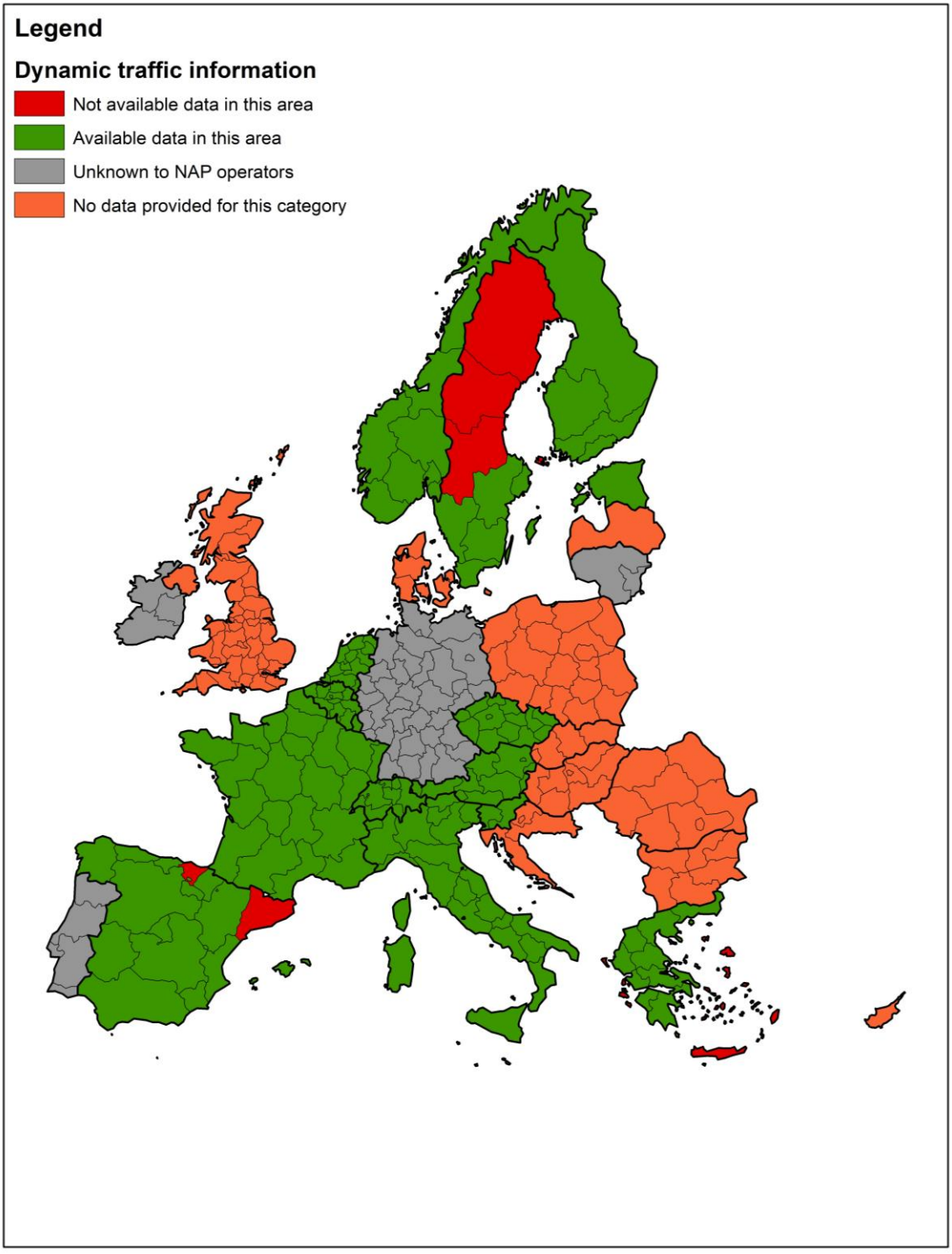
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic road status information (e.g., road closures, lane closures, roadworks)



This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

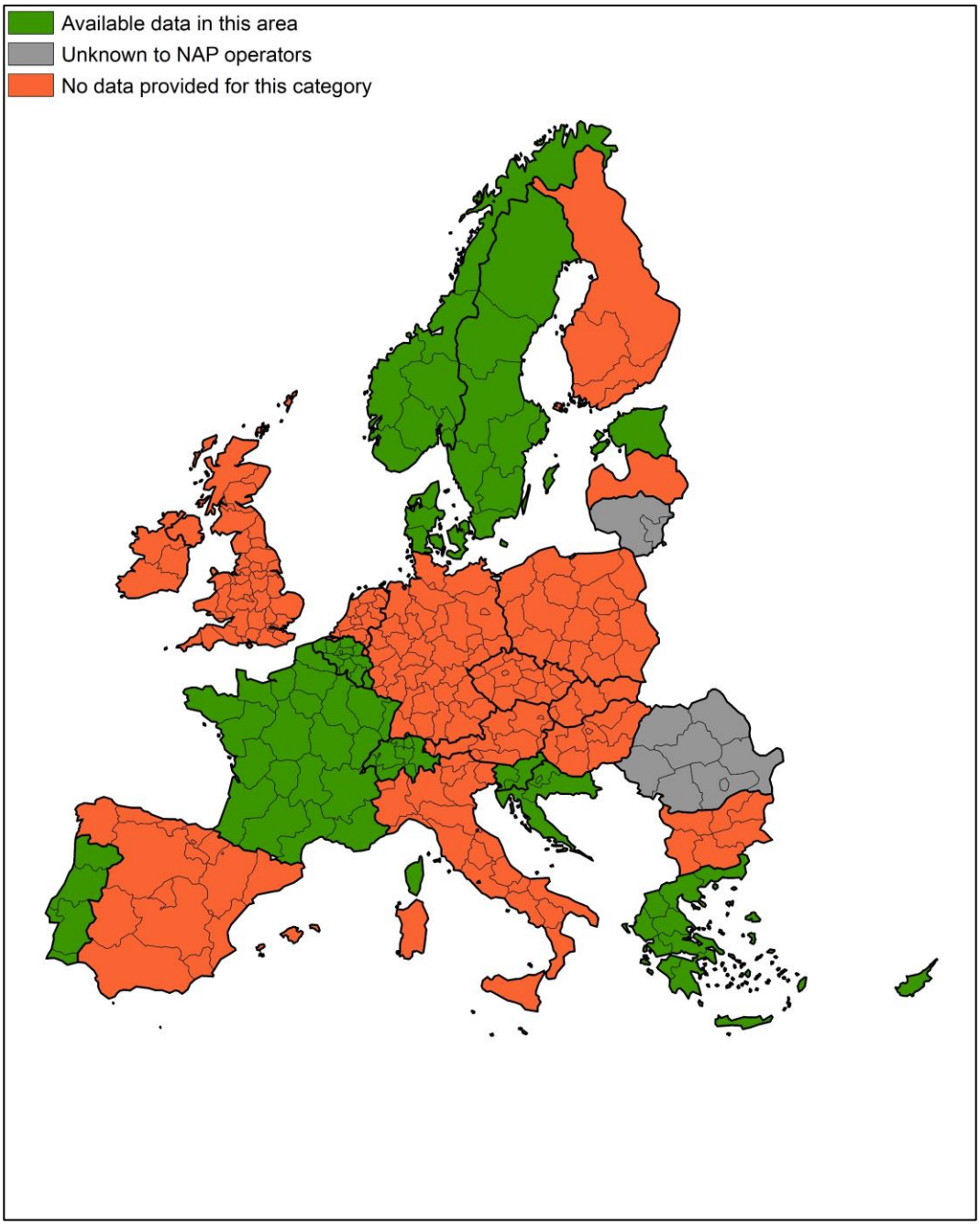
Dynamic traffic information (e.g., traffic volume, travel times, location, and length of traffic queues)



This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

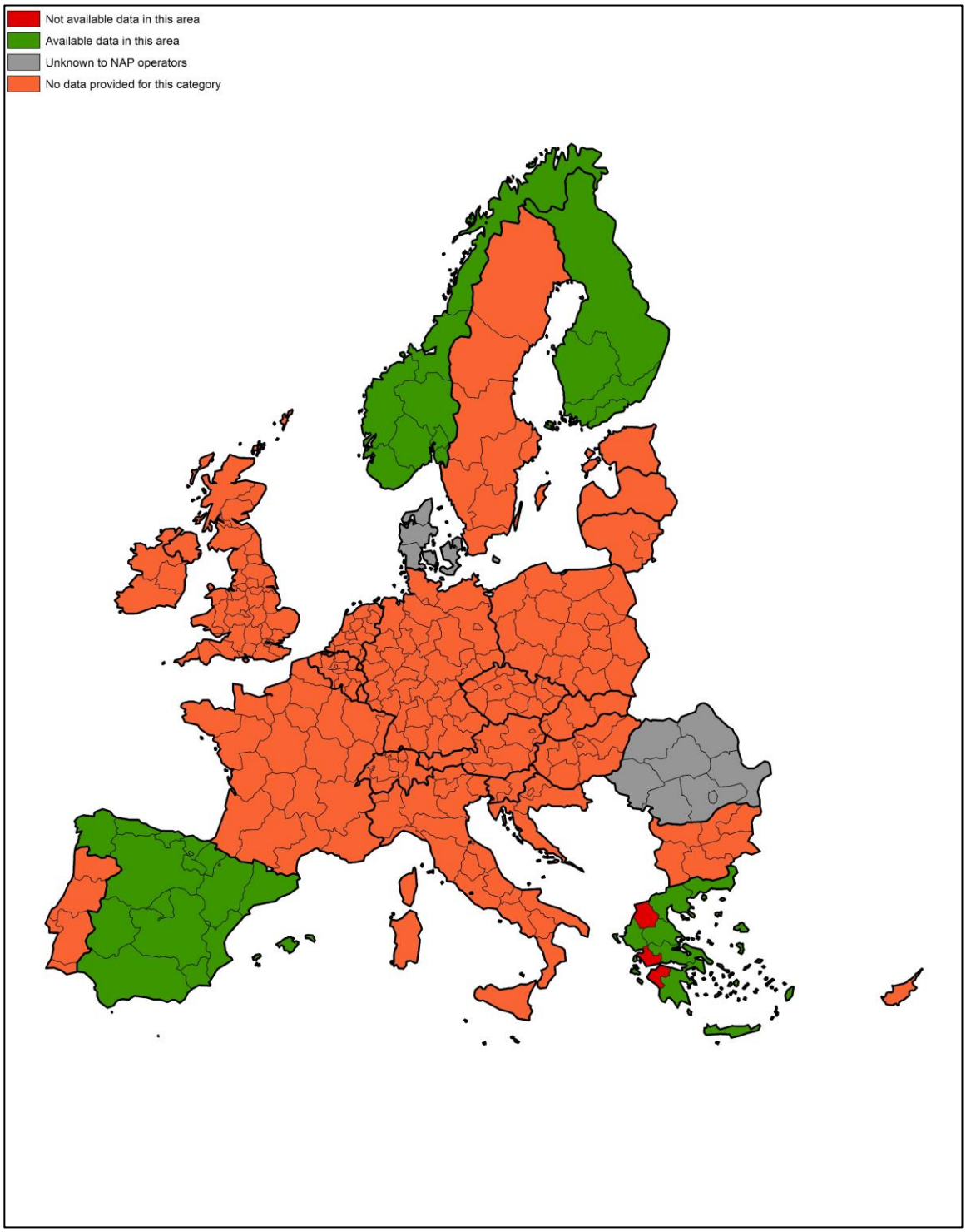
Annex V - Geographical availability MMTIS

Static information for location search (e.g., address identifiers, topographic places, points of interest)



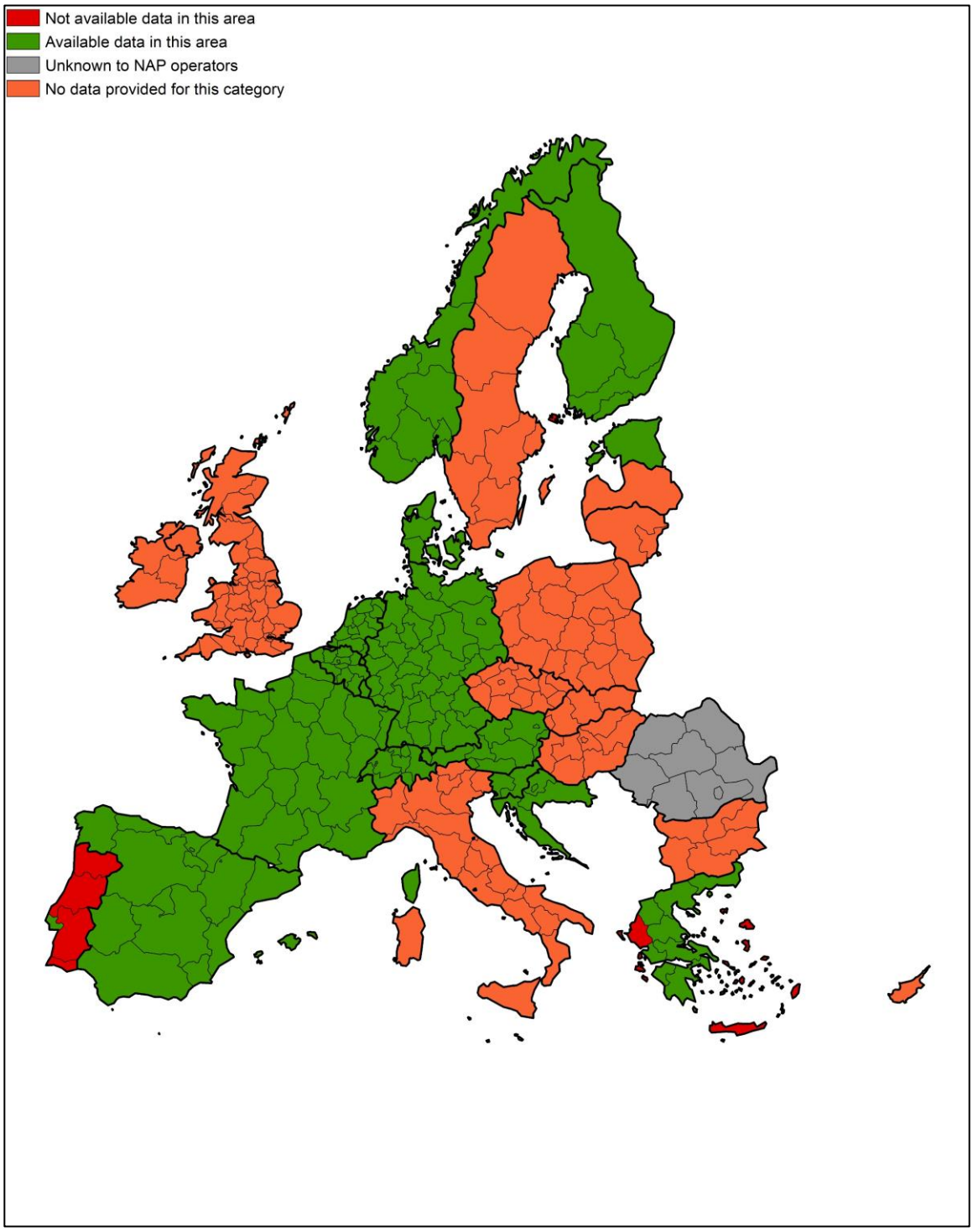
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for location search – air transport (e.g., identified access nodes, geometry/map layout structure of access nodes)



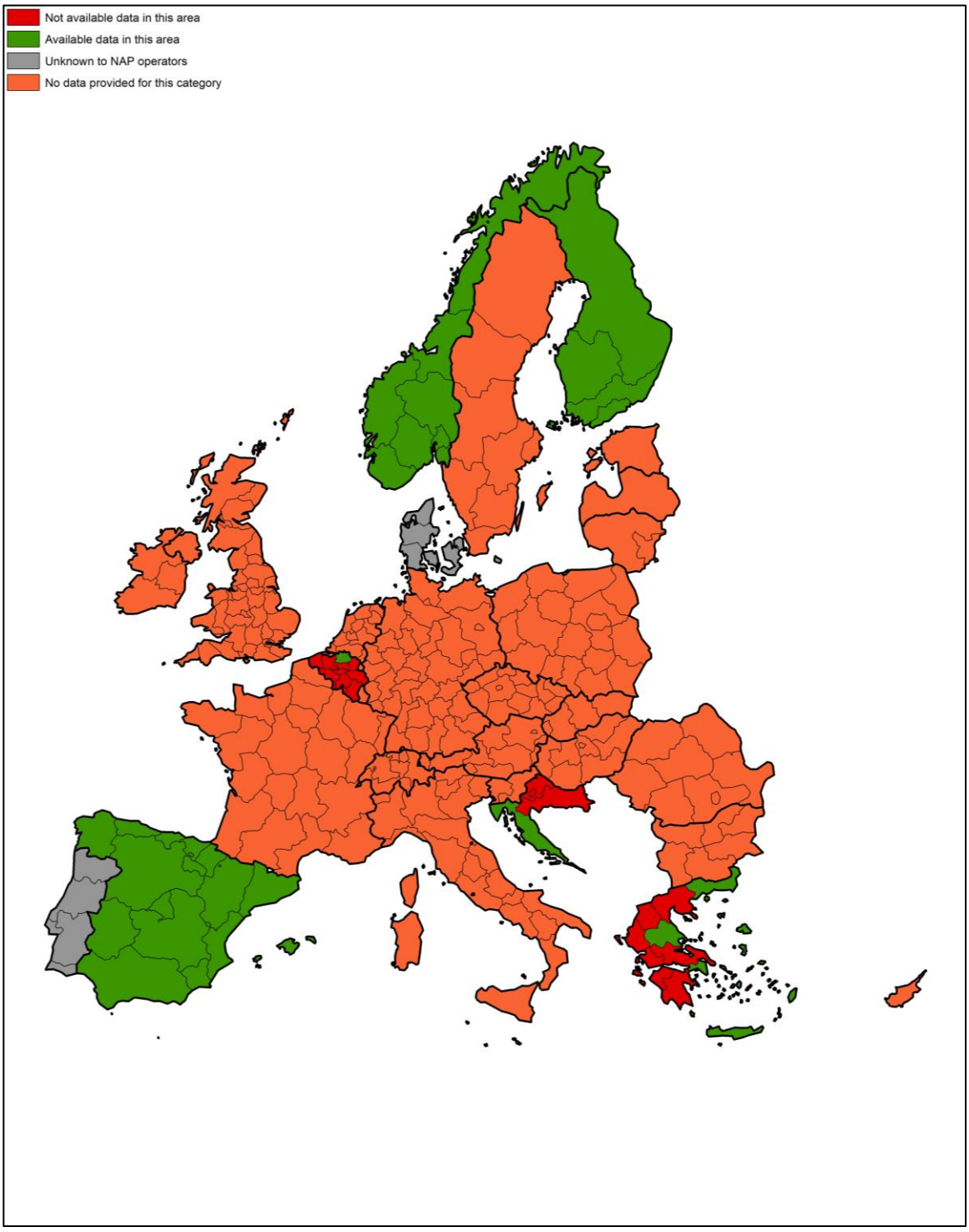
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for location search – rail transport (e.g., identified access nodes, geometry/map layout structure of access nodes)



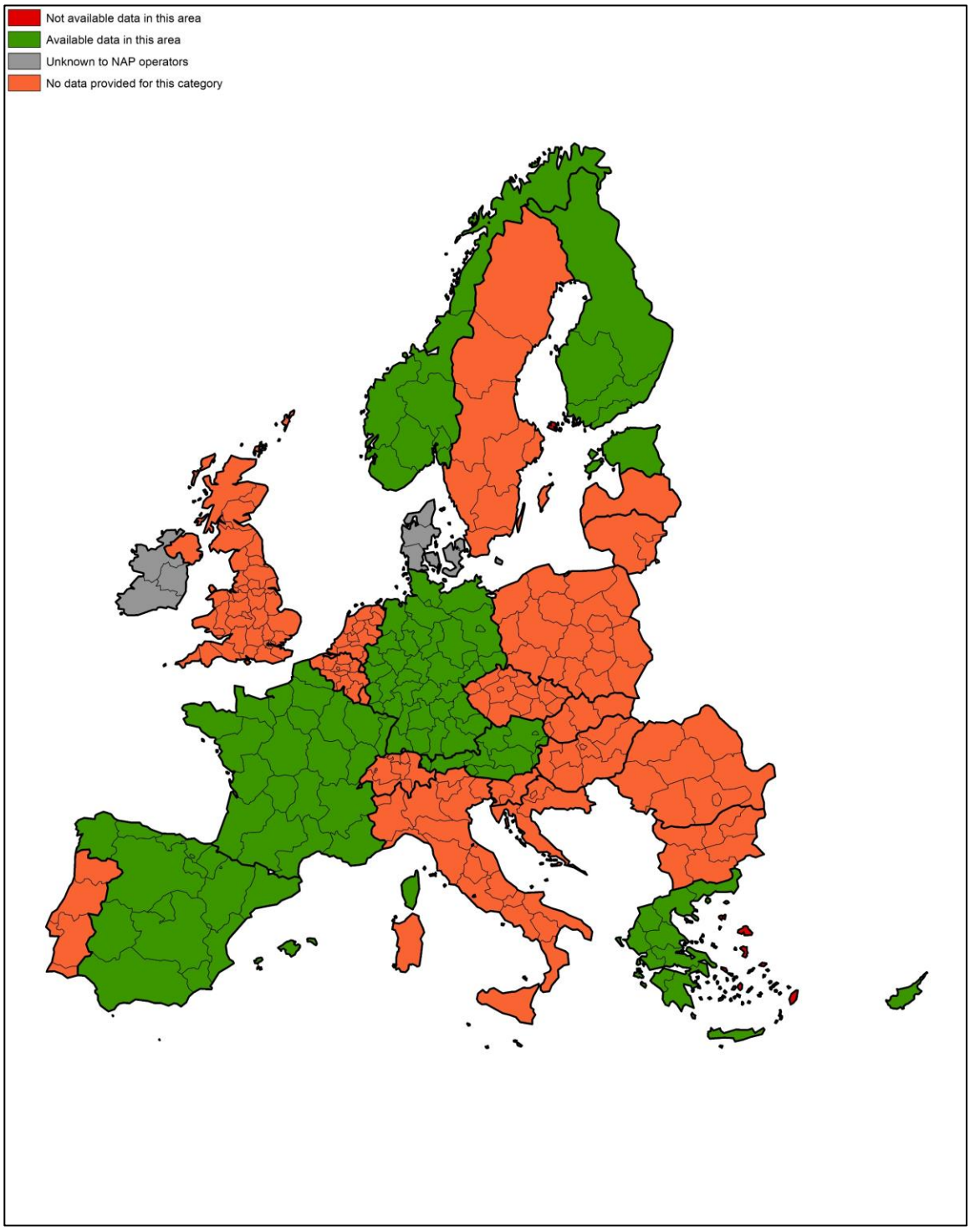
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for location search – maritime transport (e.g., identified access nodes, geometry/map layout structure of access nodes)



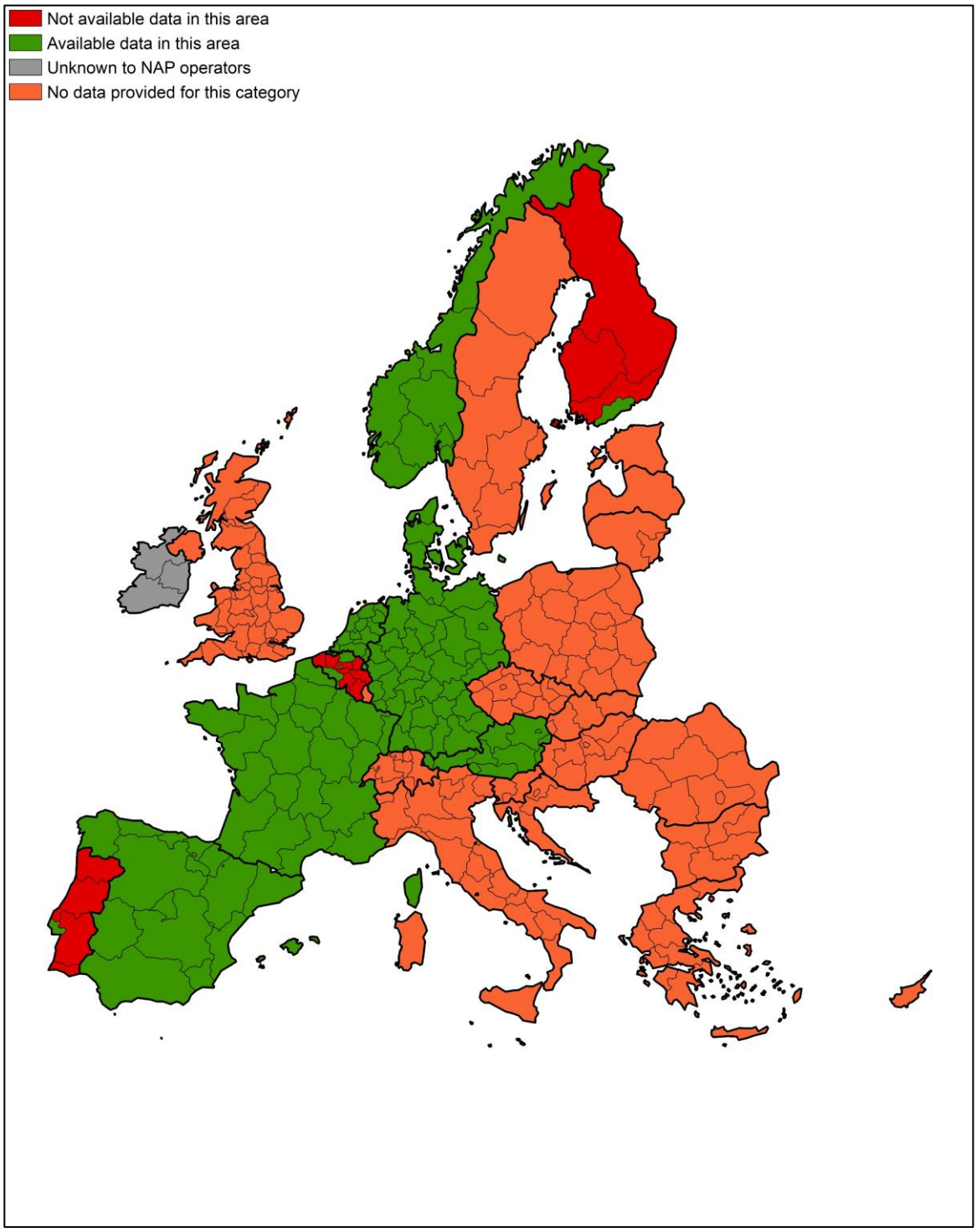
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for location search – long-distance coach (e.g., identified access nodes, geometry/map layout structure of access nodes)



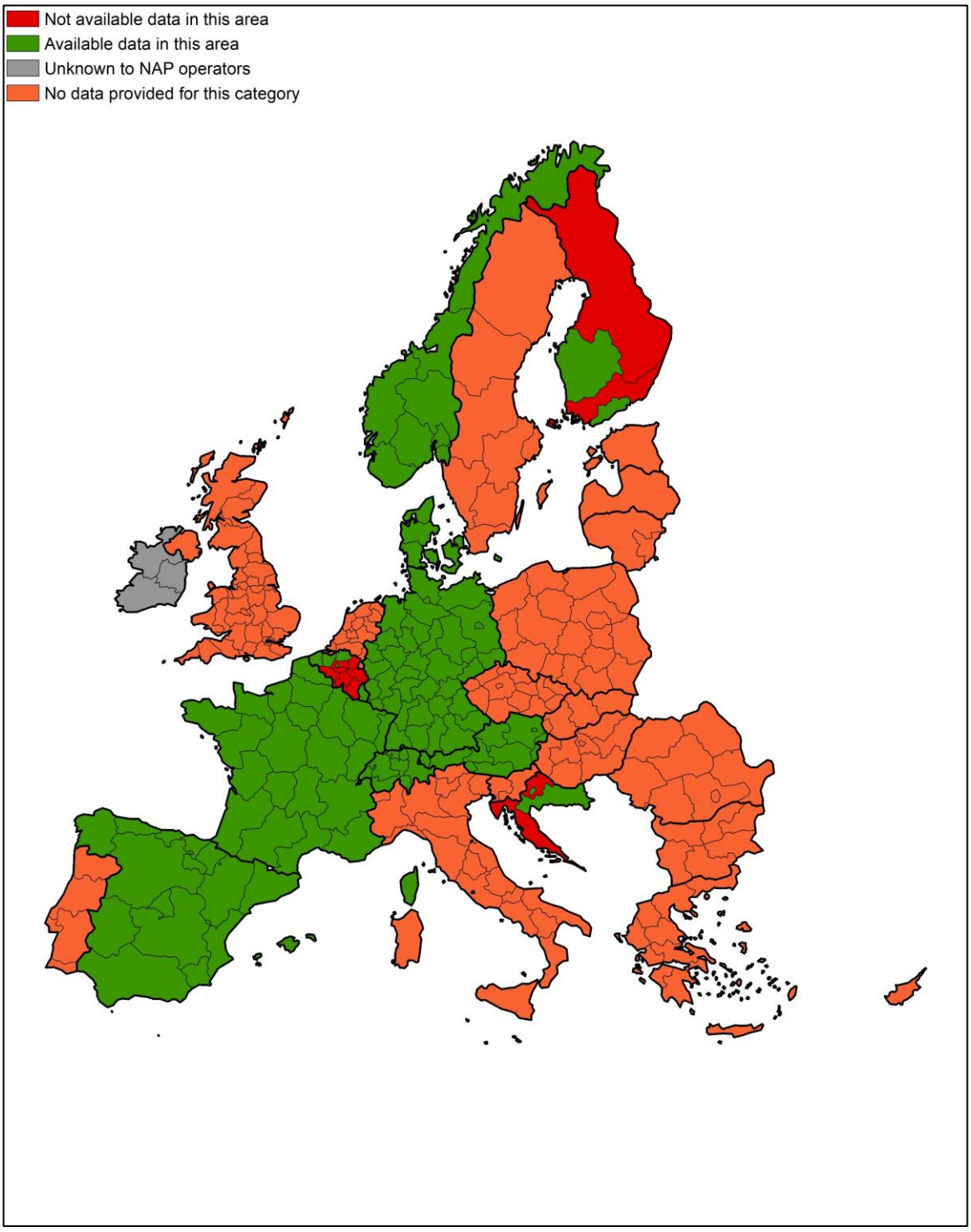
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for location search – metro (e.g., identified access nodes, geometry/map layout structure of access nodes)



This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for location search – tram (e.g., identified access nodes, geometry/map layout structure of access nodes)

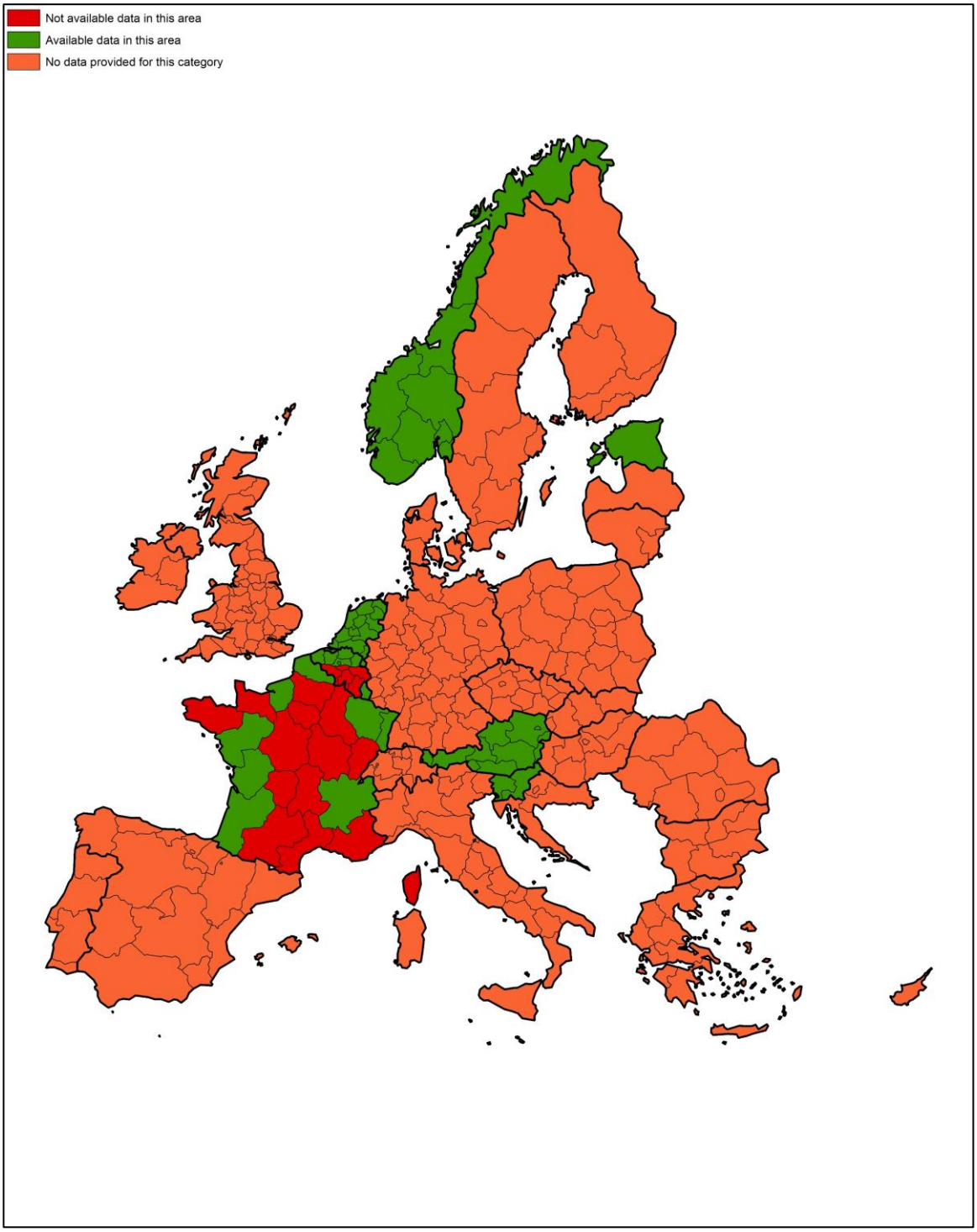


This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for location search – bus/trolley (e.g., identified access nodes, geometry/map layout structure of access nodes)

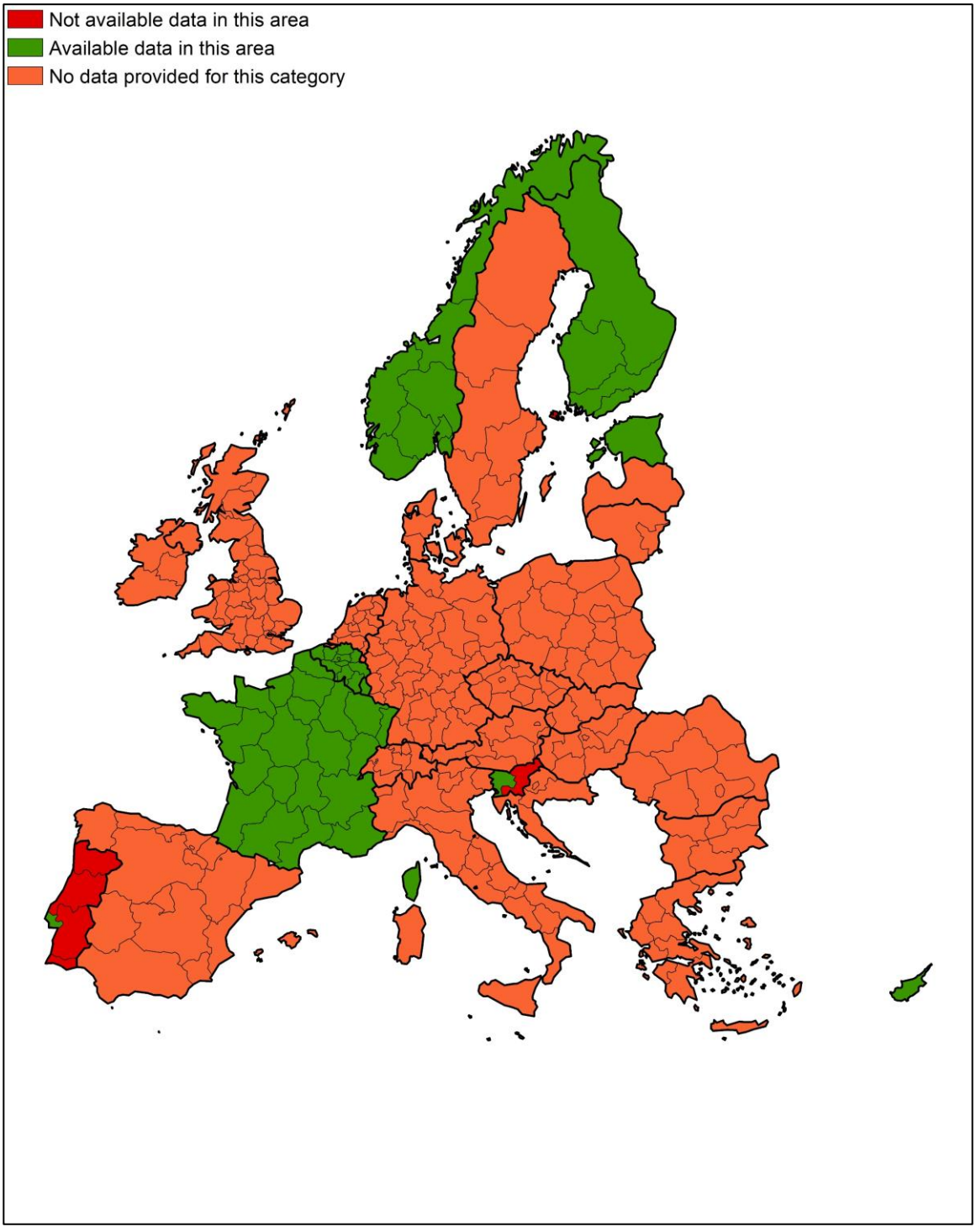
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for location search – park & ride stops (e.g., location of stops/stations)



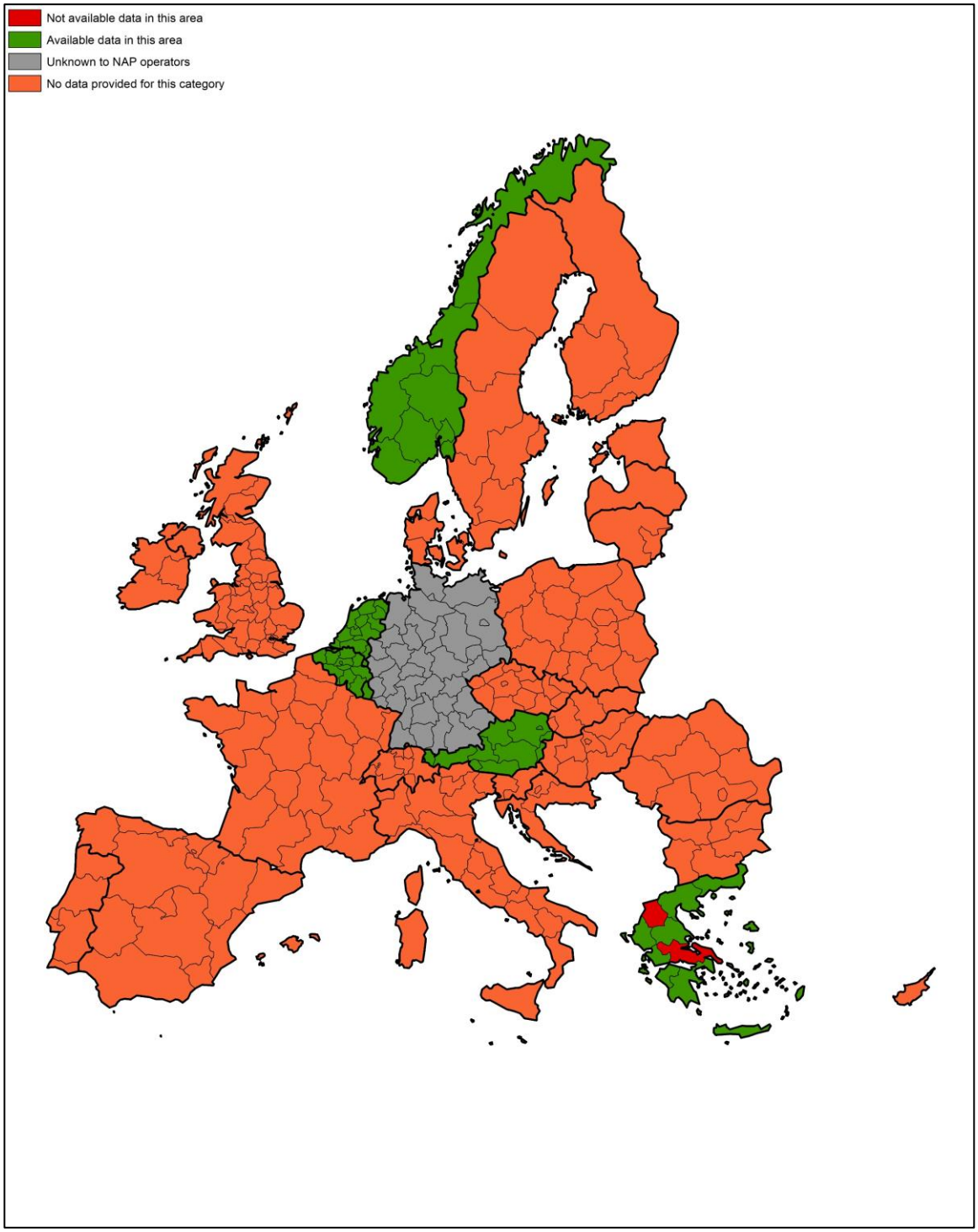
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for location search – bike sharing stations (e.g., location of stops/stations)



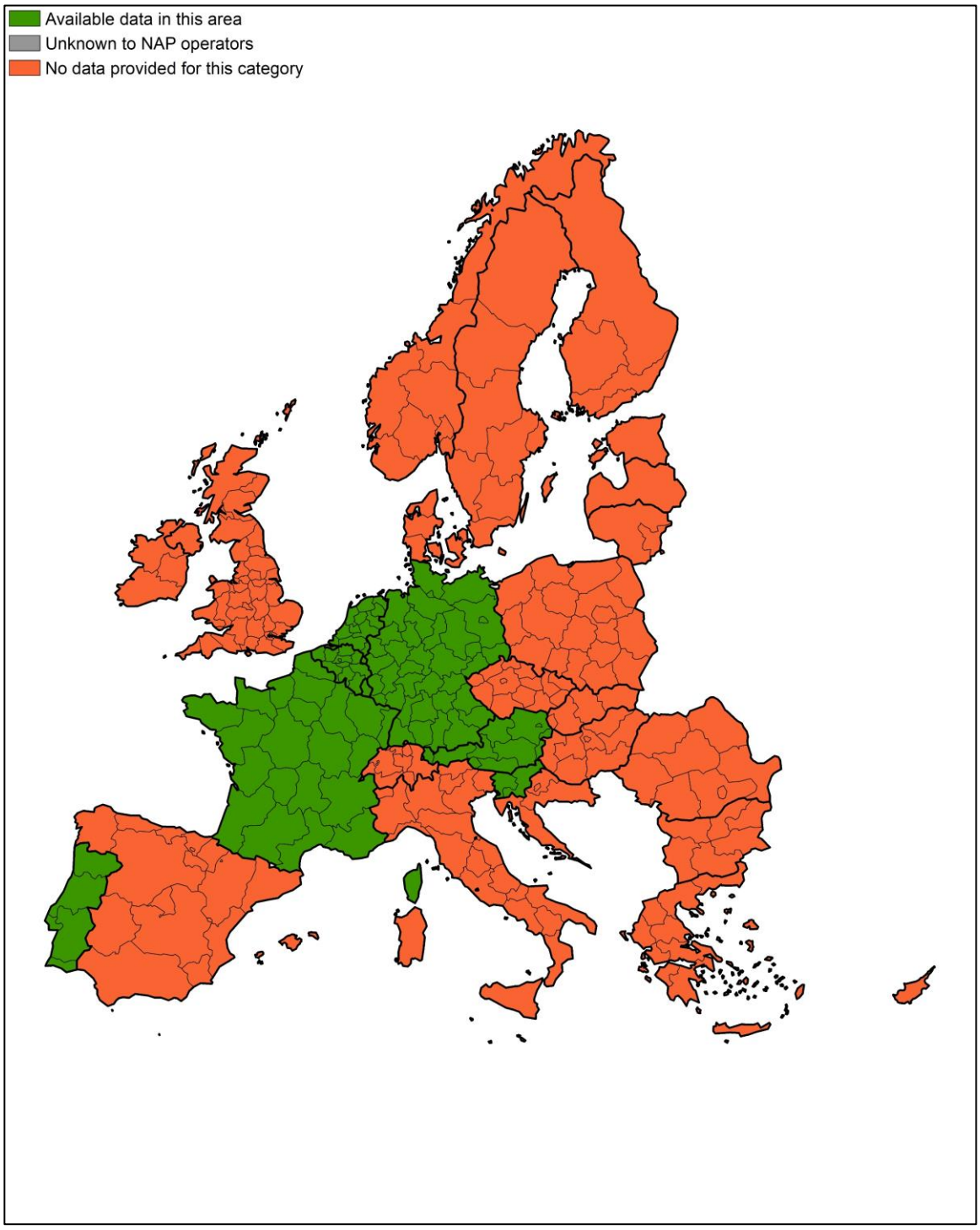
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for location search – car sharing stations (e.g., location of stops/stations)



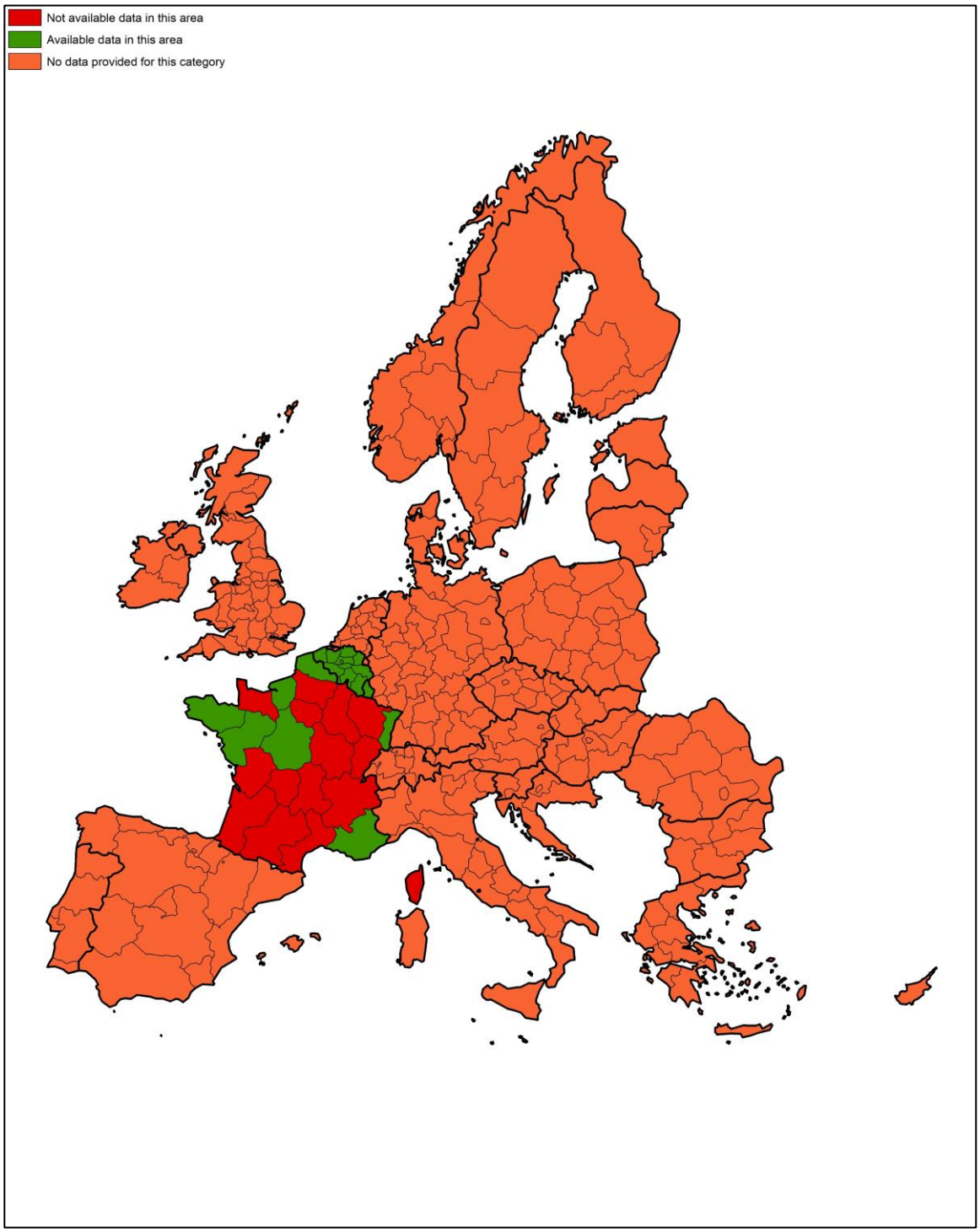
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for location search – alternative fuel stations (e.g., location of stops/stations)



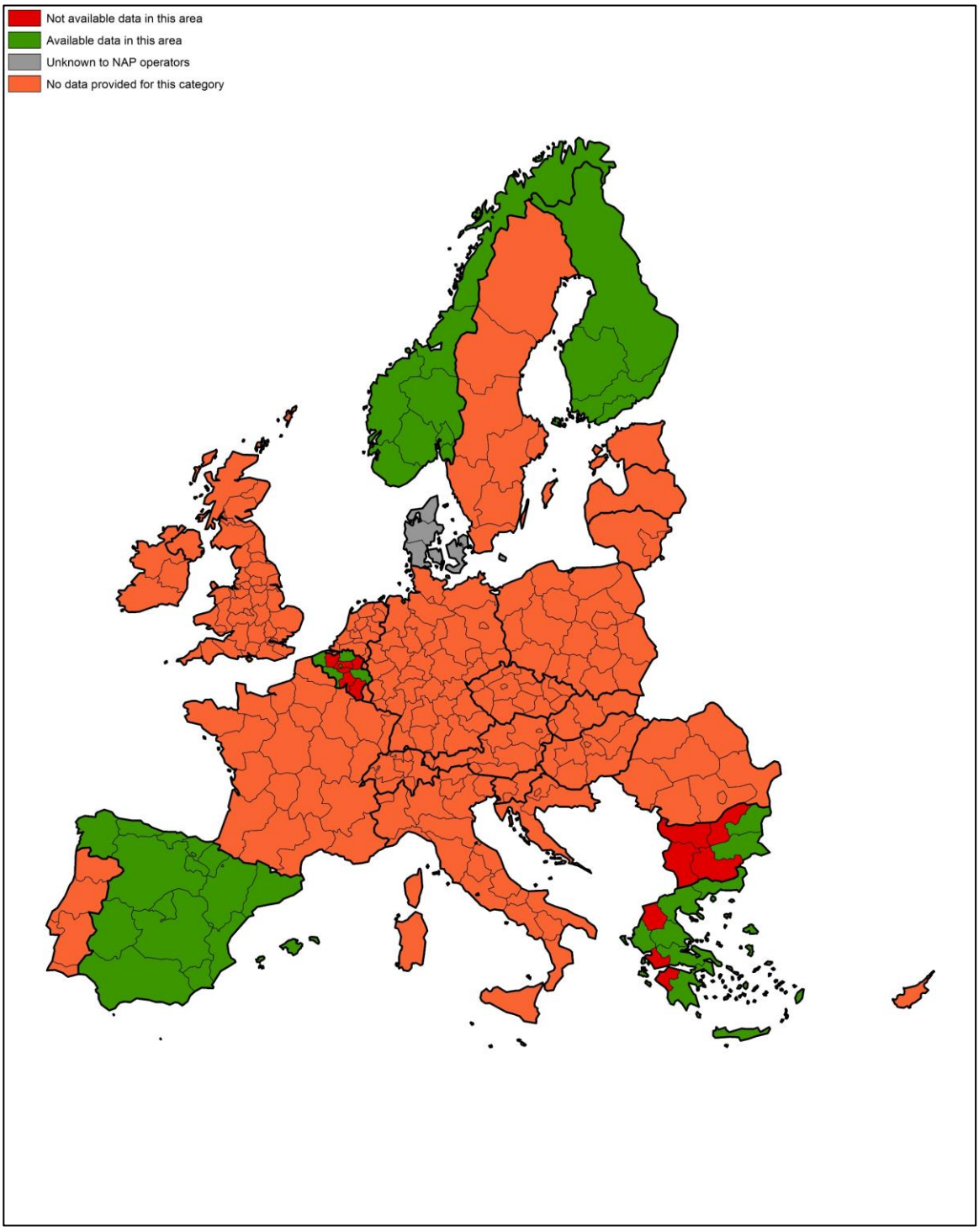
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for location search – secure bike parking stations (e.g., location of stops/stations)



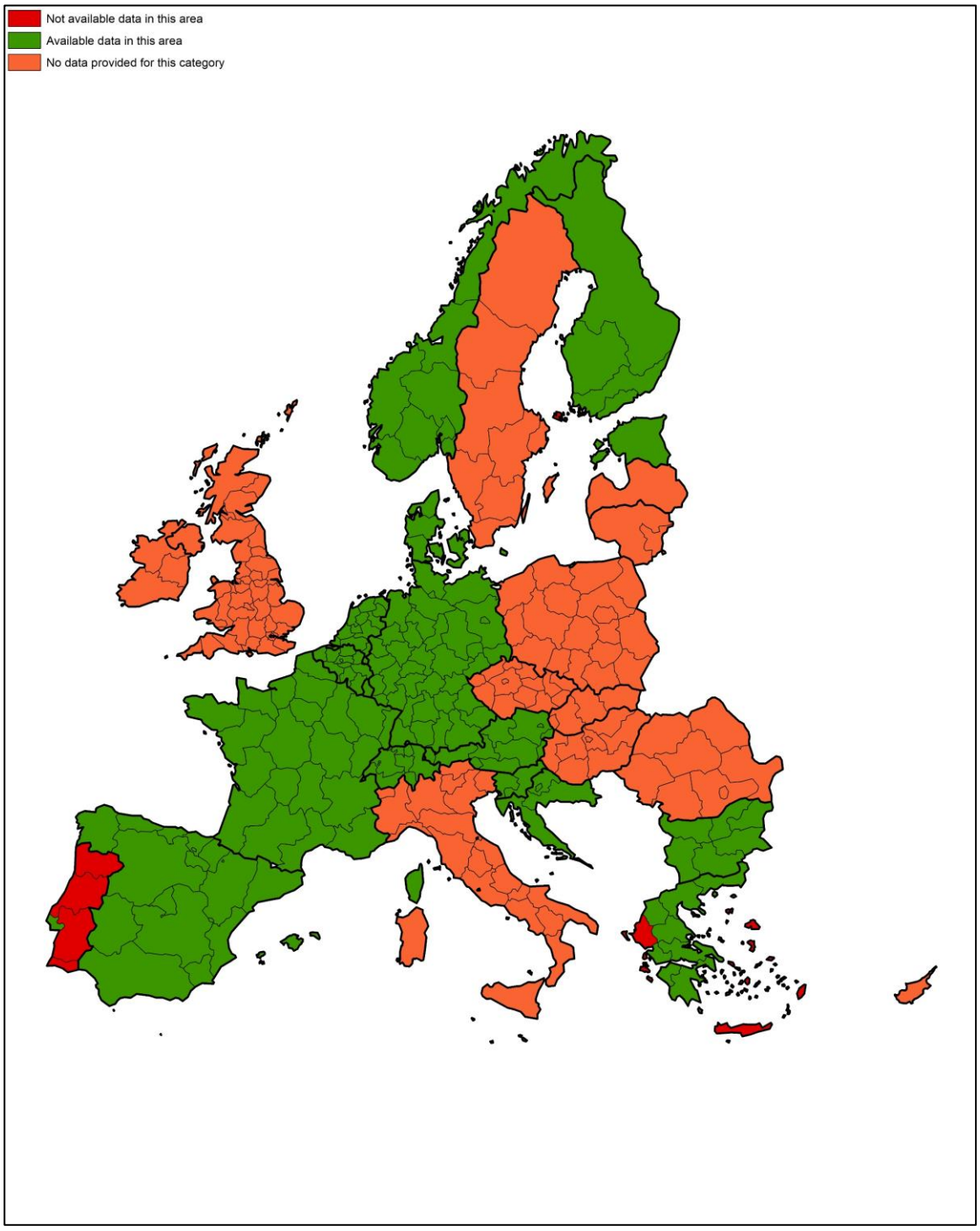
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – air transport (e.g., operational calendar, mapping day types to calendar dates)



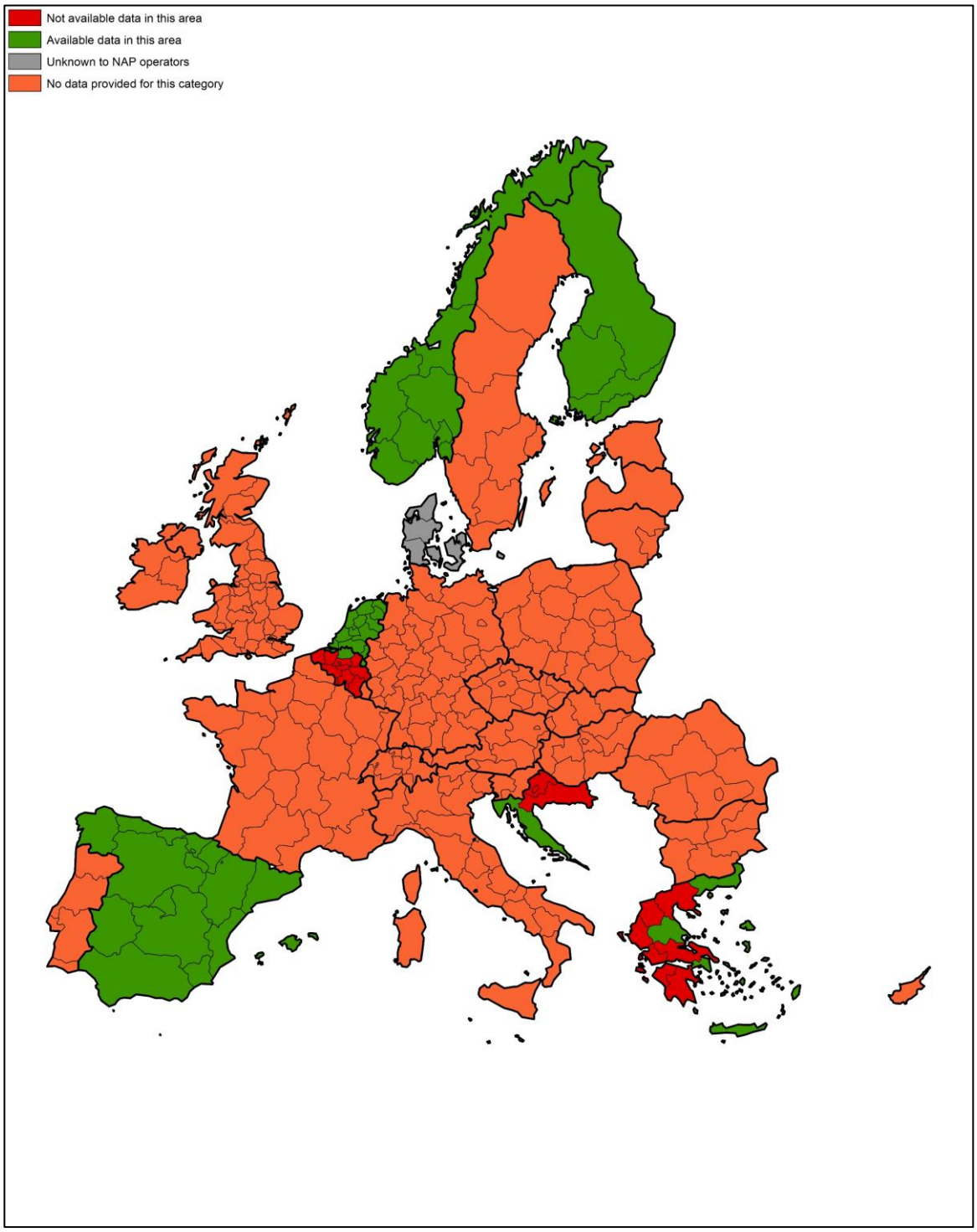
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – rail transport (e.g., operational calendar, mapping day types to calendar dates)



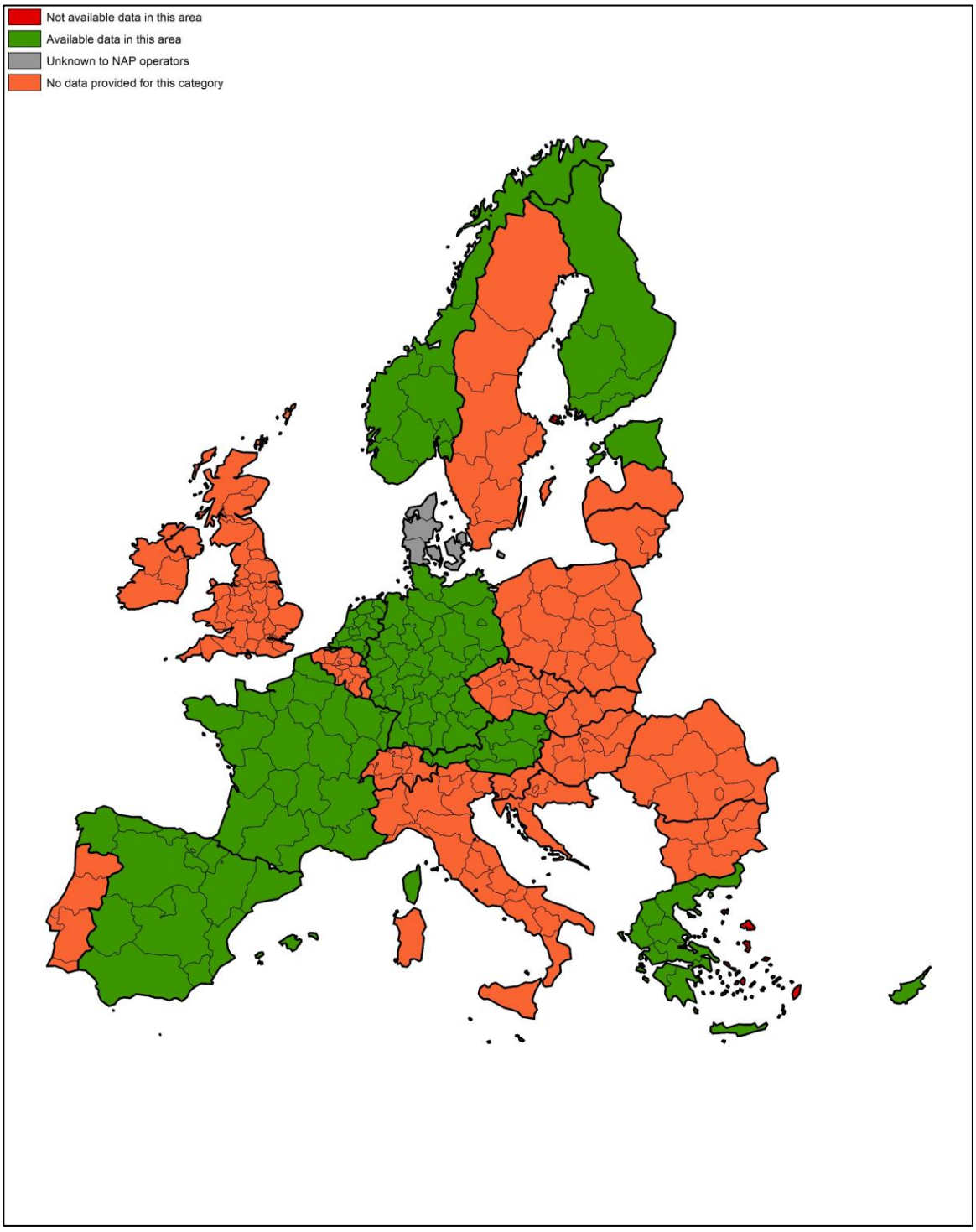
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – maritime transport (e.g., operational calendar, mapping day types to calendar dates)



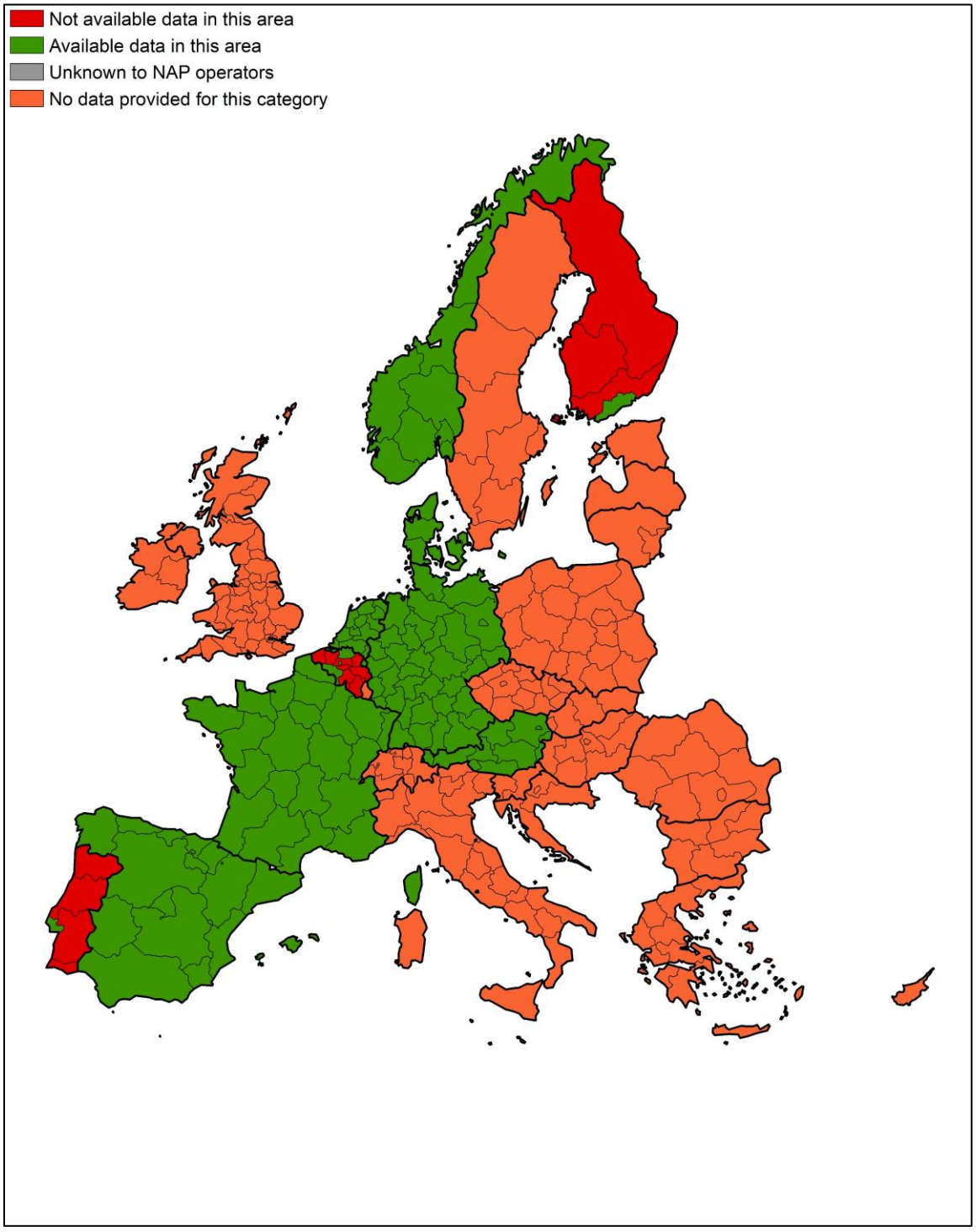
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – long-distance coach (e.g., operational calendar, mapping day types to calendar dates)



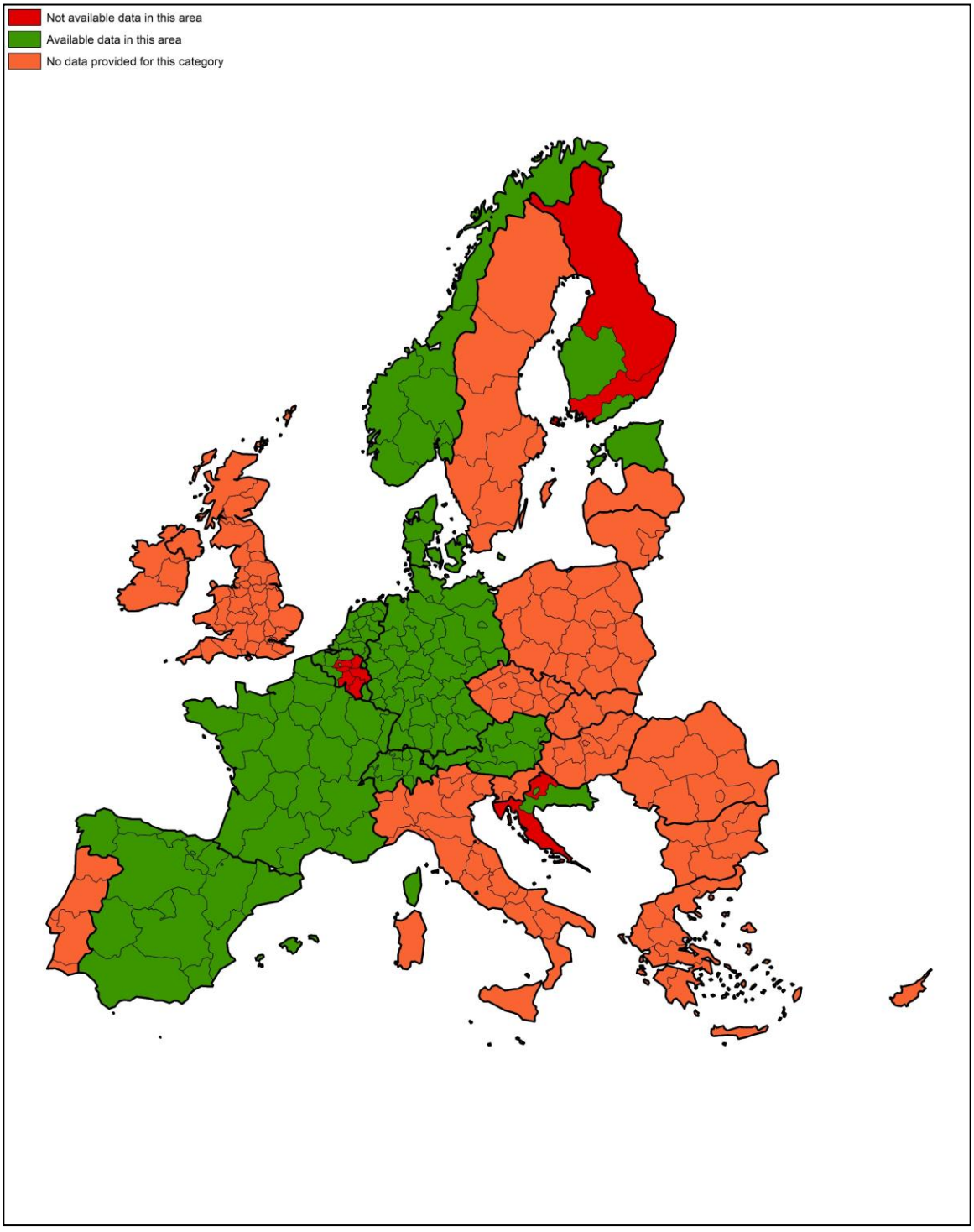
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – metro (e.g., operational calendar, mapping day types to calendar dates)



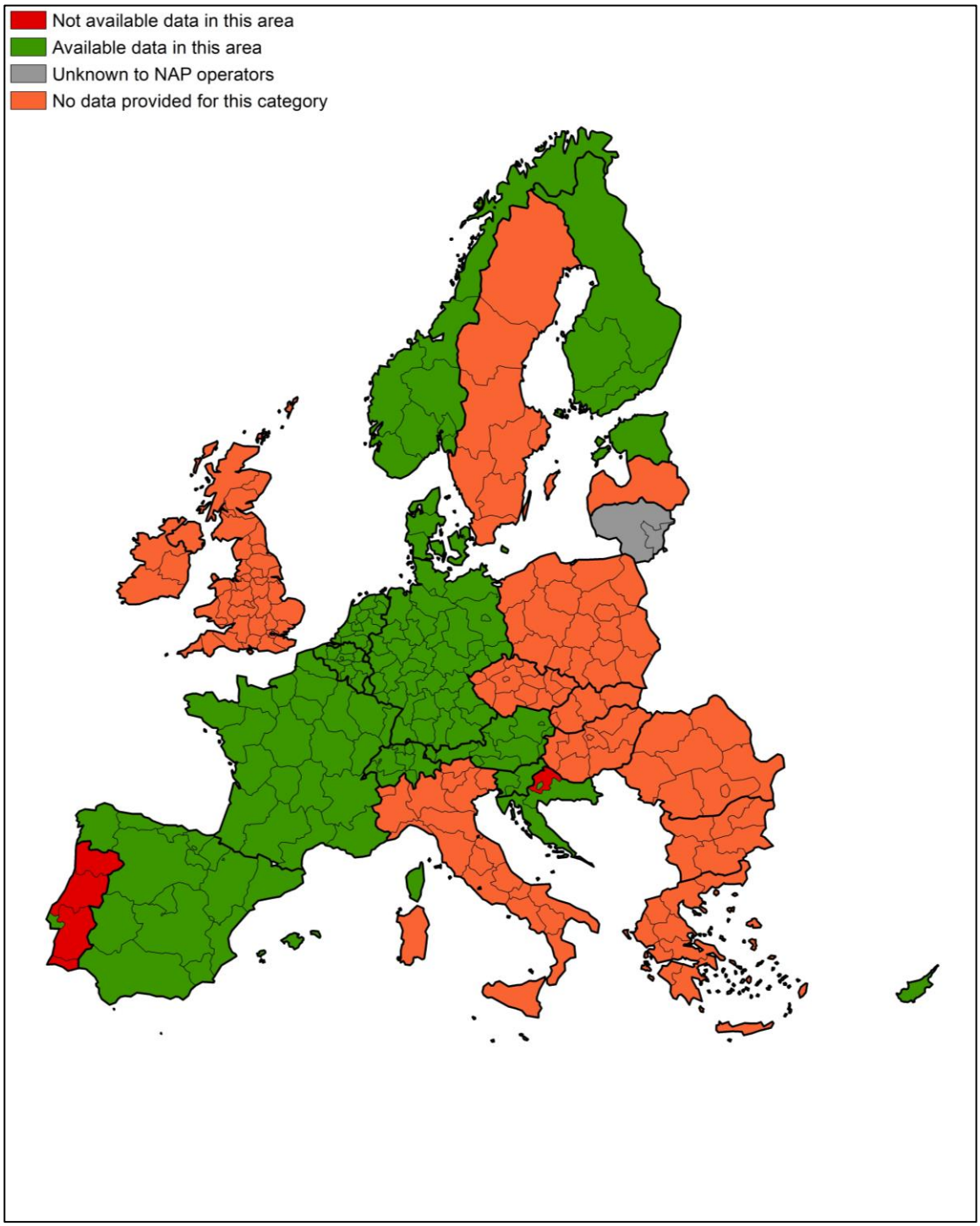
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – tram (e.g., operational calendar, mapping day types to calendar dates)



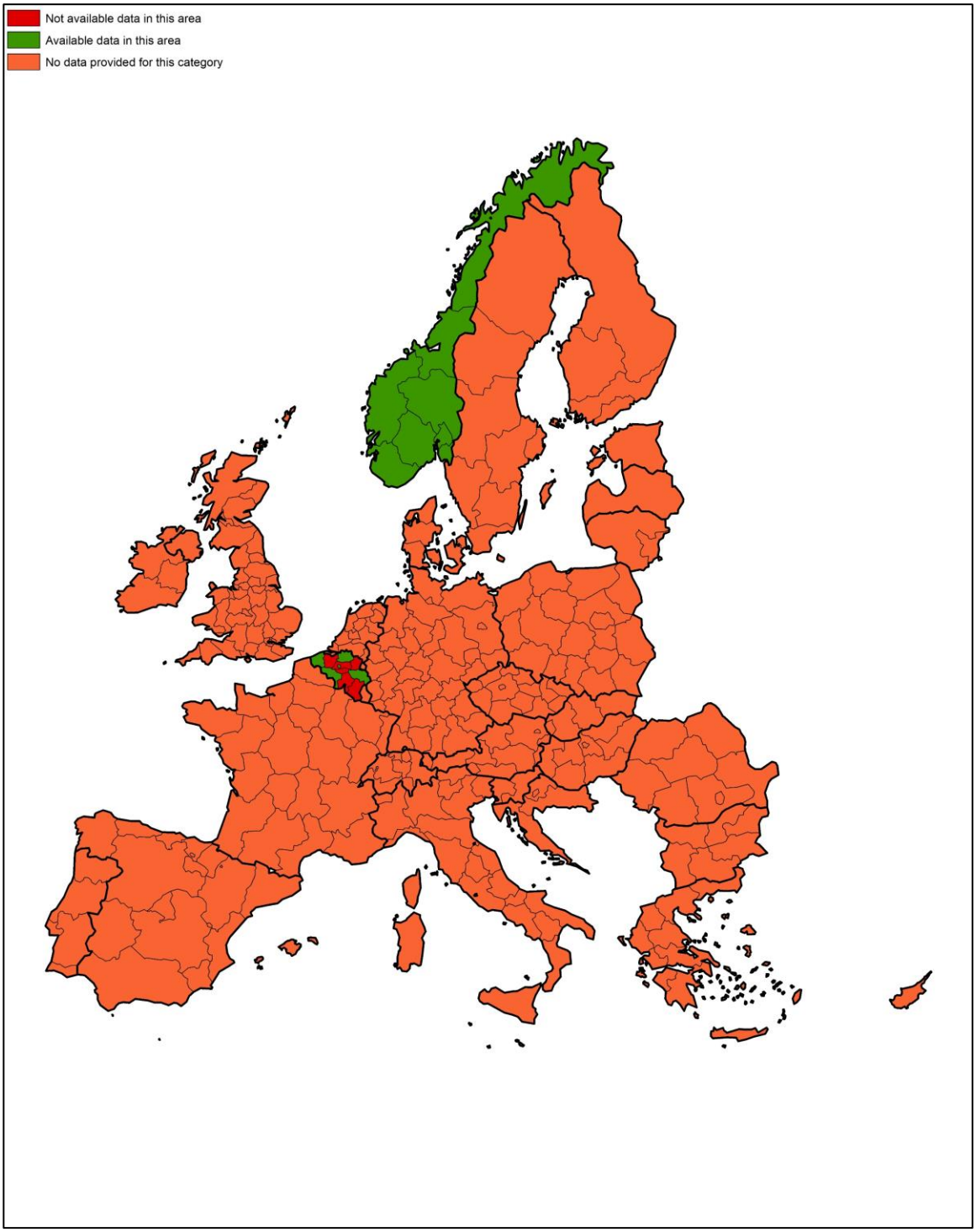
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – bus/trolley (e.g., operational calendar, mapping day types to calendar dates)



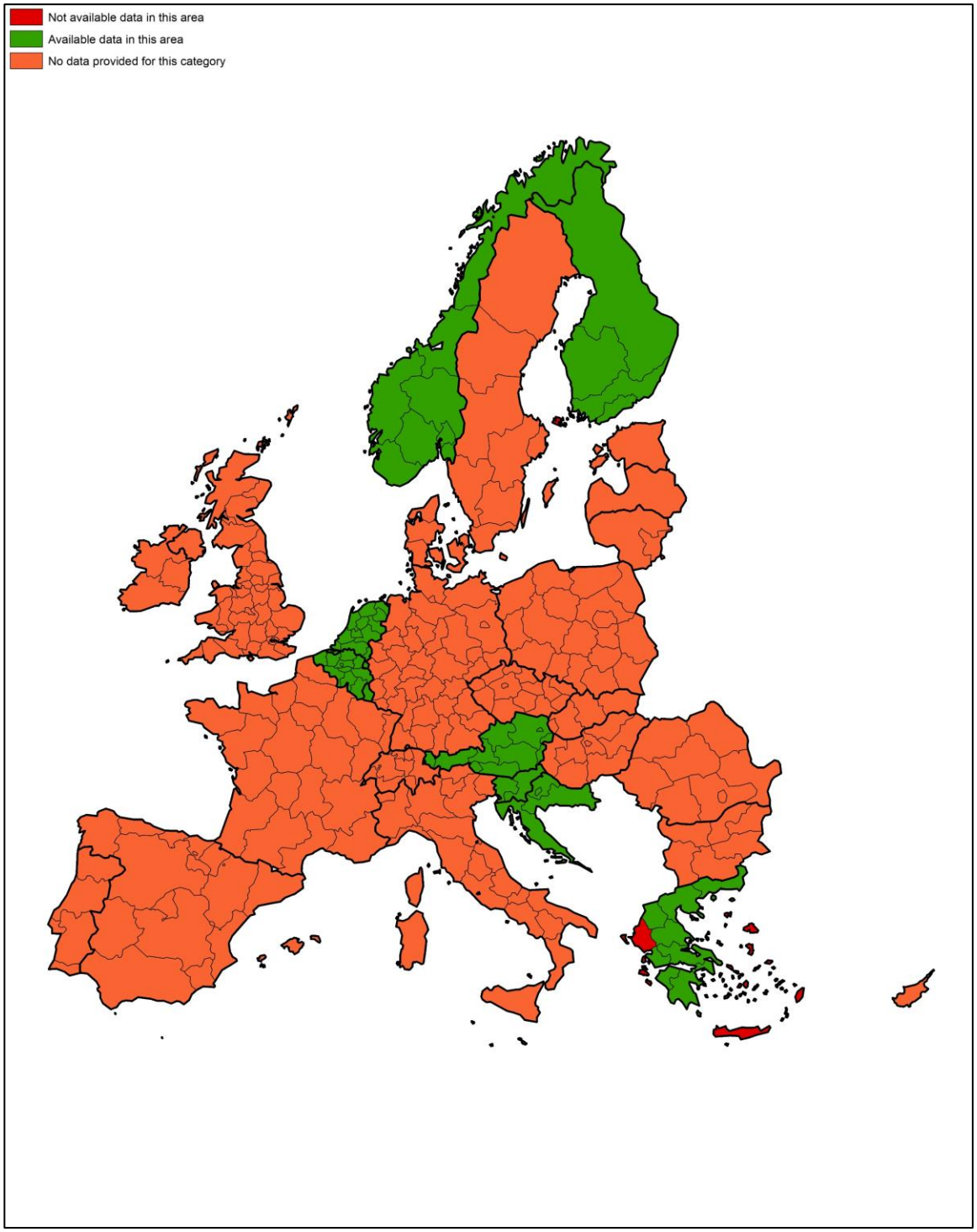
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – air transport (e.g., fare network data, standard fare structures)



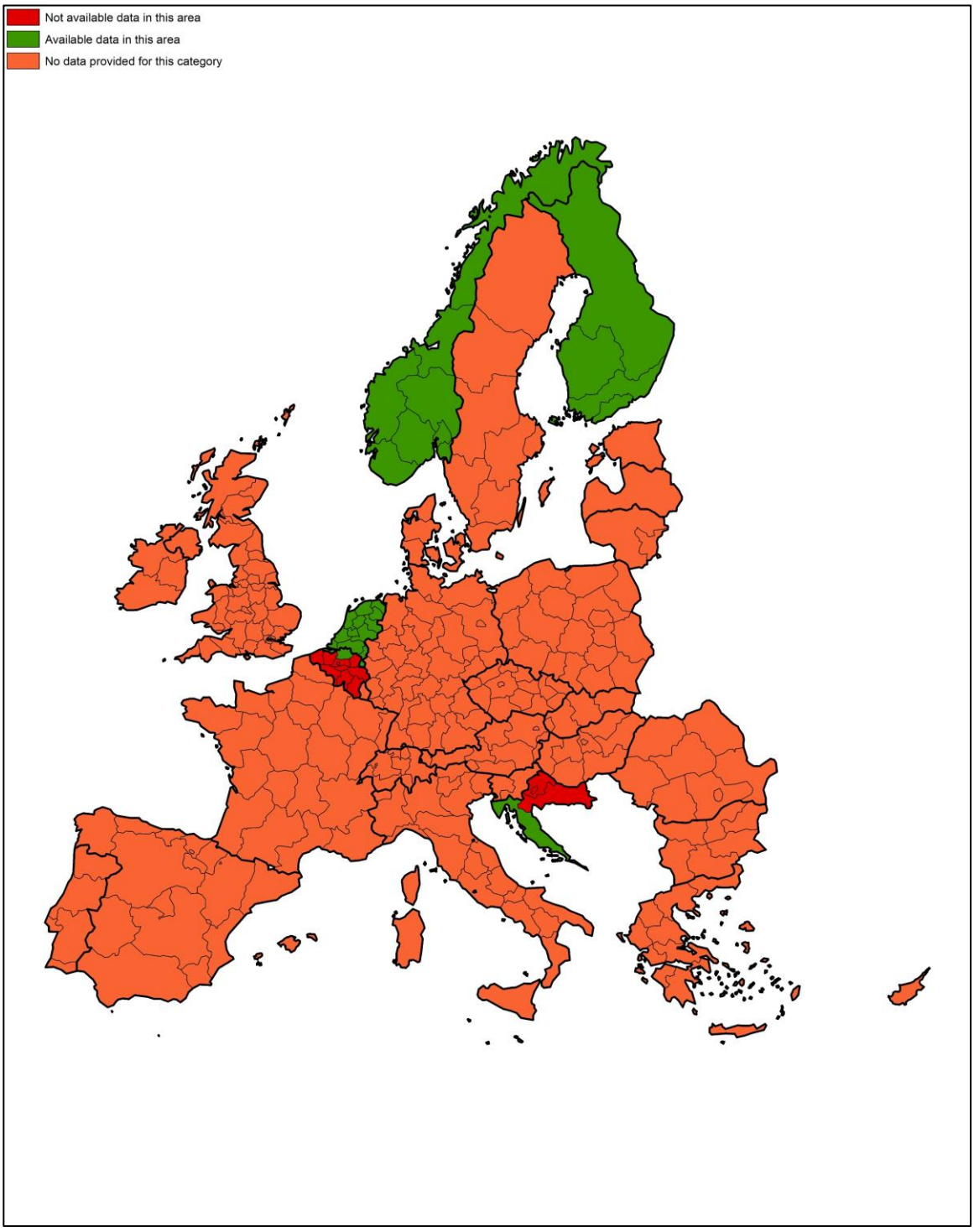
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – rail transport (e.g., fare network data, standard fare structures)



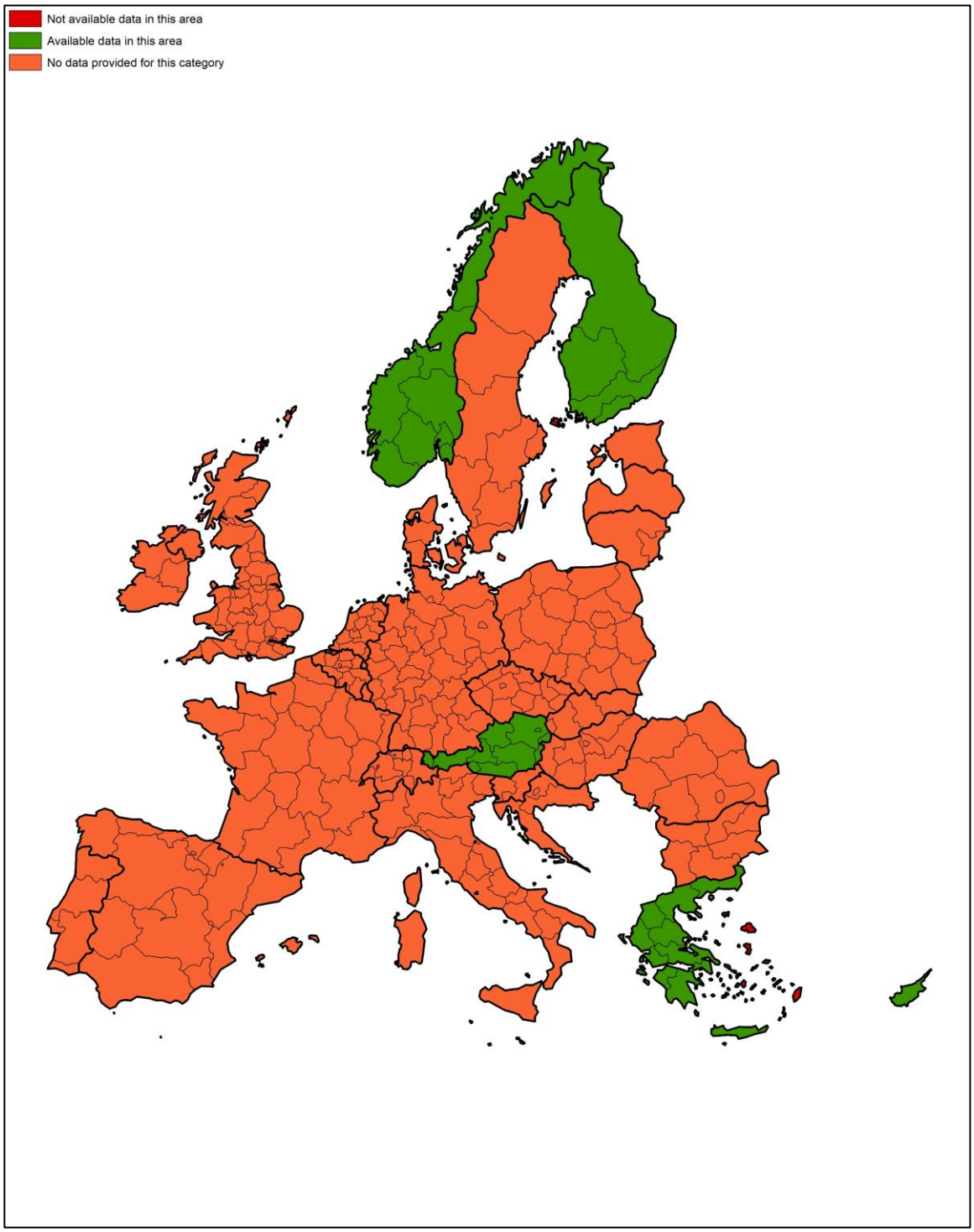
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – maritime transport (e.g., fare network data, standard fare structures)



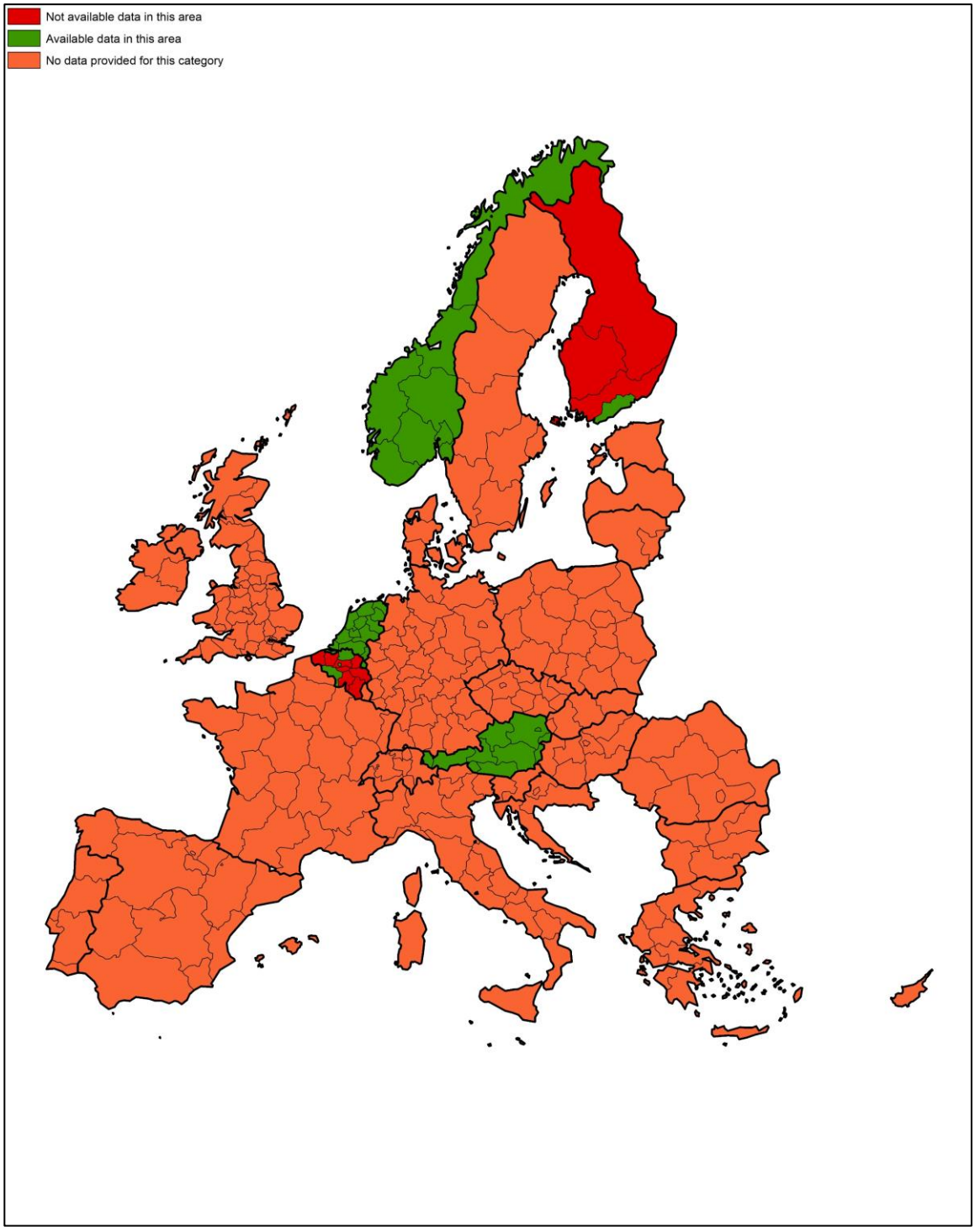
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – long-distance coach (e.g., fare network data, standard fare structures)



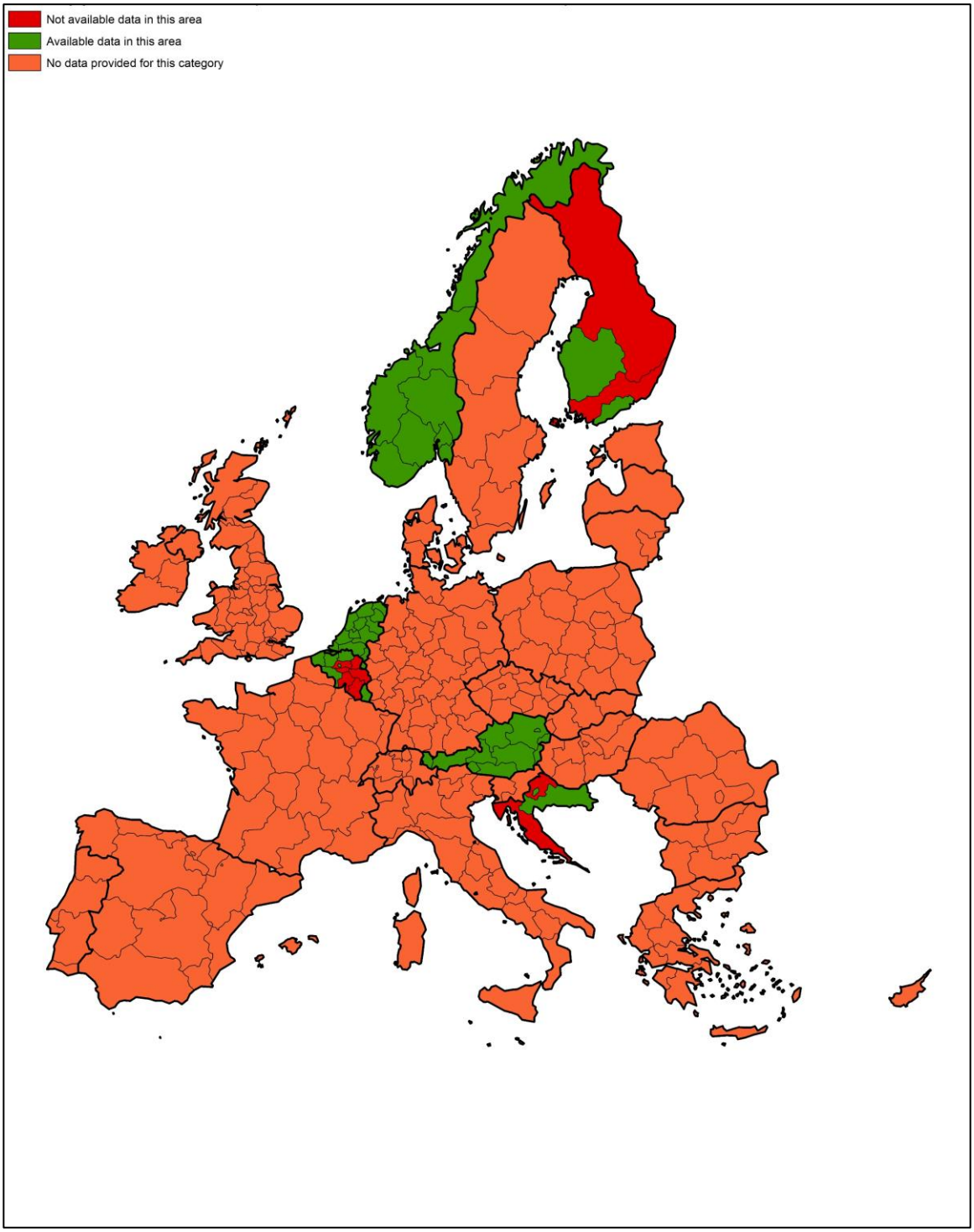
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – metro (e.g., fare network data, standard fare structures)



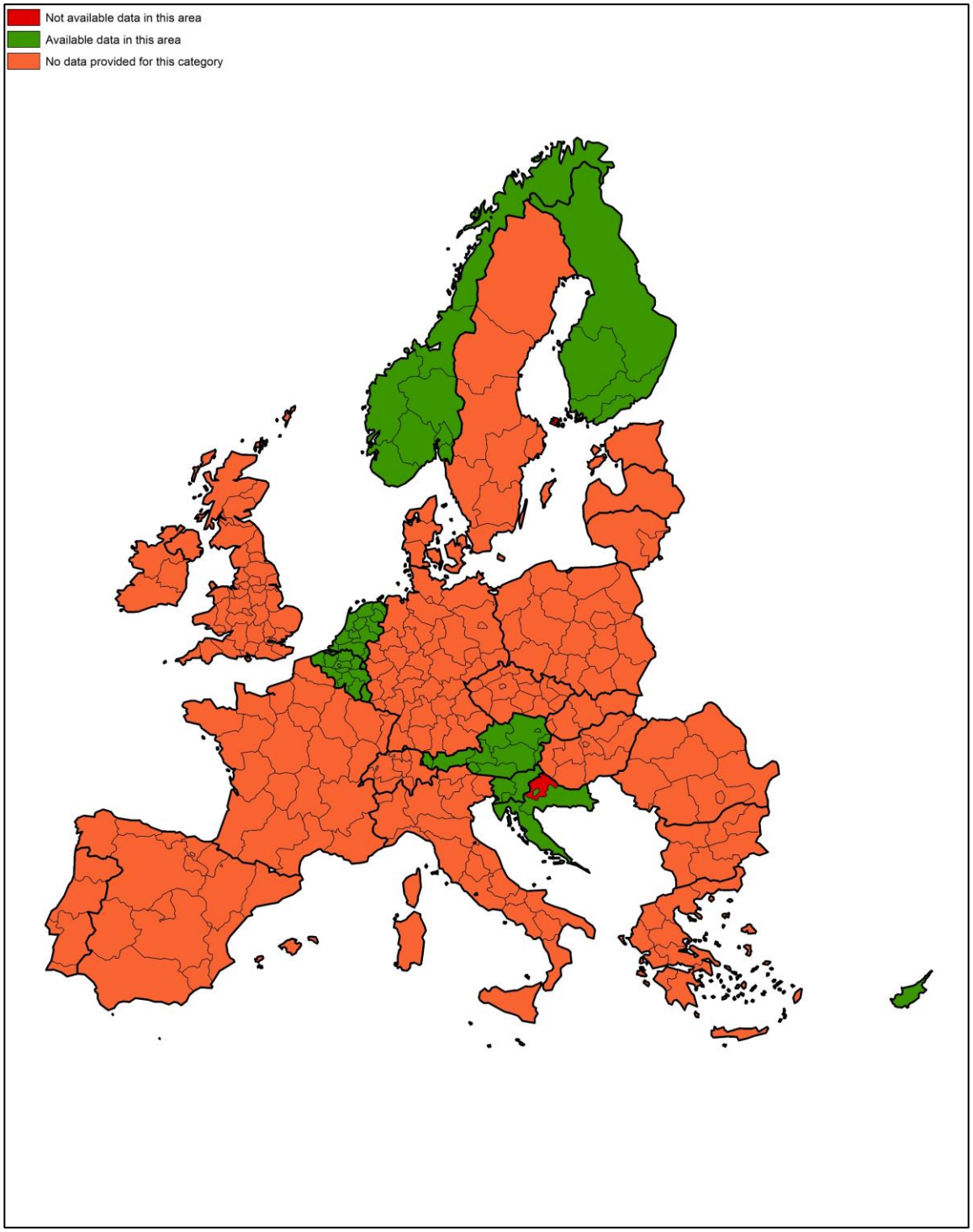
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – tram (e.g., fare network data, standard fare structures)



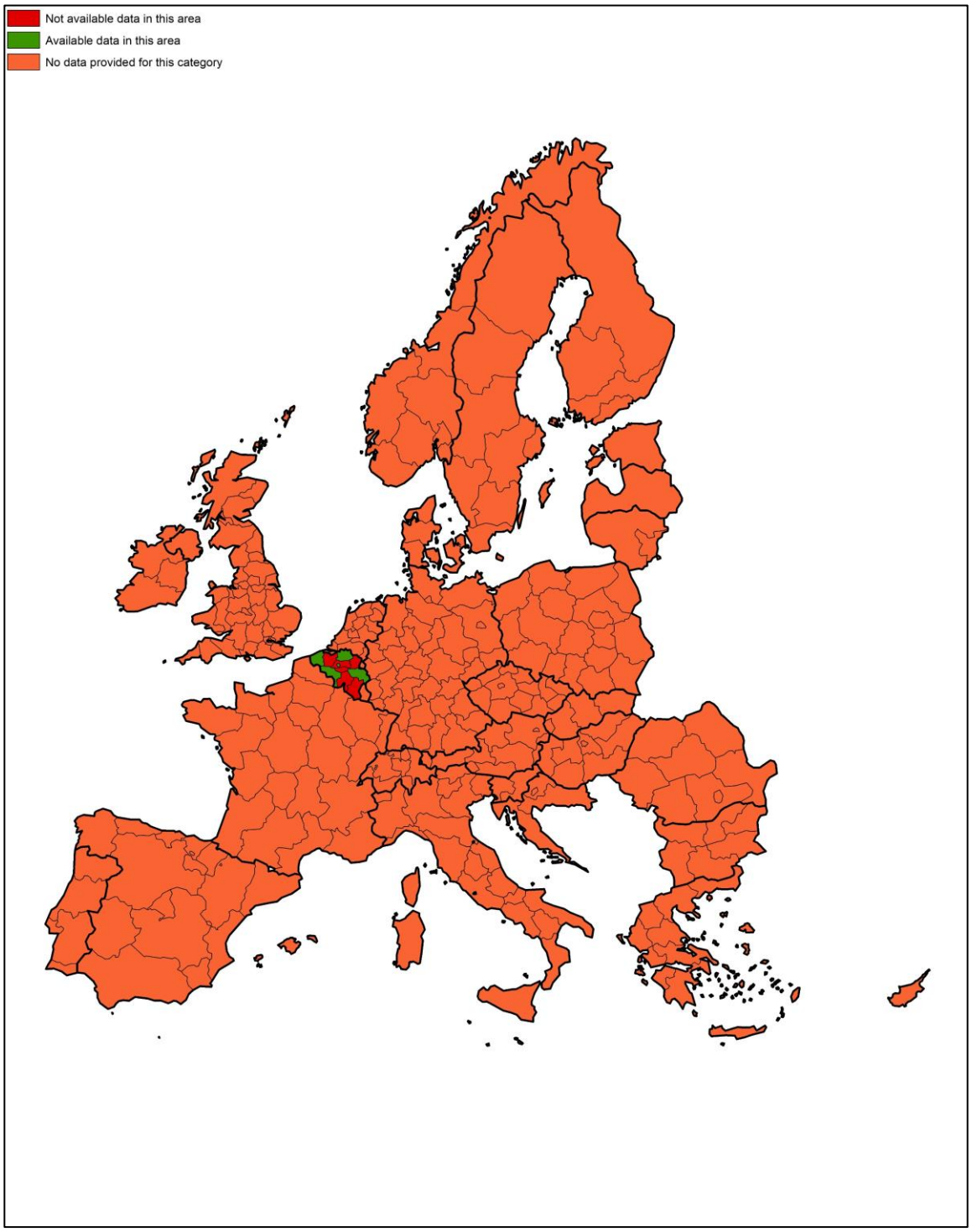
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – bus/trolley (e.g., fare network data, standard fare structures)



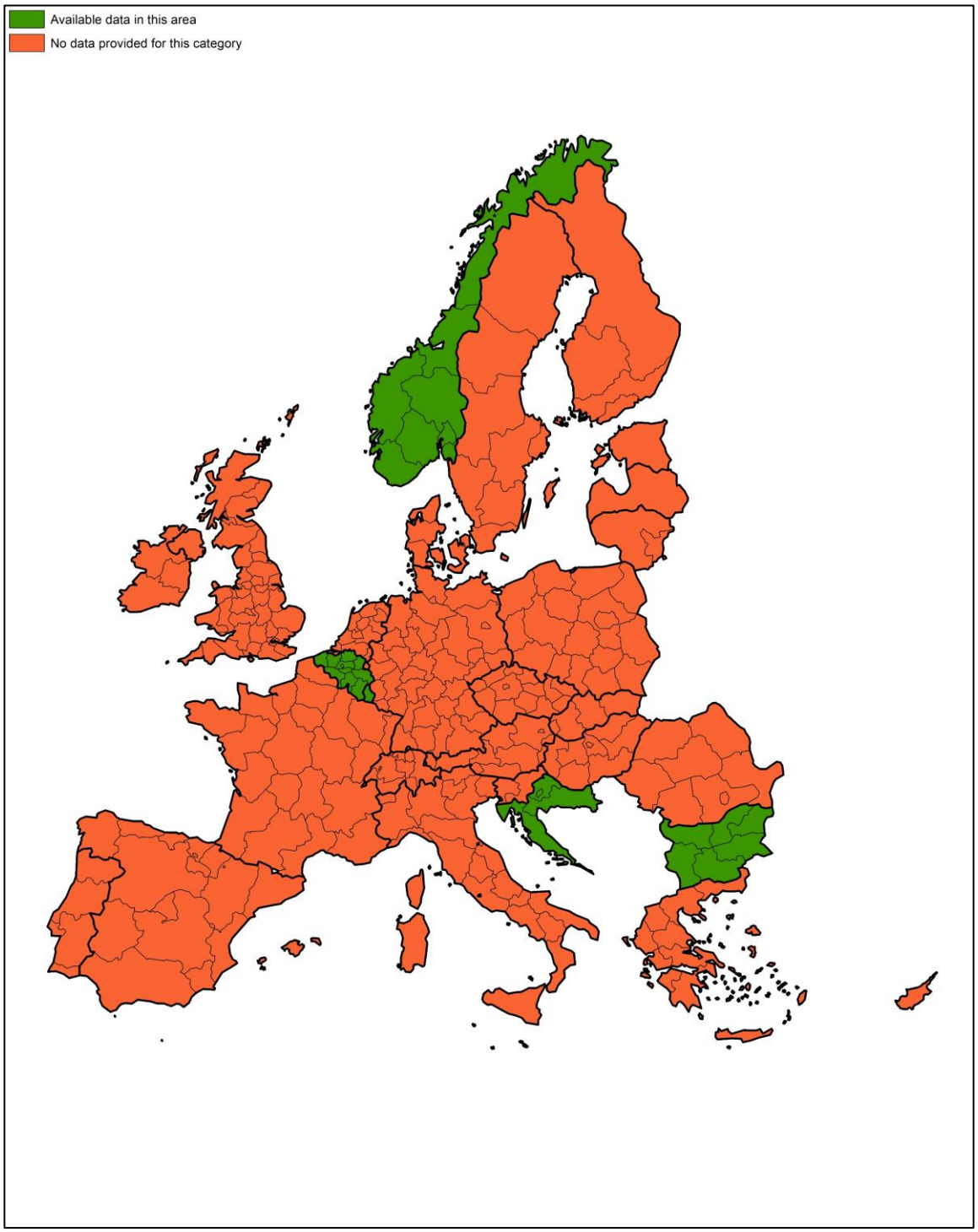
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static auxiliary information – air transport (e.g., vehicle facilities, such as classes of carriage, on-board Wi-Fi)



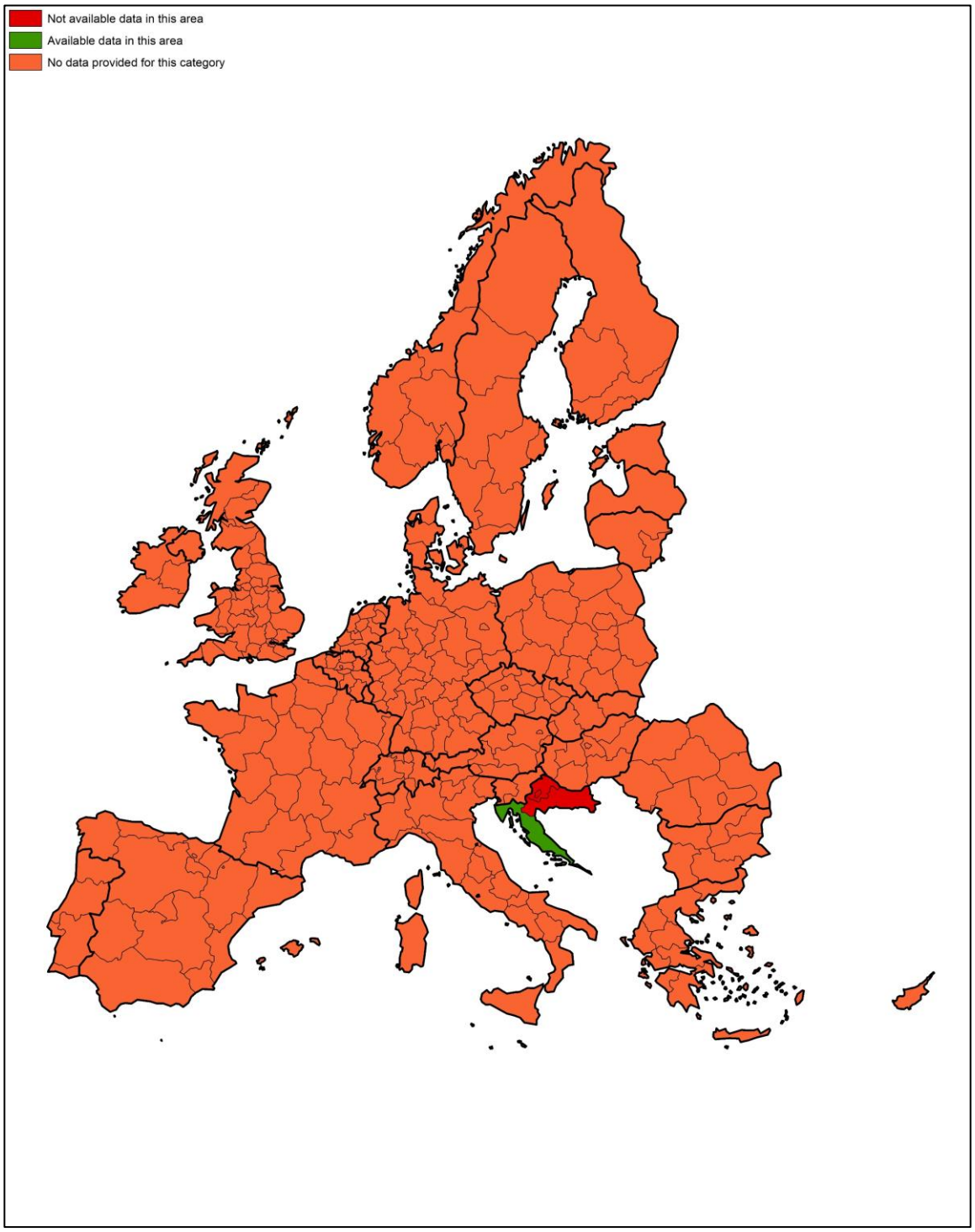
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static auxiliary information – rail transport (e.g., vehicle facilities, such as classes of carriage, on-board Wi-Fi)



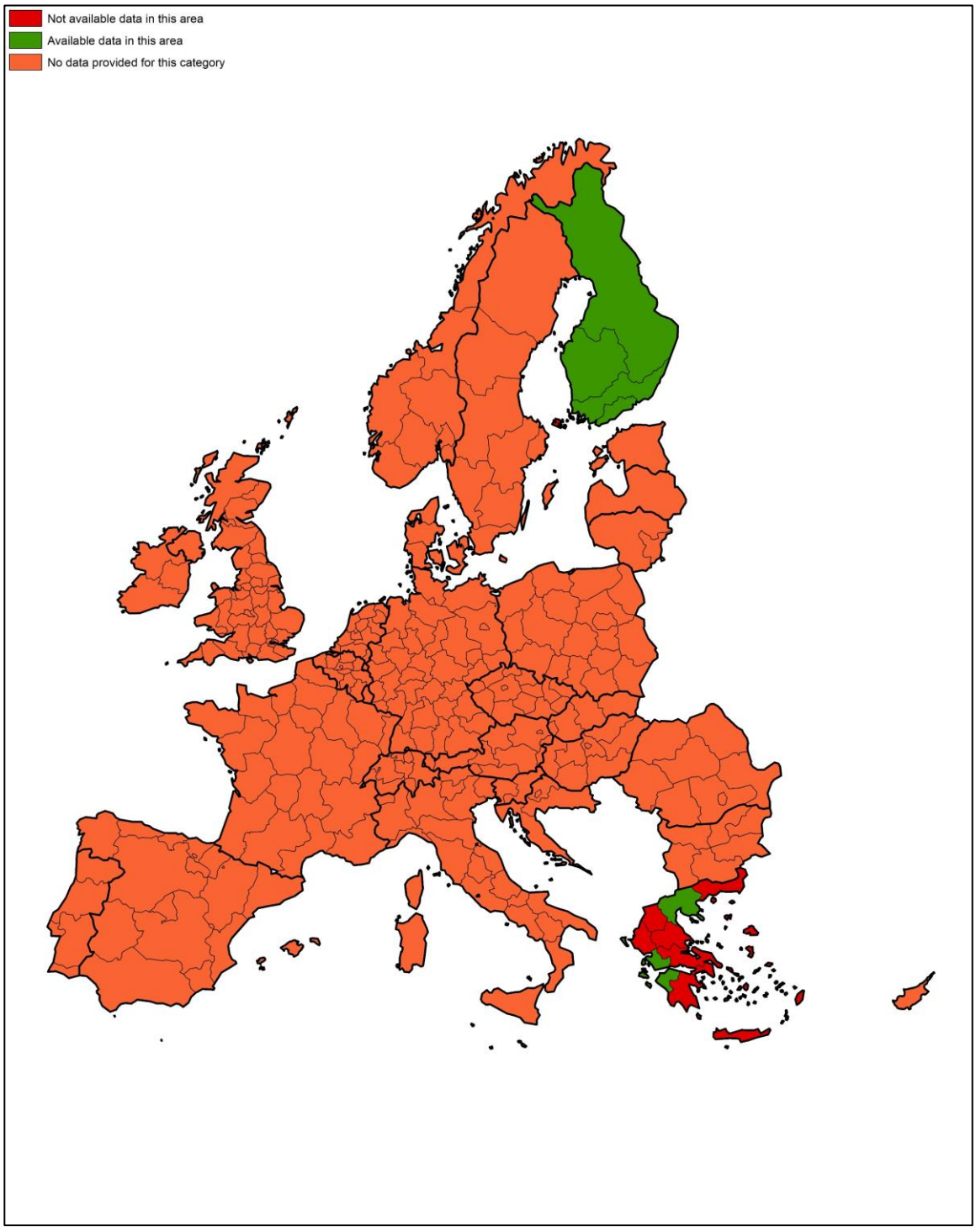
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static auxiliary information – maritime transport (e.g., vehicle facilities, such as classes of carriage, on-board Wi-Fi)



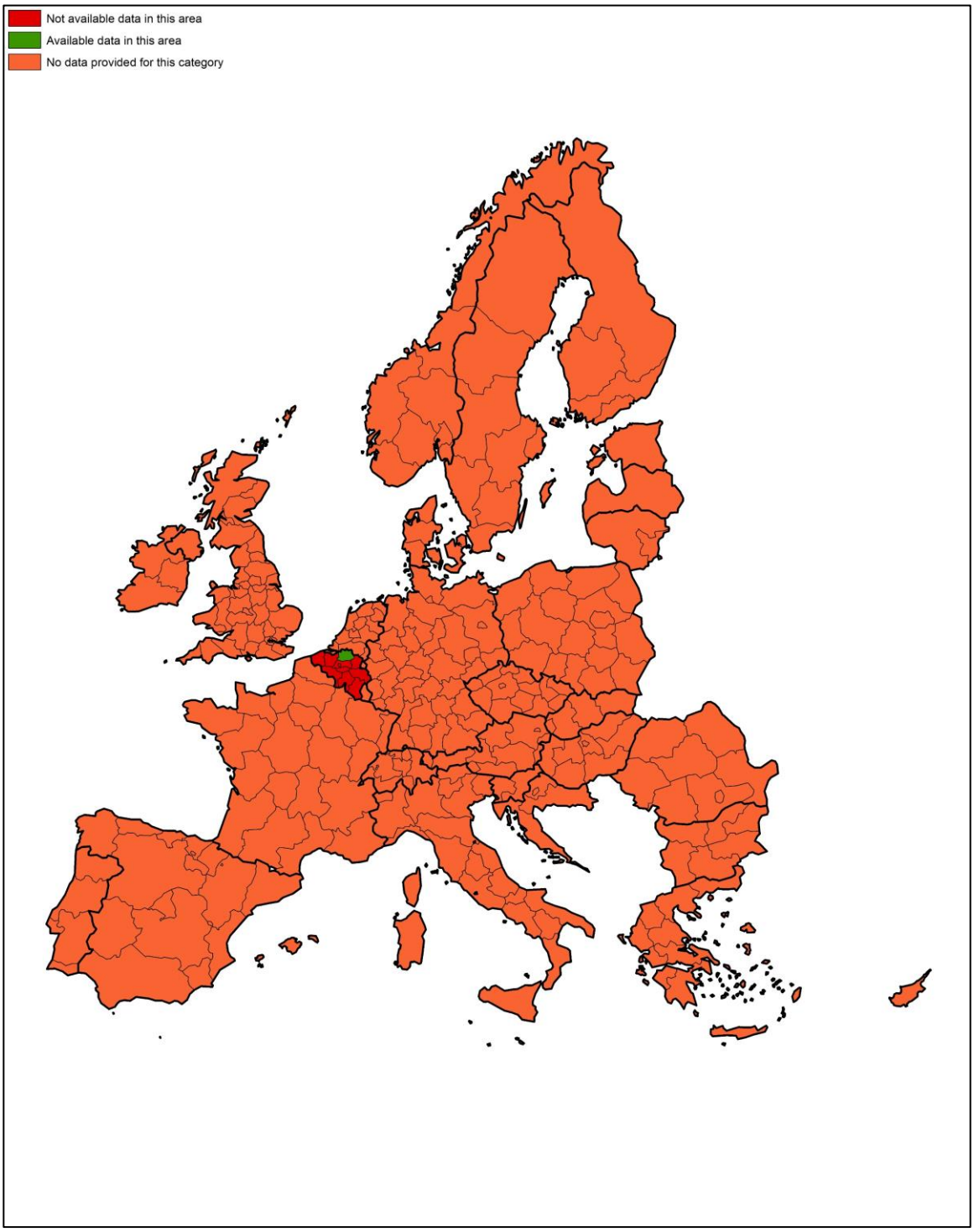
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static auxiliary information – long-distance coach (e.g., vehicle facilities, such as classes of carriage, on-board Wi-Fi)



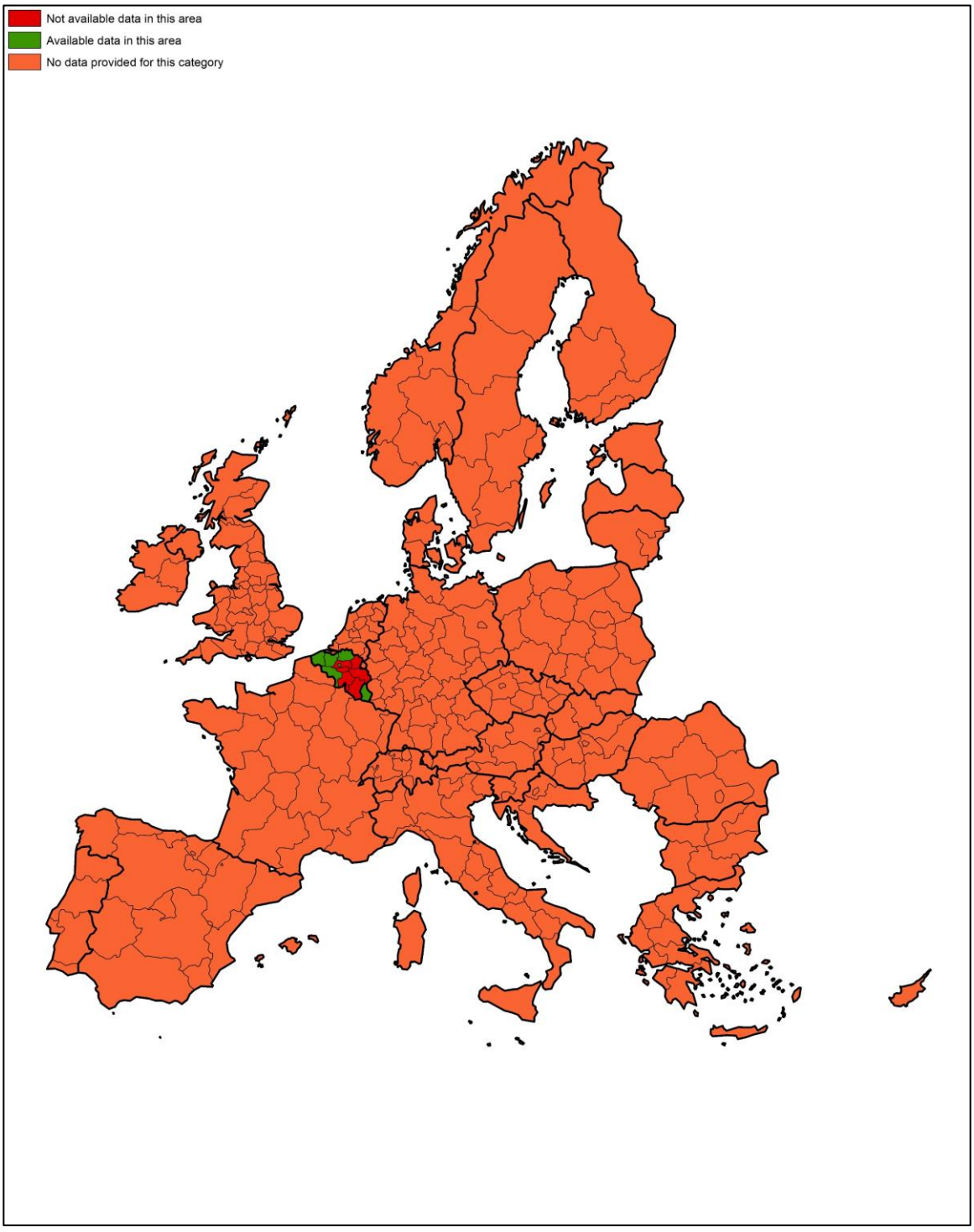
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static auxiliary information – metro (e.g., vehicle facilities, such as classes of carriage, on-board Wi-Fi)



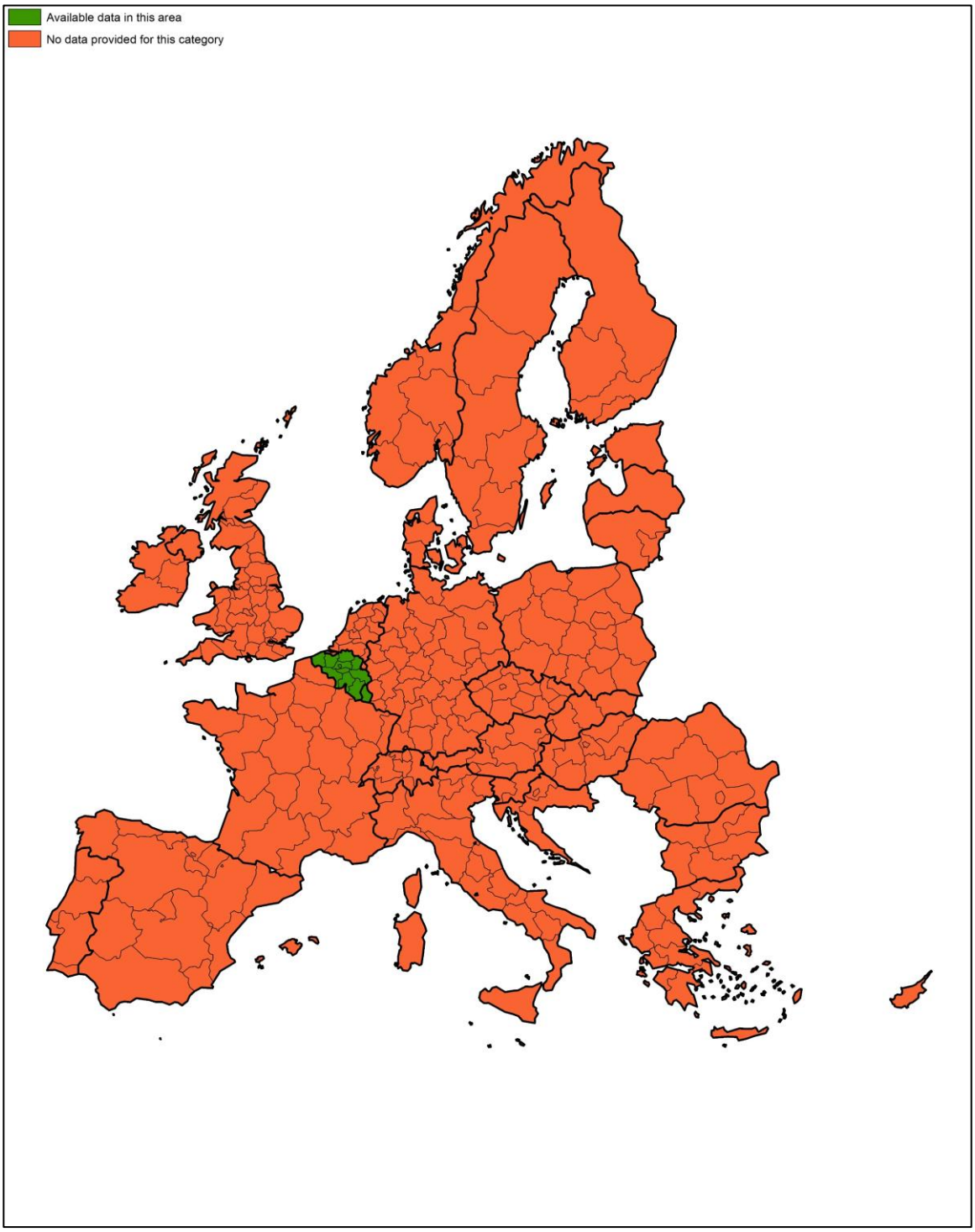
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static auxiliary information – tram (e.g., vehicle facilities, such as classes of carriage, on-board Wi-Fi)



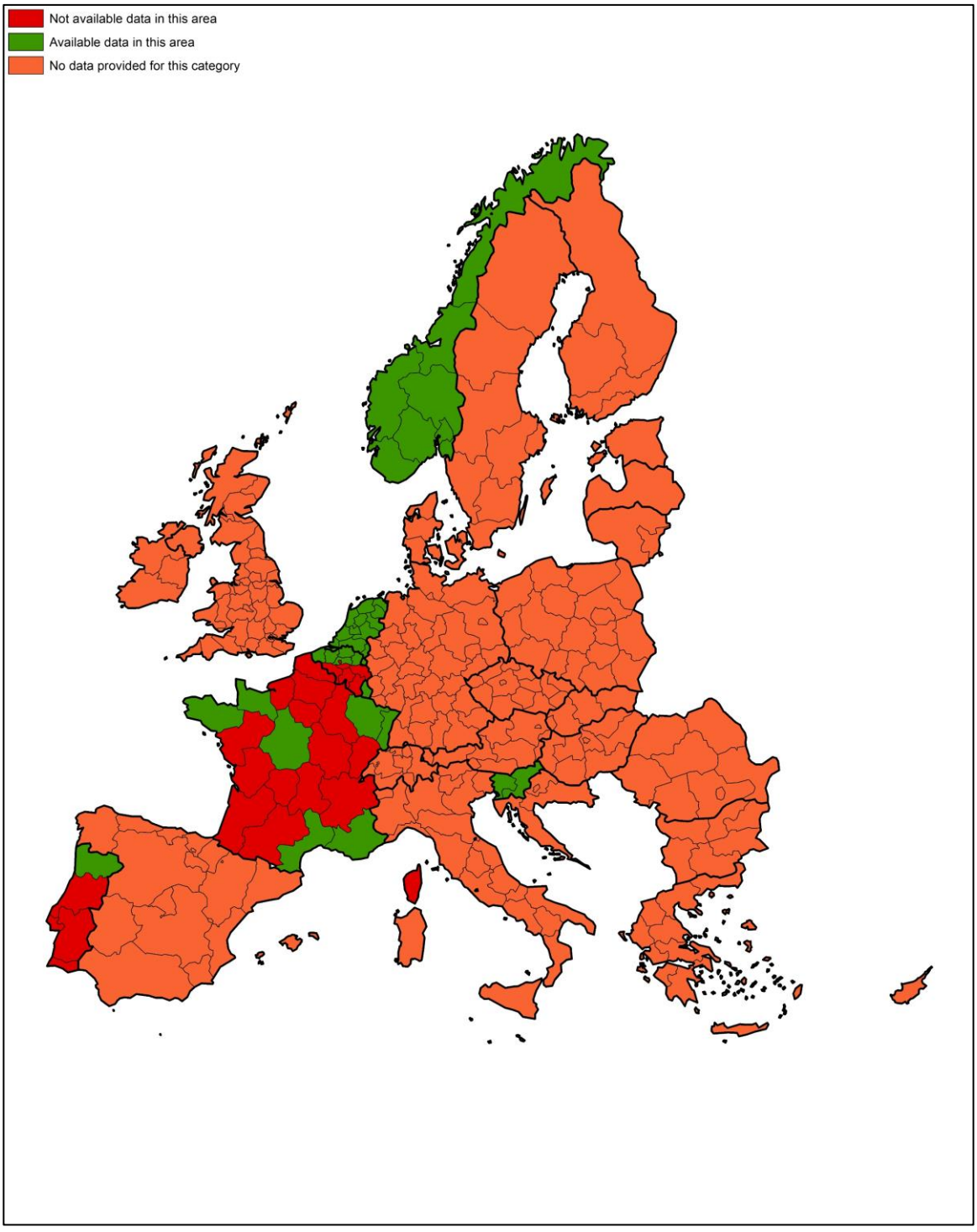
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static auxiliary information – bus/trolley (e.g., vehicle facilities, such as classes of carriage, on-board Wi-Fi)



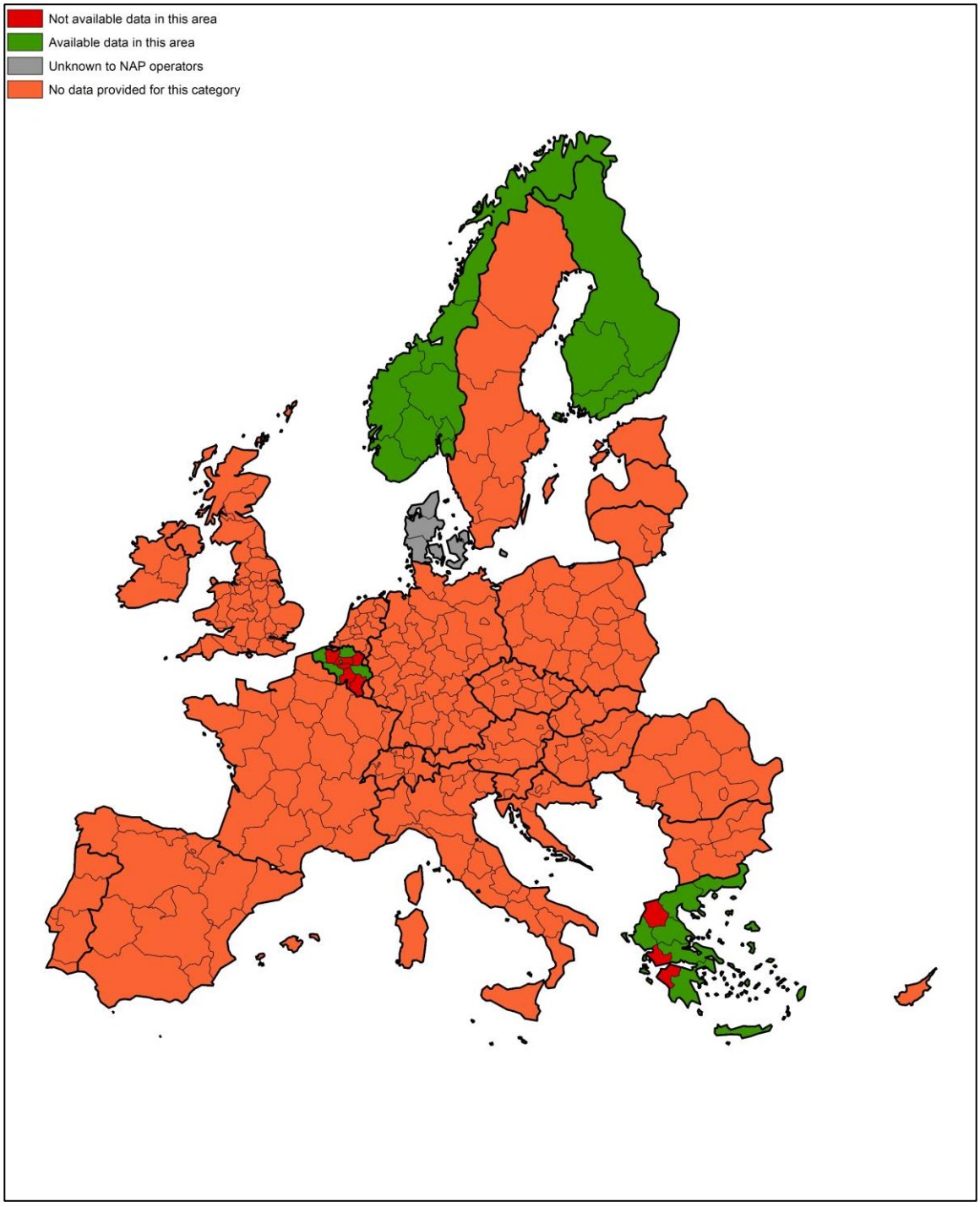
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static trip plan information – cycling (e.g., detailed cycle network attributes, such as surface quality, side-by-side cycling, shared surface, on/off road, scenic route, 'walk only', turn/access restrictions)



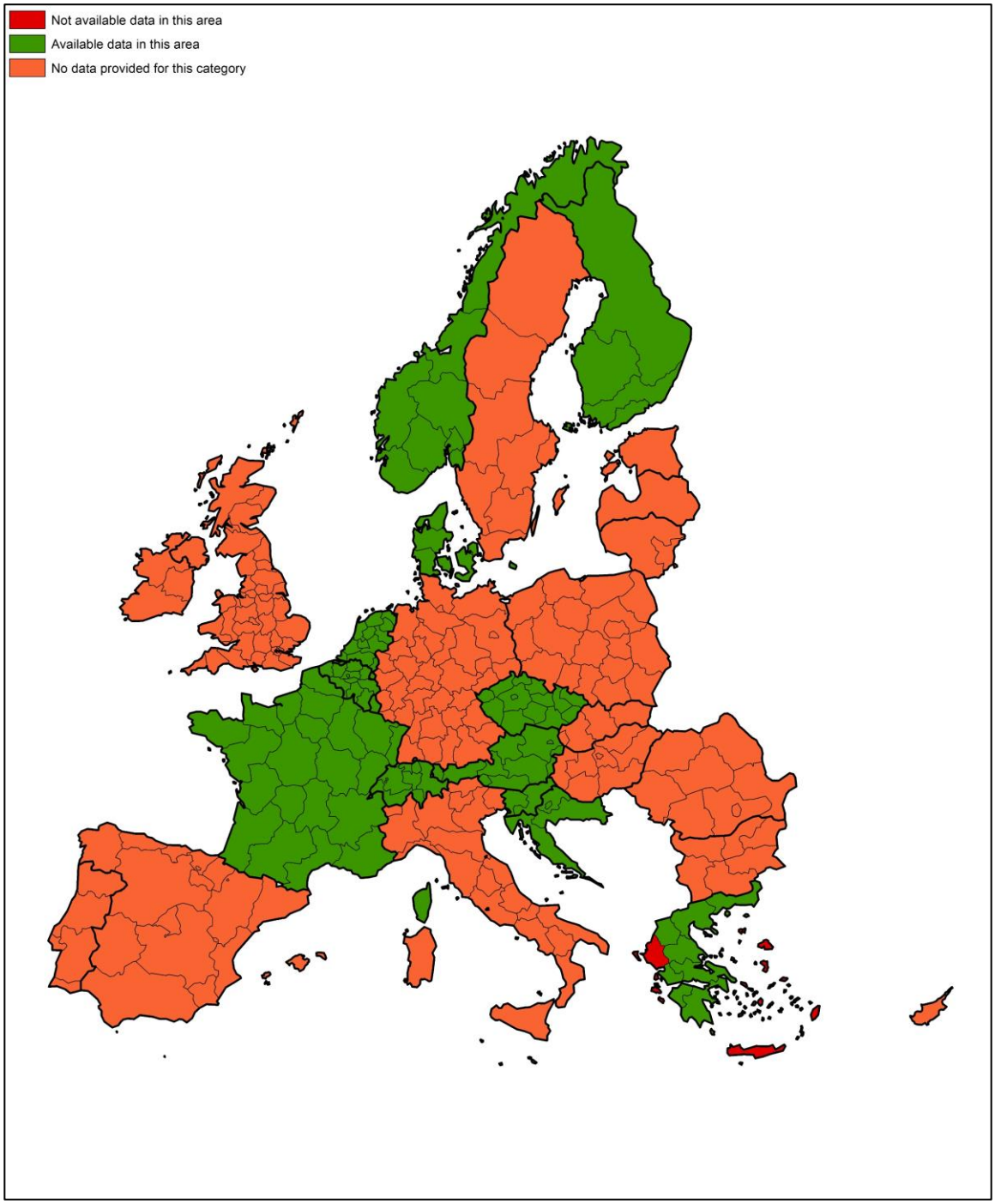
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Data for the provision of static information for trip plan computation – air transport (e.g., connection links between interchanges, transfer times, network topology, routes/lines topology, transport operators, timetables, planned interchanges, hours of operation, facilities of access nodes, etc.)



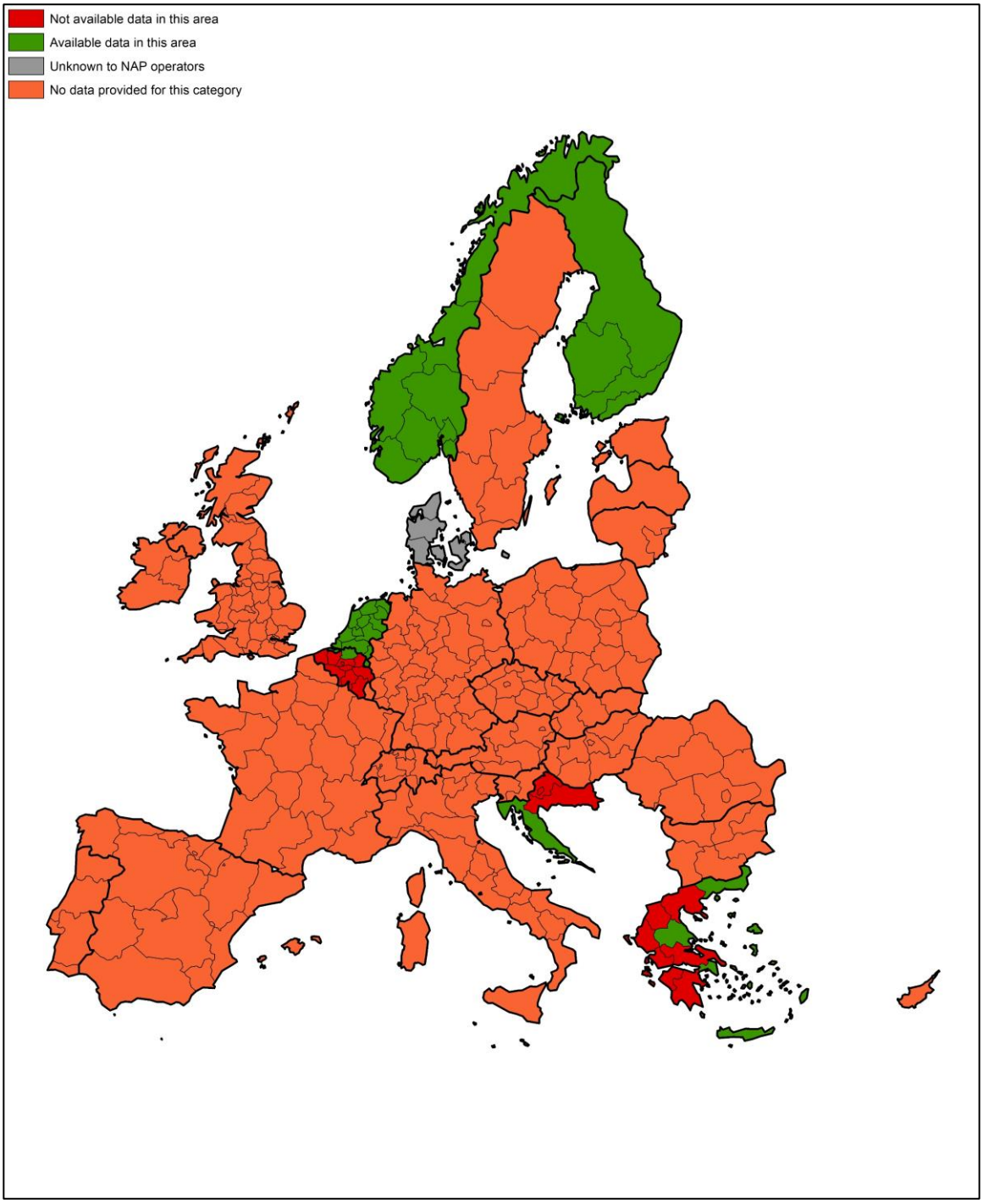
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Data for the provision of static information for trip plan computation – rail transport (e.g., connection links between interchanges, transfer times, network topology, routes/lines topology, transport operators, timetables, planned interchanges, hours of operation, facilities of access nodes, etc.)



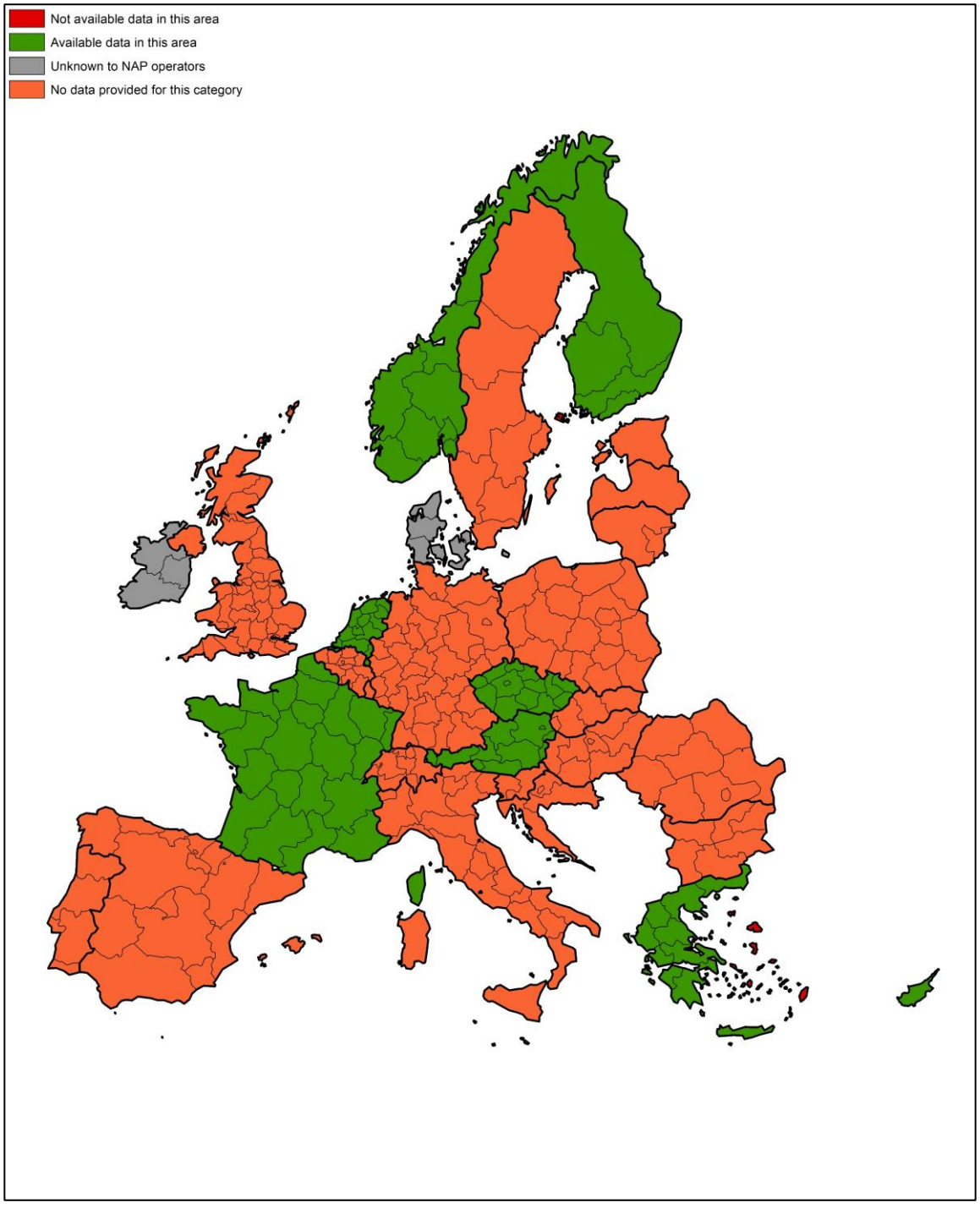
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Data for the provision of static information for trip plan computation – maritime transport (e.g., connection links between interchanges, transfer times, network topology, routes/lines topology, transport operators, timetables, planned interchanges, hours of operation, facilities of access nodes, etc.)



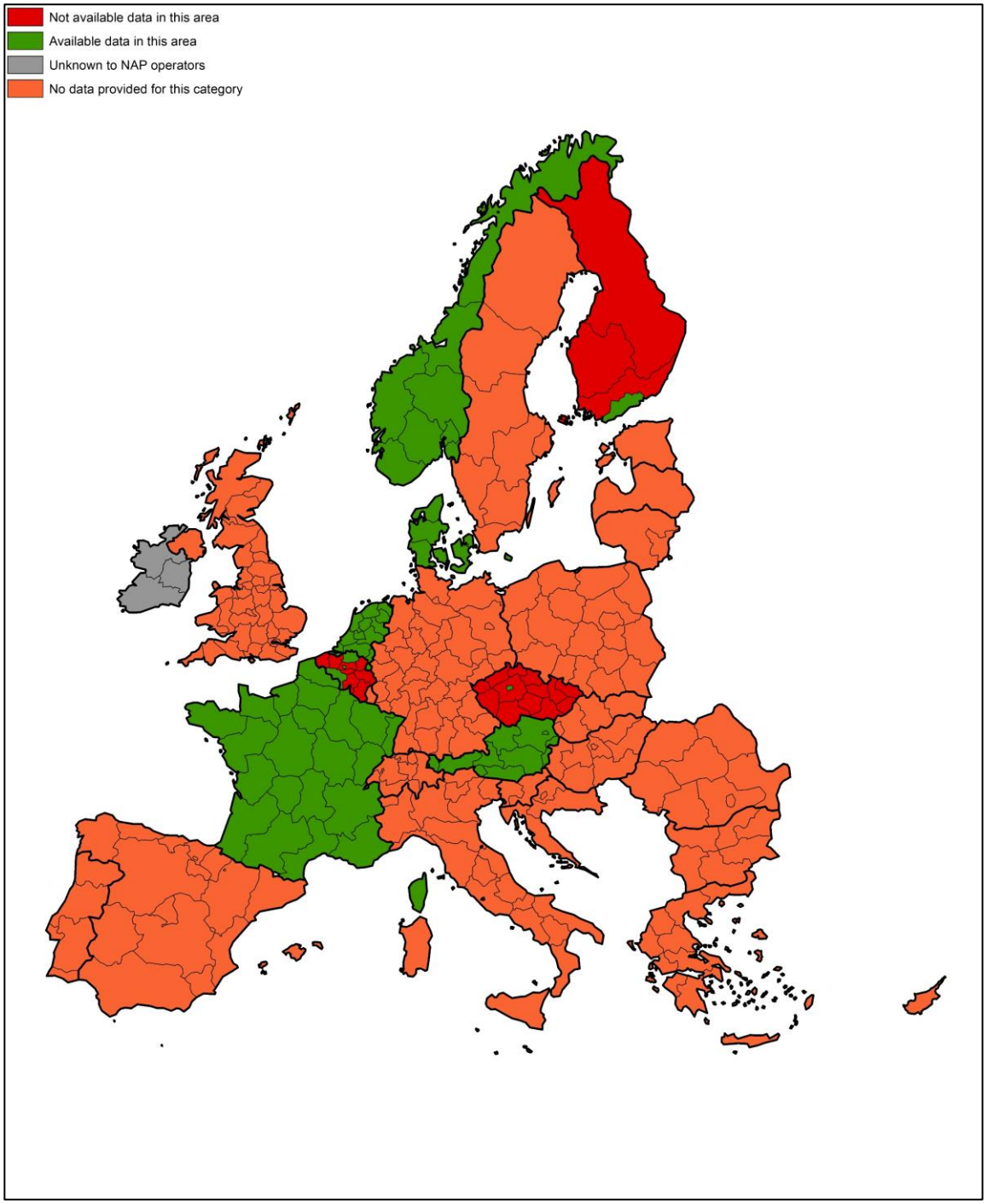
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Data for the provision of static information for trip plan computation – long-distance coach (e.g., connection links between interchanges, transfer times, network topology, routes/lines topology, transport operators, timetables, planned interchanges, hours of operation, facilities of access nodes, etc.)



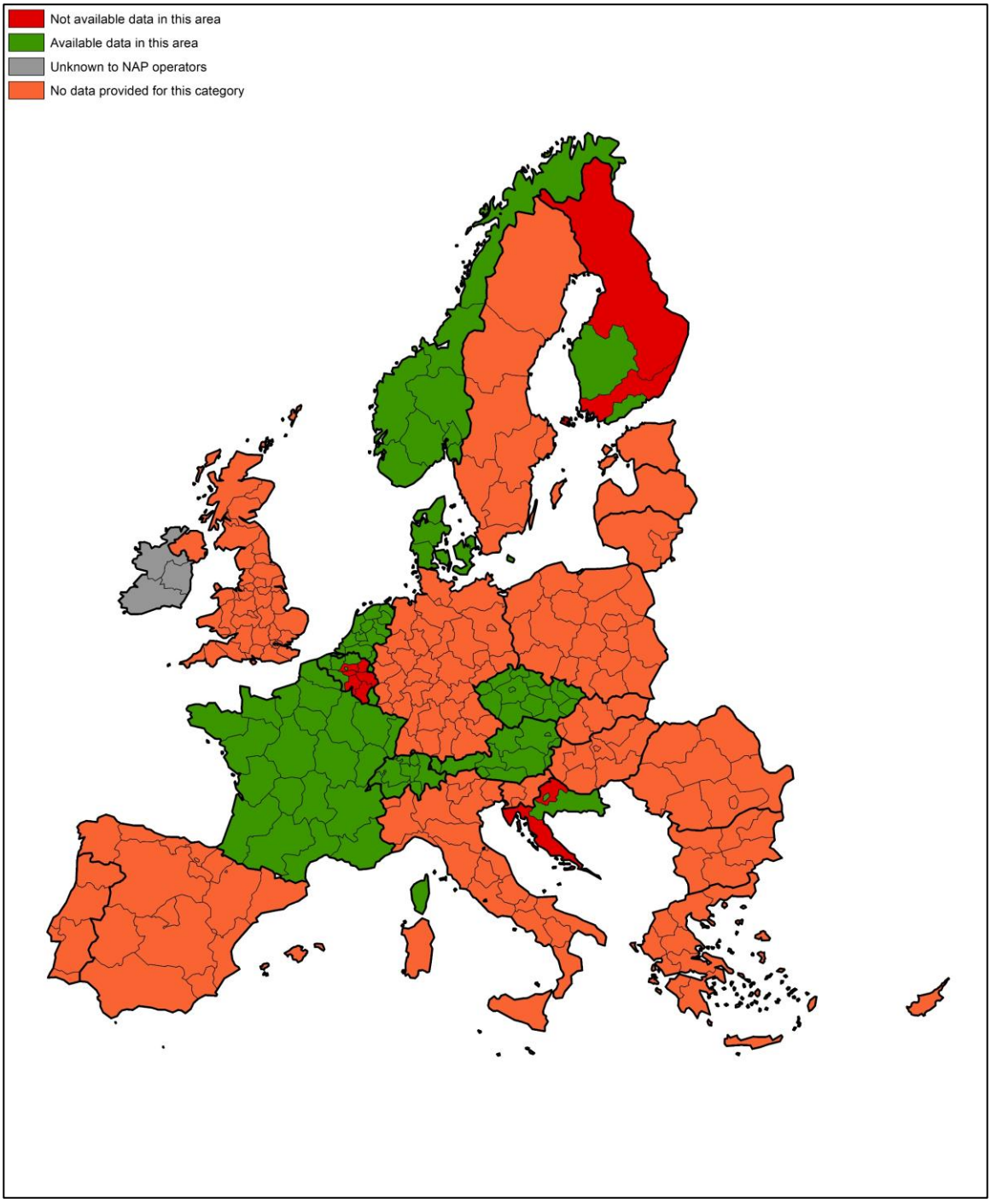
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Data for the provision of static information for trip plan computation – metro (e.g., connection links between interchanges, transfer times, network topology, routes/lines topology, transport operators, timetables, planned interchanges, hours of operation, facilities of access nodes, etc.)



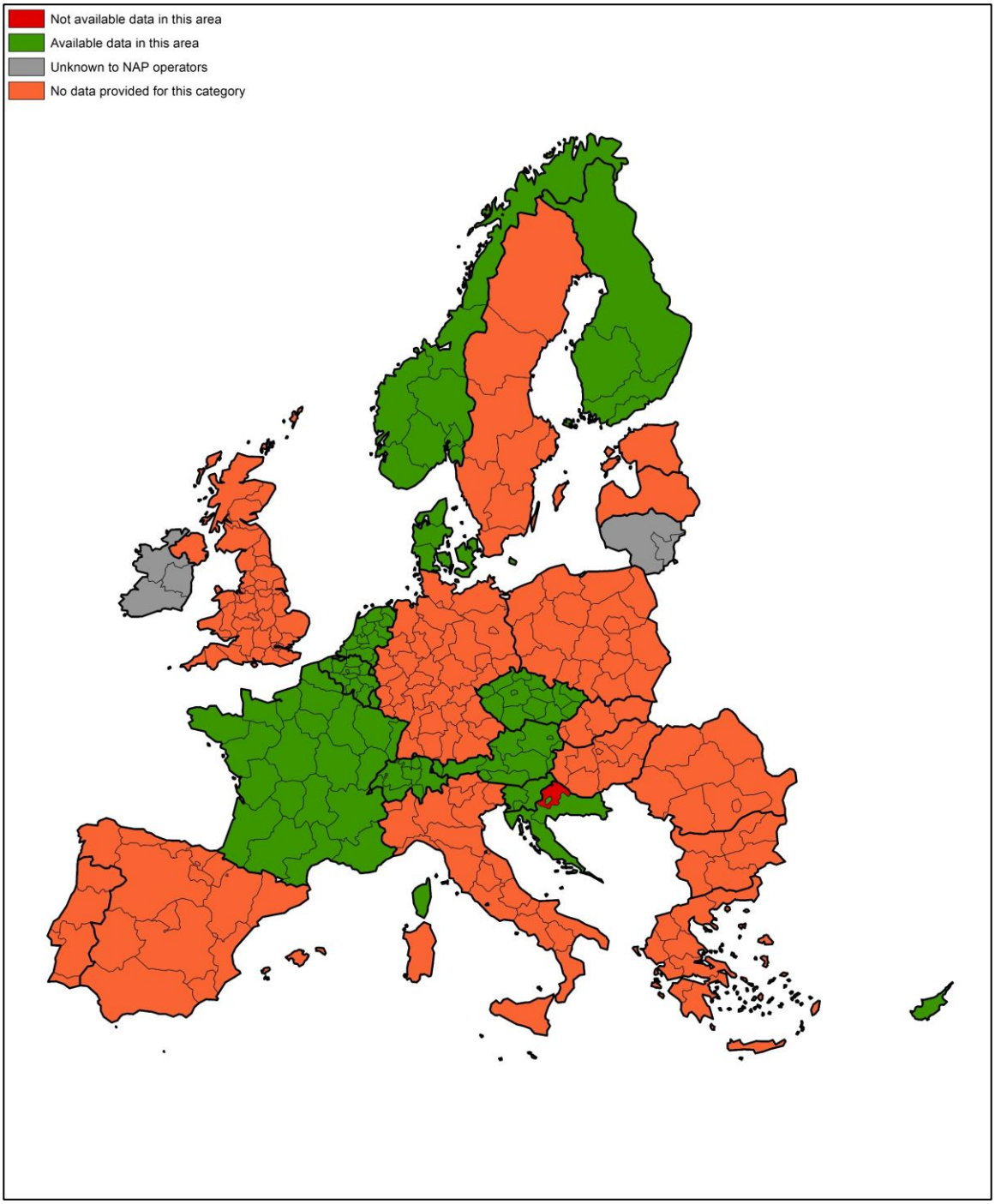
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Data for the provision of static information for trip plan computation – tram (e.g., connection links between interchanges, transfer times, network topology, routes/lines topology, transport operators, timetables, planned interchanges, hours of operation, facilities of access nodes, etc.)



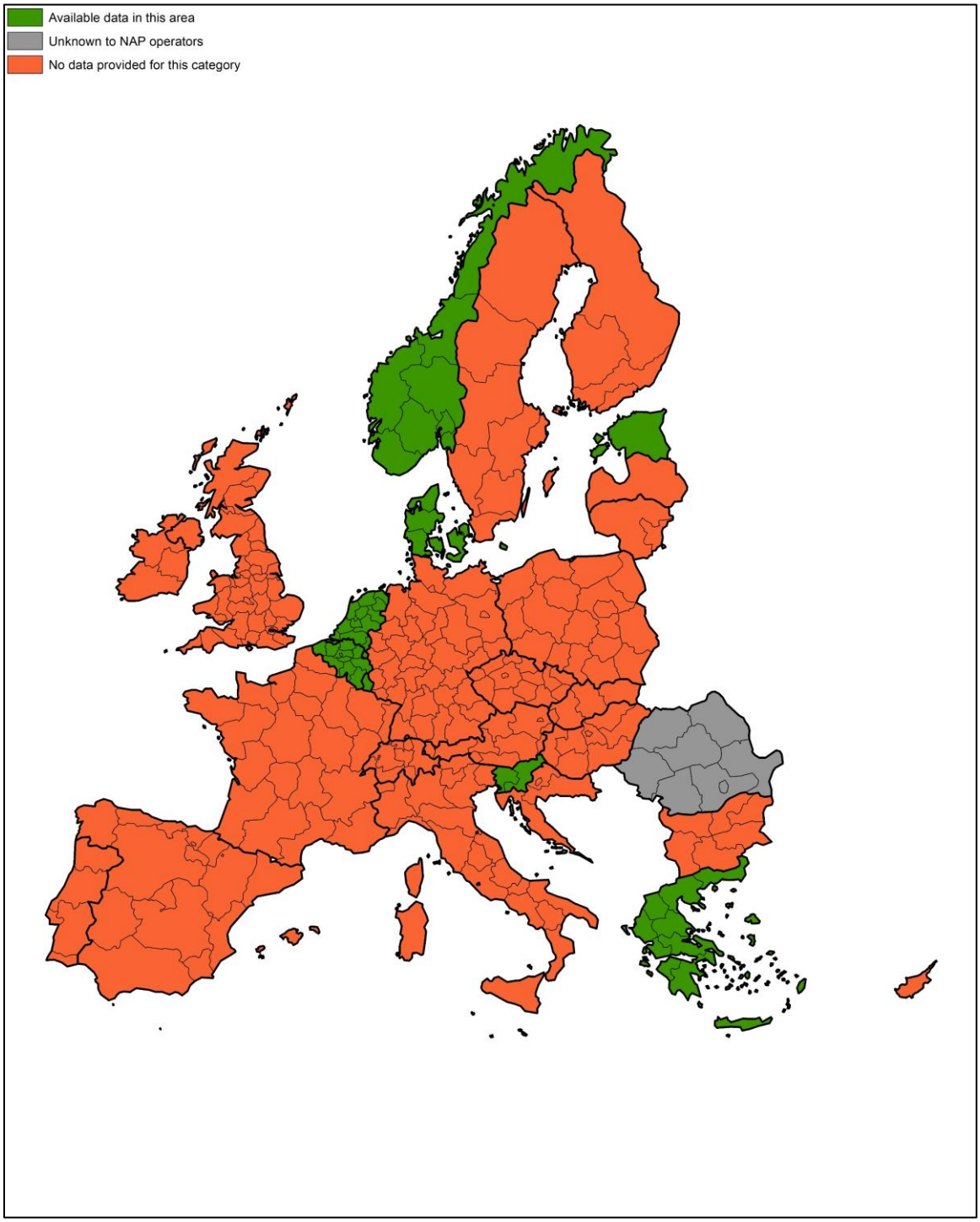
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Data for the provision of static information for trip plan computation – bus/trolley (e.g., connection links between interchanges, transfer times, network topology, routes/lines topology, transport operators, timetables, planned interchanges, hours of operation, facilities of access nodes, etc.)



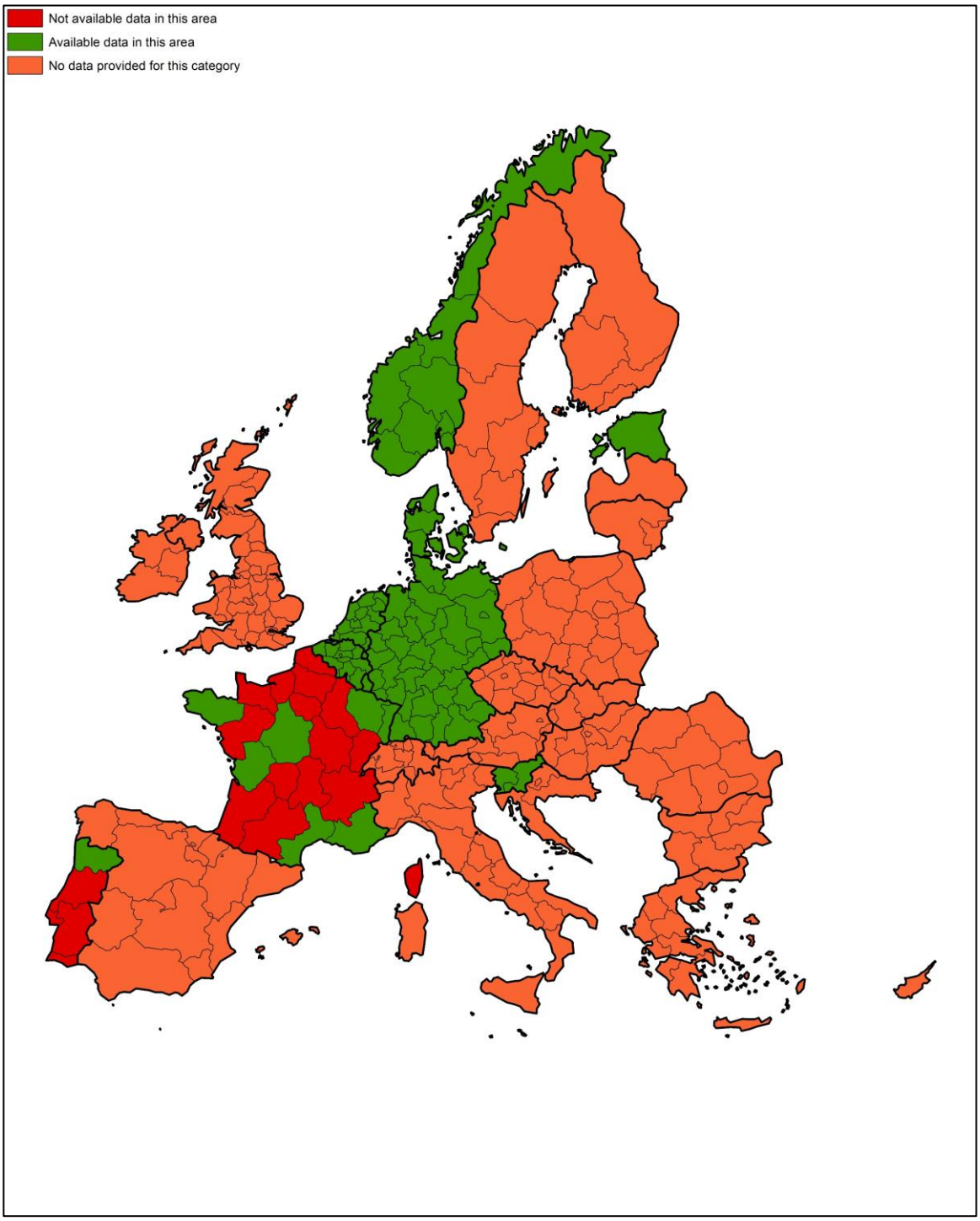
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for trip plan computation – road network (e.g., network topology and attributes)



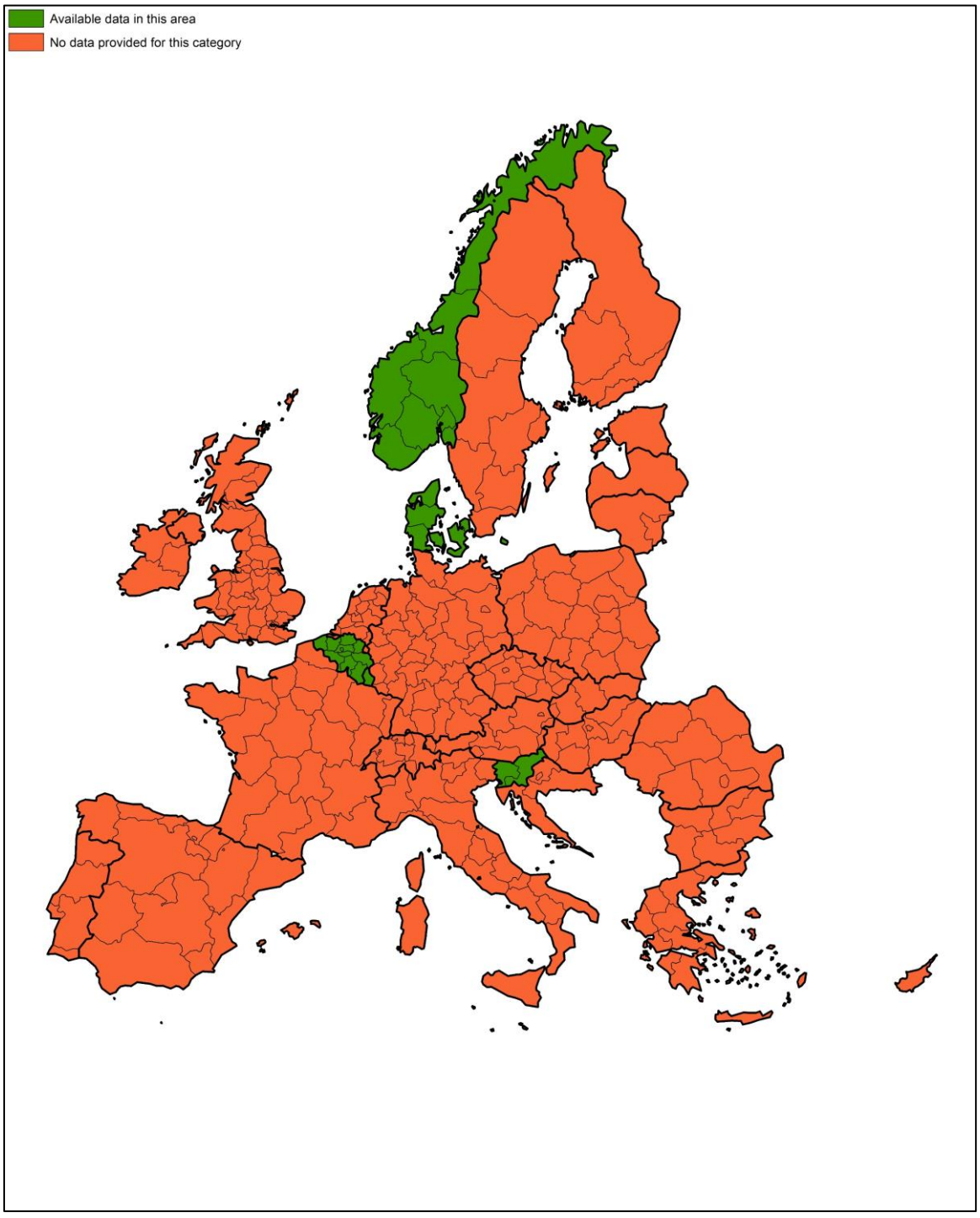
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for trip plan computation – cycling network (e.g., network topology and attributes)



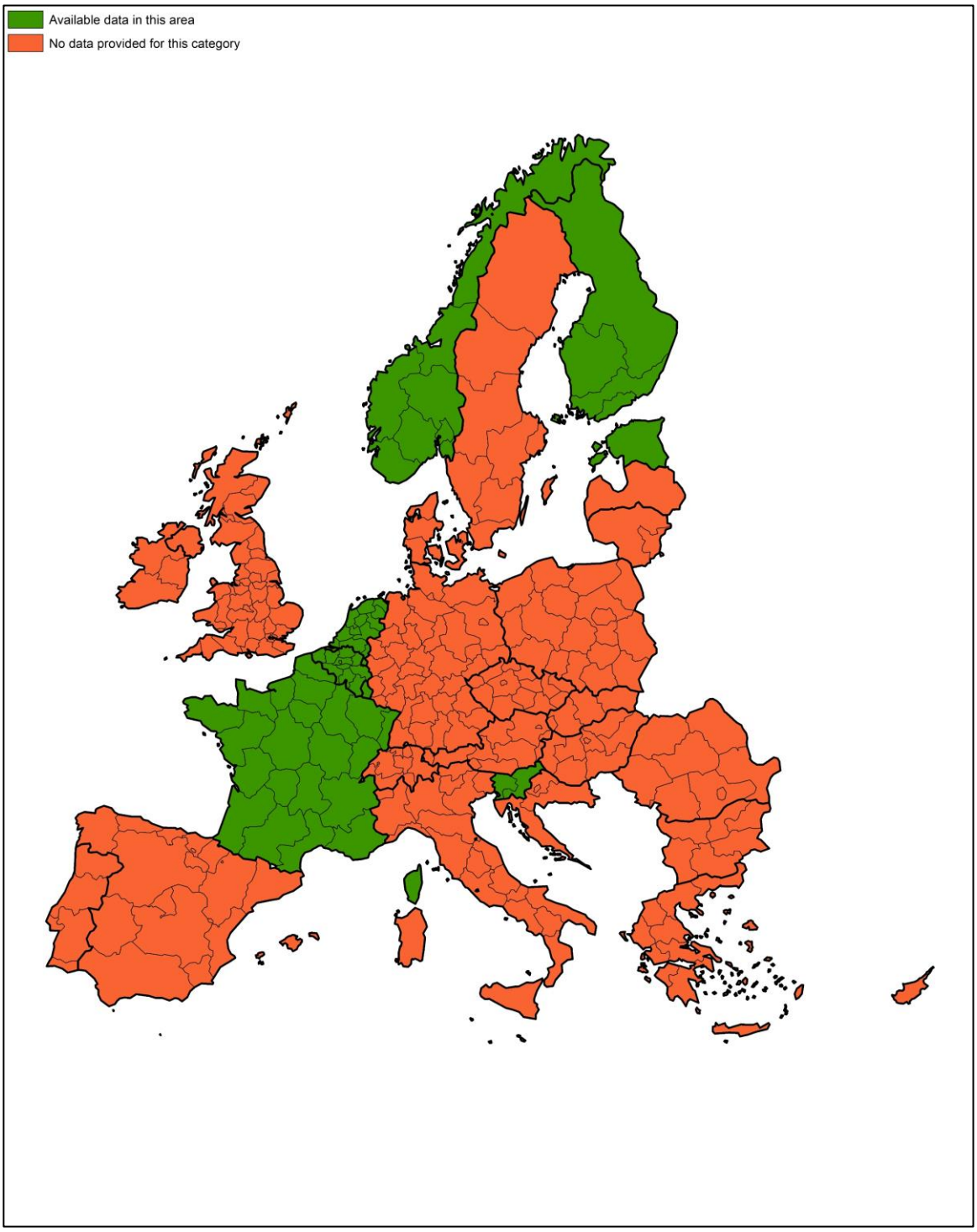
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for trip plan computation – pedestrian network (e.g., network topology and attributes)



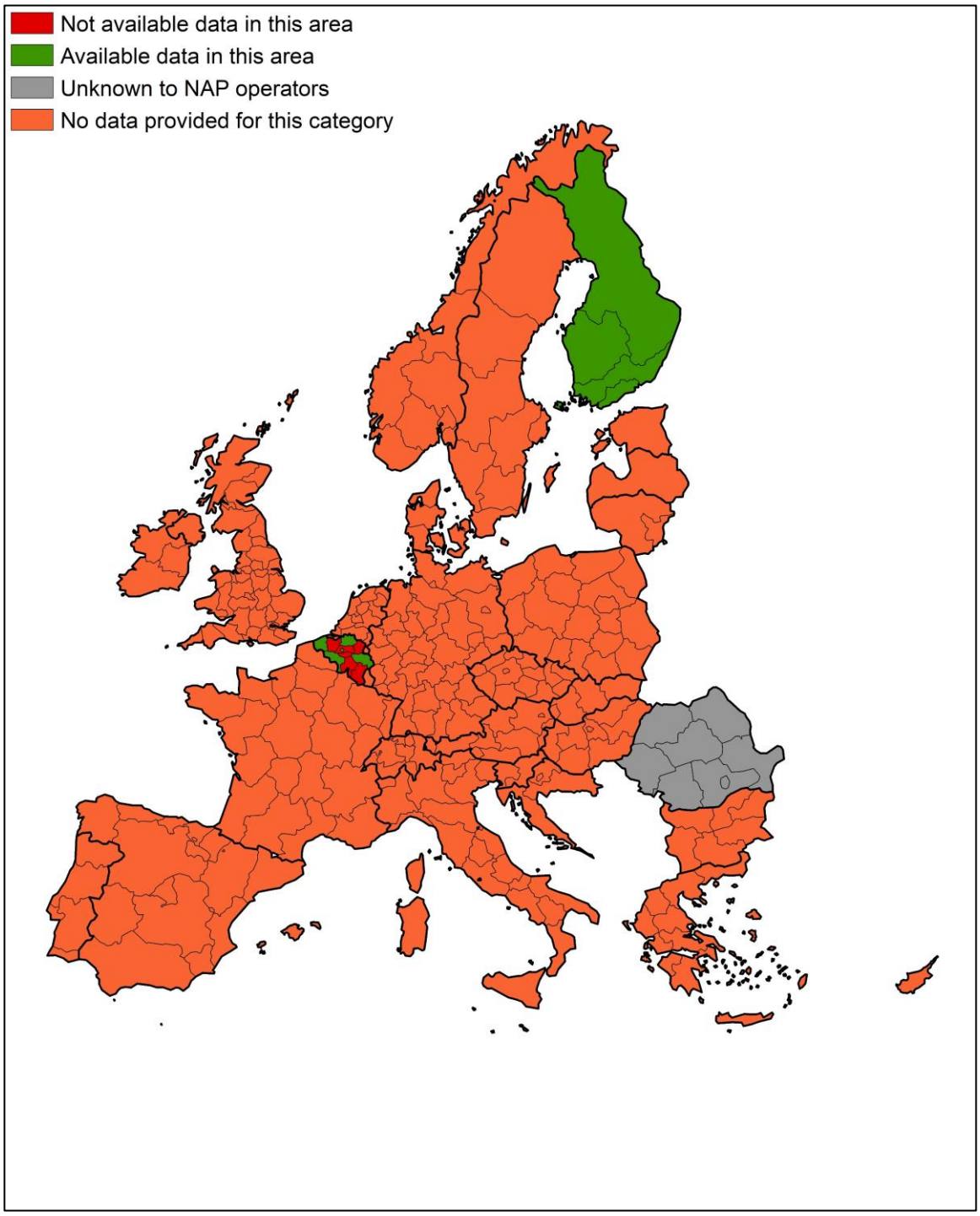
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for trip plan computation – multimodal (e.g., estimated travel times by day type and time band by transport mode/combination of transport modes)



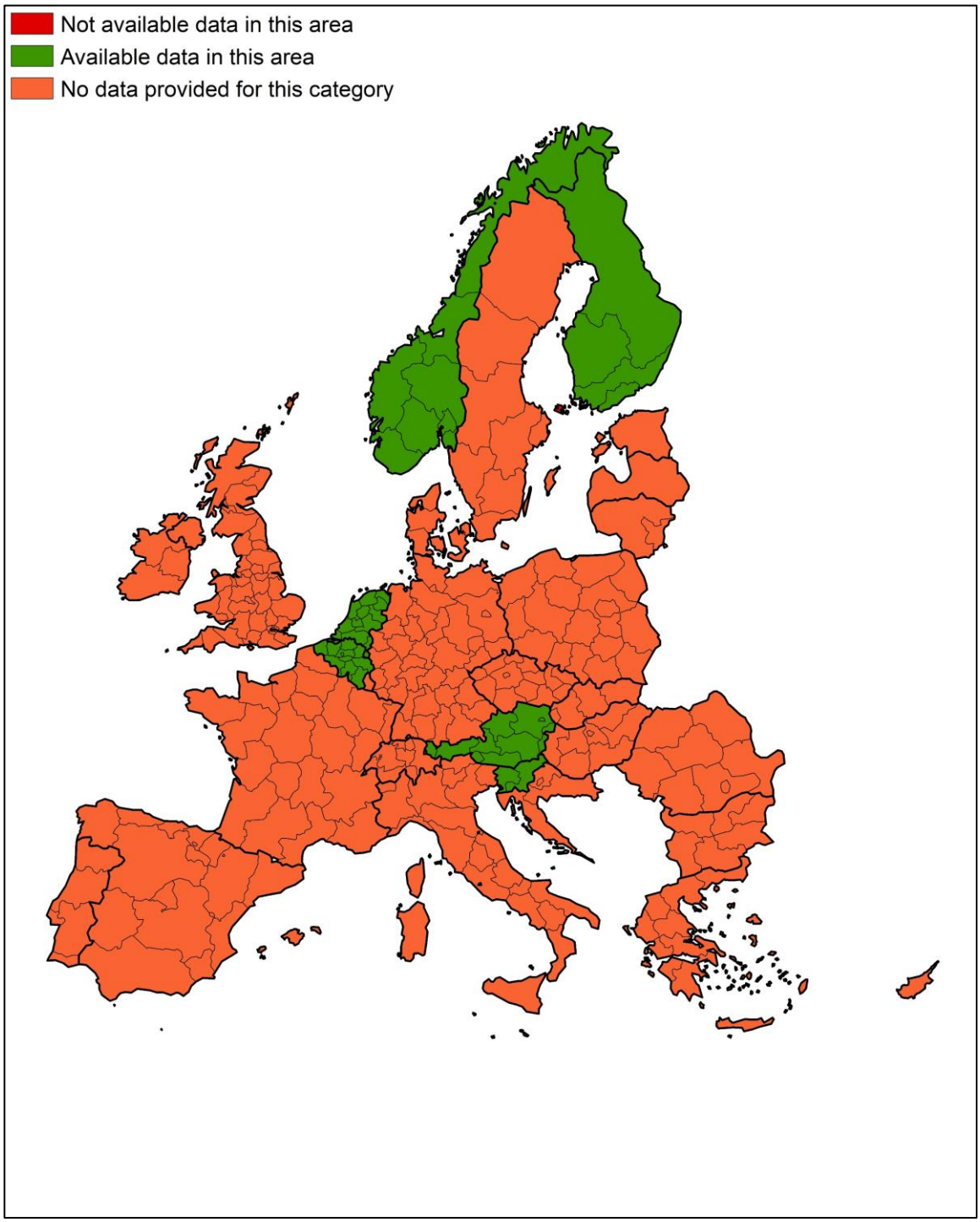
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for detailed common standard and special fare queries – air transport (e.g., passenger classes, common fare products, special fare products, basic commercial conditions)



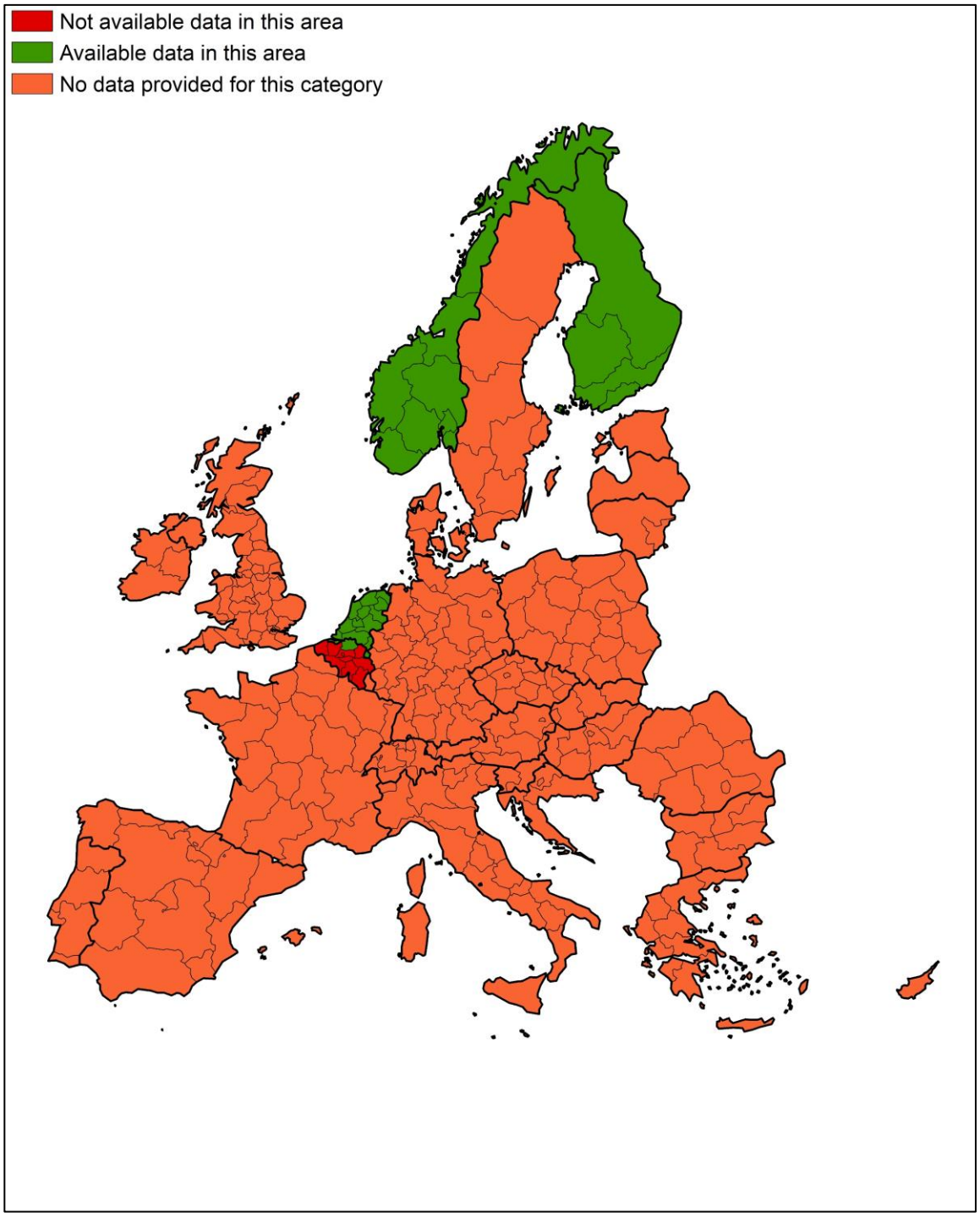
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for detailed common standard and special fare queries – rail transport (e.g., passenger classes, common fare products, special fare products, basic commercial conditions)



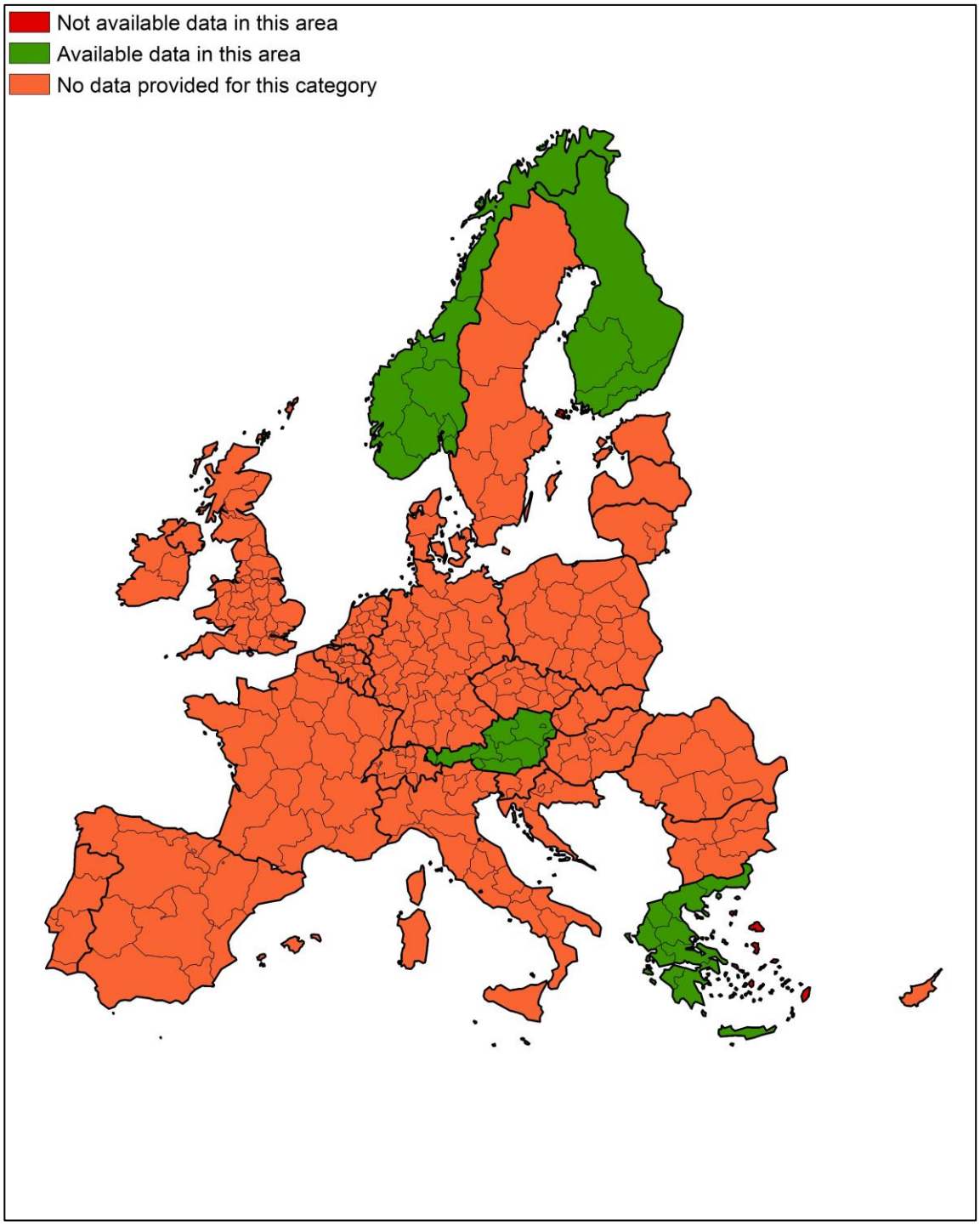
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for detailed common standard and special fare queries – maritime transport (e.g., passenger classes, common fare products, special fare products, basic commercial conditions)



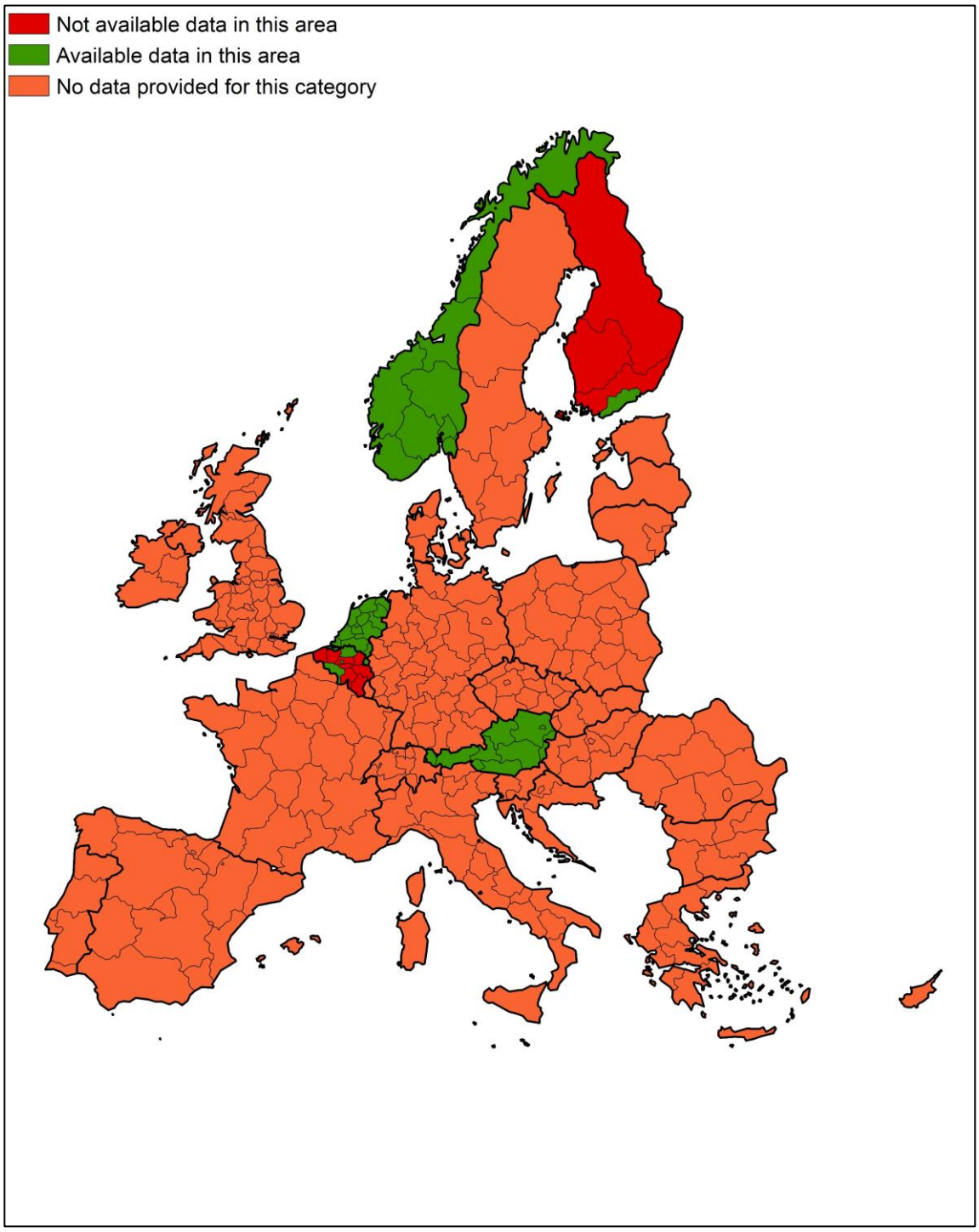
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for detailed common standard and special fare queries – long-distance coach (e.g., passenger classes, common fare products, special fare products, basic commercial conditions)



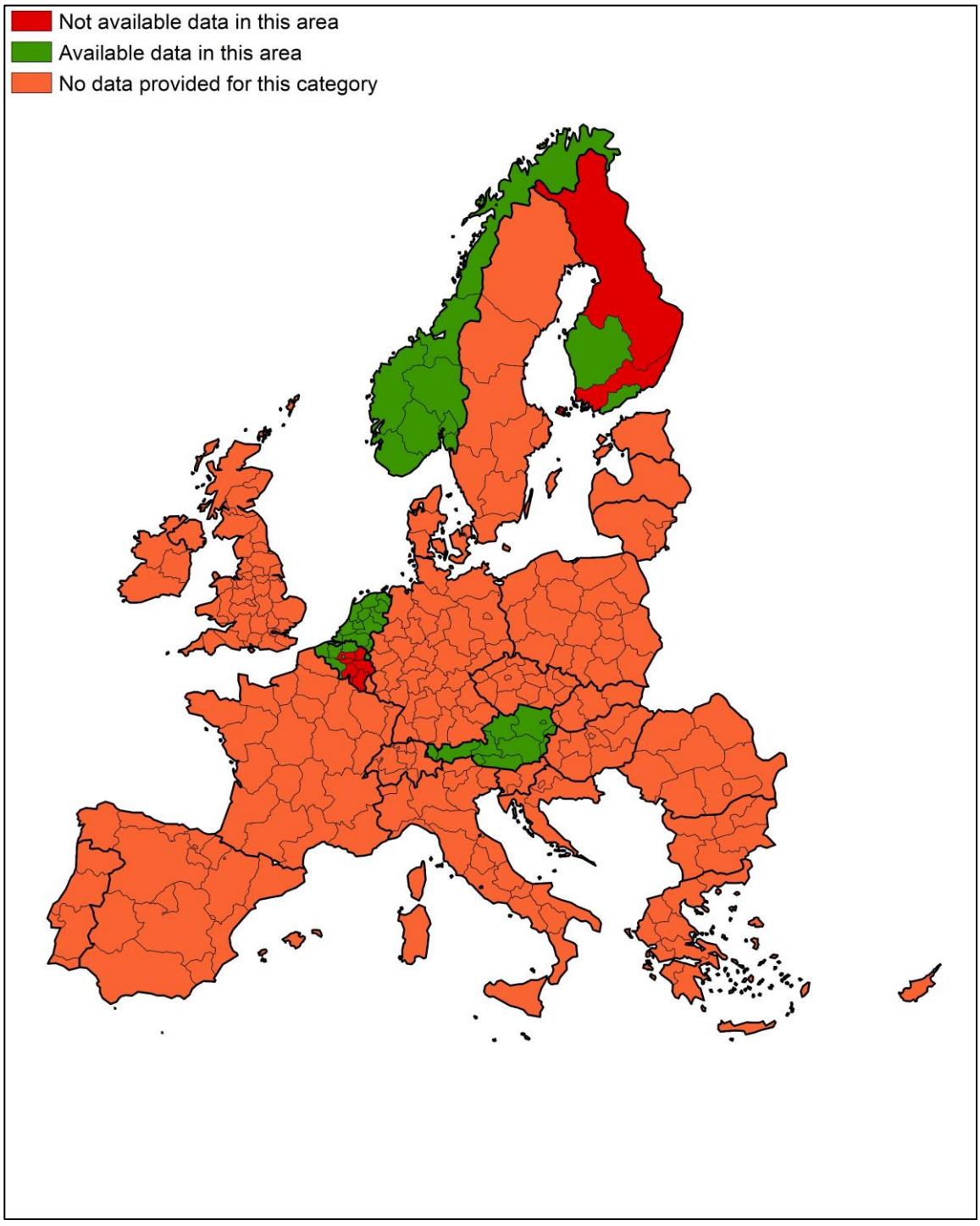
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for detailed common standard and special fare queries – metro (e.g., passenger classes, common fare products, special fare products, basic commercial conditions)



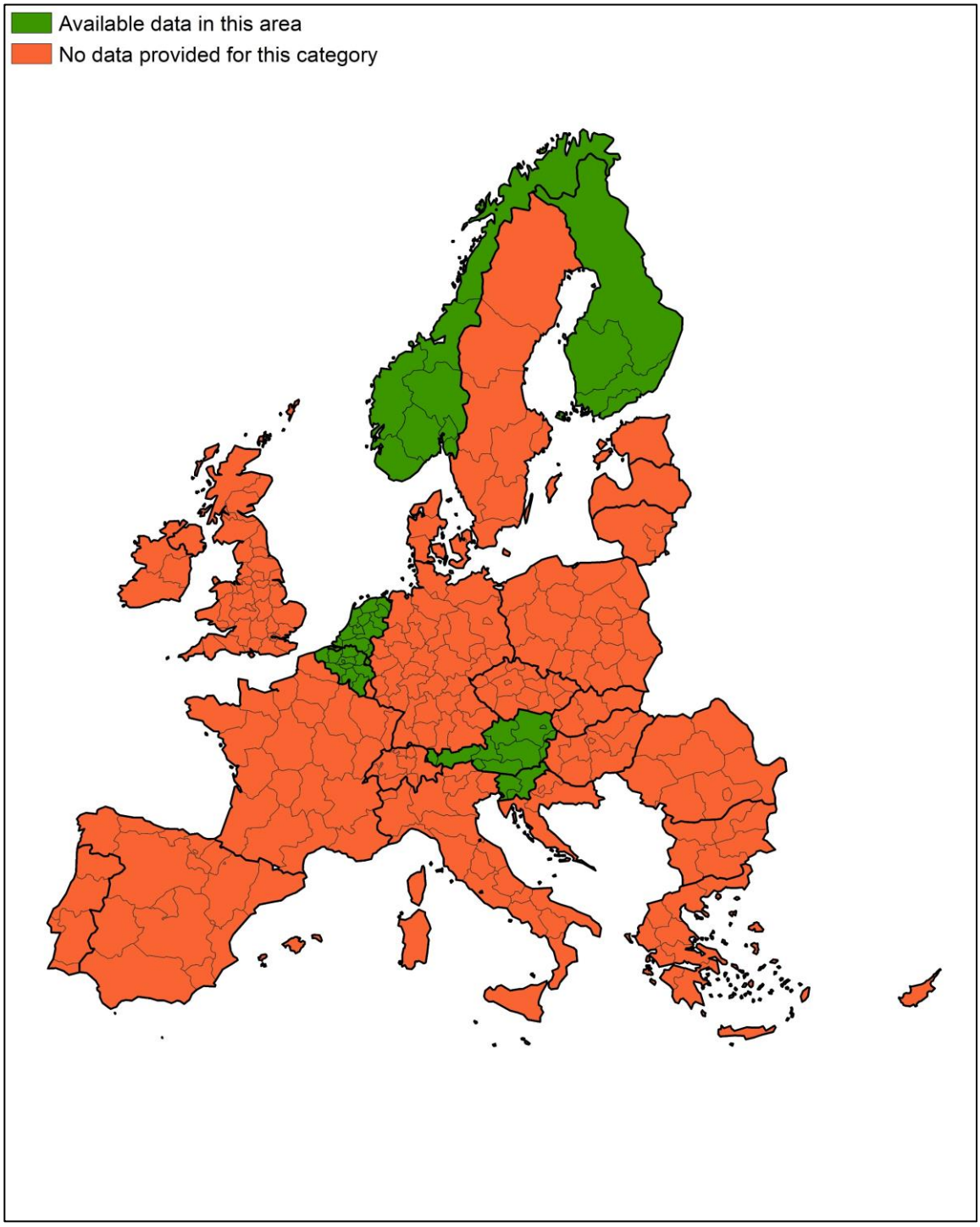
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for detailed common standard and special fare queries – tram (e.g., passenger classes, common fare products, special fare products, basic commercial conditions)



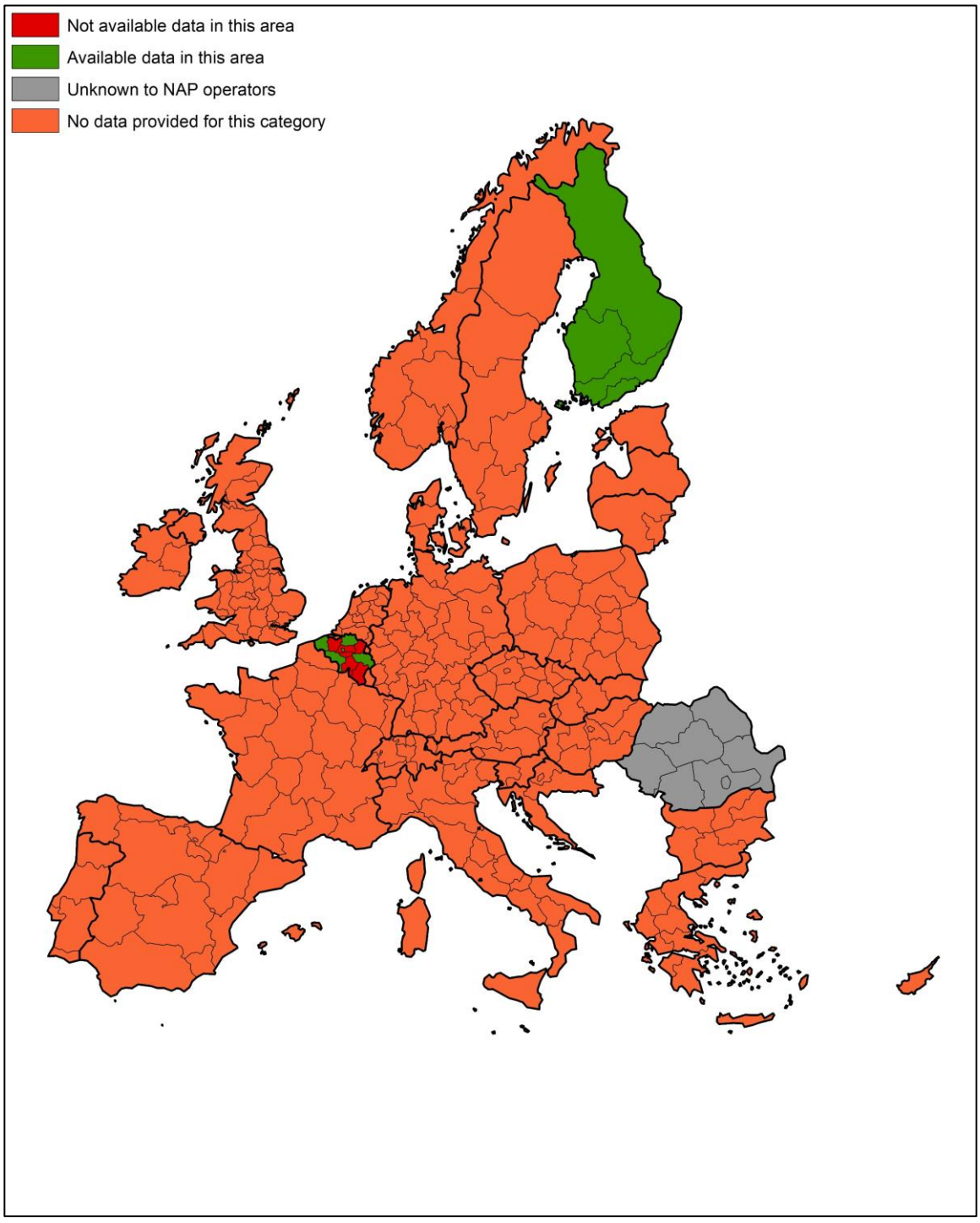
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for detailed common standard and special fare queries – bus/trolley (e.g., passenger classes, common fare products, special fare products, basic commercial conditions)



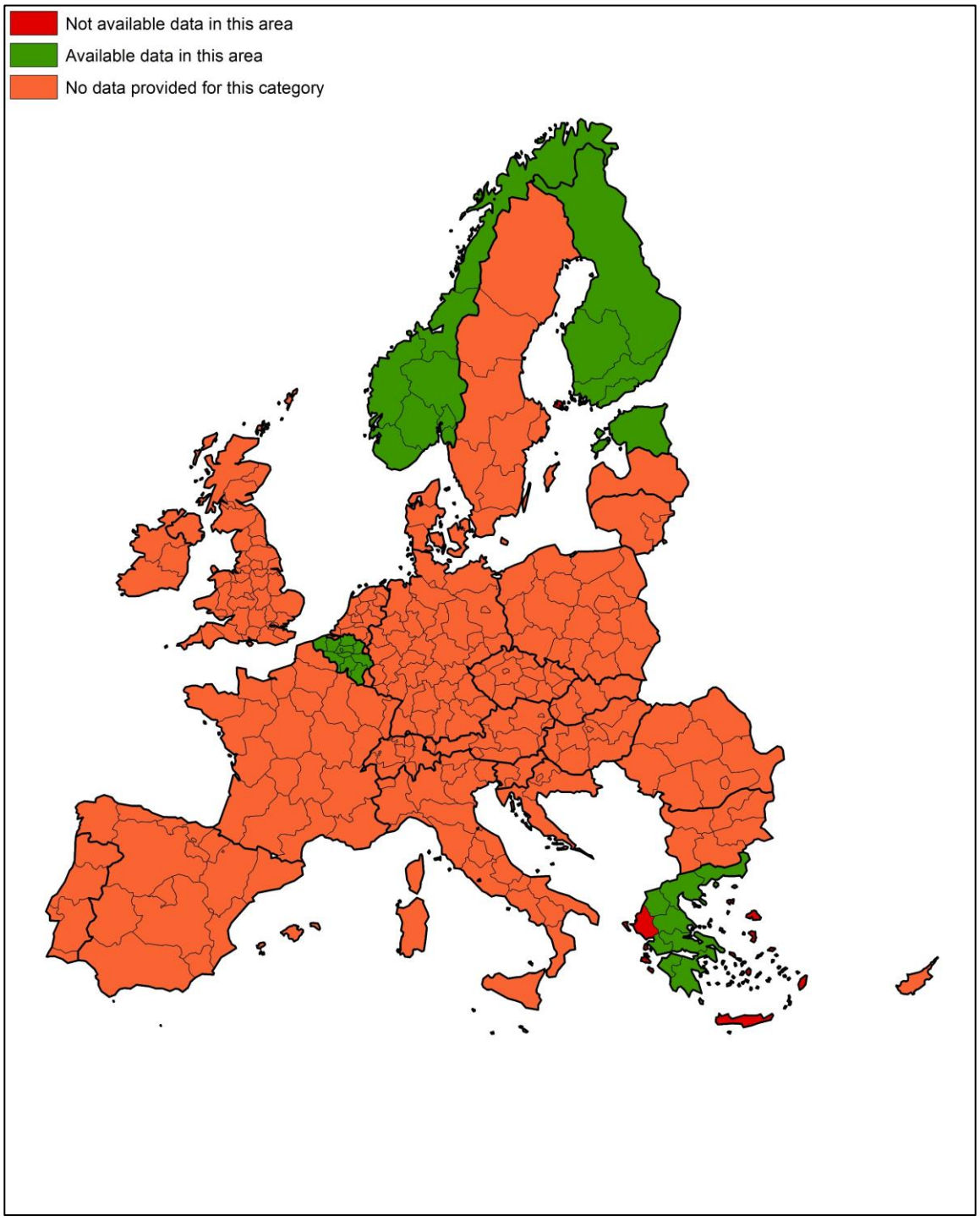
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – air transport (e.g., where and how to buy tickets, including retail channels, fulfilment methods, payment methods)



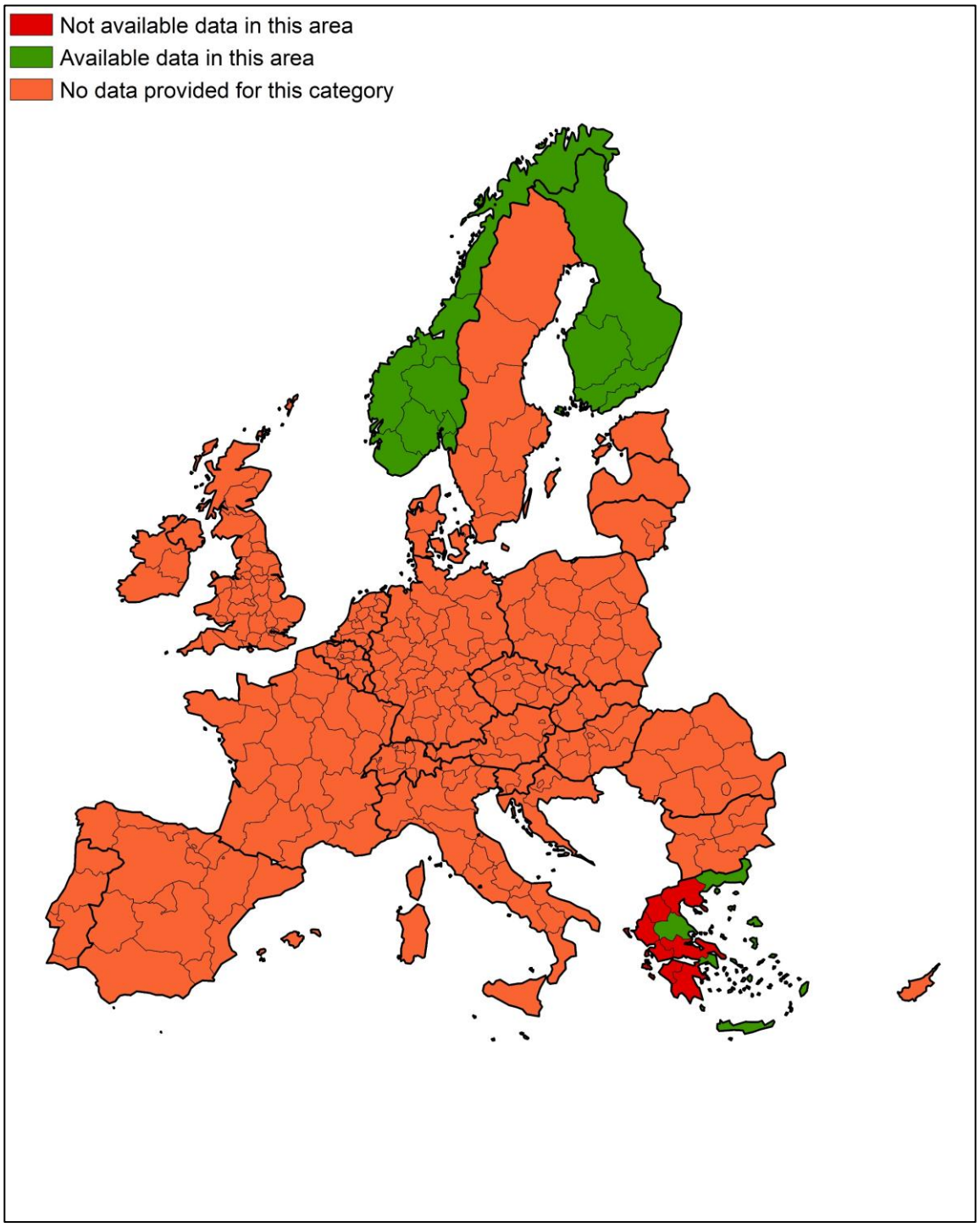
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – rail transport (e.g., where and how to buy tickets, including retail channels, fulfilment methods, payment methods)



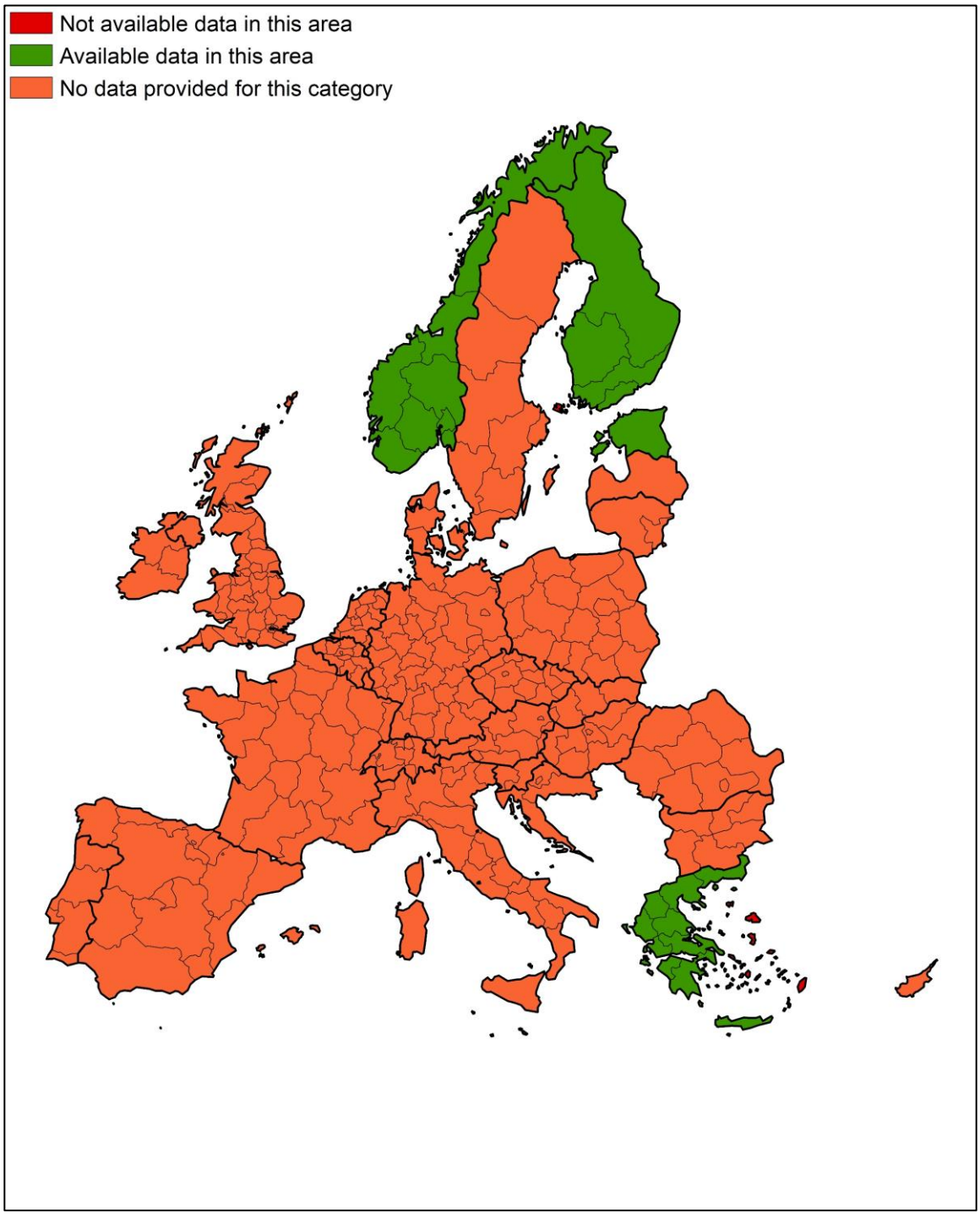
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – maritime transport (e.g., where and how to buy tickets, including retail channels, fulfilment methods, payment methods)



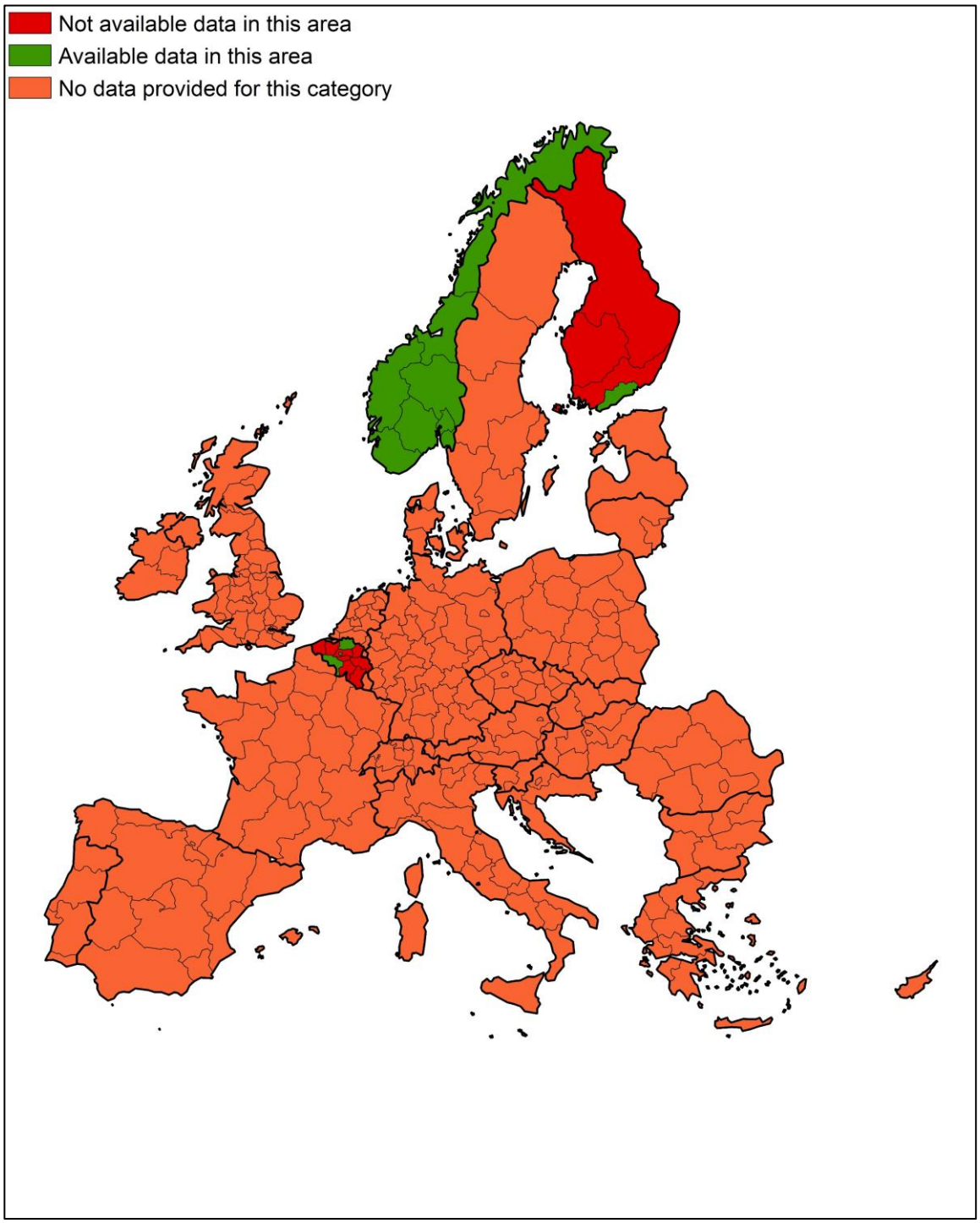
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – long-distance coach (e.g., where and how to buy tickets, including retail channels, fulfilment methods, payment methods)



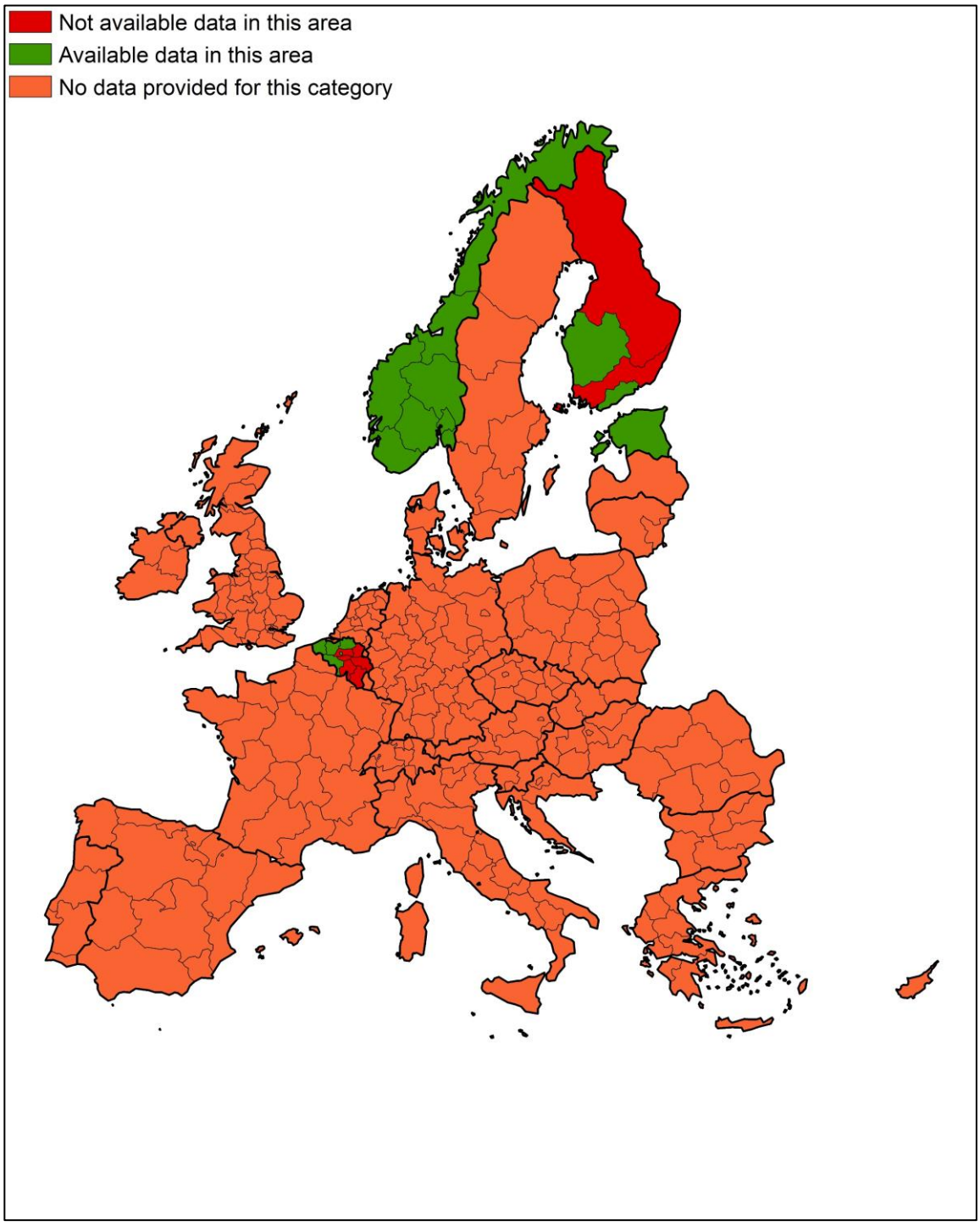
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – metro (e.g., where and how to buy tickets, including retail channels, fulfilment methods, payment methods)



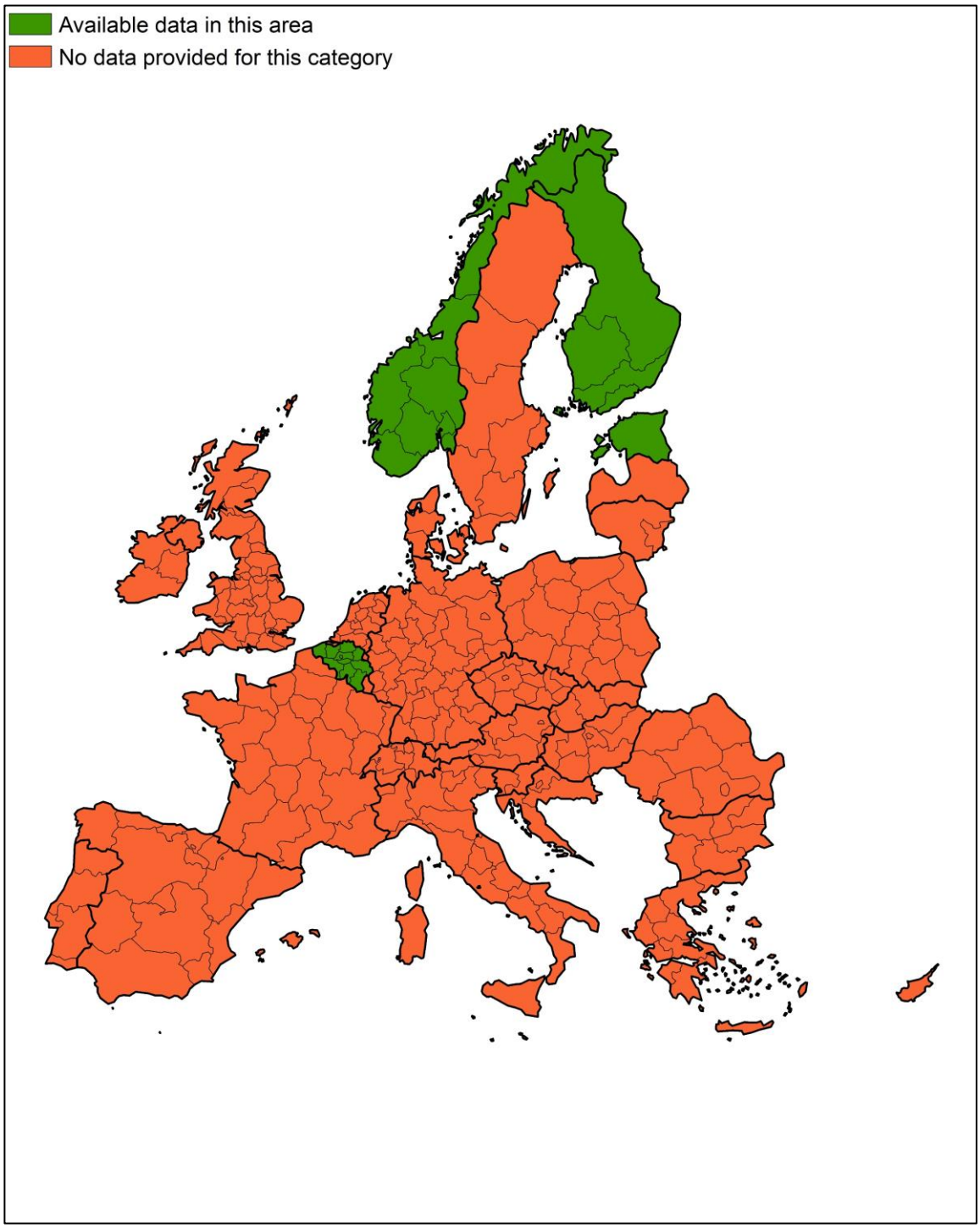
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – tram (e.g., where and how to buy tickets, including retail channels, fulfilment methods, payment methods)



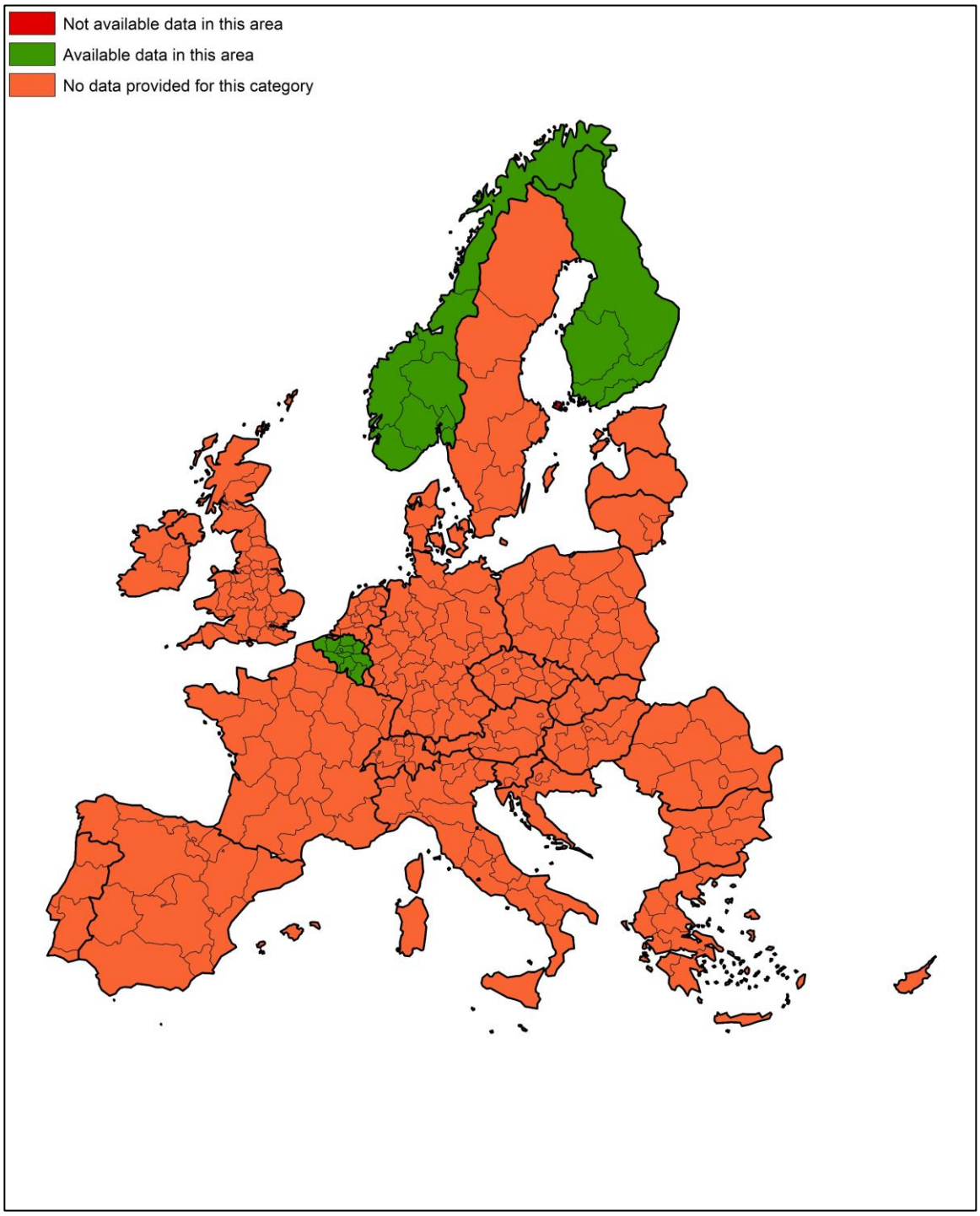
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – bus/trolley (e.g., where and how to buy tickets, including retail channels, fulfilment methods, payment methods)



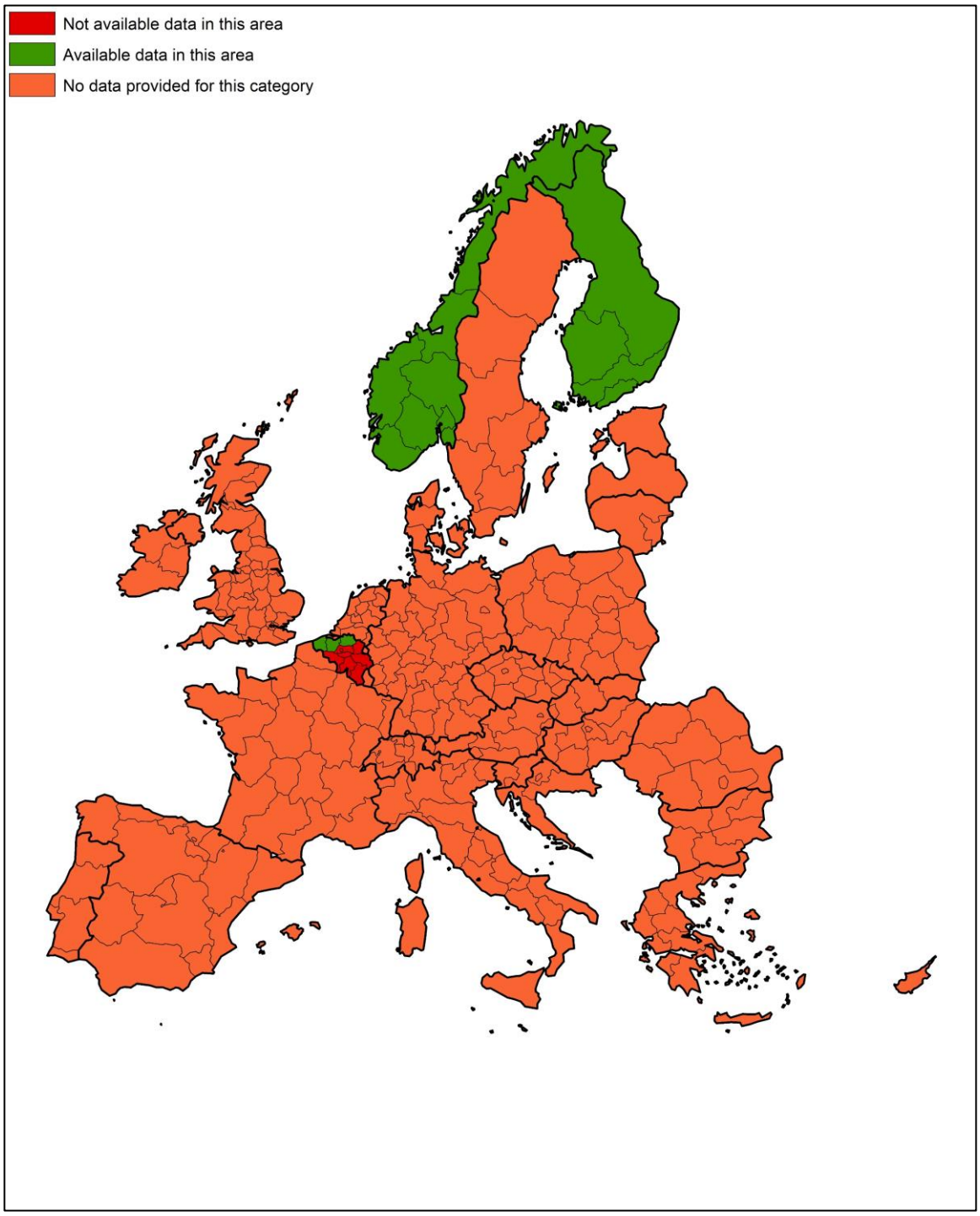
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – shuttle bus (e.g., where and how to book, including retail channels, fulfilment methods, payment methods)



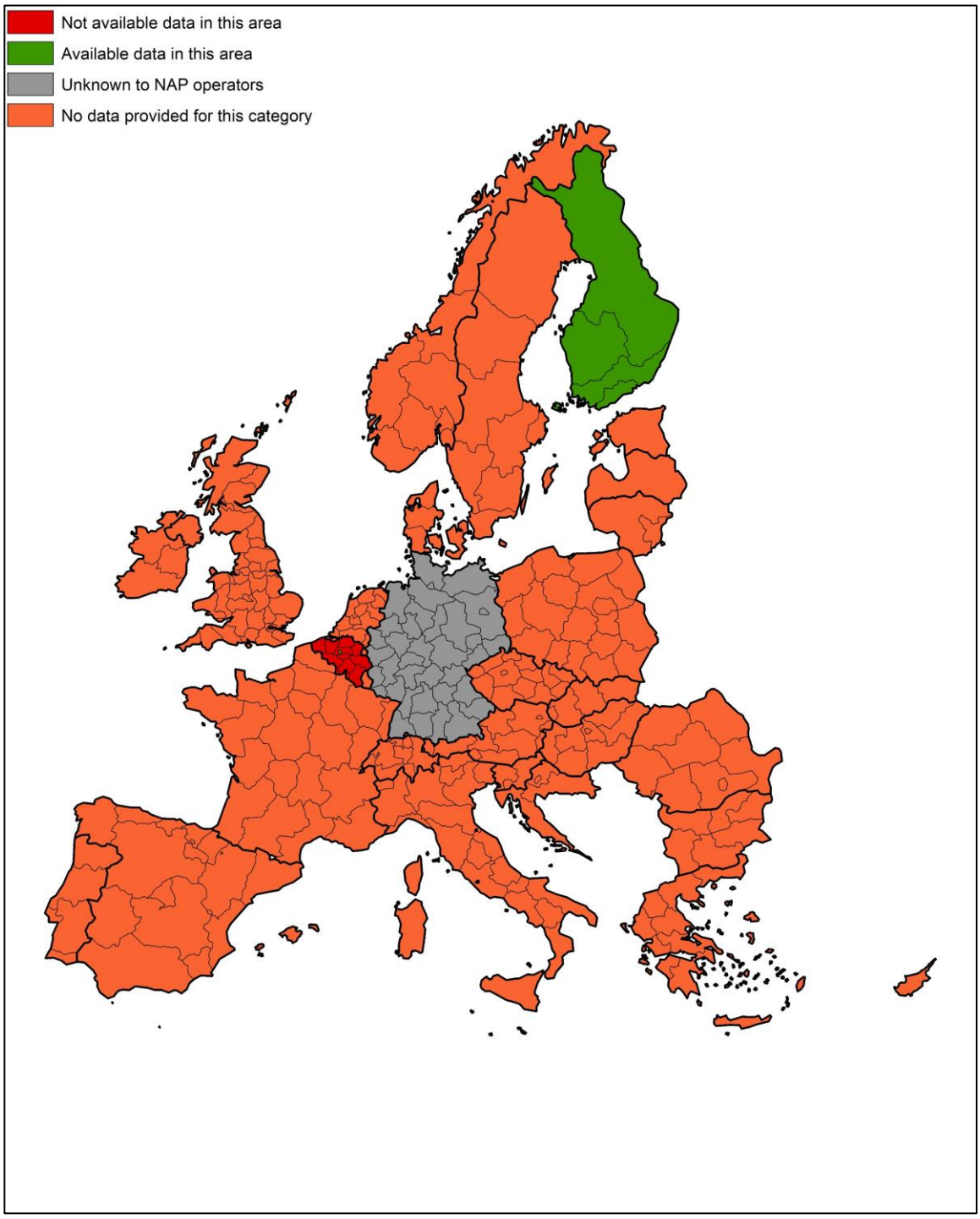
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – shuttle ferry (e.g., where and how to book, including retail channels, fulfilment methods, payment methods)



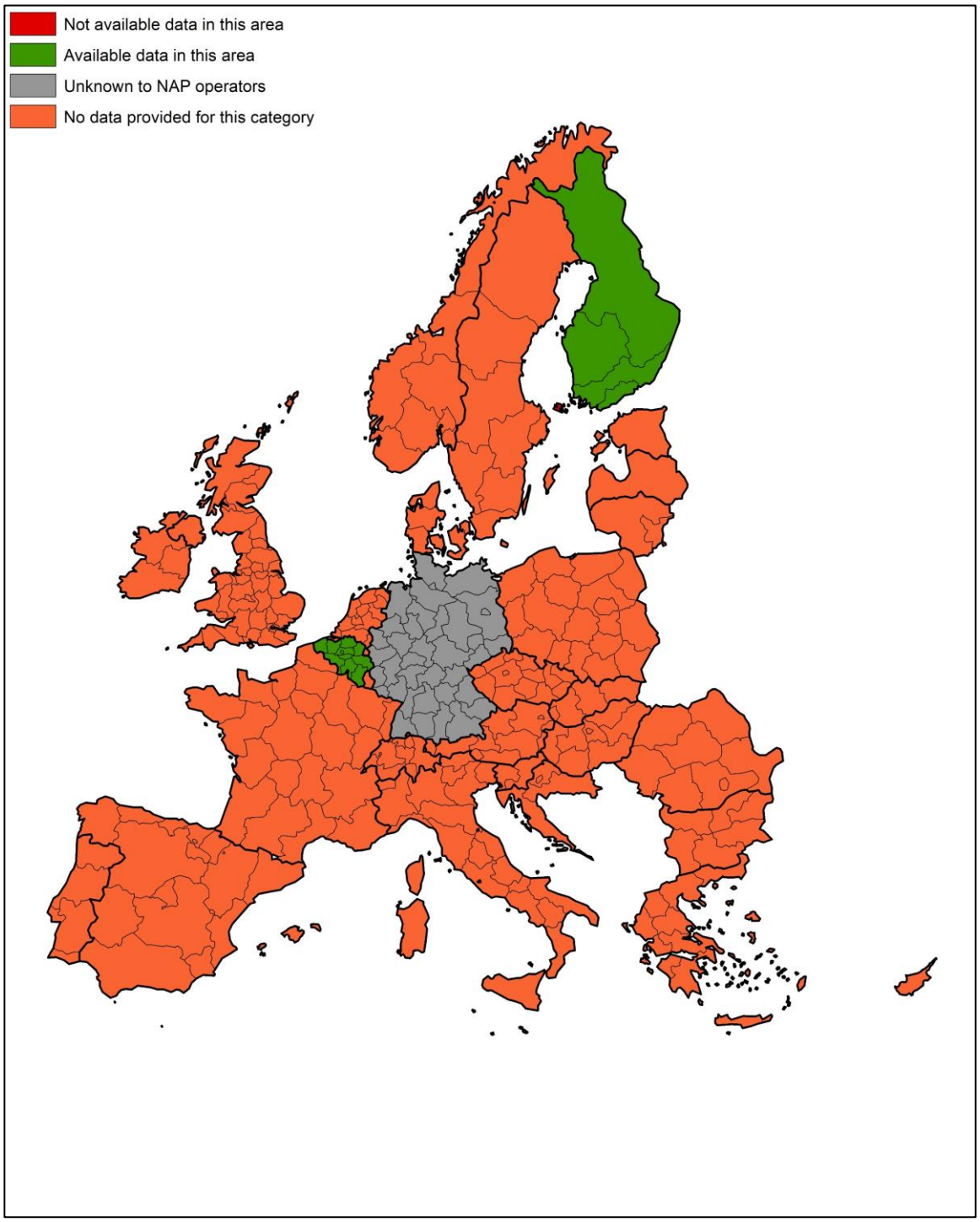
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – taxi (e.g., where and how to book, including retail channels, fulfilment methods, payment methods)



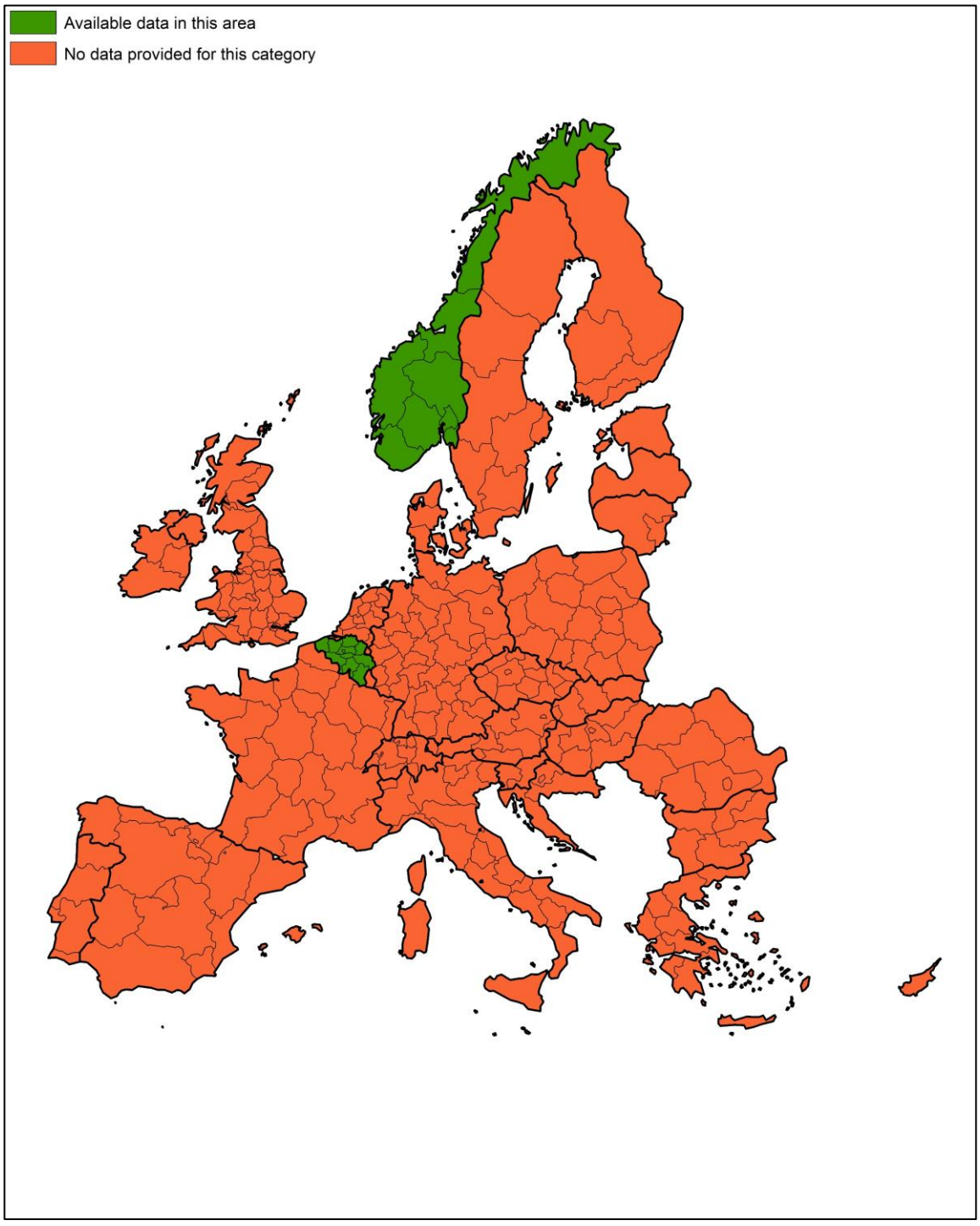
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – car sharing (e.g., where and how to book, including retail channels, fulfilment methods, payment methods)



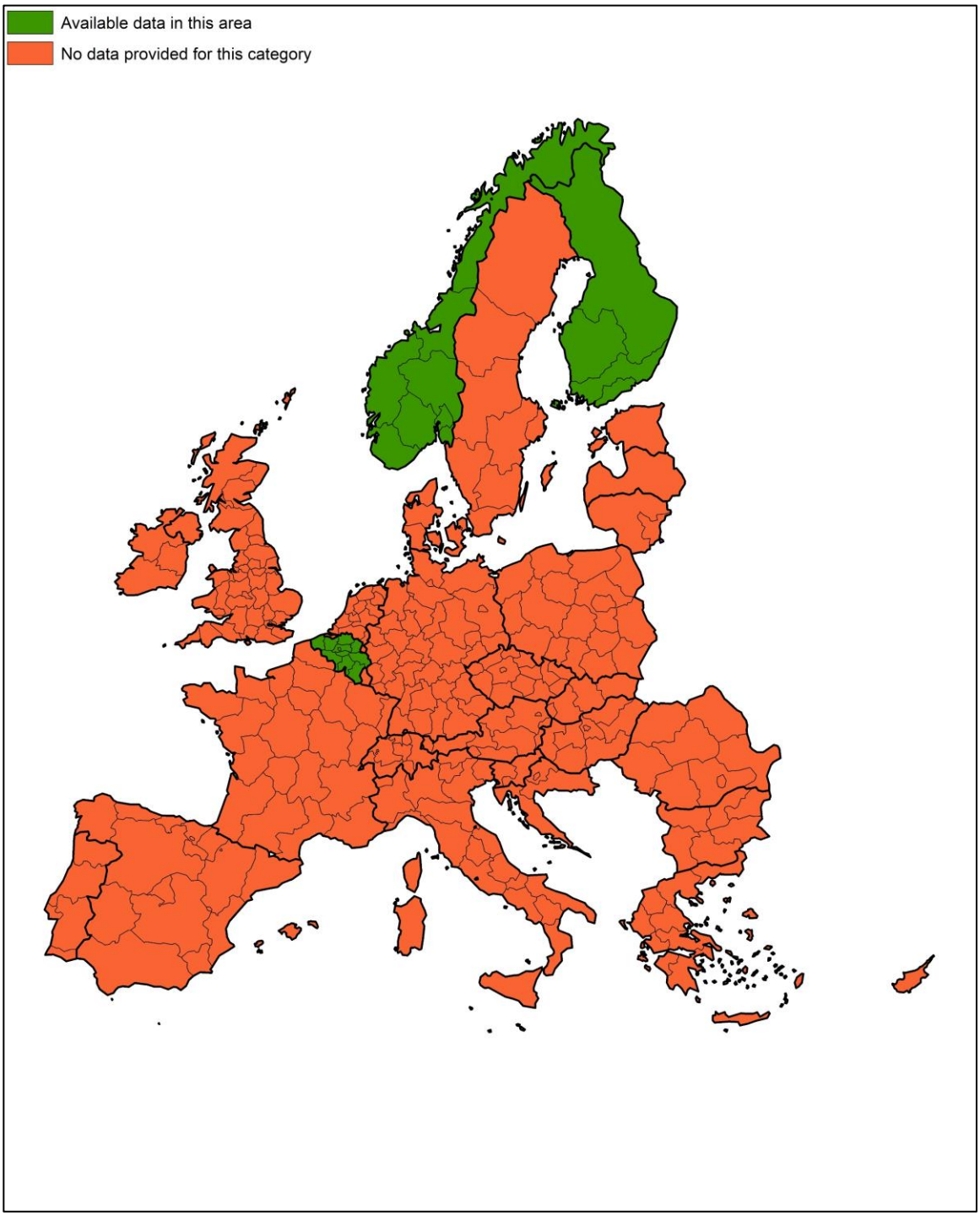
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – car pooling (e.g., where and how to book, including retail channels, fulfilment methods, payment methods)



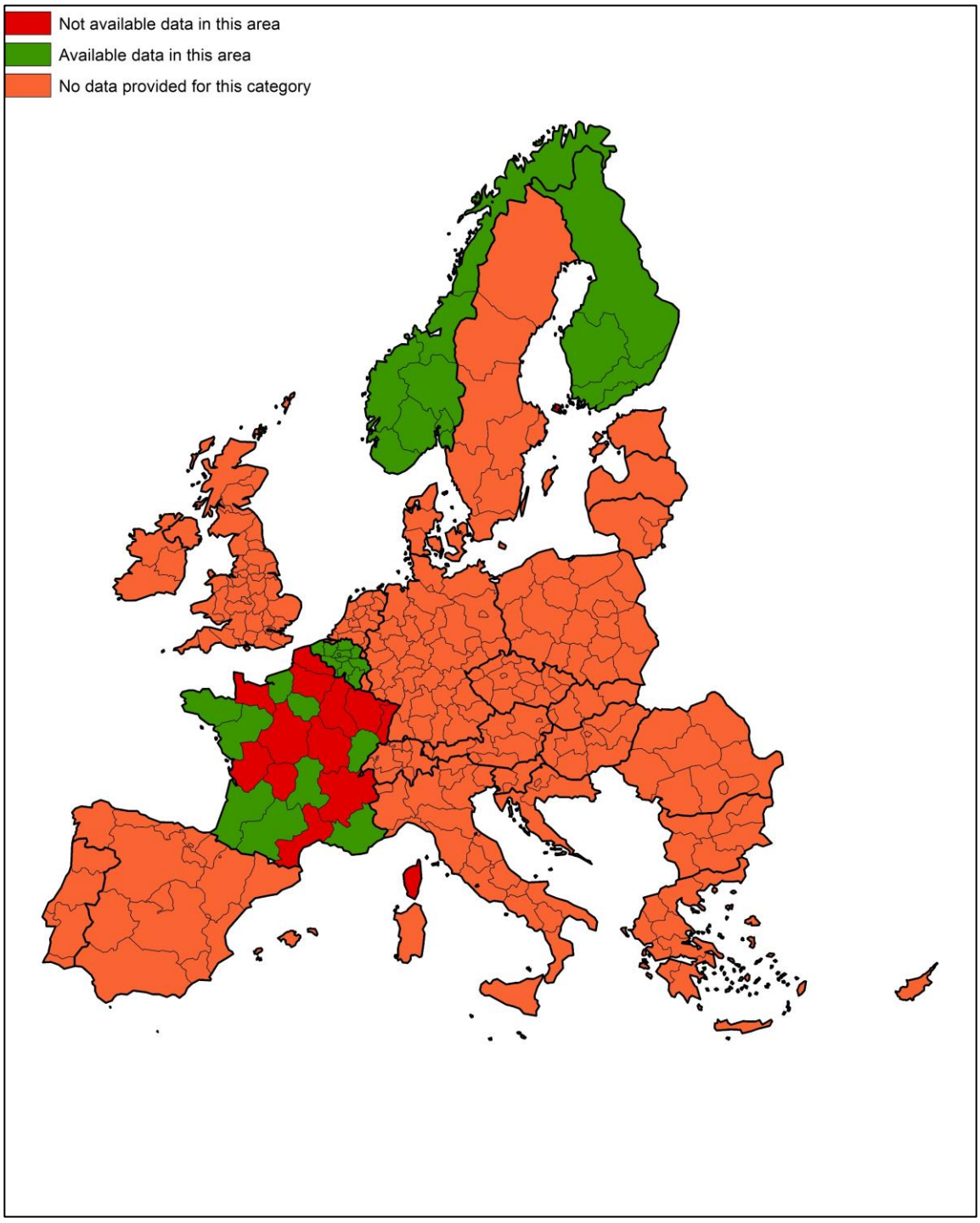
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – car hire (e.g., where and how to book, including retail channels, fulfilment methods, payment methods)



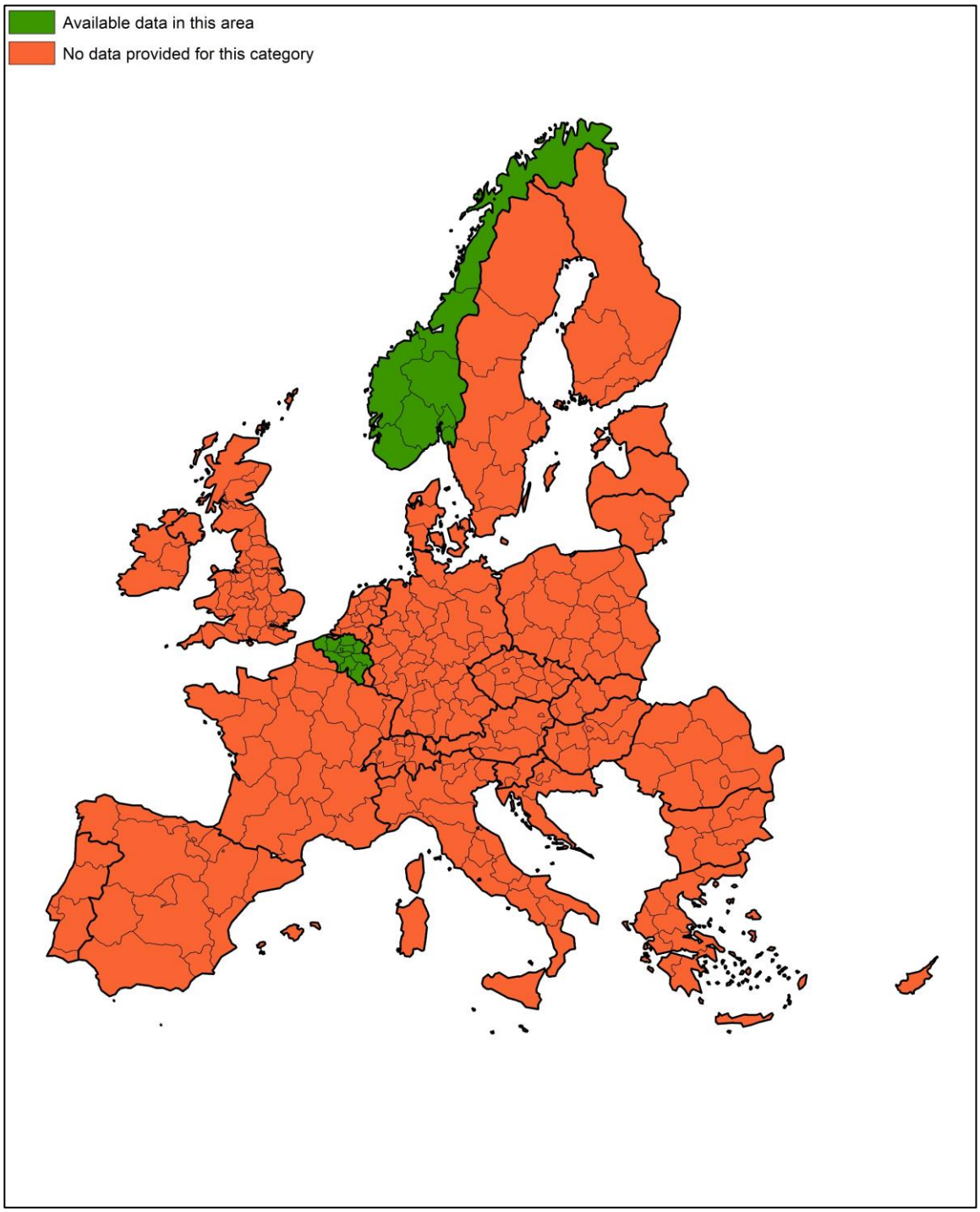
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – bike sharing (e.g., where and how to book, including retail channels, fulfilment methods, payment methods)



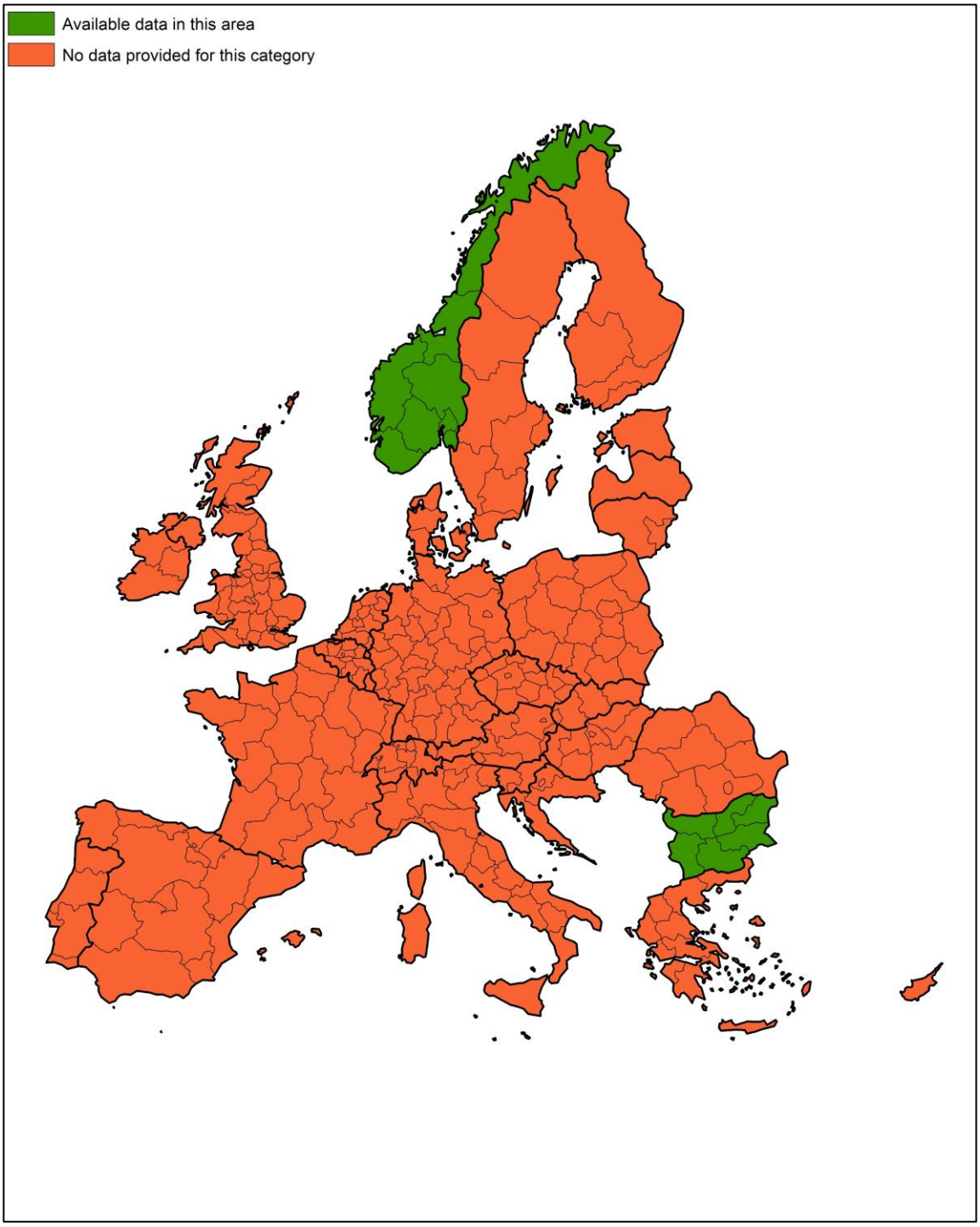
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – bike hire (e.g., where and how to book, including retail channels, fulfilment methods, payment methods)



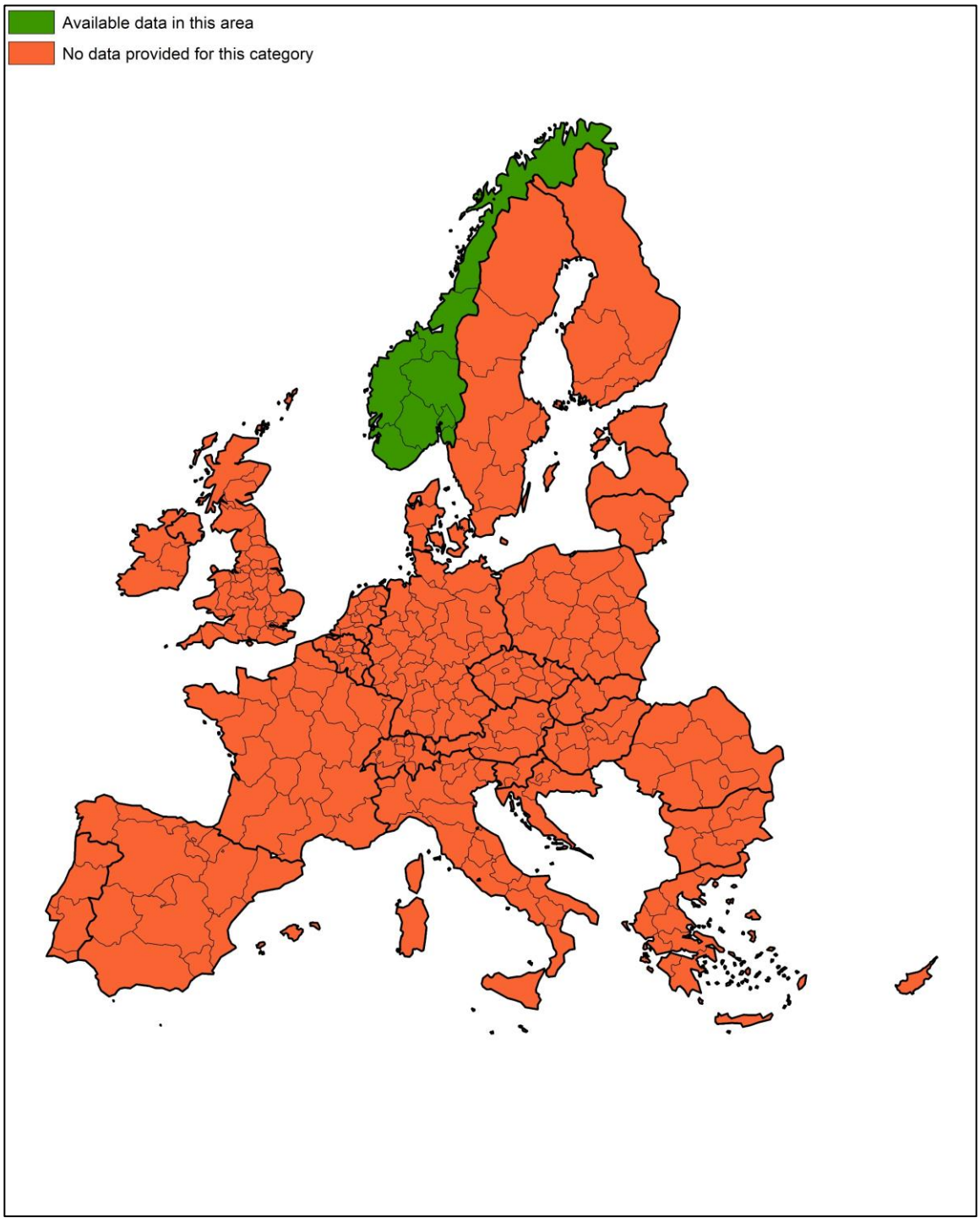
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – tolls (e.g., where and how to pay, including retail channels, fulfilment methods, payment methods)



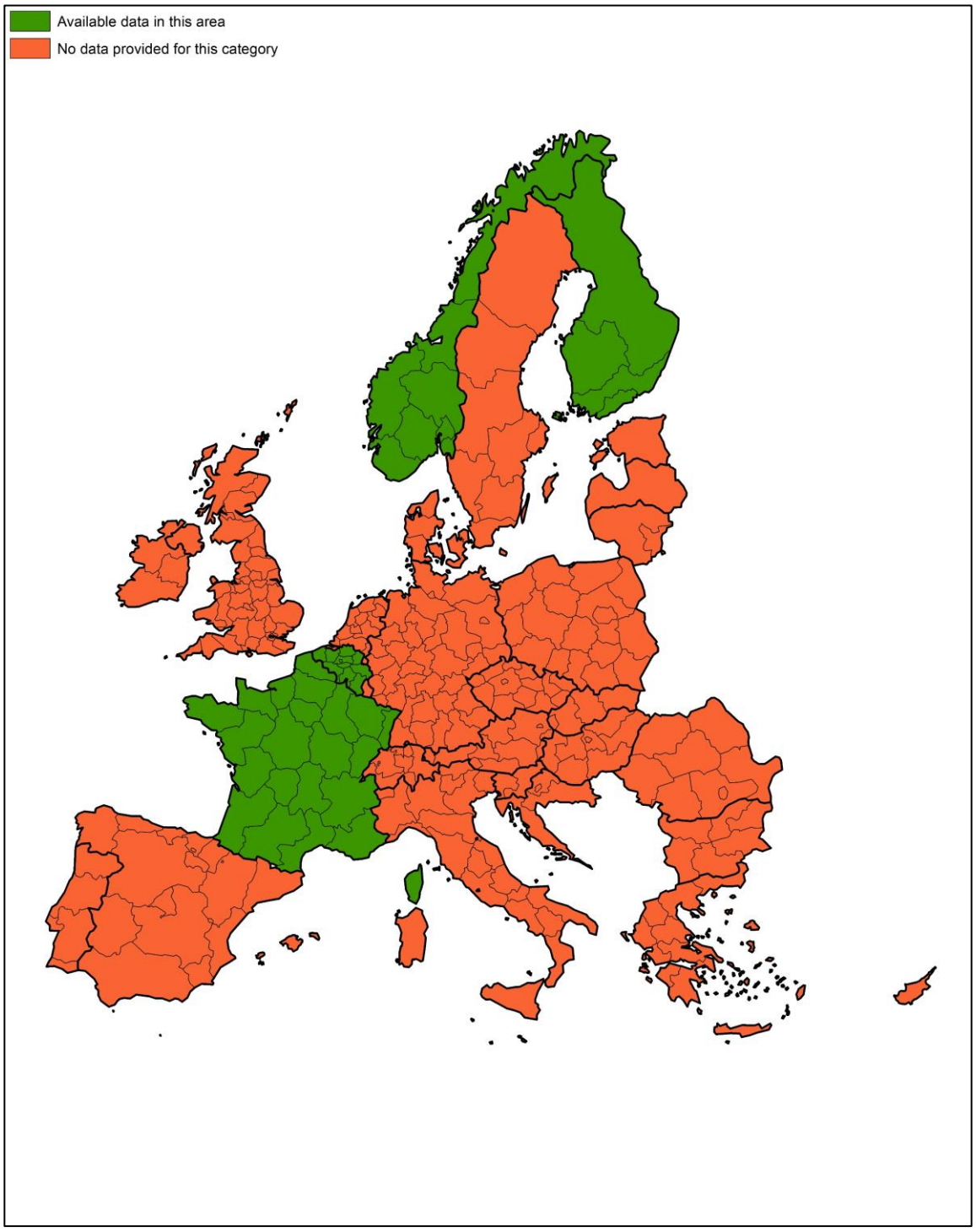
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – car parking (e.g., where and how to pay, including retail channels, fulfilment methods, payment methods)



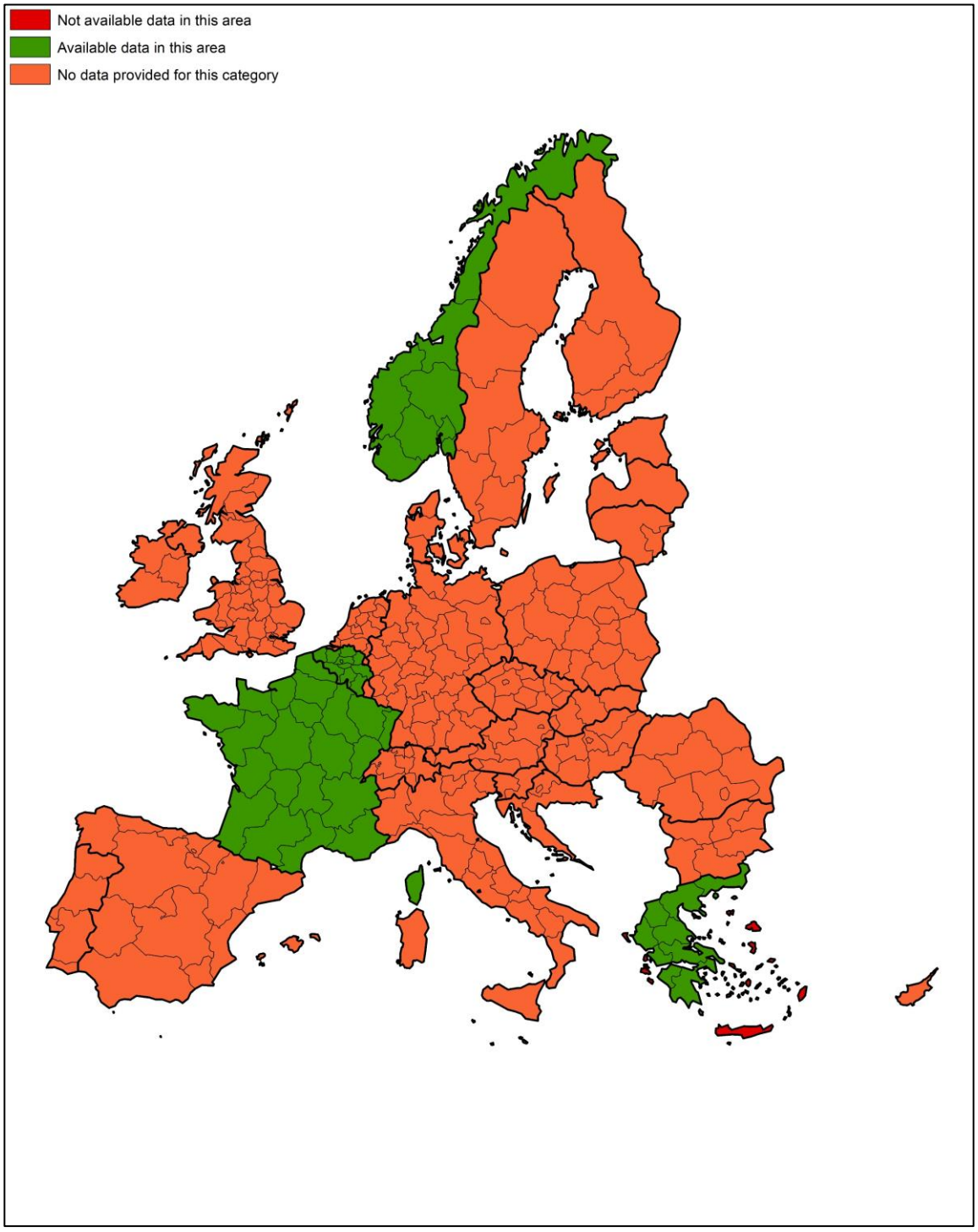
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – public charging (e.g., where and how to pay, including retail channels, fulfilment methods, payment methods)



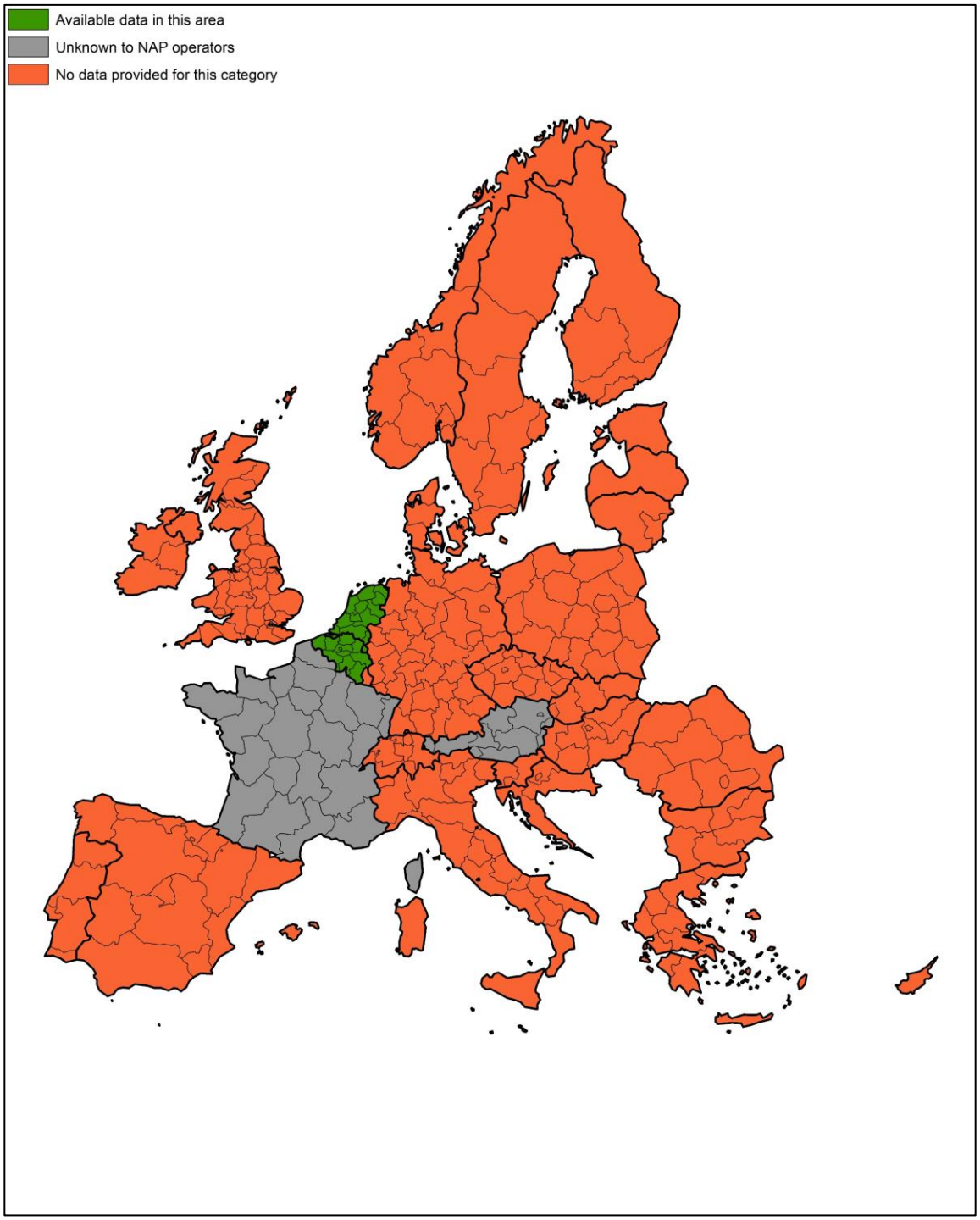
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static information for traveller services – refuelling (e.g., where and how to pay, including retail channels, fulfilment methods, payment methods)



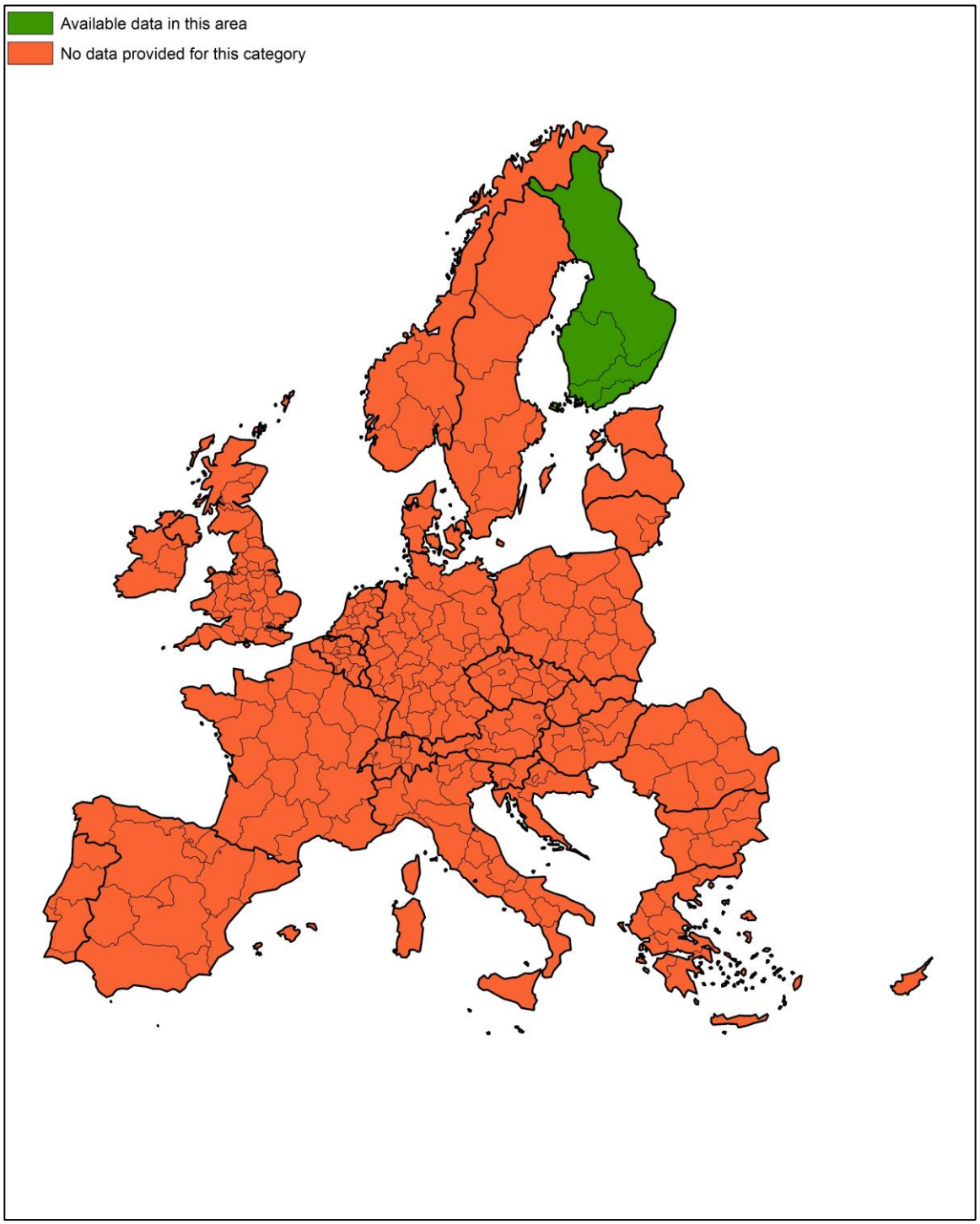
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Static environmental information (e.g., parameters needed to calculate an environmental factor, such as carbon per vehicle/passenger mile, and parameters needed to calculate cost, such as fuel consumption)



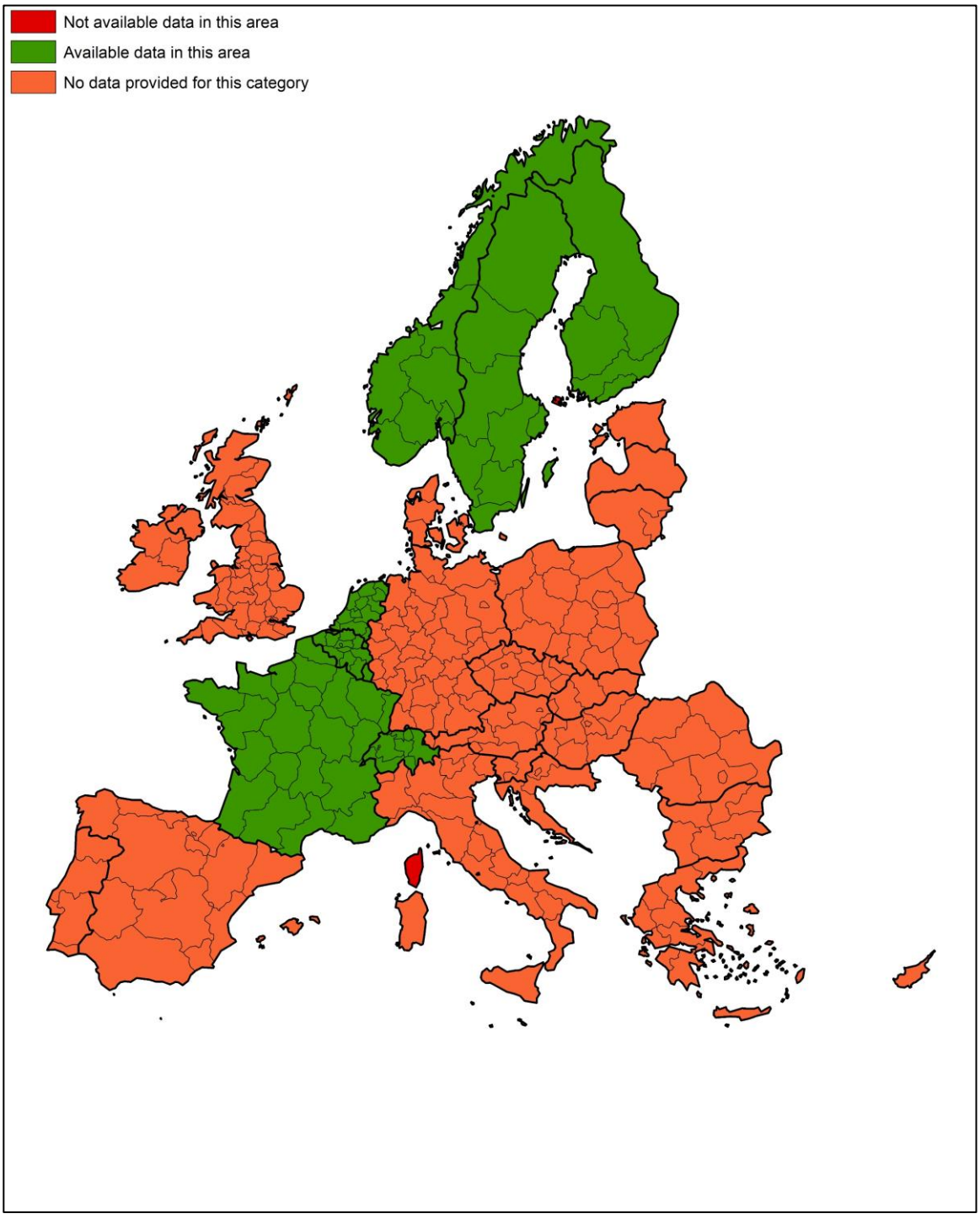
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – air transport (e.g., disruptions, real-time status, status of access nodes features, estimated departure and arrival times)



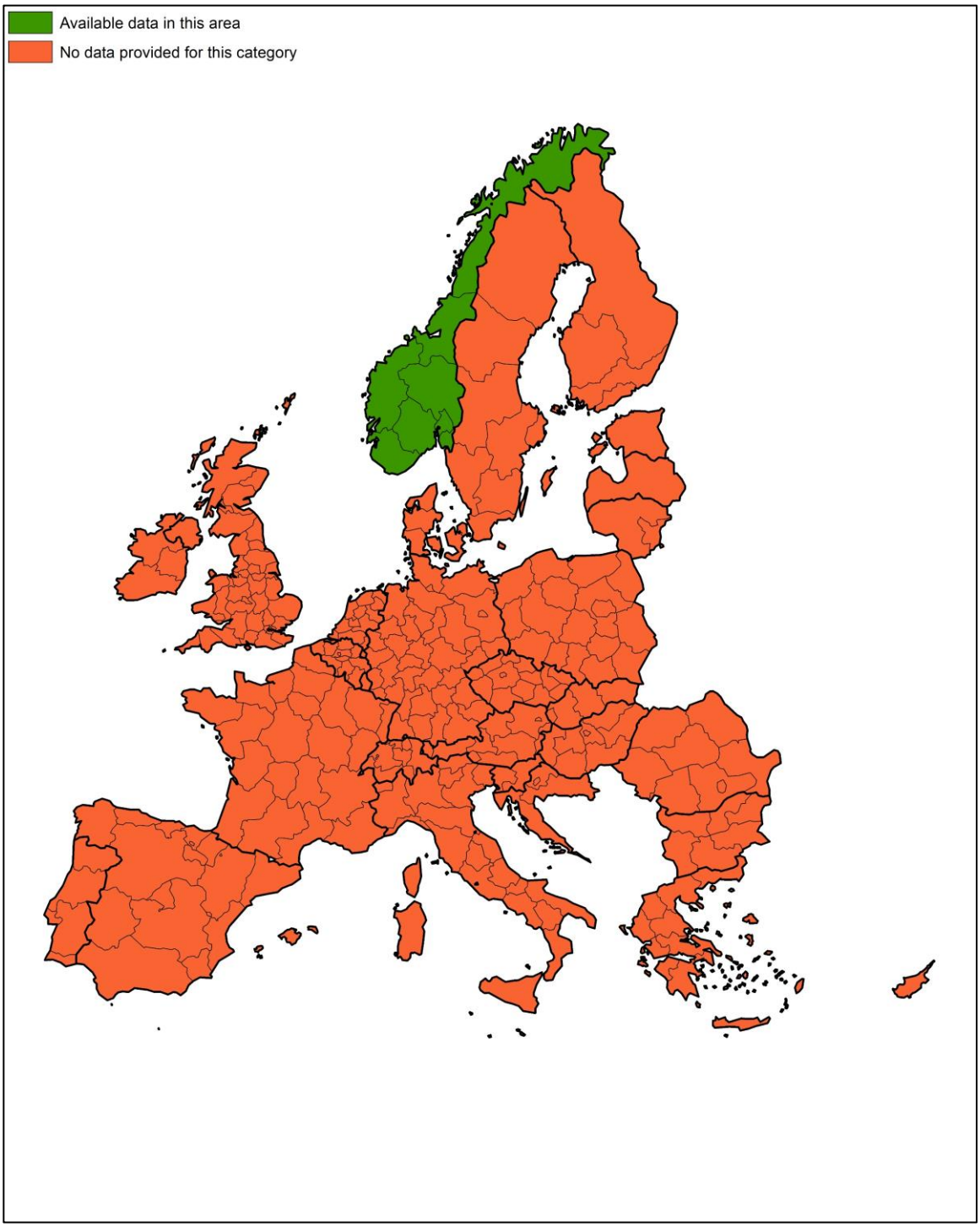
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – rail transport (e.g., disruptions, real-time status, status of access nodes features, estimated departure and arrival times)



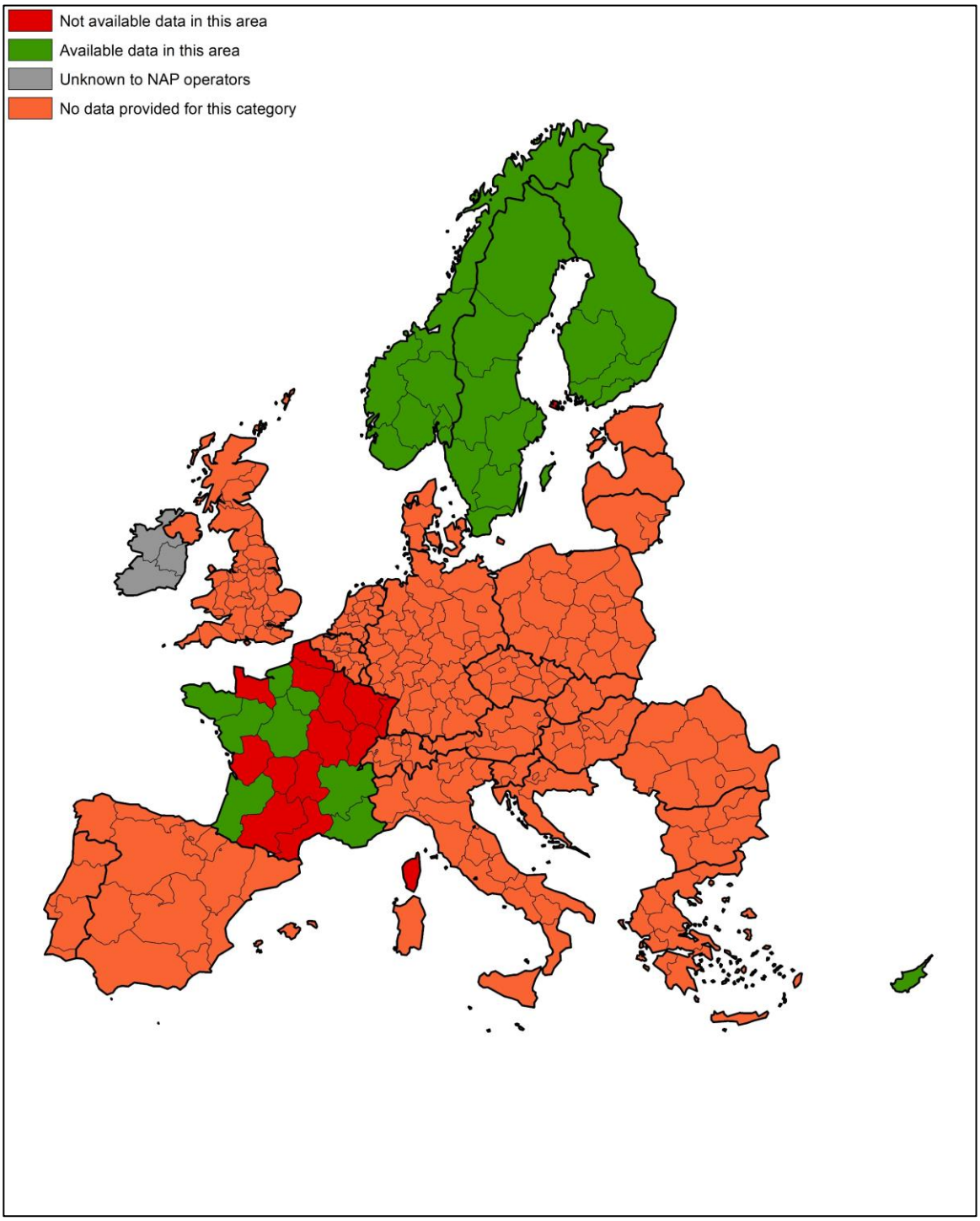
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – maritime transport (e.g., disruptions, real-time status, status of access nodes features, estimated departure and arrival times)



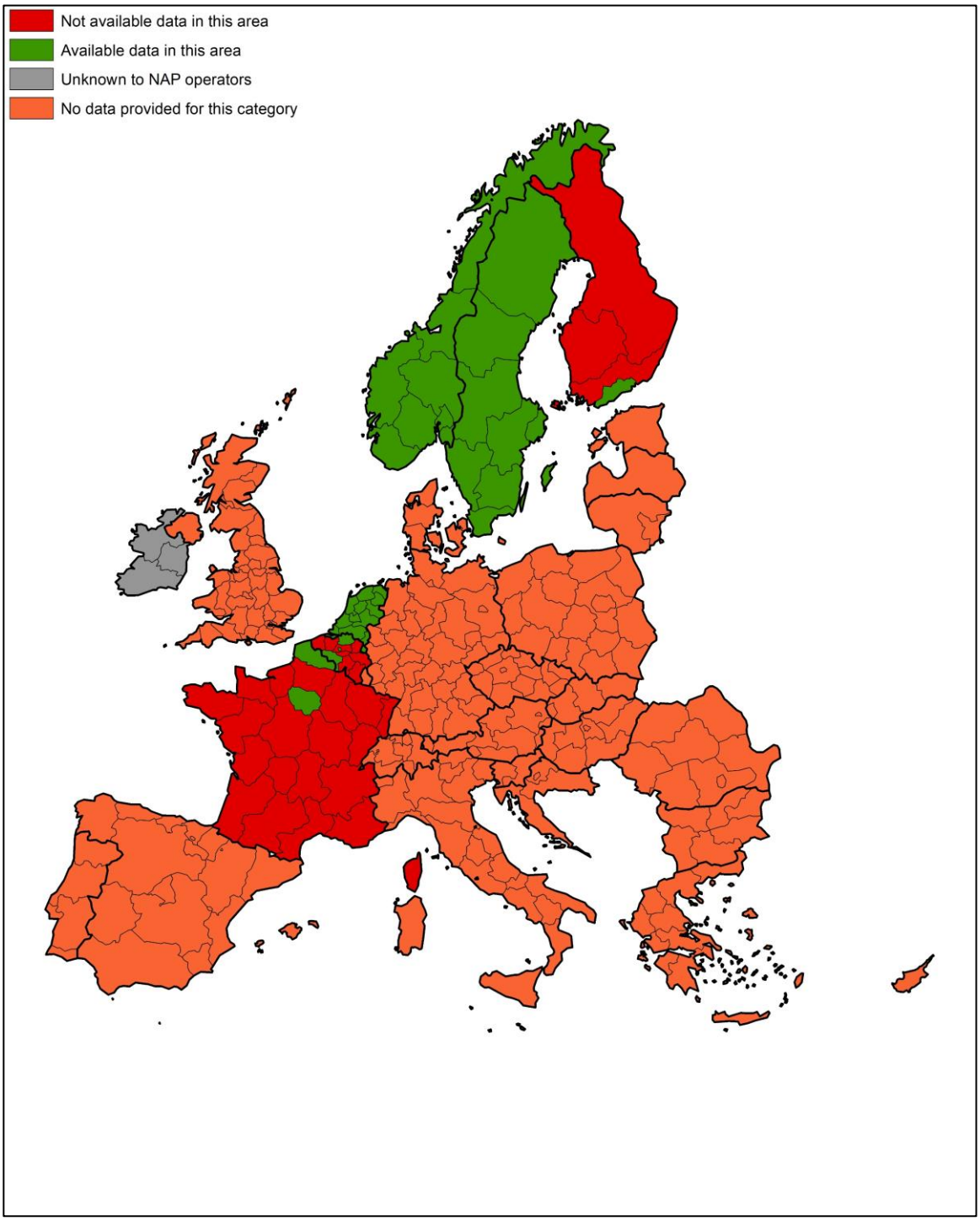
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – long distance coach (e.g., disruptions, real-time status, status of access nodes features, estimated departure and arrival times)



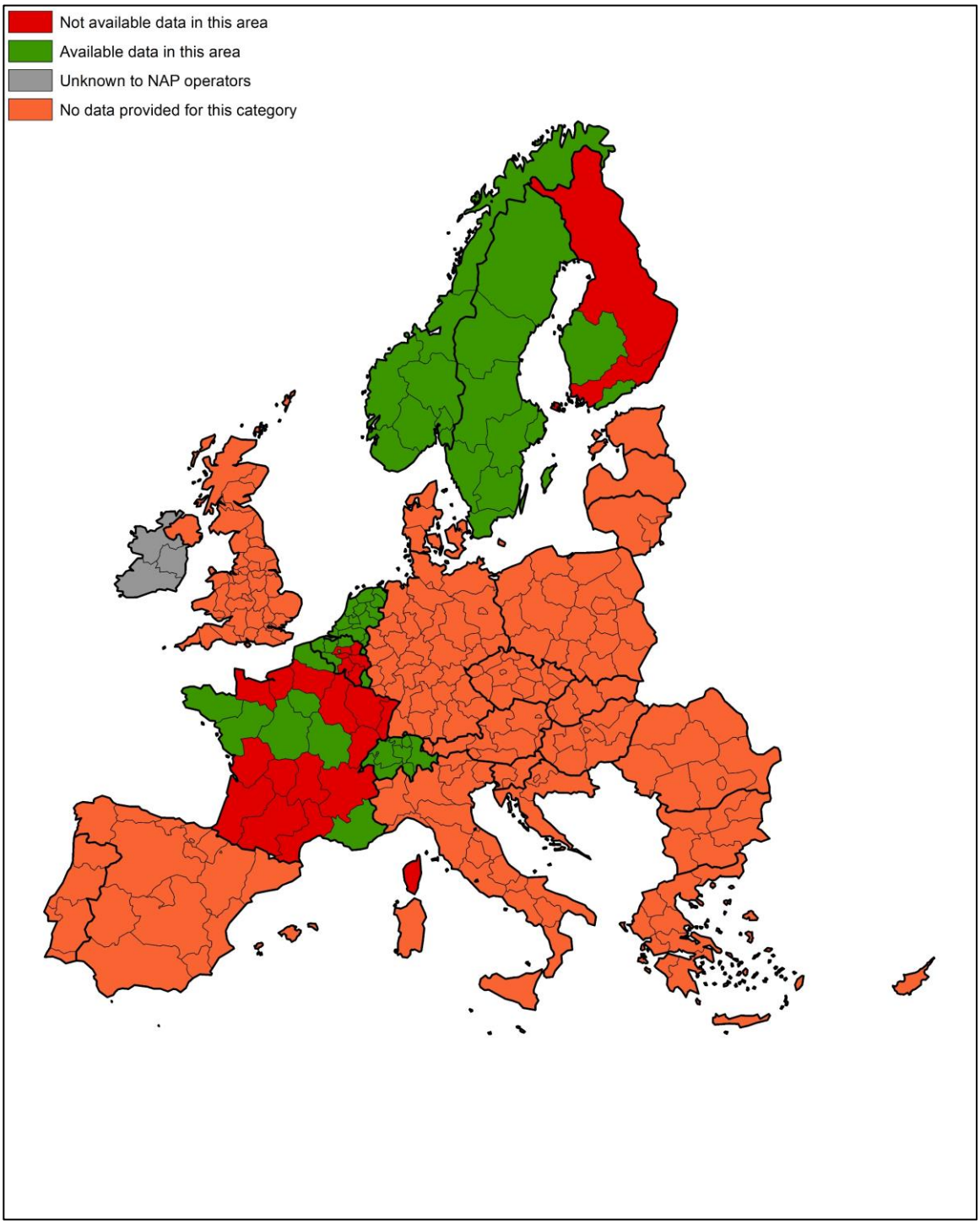
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – metro (e.g., disruptions, real-time status, status of access nodes features, estimated departure and arrival times)



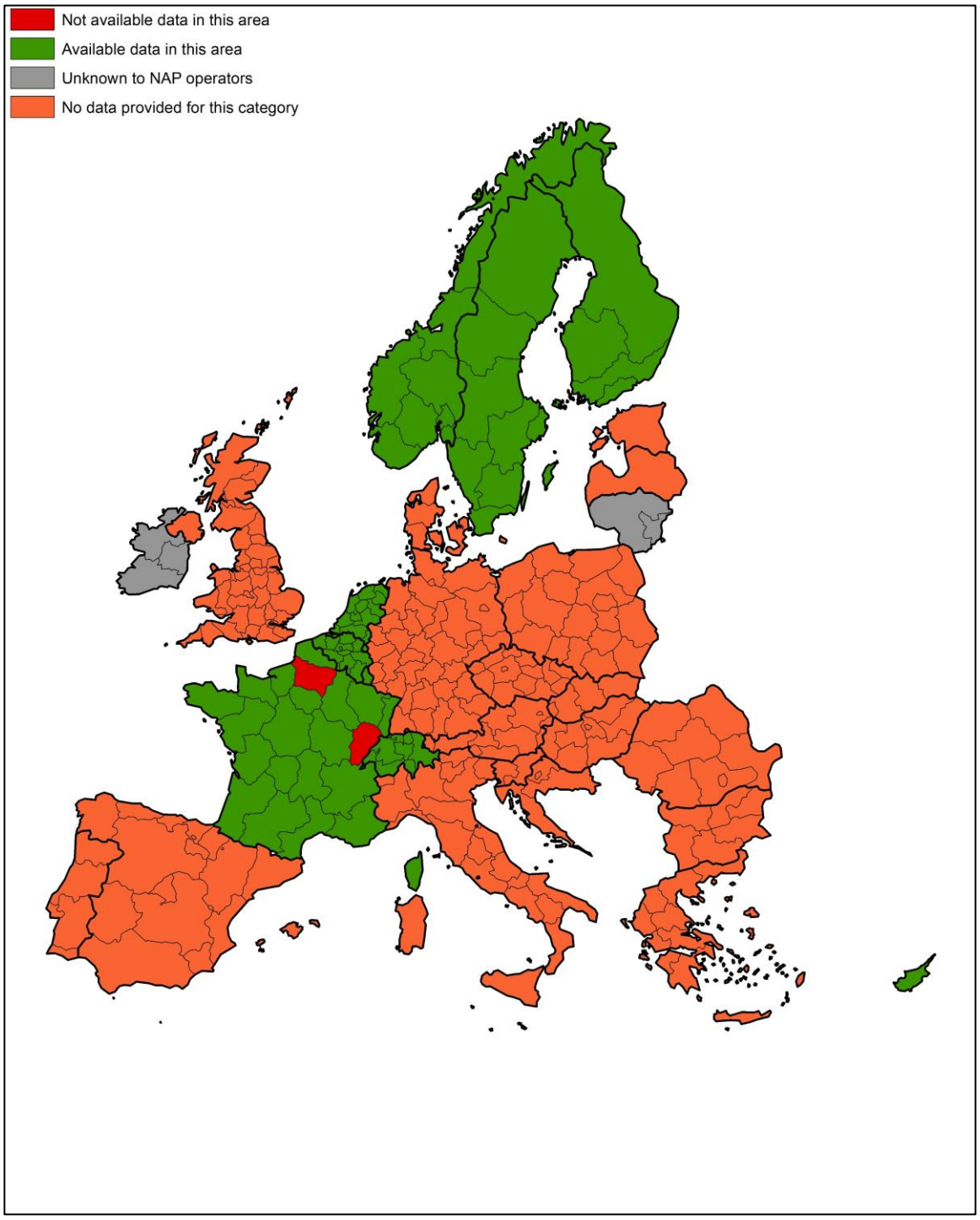
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – tram (e.g., disruptions, real-time status, status of access nodes features, estimated departure and arrival times)



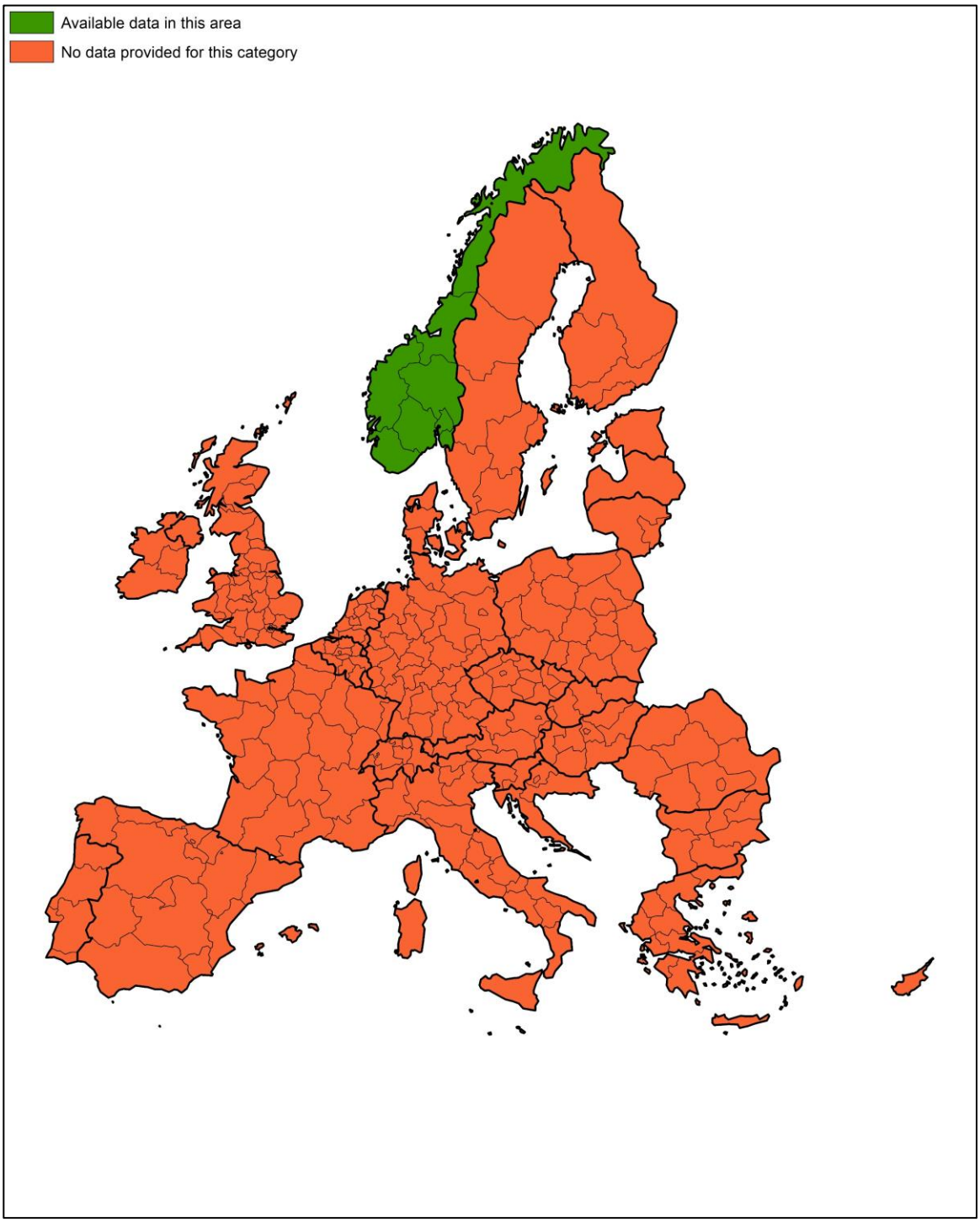
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – bus/trolley (e.g., disruptions, real-time status, status of access nodes features, estimated departure and arrival times)



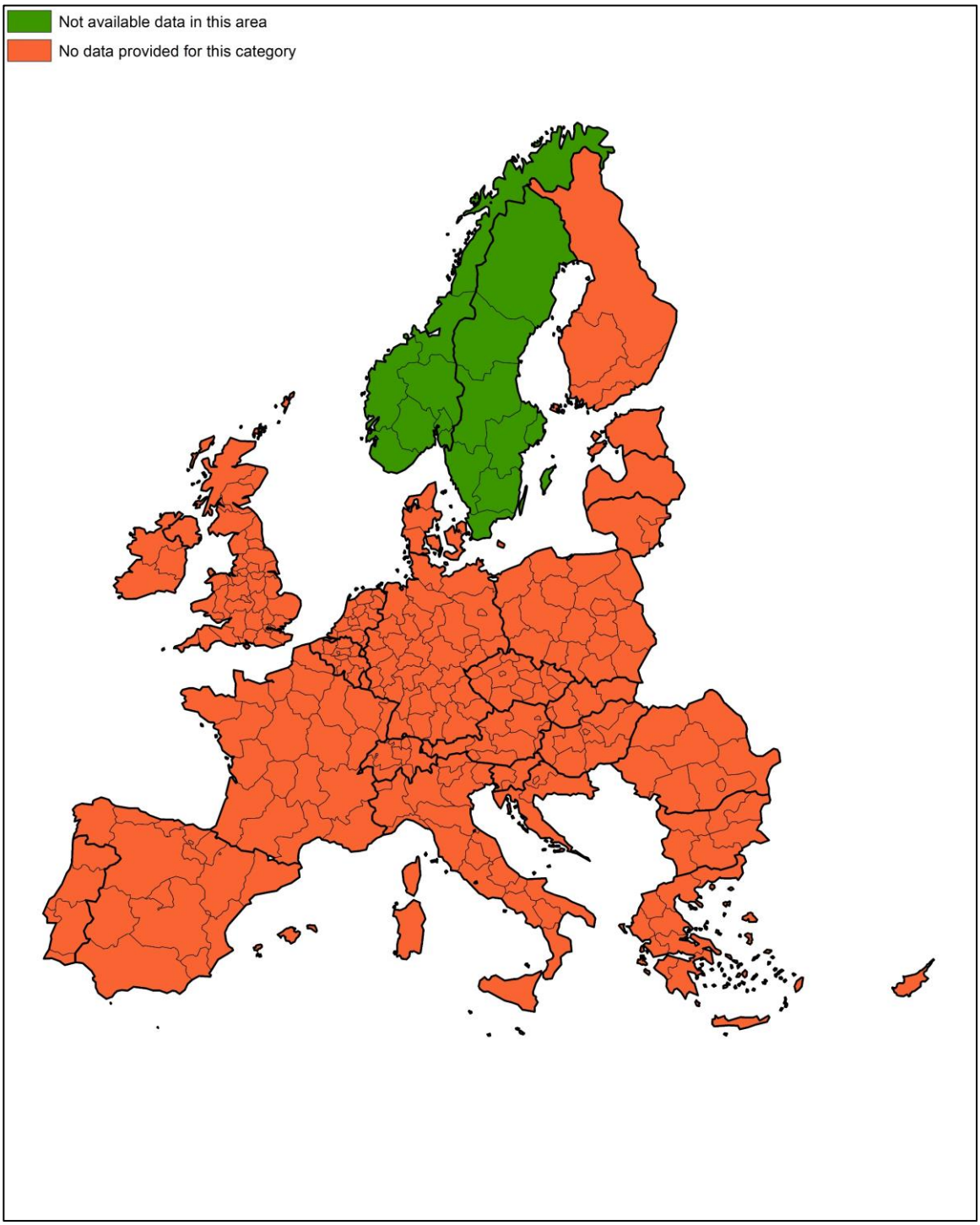
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – shuttle bus (e.g., disruptions, real-time status)



This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – shuttle ferry (e.g., disruptions, real-time status)

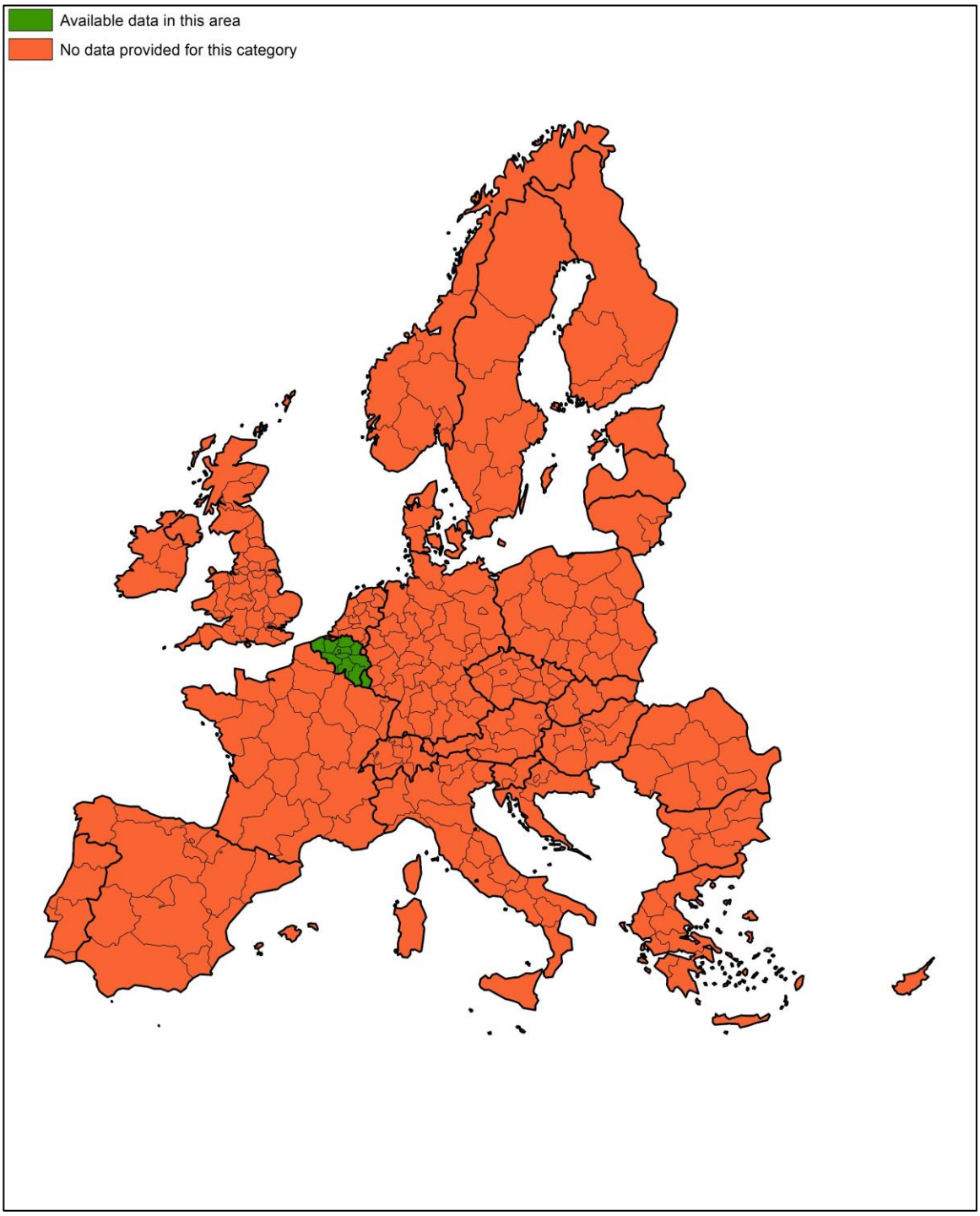


This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – taxi (e.g., disruptions, real-time status)

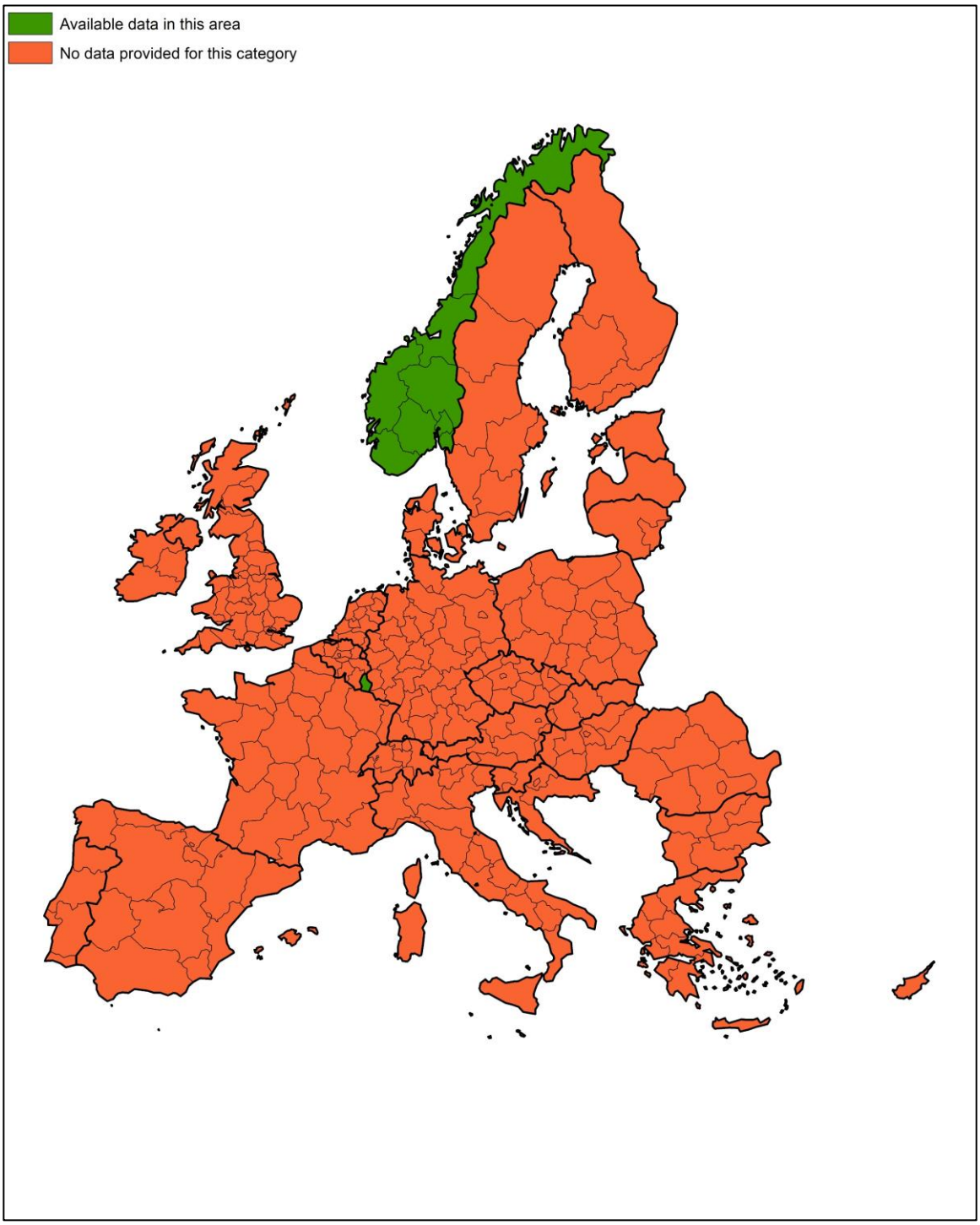
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – car sharing (e.g., disruptions, real-time status)



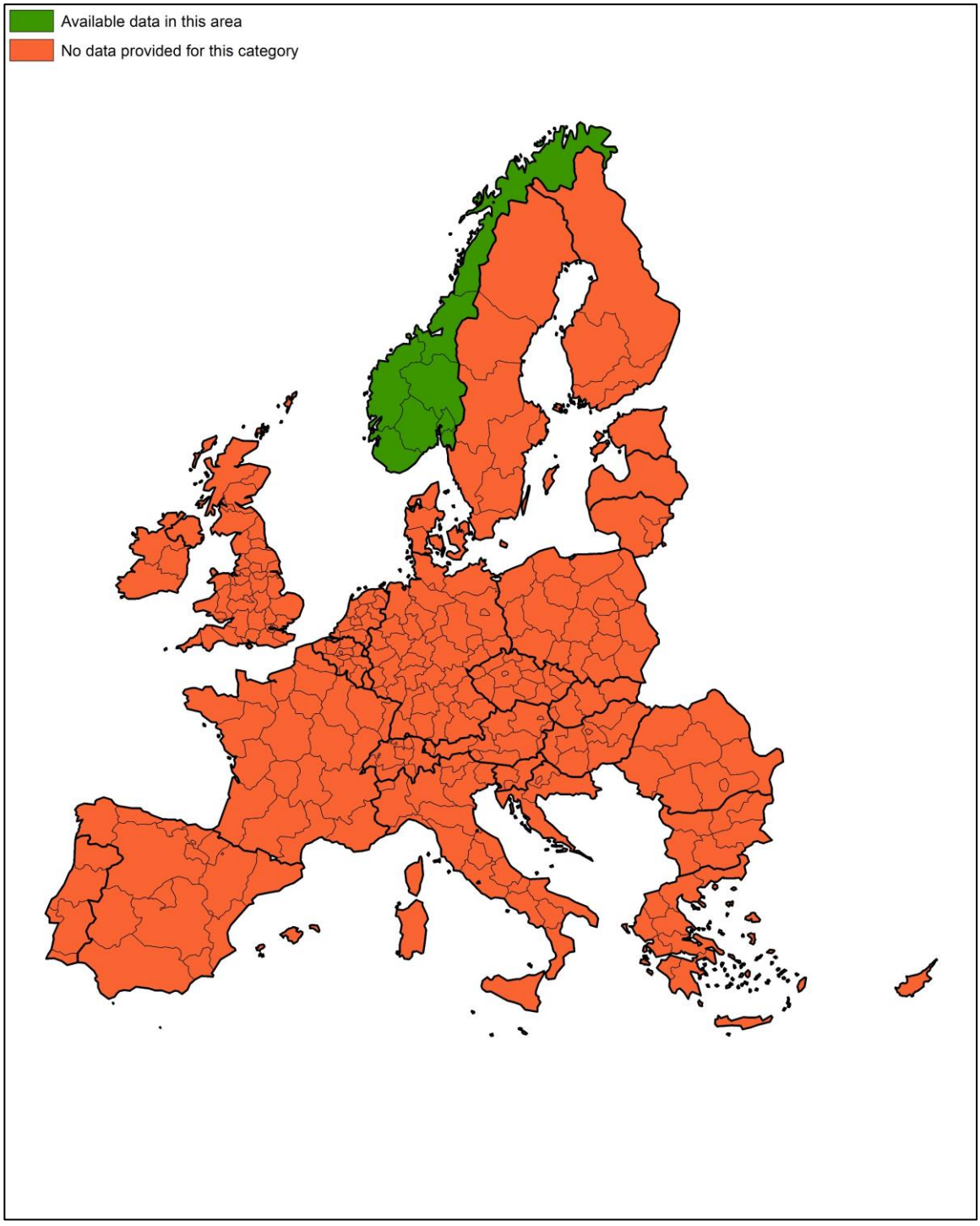
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – car pooling (e.g., disruptions, real-time status)



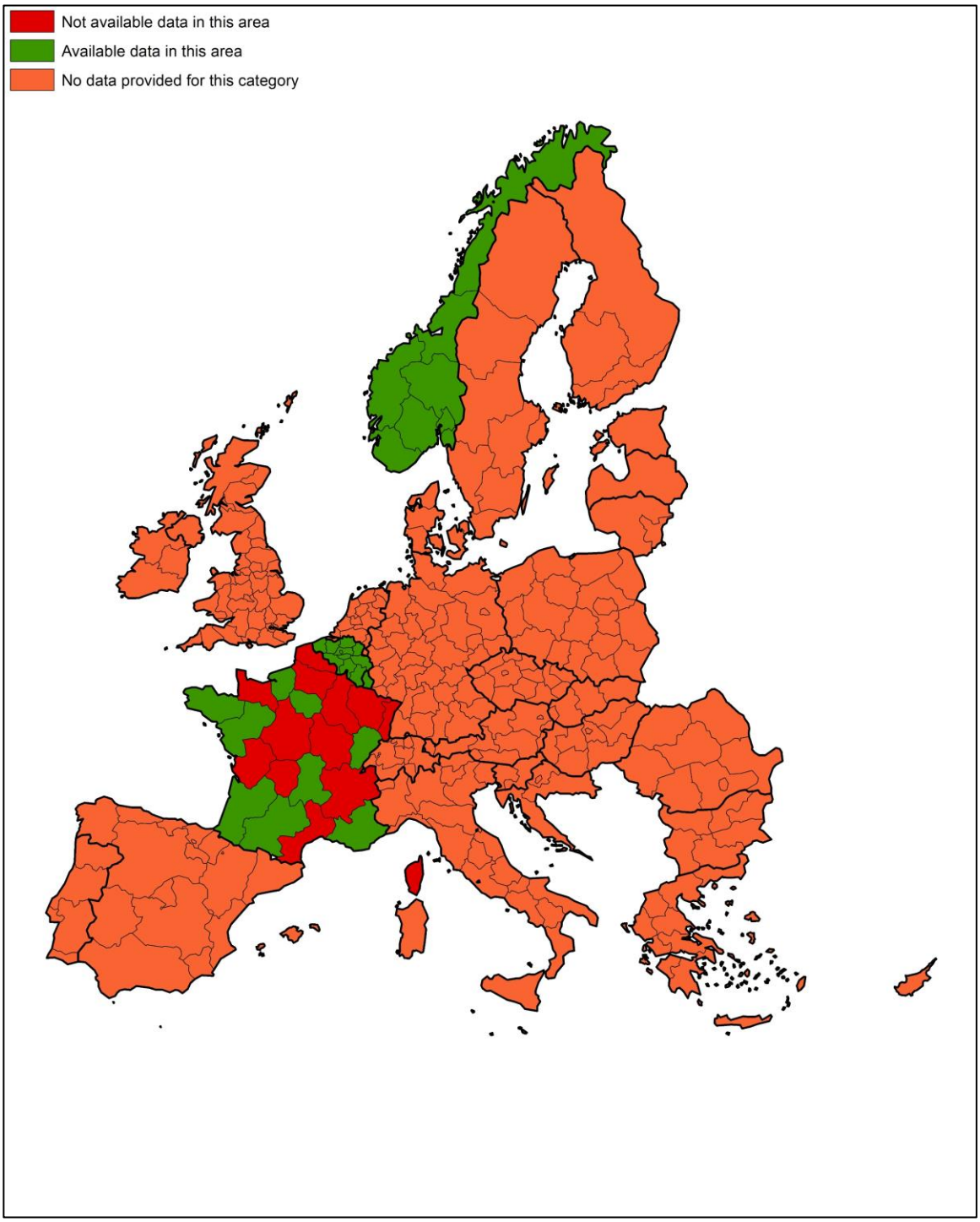
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – car hire (e.g., disruptions, real-time status)



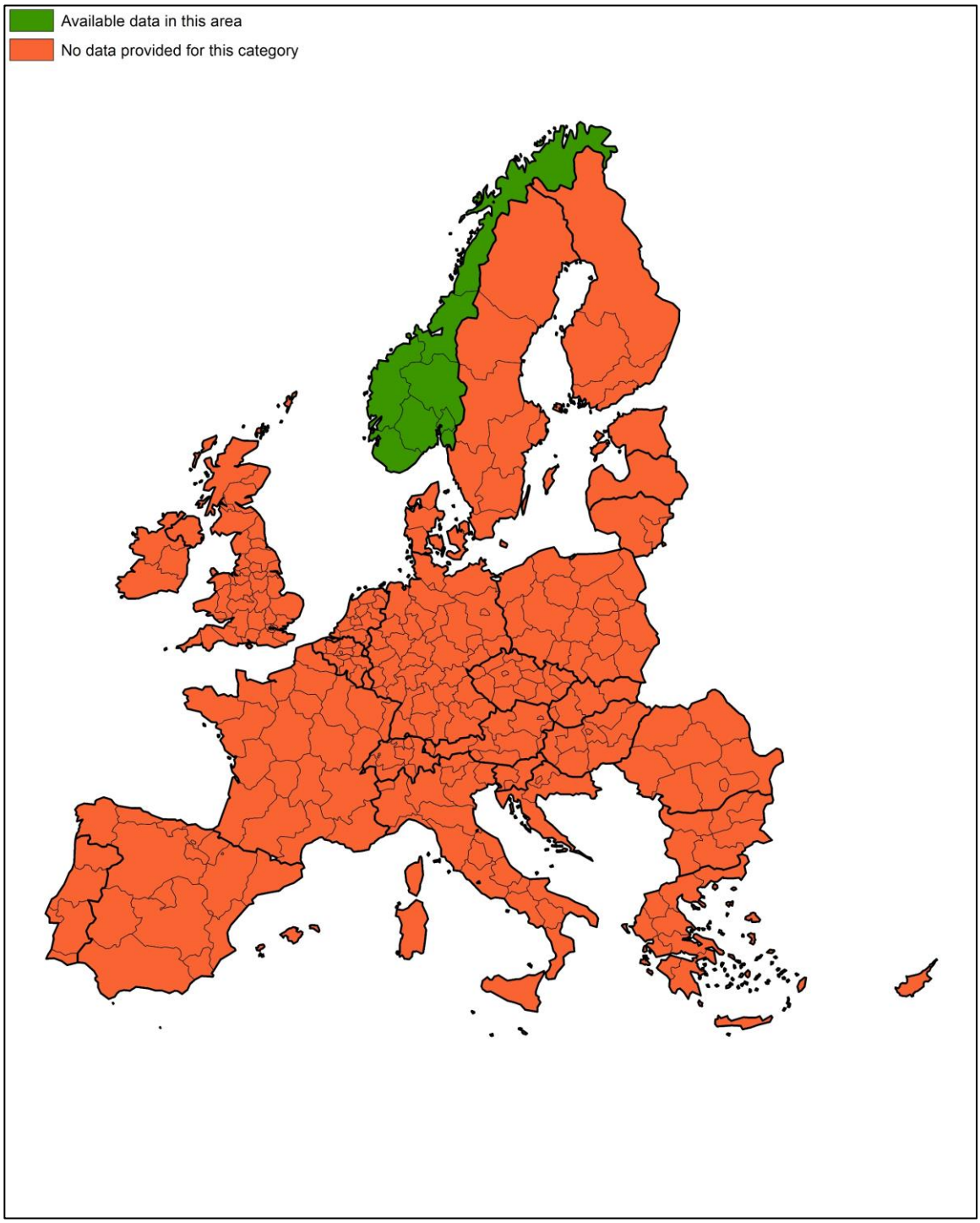
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – bike sharing (e.g., disruptions, real-time status)



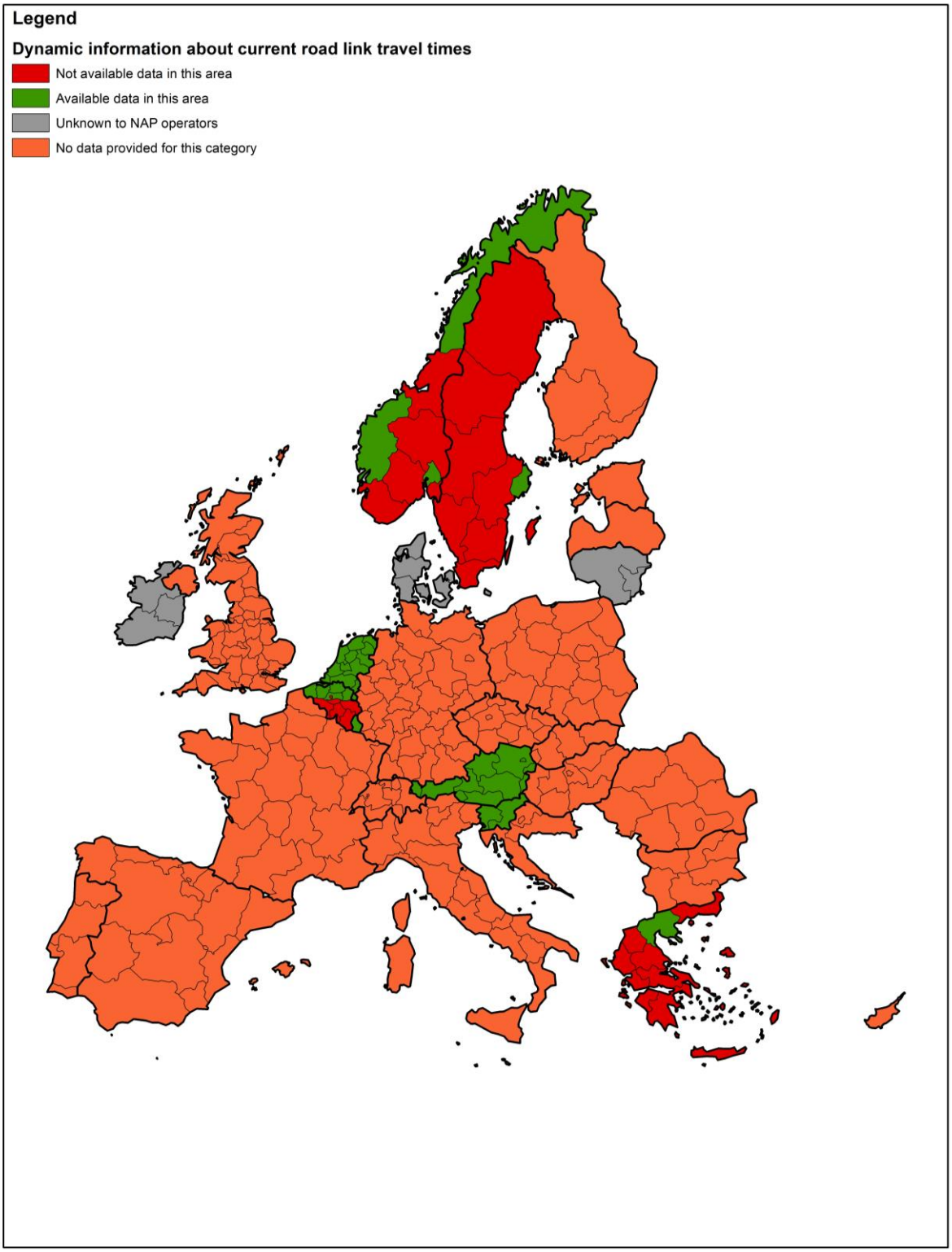
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic passing time, trip plan, and operational information – bike hire (e.g., disruptions, real-time status)



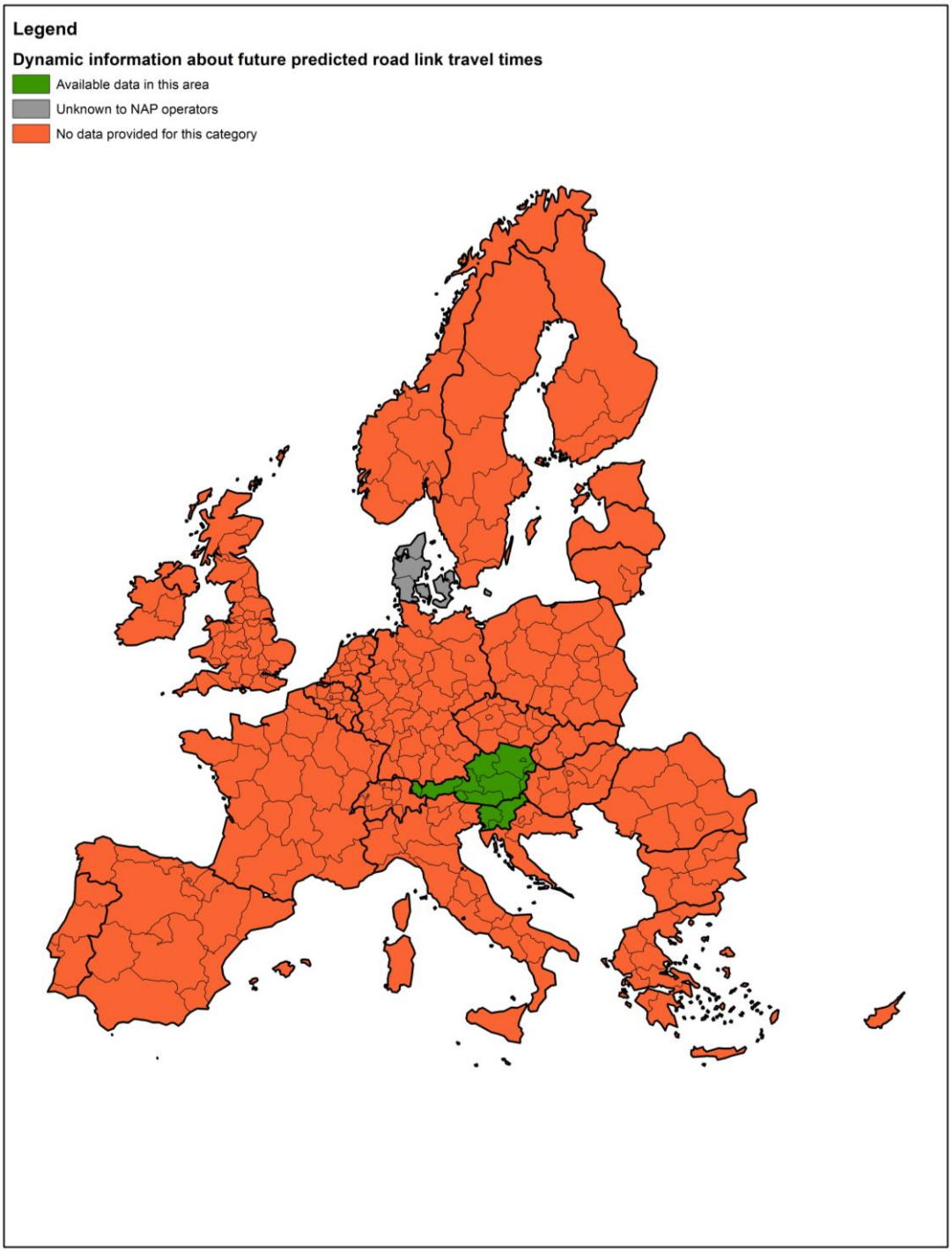
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic information about current road link travel times



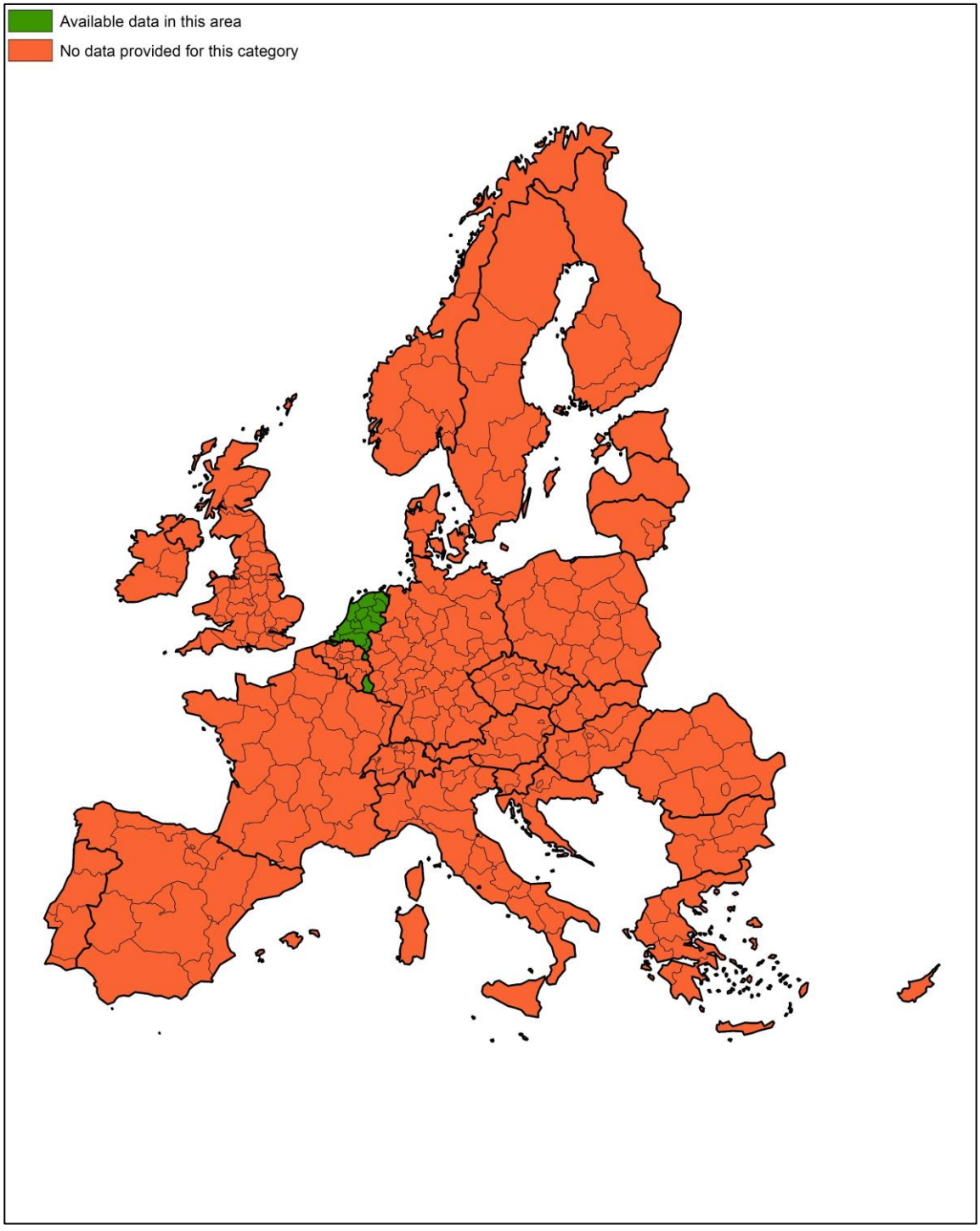
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic information about future predicted road link travel times



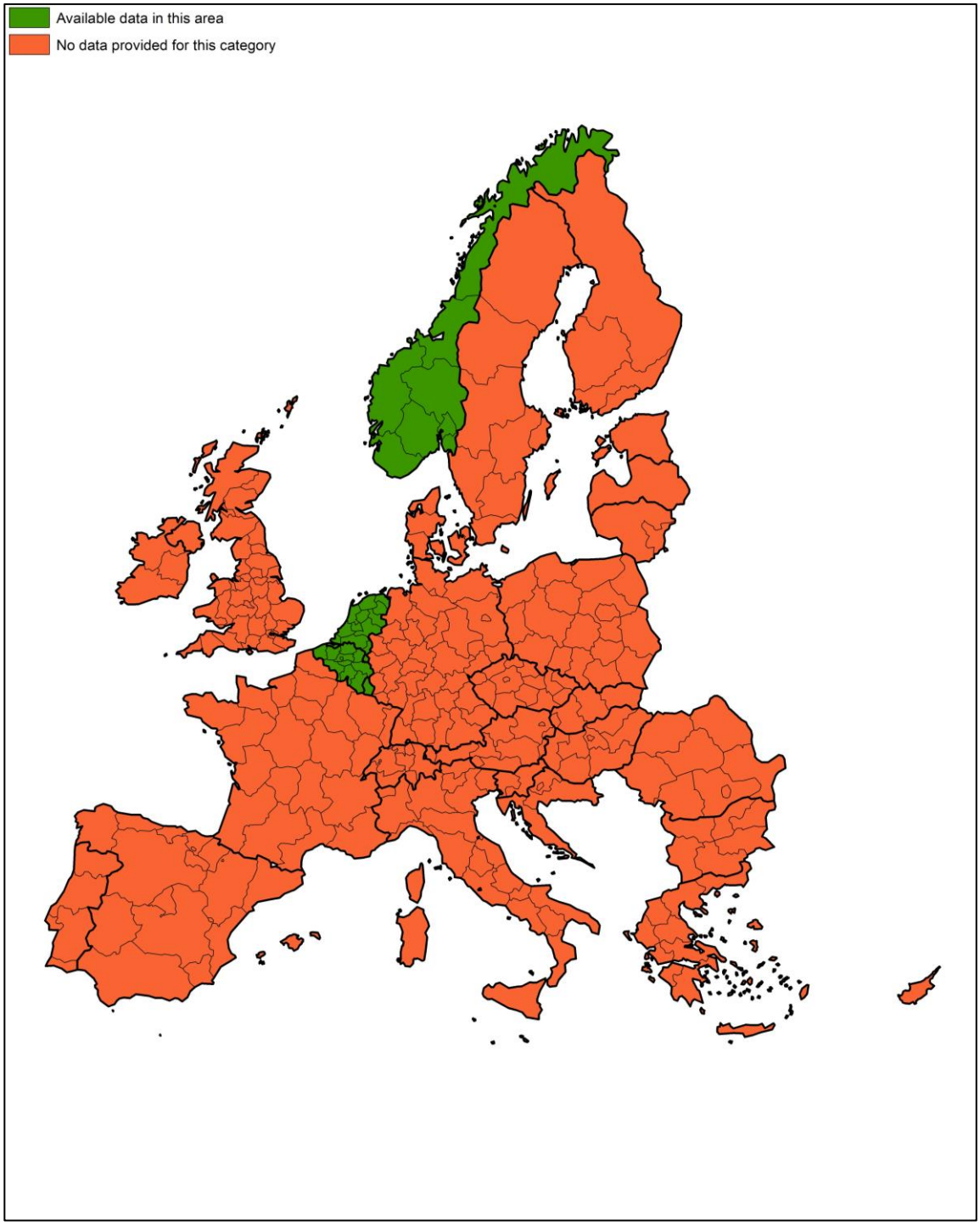
This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Dynamic information about cycling network status (e.g., closures, diversions)



This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

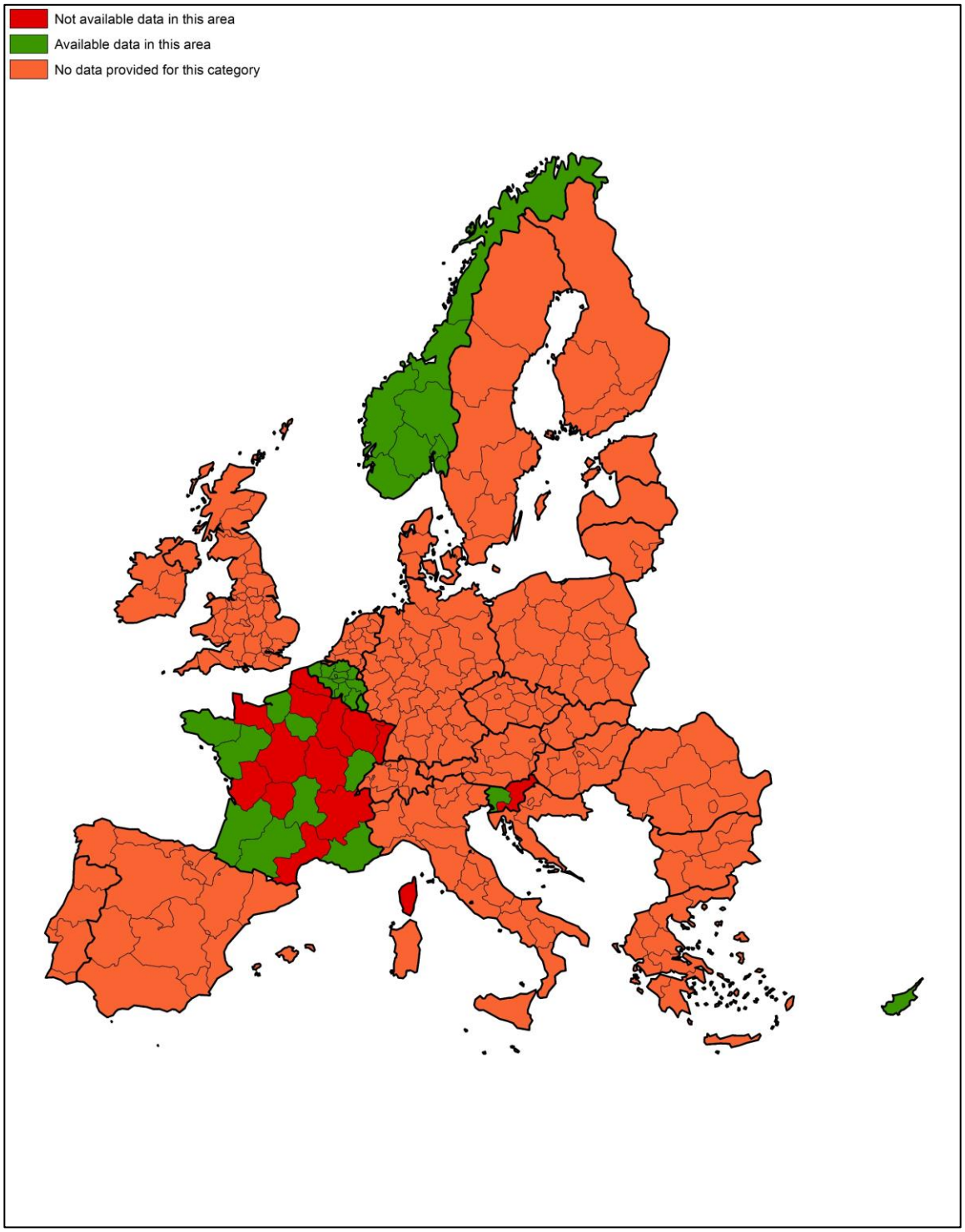
Dynamic information about the availability of mobility services and relevant infrastructure – car sharing



This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

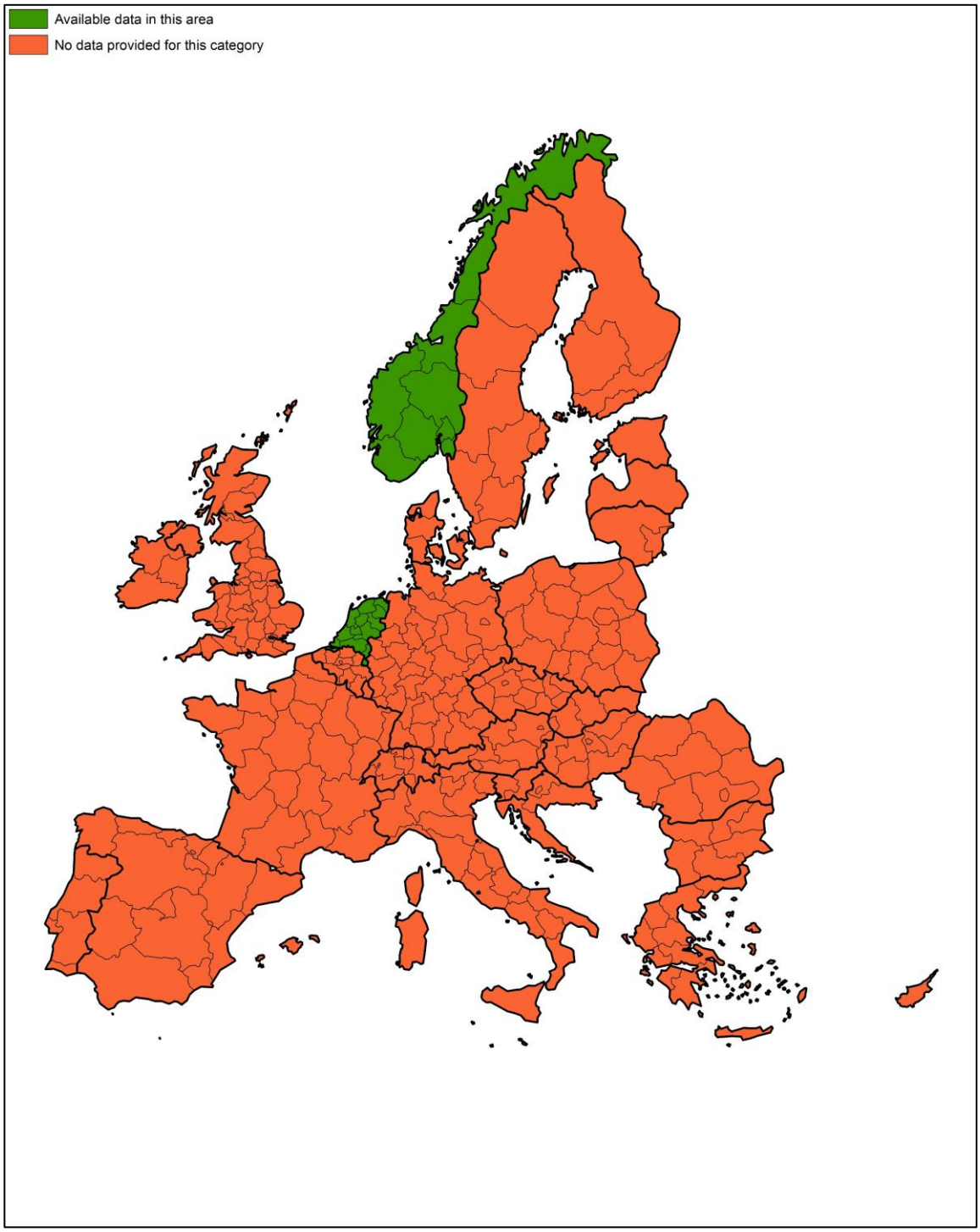
Dynamic information about the availability of mobility services and relevant infrastructure – bike sharing

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522



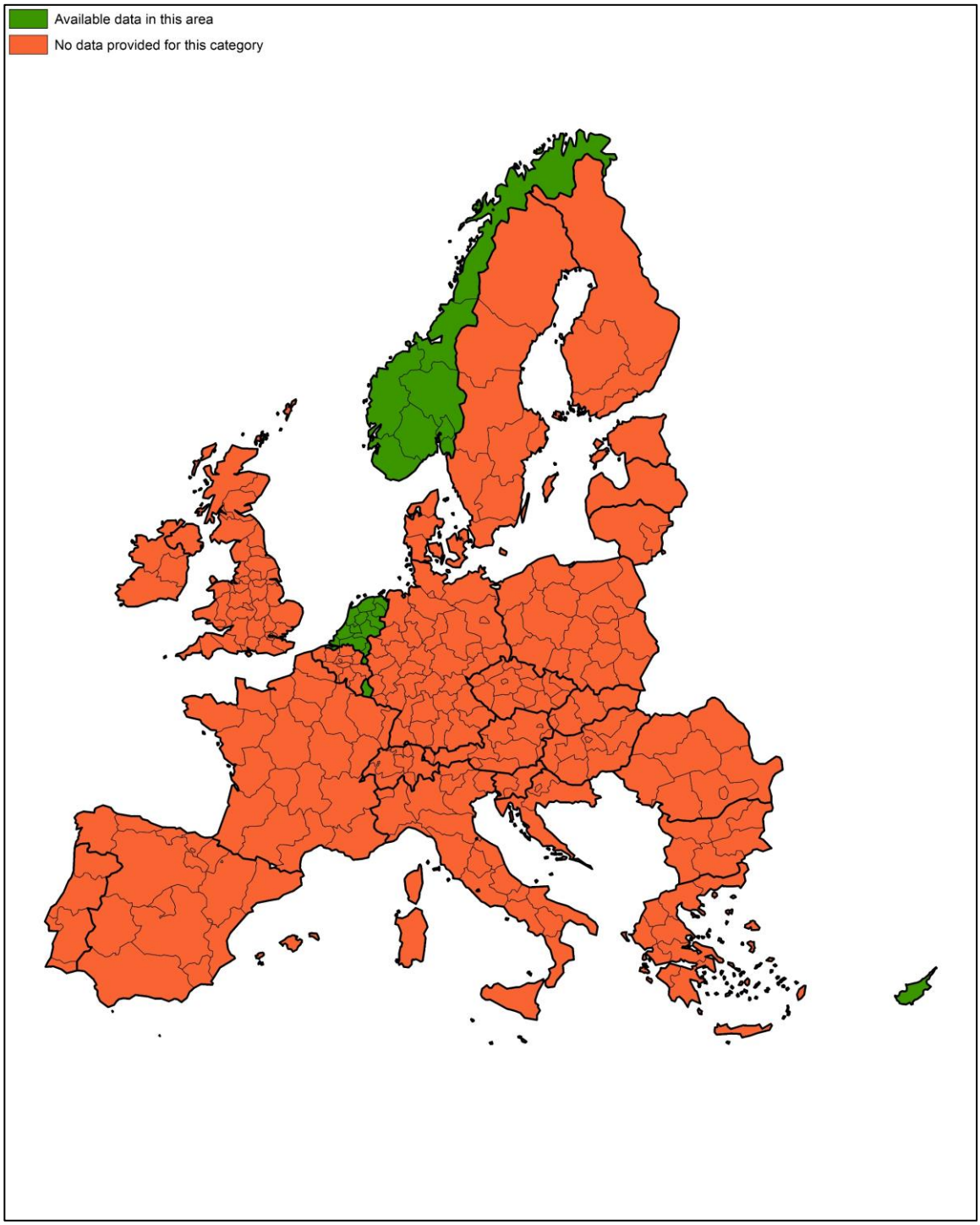
Dynamic information about the availability of mobility services and relevant infrastructure – car parking (on-street)

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522



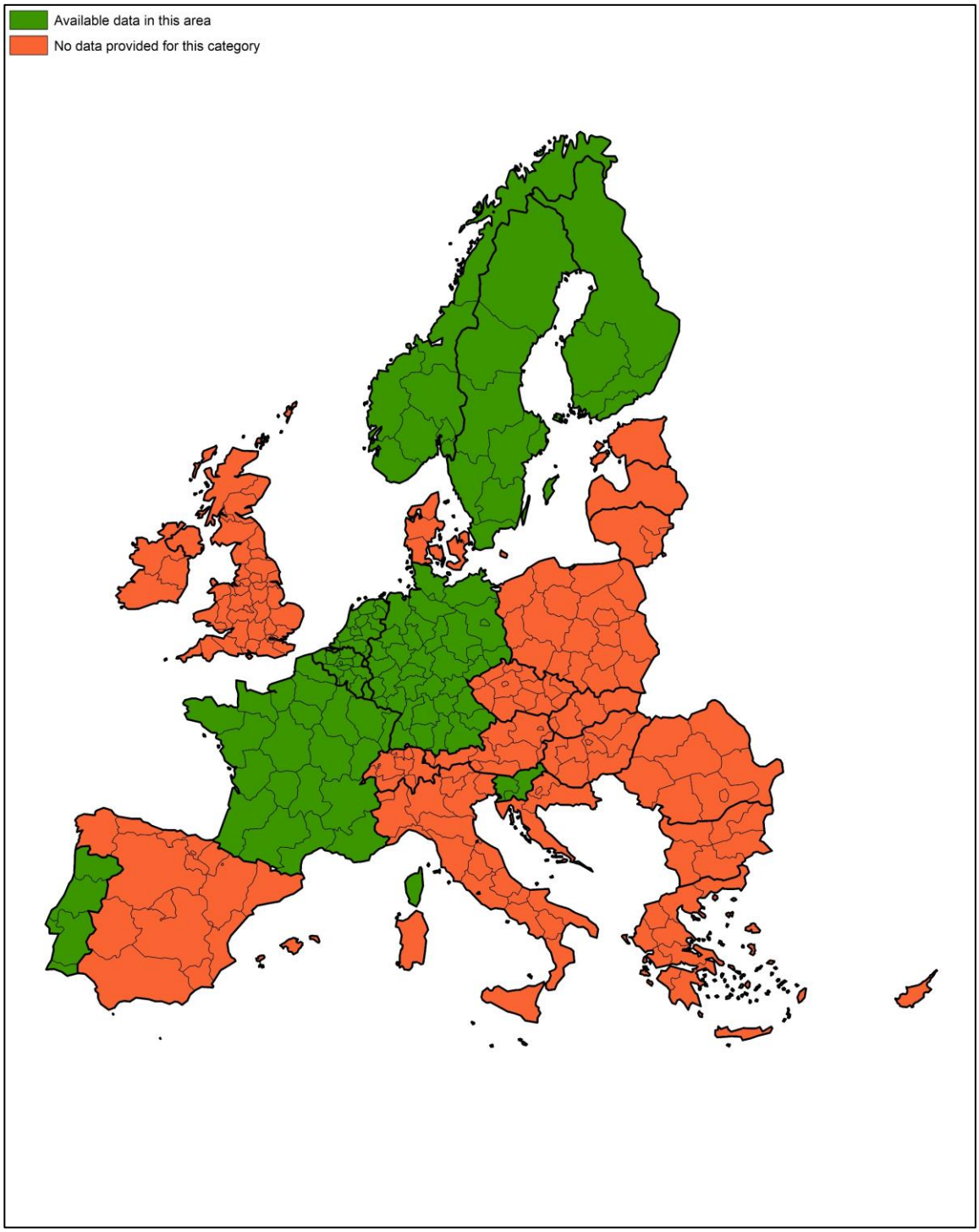
Dynamic information about the availability of mobility services and relevant infrastructure – car parking (off-street)

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522



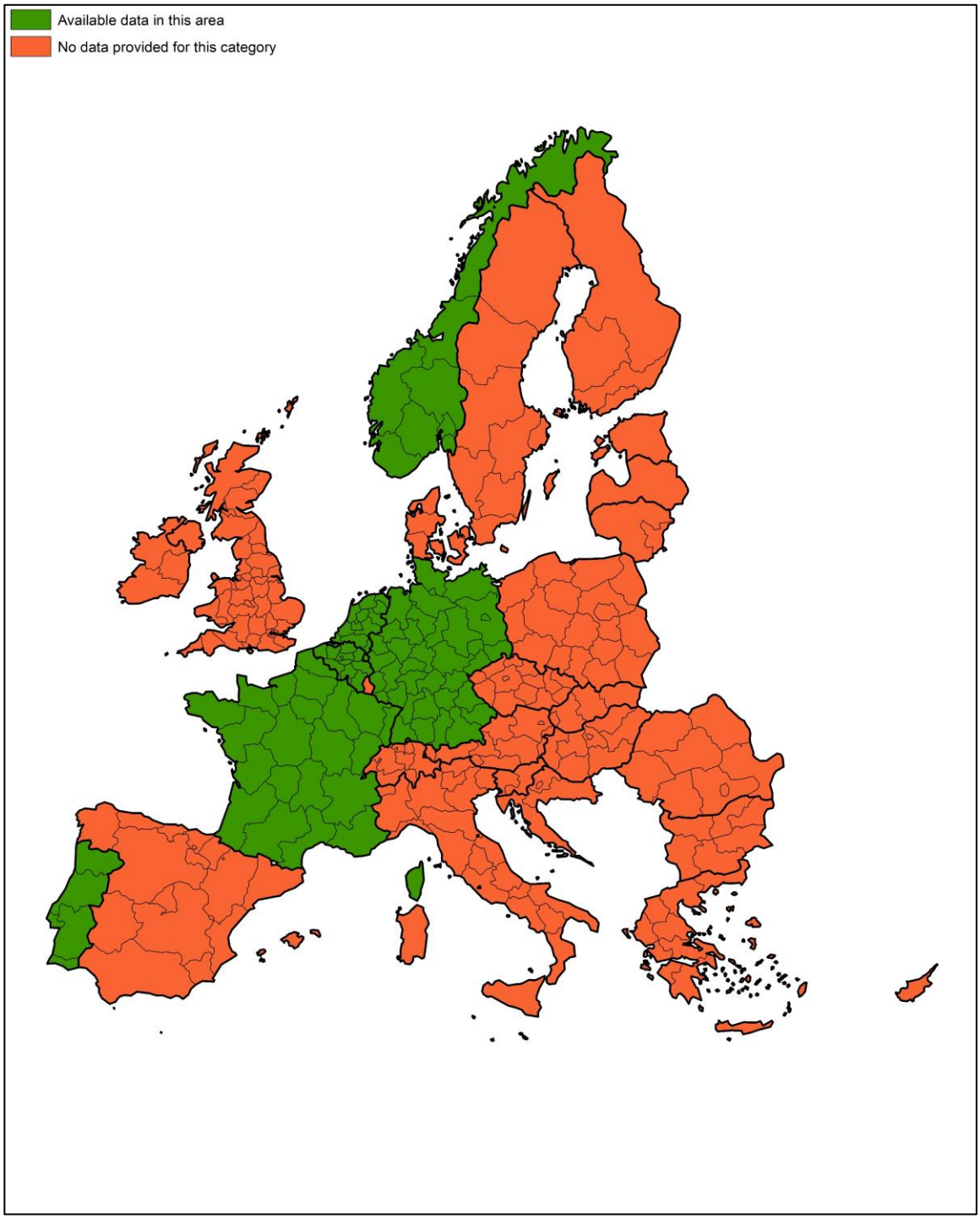
Dynamic information about the availability of mobility services and relevant infrastructure – public charging points

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522



Dynamic information about the availability of mobility services and relevant infrastructure – refuelling points

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522



This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Annex VI – Implemented data standards for SSTP per country

	Static information about truck parking areas					
Country	**Identification information of parking area (name and address of the truck parking area**	**Location information of the entry point in the parking area (latitude/longitude)**	**Primary road identifier1/direction and Primary Road identifier2/direction if same parking accessible from two different roads**	**If needed, the indication of the Exit to be taken / Distance from primary road km or miles**	**Total number of free parking places for trucks - Price and currency of parking places**	**Price and currency of parking places**
Austria	DATEX	DATEX	DATEX	DATEX	DATEX	--
Belgium	DATEX, Other(s)	DATEX, Other(s)	DATEX, Other(s)	--	DATEX, Other(s)	--
Bulgaria	DATEX	DATEX	DATEX	--	DATEX	--
Croatia	Other(s)	Other(s)	--	--	--	--
Cyprus	--	--	--	--	--	--
Czech Republic	DATEX	DATEX	DATEX	DATEX	DATEX	--
Denmark	DATEX	DATEX	DATEX	--	--	--
Estonia	DATEX	DATEX	DATEX	--	--	--
Finland	Other(s): SHP	Other(s): SHP	--	--	--	--
France	Other(s): XLS	Other(s): XLS	Other(s): XLS	Other(s): XLS	Other(s): XLS	Other(s): XLS
Germany	Approximately 90% of SSTP datasets conform to DATEX					
Greece	Other(s): XLS, GeoJSON	Other(s): XLS	Other(s): XLS	Other(s): XLS	Other(s): XLS	Other(s): XLS
Hungary	DATEX, Other(s): WFS	DATEX	DATEX, Other(s): WFS	DATEX	--	--
Ireland						
Italy	DATEX	--	DATEX	DATEX, Other(s)	DATEX, Other(s)	--
Latvia	Other(s)	--	--	--	--	--
Lithuania	--	--	--	--	--	--
Luxembourg	DATEX	--	--	--	DATEX	--
Malta	--	--	--	--	--	--
Netherlands	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Norway	--	--	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Poland	Other(s): XLS	Other(s): XLS	Other(s): XLS	--	Other(s): XLS	--
Portugal	--	--	--	--	--	--
Romania	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Slovakia	Other(s)	Other(s)	Other(s)	--	Other(s)	--
Slovenia	DATEX	DATEX	--	--	--	--
Spain	--	--	--	--	--	--
Sweden	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Switzerland	--	--	--	--	--	--
United Kingdom	--	--	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Information on safety conditions and equipment of truck parking areas		
Country	**Description of security, safety and service equipment of the parking including national classification if one is applied**	**Number of parking places for refrigerated goods vehicles**	**Information on specific equipment or services for specific goods vehicles and other**
Austria	DATEX	DATEX	DATEX
Belgium	DATEX, Other(s)	--	--
Bulgaria	DATEX	DATEX	--
Croatia	Other(s)	--	--
Cyprus	--	--	--
Czech Republic	DATEX	DATEX	DATEX
Denmark	--	--	--
Estonia	--	--	--
Finland	--	--	--
France	--	--	--
Germany	Approximately 90% of SSTP datasets conform to DATEX		
Greece	Other(s): XLS, GeoJSON	Other(s): XLS	Other(s): XLS
Hungary	DATEX	DATEX	DATEX
Ireland			
Italy	DATEX, Other(s)	DATEX, Other(s)	DATEX, Other(s)
Latvia	--	--	--
Lithuania	--	--	--
Luxembourg	--	--	--
Malta	--	--	--
Netherlands	DATEX	DATEX	DATEX
Norway	--	--	--
Poland	Other(s): XLS	--	Other(s): XLS
Portugal	--	--	--
Romania	DATEX	DATEX	DATEX
Slovakia	Other(s)	Other(s)	--
Slovenia	DATEX	--	--
Spain	--	--	--
Sweden	DATEX	DATEX	DATEX
Switzerland	--	--	--
United Kingdom	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Contact information of truck parking operators			
Country	**Name and surname**	**Telephone number**	**E-mail address**	**Consent of the operator to make his contact information public**
Austria	--	--	--	--
Belgium	Other(s)	--	DATEX, Other(s)	--
Bulgaria	DATEX	--	DATEX	--
Croatia	Other(s)	Other(s)	Other(s)	Other(s)
Cyprus	--	--	--	--
Czech Republic	--	--	DATEX	--
Denmark	DATEX	DATEX	DATEX	--
Estonia	--	DATEX	--	--
Finland	--	--	--	--
France	Other(s)	Other(s)	--	Other(s)
Germany	Approximately 90% of SSTP datasets conform to DATEX			
Greece	Other(s): XLS	Other(s): XLS	Other(s): XLS	Other(s): XLS
Hungary	DATEX	--	--	--
Ireland				
Italy	--	DATEX, Other(s)	DATEX, Other(s)	--
Latvia	--	--	--	--
Lithuania	--	--	--	--
Luxembourg	--	--	--	--
Malta	--	--	--	--
Netherlands	DATEX	DATEX	DATEX	DATEX
Norway	--	--	--	--
Poland	--	--	--	--
Portugal	--	--	--	--
Romania	DATEX	DATEX	DATEX	DATEX
Slovakia	--	--	--	--
Slovenia	DATEX	DATEX	DATEX	DATEX
Spain	--	--	--	--
Sweden	Other(s)	Other(s)	Other(s)	--
Switzerland	--	--	--	--
United Kingdom	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Dynamic information about the availability of truck parking areas		
Country	**Full**	**Closed**	**Number of free places which are available**
Austria	DATEX	--	--
Belgium	--	--	--
Bulgaria	--	--	--
Croatia	--	--	--
Cyprus	--	--	--
Czech Republic	--	--	--
Denmark	DATEX	DATEX	DATEX
Estonia	--	--	--
Finland	--	--	--
France	--	--	--
Germany	Approximately 90% of SSTP datasets conform to DATEX		
Greece	--	--	--
Hungary	DATEX	--	DATEX
Ireland			
Italy	--	--	--
Latvia	--	--	--
Lithuania	--	--	--
Luxembourg	DATEX	DATEX	DATEX
Malta	--	--	--
Netherlands	DATEX	DATEX	DATEX
Norway	--	--	--
Poland	--	--	--
Portugal	--	--	--
Romania	DATEX	DATEX	DATEX
Slovakia	--	--	--
Slovenia	--	--	--
Spain	--	--	--
Sweden	--	--	--
Switzerland	--	--	--
United Kingdom	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Point location encoding (SSTP)					
Country	**Coordinates**	**Point along linear element**	**TPEG point**	**Alert C point**	**Open LR point**	**Other**
Austria	✓			✓		
Belgium	✓					✓
Bulgaria	✓					
Croatia						
Cyprus						
Czech Republic	✓	✓				
Denmark	✓					
Estonia	✓					
Finland						
France						
Germany						
Greece	✓					
Hungary	✓	✓		✓	✓	
Ireland						
Italy	✓			✓	✓	
Latvia						
Lithuania						
Luxembourg						
Malta						
Netherlands	✓					
Norway						
Poland					✓	
Portugal						
Romania	✓			✓		
Slovakia						
Slovenia	✓	✓		✓	✓	
Spain						
Sweden	✓				✓	
Switzerland						
United Kingdom						

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Linear location encoding (SSTP)					
Country	**Linear along linear element**	**TPEG linear location**	**Alert C linear**	**Open LR linear**	**GML line**	**Other(s)**
Austria	✓		✓			
Belgium						
Bulgaria						
Croatia						
Cyprus						
Czech Republic						
Denmark						
Estonia						
Finland						
France						
Germany						
Greece	✓					
Hungary	✓		✓	✓		
Ireland						
Italy				✓		
Latvia						
Lithuania						
Luxembourg						
Malta						
Netherlands						
Norway						
Poland						
Portugal						
Romania	✓		✓			
Slovakia						
Slovenia	✓		✓	✓		
Spain						
Sweden				✓		
Switzerland						
United Kingdom						

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Annex VII – Implemented data standards for SRTI per country

	Safety-related traffic information							
Country	**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**
Austria	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Belgium	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Bulgaria	DATEX	DATEX	DATEX	DATEX	DATEX	--	--	DATEX
Croatia	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Cyprus	--	--	--	--	--	--	--	--
Czech Republic	DATEX, Other(s): DDR XML	DATEX, Other(s): DDR XML	DATEX, Other(s): DDR XML	DATEX, Other(s): DDR XML	DATEX, Other(s): DDR XML	DATEX, Other(s): DDR XML	DATEX, Other(s): DDR XML	DATEX, Other(s): DDR XML
Denmark	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Estonia	DATEX	DATEX	DATEX	DATEX	DATEX	--	DATEX	DATEX
Finland	DATEX, Other(s): custom JSON	DATEX, Other(s): custom JSON	DATEX, Other(s): custom JSON	DATEX, Other(s): custom JSON	DATEX, Other(s): custom JSON	DATEX, Other(s): custom JSON	DATEX, Other(s): custom JSON	DATEX, Other(s): custom JSON
France	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Germany	Approximately 90% of SRTI datasets conform to DATEX							
Greece	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Hungary	DATEX	DATEX	DATEX	DATEX	DATEX	--	DATEX	DATEX
Ireland								
Italy	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Latvia	Other(s)	--	--	Other(s)	Other(s)	--	--	Other(s)
Lithuania	DATEX	--	--	DATEX	DATEX	--	--	DATEX
Luxembourg	--	--	--	--	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Malta	--	--	--	--	--	--	--	--
Netherlands	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Norway	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Poland	DATEX, Other(s): OSM	DATEX, Other(s): OSM	DATEX, Other(s): OSM	DATEX, Other(s): OSM	DATEX, Other(s): OSM	DATEX, Other(s): OSM	DATEX, Other(s): OSM	DATEX, Other(s): OSM
Portugal	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Romania	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Slovakia	Other(s)	Other(s)	--	Other(s)	Other(s)	--	--	--
Slovenia	DATEX, Other(s): GeoJSON, JSON, RSS, GeoRSS	DATEX, Other(s): GeoJSON, JSON, RSS, GeoRSS	DATEX, Other(s): GeoJSON, JSON, RSS, GeoRSS	DATEX, Other(s): GeoJSON, JSON, RSS, GeoRSS	DATEX, Other(s): GeoJSON, JSON, RSS, GeoRSS	DATEX, Other(s): GeoJSON, JSON, RSS, GeoRSS	DATEX, Other(s): GeoJSON, JSON, RSS, GeoRSS	DATEX, Other(s): GeoJSON, JSON, RSS, GeoRSS
Spain	DATEX	DATEX	DATEX	DATEX	DATEX	--	DATEX	DATEX
Sweden	DATEX	DATEX	DATEX	DATEX	DATEX	--	DATEX	DATEX
Switzerland	--	--	--	--	--	--	--	--
United Kingdom	--	--	--	--	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Point location encoding (SRTI)					
Country	**Coordinates**	**Point along linear element**	**TPEG point**	**Alert C point**	**Open LR point**	**Other**
Austria				✓		
Belgium	✓			✓		
Bulgaria	✓					
Croatia	✓	✓		✓	✓	
Cyprus						
Czech Republic	✓	✓		✓	✓	
Denmark	✓			✓	✓	✓
Estonia	✓					
Finland				✓		
France	✓	✓				
Germany						
Greece	✓					
Hungary	✓	✓		✓	✓	
Ireland						
Italy	✓			✓	✓	
Latvia						
Lithuania	✓					
Luxembourg						
Malta						
Netherlands	✓			✓		
Norway	✓					
Poland					✓	
Portugal	✓					
Romania	✓			✓		
Slovakia			✓			
Slovenia	✓	✓		✓	✓	
Spain	✓	✓	✓	✓		
Sweden	✓			✓	✓	
Switzerland						
United Kingdom						

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Linear location encoding (SRTI)					
Country	**Linear along linear element**	**TPEG linear location**	**Alert C linear**	**Open LR linear**	**GML line**	**Other(s)**
Austria	✓		✓			
Belgium	✓		✓			
Bulgaria						
Croatia	✓		✓	✓		
Cyprus						
Czech Republic	✓		✓			✓
Denmark			✓	✓		✓
Estonia						
Finland			✓			
France						
Germany						
Greece	✓					
Hungary	✓		✓	✓		
Ireland						
Italy			✓	✓		
Latvia						
Lithuania						
Luxembourg						
Malta						
Netherlands	✓		✓			
Norway					✓	
Poland						
Portugal						
Romania	✓		✓			
Slovakia						
Slovenia	✓		✓	✓		
Spain	✓	✓	✓			
Sweden				✓		
Switzerland						
United Kingdom						

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Area location encoding (SRTI)					
Country	**Coordinates**	**Point along linear element**	**TPEG point**	**Alert C point**	**Open LR point**	**Other**
Austria						
Belgium						
Bulgaria						
Croatia						
Cyprus						
Czech Republic						
Denmark	✓	✓				
Estonia						
Finland	✓					
France						
Germany						
Greece					✓	
Hungary	✓	✓			✓	
Ireland						
Italy	✓	✓				
Latvia						
Lithuania						
Luxembourg						
Malta						
Netherlands	✓					
Norway						
Poland						
Portugal						
Romania	✓				✓	
Slovakia						
Slovenia	✓	✓				
Spain						
Sweden						
Switzerland						
United Kingdom						

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Annex VIII – Implemented data standards for RTTI per country

	Types of static road data (continued in the next page)								
Country	**Geometry**	**Road width**	**Number of lanes**	**Gradients**	**Junctions**	**Road classification**	**Access conditions for tunnels**	**Access conditions for bridges**	**Permanent access restrictions**
Austria	Other(s)	Other(s)	DATEX	Other(s)	Other(s)	Other(s)	DATEX	Other(s)	Other(s)
Belgium	Other(s)	Other(s)	DATEX, Other(s)	--	DATEX, Other(s)	Other(s)	DATEX, TN-ITS	TN-ITS	TN-ITS
Bulgaria	--	--	--	--	--	--	--	--	--
Croatia	--	--	--	--	--	--	--	--	--
Cyprus	--	--	--	--	--	--	--	--	--
Czech Republic	WMS/WFS, Other(s): ALERT-C	--	--	Other(s): GeoJSON, SHP (at NAP only for Brno metropolitan area)	Other(s): ALERT-C	WMS/WFS, Other(s): ALERT-C	--	--	--
Denmark	--	--	--	--	--	--	DATEX	DATEX	--
Estonia	WMS/WFS	--	--	--	WMS/WFS	WMS/WFS	--	--	--
Finland	WMS/WFS, Other(s): Geopackage, SHP	WMS/WFS, Other(s): Geopackage, SHP	WMS/WFS, Other(s): Geopackage, SHP	--	--	WMS/WFS, Other(s): Geopackage, SHP	--	--	--
France	--	--	--	--	--	--	--	--	--
Germany	Approximately 90% of RTTI datasets conform to DATEX								
Greece	Other(s): OSM	Other(s): OSM	--	--	Other(s): OSM	Other(s): OSM	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Hungary	WMS/WFS, TN-ITS	WMS/WFS, TN-ITS	WMS/WFS, TN-ITS	--	WMS/WFS, TN-ITS	WMS/WFS, TN-ITS	--	WMS/WFS, TN-ITS	--
Ireland									
Italy	WMS/WFS, Other(s)	WMS/WFS, Other(s)	--	--	--	WMS/WFS, Other(s)	--	--	WMS/WFS, Other(s)
Latvia	Other(s)	Other(s)	--	--	Other(s)	--	--	--	--
Lithuania	--	--	--	--	--	--	--	--	--
Luxembourg	--	--	--	--	--	--	--	--	--
Malta	--	--	--	--	--	--	--	--	--
Netherlands	Other(s): SHP	Other(s): SHP	Other(s): SHP	Other(s): SHP	Other(s): SHP	Other(s): SHP	Other(s): SHP	Other(s): SHP	Other(s): GeoJSON, CSV
Norway	Other(s): Elveg	Other(s): NVDB	Other(s): Elveg, NVDB	Other(s): NVDB	Other(s): NVDB	Other(s): Elveg, NVDB	Other(s): Elveg, NVDB	Other(s): Elveg, NVDB	Other(s): Elveg, NVDB
Poland	--	--	--	--	Other(s): OSM	--	--	--	--
Portugal	--	--	--	--	--	--	--	--	--
Romania	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS
Slovakia	Other(s)	Other(s)	Other(s)	Other(s)	--	Other(s)	Other(s)	Other(s)	Other(s)
Slovenia	--	--	--	--	Other(s): Location table	--	--	--	--
Spain	--	--	--	--	--	--	--	--	--
Sweden	WMS/WFS, TN-ITS	WMS/WFS	WMS/WFS	--	--	WMS/WFS	WMS/WFS, TN-ITS	WMS/WFS, TN-ITS	WMS/WFS, TN-ITS
Switzerland	--	--	--	--	--	--	--	--	--
United Kingdom	--	--	--	--	--	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Types of static road data										
Country	**Other traffic regulations**	**Speed limits**	**Traffic circulation plans**	**Freight delivery regulations**	**Location of tolling stations**	**Identification of tolled roads, applicable fixed road user charges and available payment methods**	**Location of parking places and service areas**	**Location of charging points for electric vehicles and the conditions for their use**	**Location of compressed natural gas, liquefied natural gas, liquefied petroleum gas stations**	**Location of public transport stops and interchange points**	**Location of delivery areas**
Austria	Other(s)	DATEX	--	Other(s)	DATEX	--	DATEX	DATEX	DATEX	Other(s)	Other(s)
Belgium	TN-ITS	TN-ITS	--	--	--	--	DATEX, Other(s)	--	--	--	--
Bulgaria	--	--	--	--	--	--	--	--	--	--	--
Croatia	--	--	--	--	--	--	--	--	--	--	--
Cyprus	--	--	--	--	--	--	--	--	--	--	--
Czech Republic	DATEX	--	--	--	--	--	DATEX, Other(s): ALERT-C	--	--	--	--
Denmark	DATEX	DATEX	--	--	--	--	DATEX	--	--	--	--
Estonia	--	--	Other(s)	--	Other(s)	--	--	--	--	Other(s)	--
Finland	--	WMS/WFS, Other(s): Geopackage, SHP	--	--	--	--	--	--	--	WMS/WFS, Other(s): Geopackage, SHP	--
France	--	--	--	--	--	--	--	--	--	--	--
Germany	Approximately 90% of RTTI datasets conform to DATEX										
Greece	--	Other(s): OSM	--	--	Other(s): XLS	Other(s): XLS	Other(s): XLS, GeoJSON	--	Other(s): XLS	Other(s): OSM	--
Hungary	TN-ITS	WMS/WFS, TN-ITS	--	TN-ITS	--	--	DATEX, WMS/WFS	DATEX	DATEX	WMS/WFS	--
Ireland											
Italy	--	--	--	--	DATEX	--	DATEX	--	--	--	--
Latvia	--	Other(s)	--	--	--	--	Other(s)	--	--	--	--
Lithuania	--	--	--	--	--	--	--	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Luxembourg	--	--	--	--	--	--	--	--	--	--	--
Malta	--	--	--	--	--	--	--	--	--	--	--
Netherlands	Other(s): SHP	Other(s): SHP	--	--	--	Other(s): SHP	Other(s): DBF	Other(s): OPCI	Other(s): JSON	Other(s): KML	--
Norway	Other(s): Elveg, NVDB	Other(s): Elveg, NVDB	Other(s): Elveg, NVDB	Other(s): NVDB	Other(s): NVDB	Other(s): NVDB	Other(s): NVDB	Other(s): OPCI	--	Other(s): NeTEx	--
Poland	--	--	--	--	Other(s): OSM	--	Other(s): OSM	Other(s): OSM	Other(s): OSM	--	--
Portugal	--	--	--	--	--	--	--	--	--	--	--
Romania	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS	DATEX, WMS/WFS
Slovakia	Other(s)	--	Other(s)	--	--	--	--	--	--	--	--
Slovenia	TN-ITS, Other(s): ROSATTE	--	TN-ITS, Other(s): ROSATTE	--	--	--	--	DATEX	--	Other(s): Open API	--
Spain	--	TN-ITS	--	--	--	--	DATEX	--	--	--	--
Sweden	WMS/WFS, TN-ITS	WMS/WFS, TN-ITS	--	--	--	--	DATEX	--	--	WMS/WFS	--
Switzerland	--	--	--	--	--	--	--	--	--	--	--
United Kingdom	--	--	--	--	--	--	--	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Types of dynamic road status data (continued in the next page)							
Country	**Road closures**	**Lane closures**	**Bridge closures**	**Overtaking bans on heavy goods vehicles**	**Roadworks**	**Accidents and incidents**	**Dynamic speed limits**	**Direction of travel on reversible lanes**
Austria	DATEX	DATEX	DATEX	--	DATEX	DATEX	DATEX	DATEX
Belgium	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Bulgaria	DATEX	DATEX	Not Applicable	DATEX	DATEX	--	--	--
Croatia	DATEX	DATEX	DATEX	--	DATEX	DATEX	--	--
Cyprus	--	--	--	--	--	--	--	--
Czech Republic	DATEX, Other(s): DDR XML	DATEX, Other(s): DDR XML	DATEX, Other(s): DDR XML	--	DATEX, Other(s): DDR XML	DATEX, Other(s): DDR XML	DATEX	--
Denmark	DATEX	DATEX	DATEX	--	DATEX	DATEX	DATEX	--
Estonia	DATEX	--	--	--	DATEX	DATEX	DATEX	--
Finland	DATEX, Other(s): custom JSON	DATEX, Other(s): custom JSON	DATEX, Other(s): custom JSON	--	DATEX, Other(s): custom JSON	DATEX, Other(s): custom JSON	DATEX, Other(s): custom JSON	DATEX, Other(s): custom JSON
France	--	--	--	--	--	--	--	--
Germany	Approximately 90% of RTTI datasets conform to DATEX							
Greece	DATEX	DATEX	DATEX	--	DATEX	DATEX	--	--
Hungary	DATEX	DATEX	DATEX	--	DATEX	DATEX	--	--
Ireland								
Italy	DATEX	DATEX	DATEX	--	DATEX	DATEX	--	DATEX
Latvia	Other(s)	--	--	--	Other(s)	Other(s)	--	--
Lithuania	DATEX	DATEX	--	--	--	--	--	--
Luxembourg	DATEX	--	--	--	DATEX	--	--	--
Malta	--	--	--	--	--	--	--	--
Netherlands	DATEX	DATEX	DATEX	--	DATEX	DATEX	Other(s): XML	DATEX
Norway	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	--	--
Poland	DATEX,Other(s): OSM	DATEX,Other(s): OSM	--	--	DATEX,Other(s): OSM	DATEX,Other(s): OSM	--	--
Portugal	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX
Romania	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Slovakia	Other(s)	Other(s)	Other(s)	Other(s)	Other(s)	--	--	--
Slovenia	DATEX,Other(s): GeoJSON, JSON, RSS, GeoRSS	DATEX,Other(s): GeoJSON, JSON, RSS, GeoRSS	DATEX,Other(s): GeoJSON, JSON, RSS, GeoRSS	--	DATEX,Other(s): GeoJSON, JSON, RSS, GeoRSS	DATEX,Other(s): GeoJSON, JSON, RSS, GeoRSS	--	--
Spain	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	--	DATEX
Sweden	DATEX	DATEX	DATEX	--	DATEX	DATEX	DATEX	--
Switzerland	--	--	--	--	--	--	--	--
United Kingdom	--	--	--	--	--	--	--	--

	Types of dynamic road status data							
Country	**Poor road conditions**	**Temporary traffic management measures**	**Variable road user charges and available payment methods**	**Availability of parking places**	**Availability of delivery areas**	**Cost of parking**	**Availability of charging points for electric vehicles**	**Weather conditions affecting road surface and visibility**
Austria	DATEX	DATEX	--	DATEX	--	--	--	DATEX
Belgium	DATEX	-	DATEX	DATEX	--	--	--	DATEX
Bulgaria	DATEX	DATEX	--	--	--	DATEX	--	--
Croatia	DATEX	--	--	--	--	--	--	DATEX
Cyprus	--	--	--	--	--	--	--	--
Czech Republic	DATEX, Other(s): DDR XML	DATEX, Other(s): DDR XML	--	Other(s): DDR XML	--	--	--	DATEX, Other(s): DDR XML
Denmark	DATEX	DATEX	--	--	--	--	--	DATEX
Estonia	--	--	--	--	--	--	--	DATEX
Finland	DATEX, Other(s): custom JSON	DATEX, Other(s): custom JSON	--	--	--	--	--	DATEX, Other(s): custom JSON
France	--	--	--	--	--	--	--	--
Germany	Approximately 90% of RTTI datasets conform to DATEX							
Greece	DATEX	--	--	--	--	--	--	Other(s): XML, CSV
Hungary	DATEX	--	--	DATEX	--	--	--	DATEX
Ireland								
Italy	DATEX	--	--	--	--	--	--	DATEX
Latvia	Other(s)	--	--	--	--	--	--	Other(s)

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Lithuania	--	--	--	--	--	--	--	DATEX
Luxembourg	--	--	--	--	--	--	--	--
Malta	--	--	--	--	--	--	--	--
Netherlands	DATEX	DATEX	--	DATEX, Other(s): JSON	--	DATEX, Other(s): JSON	Other(s): JSON	DATEX
Norway	DATEX	DATEX	DATEX	--	--	--	--	DATEX
Poland	DATEX,Other(s): OSM	--	--	--	--	--	Other(s): OSM	--
Portugal	DATEX	DATEX	--	DATEX	--	DATEX	--	DATEX
Romania	DATEX	DATEX	DATEX	DATEX	DATEX	DATEX	--	DATEX
Slovakia	Other(s)	--	--	--	--	--	--	--
Slovenia	DATEX,Other(s): GeoJSON, JSON, RSS, GeoRSS	--	--	--	--	--	DATEX,Other(s): GeoJSON, JSON, RSS, GeoRSS	DATEX,Other(s): GeoJSON, JSON, RSS, GeoRSS
Spain	DATEX	DATEX	--	DATEX	--	--	--	DATEX
Sweden	DATEX	DATEX	--	-	--	--	--	--
Switzerland	--	--	--	--	--	--	--	--
United Kingdom	--	--	--	--	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Types of traffic data				
Country	**Traffic volume**	**Speed**	**Location and length of traffic queues**	**Travel times**	**Waiting time at border crossings to non-EU Member States**
Austria	--	--	DATEX	DATEX	--
Belgium	--	--	DATEX	DATEX	--
Bulgaria	--	--	--	--	--
Croatia	DATEX	DATEX	DATEX	Not Applicable	Other(s)
Cyprus	--	--	--	--	--
Czech Republic	Other(s): DDR XML	Other(s): DDR XML	Other(s): DDR XML	Other(s): DDR XML	--
Denmark	--	--	--	--	--
Estonia	DATEX	--	--	--	Other(s)
Finland	Other(s): custom JSON	Other(s): custom JSON	--	--	--
France	--	--	--	--	--
Germany	Approximately 90% of RTTI datasets conform to DATEX				
Greece	Other(s): CSV	Other(s): XML, JSON, CSV	--	Other(s): XML, JSON, CSV	--
Hungary	--	--	DATEX	--	--
Ireland					
Italy	--	--	DATEX	--	DATEX
Latvia	--	--	--	--	--
Lithuania	DATEX	DATEX	--	--	--
Luxembourg	DATEX	--	--	DATEX	--
Malta	--	--	--	--	--
Netherlands	DATEX	DATEX	DATEX	DATEX	--
Norway	DATEX	--	--	DATEX	--
Poland	--	--	--	--	--
Portugal	DATEX	DATEX	DATEX	DATEX	--
Romania	DATEX	DATEX	DATEX	DATEX	DATEX
Slovakia	--	--	--	--	--
Slovenia	--	--	DATEX,Other(s): GeoJSON, JSON, RSS, GeoRSS	--	DATEX,Other(s): GeoJSON, JSON, RSS, GeoRSS
Spain	DATEX	DATEX	--	--	--
Sweden	Other(s)	--	--	DATEX	Not Applicable
Switzerland	DATEX	DATEX	--	--	--
United Kingdom	--	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Point location encoding (RTTI)					
Country	**Coordinates**	**Point along linear element**	**TPEG point**	**Alert C point**	**Open LR point**	**Other**
Austria	✓	✓		✓		✓
Belgium	✓			✓		
Bulgaria	✓					
Croatia	✓	✓		✓	✓	
Cyprus						
Czech Republic	✓	✓		✓	✓	
Denmark	✓			✓		
Estonia	✓					
Finland				✓		
France	✓	✓				
Germany						
Greece	✓					
Hungary	✓	✓		✓	✓	
Ireland						
Italy	✓			✓	✓	
Latvia						
Lithuania	✓					
Luxembourg						
Malta						
Netherlands	✓			✓		
Norway	✓	✓				
Poland					✓	
Portugal	✓					
Romania	✓			✓		
Slovakia						
Slovenia	✓	✓		✓	✓	
Spain	✓	✓	✓	✓		
Sweden	✓			✓	✓	
Switzerland				✓		
United Kingdom						

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Linear location encoding (RTTI)					
Country	**Linear along linear element**	**TPEG linear location**	**Alert C linear**	**Open LR linear**	**GML line**	**Other(s):**
Austria	✓		✓			✓
Belgium	✓		✓		✓	
Bulgaria						
Croatia	✓		✓	✓		
Cyprus						
Czech Republic	✓		✓	✓		✓
Denmark			✓	✓		✓
Estonia						
Finland			✓			
France						
Germany						
Greece	✓					
Hungary	✓		✓	✓		
Ireland	-	-	-	-	-	-
Italy			✓	✓		
Latvia						
Lithuania	✓					
Luxembourg						
Malta						
Netherlands	✓		✓			
Norway	✓				✓	
Poland						
Portugal						
Romania	✓		✓			
Slovakia						
Slovenia	✓		✓	✓		
Spain	✓	✓	✓			
Sweden				✓	✓	
Switzerland						
United Kingdom						

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Area location enconding (RTTI)					
Country	**Alert C area**	**TPEG Area**	**Named Area**	**Open LR area**	**GML multipolygon**	**Other(s):**
Austria			✓		✓	✓
Belgium						
Bulgaria						
Croatia						
Cyprus						
Czech Republic						
Denmark	✓			✓		✓
Estonia						
Finland	✓					
France						
Germany						
Greece			✓			
Hungary	✓			✓		
Ireland	-	-	-	-	-	-
Italy	✓			✓		
Latvia						
Lithuania						
Luxembourg						
Malta						
Netherlands	✓					
Norway					✓	✓
Poland						
Portugal						
Romania	✓		✓			
Slovakia						
Slovenia	✓			✓		
Spain						
Sweden						
Switzerland						
United Kingdom						

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Annex IX – Implemented data standards for MMTIS per country

	Standards for "location search" category									
Country	**Address identifiers**	**Topographic places**	**Points of interest**	**Access Nodes: Identified access nodes**	**Access Nodes: Geometry/map layout structure of access nodes**	**Park & Ride stops**	**Bike sharing stations**	**Car-sharing stations**	**Publicly accessible refuelling stations for petrol, diesel, CNG/LNG, hydrogen powered vehicles, charging stations for electric vehicles**	**Secure bike parking**
Austria	--	NeTEx, Other(s)	--	NeTEx, Other(s)	NeTEx, Other(s)	Other(s)	--	Other(s)	Other(s)	--
Belgium	WMS/WFS, INSPIRE, Other(s): API of PTO	WMS/WFS, INSPIRE	NeTEx	NeTEx	--	WMS/WFS, Other(s): JSON/CSV	Other(s): GBFS	Other(s): JSON	Other(s): JSON (Open API)	Other(s): JSON/JSON-LD (Linked Data)
Bulgaria	--	--	--	--	--	--	--	--	--	--
Croatia	Other(s): Open API	Other(s): Open API	Other(s): Open API	--	--	--	--	--	--	--
Cyprus	Other(s)	Other(s)	Other(s)	Other(s)	--	--	Other(s)	--	--	--
Czech Republic	--	--	--	Other(s): JDF	--	--	--	--	--	--
Denmark	INSPIRE	INSPIRE	INSPIRE	Other(s): GTFS	--	--	--	--	--	--
Estonia	INSPIRE, Other(s)	Other(s)	Other(s)	INSPIRE	--	--	Other(s)	--	--	--
Finland	--	--	--	Other(s): GTFS	Other(s)	Other(s)	Other(s): GBFS	--	--	--
France	Other(s): CSV	--	Other(s): CSV	Other(s): GeoJSON	Other(s): GeoJSON	Other(s): CSV	Other(s): GBFS	--	Other(s): CSV	Other(s): CSV
Germany	MMTIS data conform to multiple standards/formats									

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Greece	Other(s): OSM	Other(s): OSM	Other(s): OSM	Other(s): XLS	--	--	--	--	Other(s): XLS	--
Hungary	--	--	--	--	--	--	--	--	--	--
Ireland										
Italy	NeTEx	NeTEx	--	NeTEx	NeTEx	--	--	--	--	--
Latvia	--	--	--	--	--	--	--	--	--	--
Lithuania	--	--	--	--	--	--	--	--	--	--
Luxembourg	INSPIRE	INSPIRE	WMS/WFS, INSPIRE	NeTex	--	WMS/WFS	WMS/WFS	WMS/WFS	WMS/WFS	WMS/WFS
Malta	--	--	--	--	--	--	--	--	--	--
Netherlands	--	WMS/WFS	--	Other(s): KML	Other(s): KML	Other(s)	--	Other(s)	Other(s): CSV	--
Norway	NeTex, Other(s): OSM	NeTex, Other(s): OSM	NeTex	NeTex	NeTex	NeTex	NeTex, Other(s): GBFS	NeTex, Other(s): GBFS	Other(s): OCPI	NeTex
Poland	--	--	--	--	--	--	--	--	--	--
Portugal	INSPIRE	INSPIRE	Other(s)	Other(s): GTFS	Other(s): GTFS	Other(s)	Other(s)	Other(s)	Other(s): DATEX	Other(s)
Romania	WMS/WFS	WMS/WFS	WMS/WFS	WMS/WFS	WMS/WFS	WMS/WFS	WMS/WFS	WMS/WFS	WMS/WFS	WMS/WFS
Slovakia	--	--	--	--	--	--	--	--	--	--
Slovenia	Other(s): OpenAPI	--	Other(s): OpenAPI	--	--	--	--	--	Other(s): DATEX	--
Spain	--	--	--	--	--	--	--	--	--	--
Sweden	--	--	--	--	--	--	--	--	--	--
Switzerland	--	--	--	--	--	--	--	--	--	--
United Kingdom	--	--	--	--	--	--	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Standards for "Detailed common standard and special fare query" category			
Country	**Passenger classes**	**Common fare products**	**Special Fare Products**	**Basic commercial conditions**
Austria	--	--	--	--
Belgium	Other(s)	Other(s)	Other(s)	Other(s)
Bulgaria	--	--	--	--
Croatia	--	--	--	--
Cyprus	--	--	--	--
Czech Republic	Other(s): JDF	--	--	--
Denmark	--	--	--	--
Estonia	--	--	--	--
Finland	Other(s)	NeTEx, Other(s)	Other(s)	Other(s)
France	--	--	--	--
Germany	MMTIS data conform to multiple standards/formats			
Greece	Other(s): XLS	Other(s): XLS	Other(s): XLS	--
Hungary	--	--	--	--
Ireland				
Italy	--	--	--	--
Latvia	--	--	--	--
Lithuania	--	--	--	--
Luxembourg	NeTEx	--	--	--
Malta	--	--	--	--
Netherlands	NeTEx	NeTEx	--	NeTEx
Norway	NeTEx	NeTEx	NeTEx	NeTEx
Poland	--	--	--	--
Portugal	Other(s)	Other(s)	Other(s)	Other(s)
Romania	--	--	--	--
Slovakia	--	--	--	--
Slovenia	--	--	--	--
Spain	--	--	--	--
Sweden	--	--	--	--
Switzerland	--	--	--	--
United Kingdom	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Standards for "Information service" category			
Country	**Where and how to buy tickets for scheduled modes, demand responsive modes and car parking**	**How to pay tolls**	**How to book car sharing, taxis, cycle hire etc**	**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**
Austria	--	--	--	--
Belgium	Other(s)	--	Other(s)	Other(s)
Bulgaria	--	--	--	--
Croatia	--	--	--	--
Cyprus	--	--	--	--
Czech Republic	--	--	--	--
Denmark	--	--	--	--
Estonia	--	Other(s)	Other(s)	--
Finland	Other(s)	--	Other(s)	Other(s)
France	--	--	Other(s): GBFS	Other(s): CSV
Germany	MMTIS data conform to multiple standards/formats			
Greece	Other(s): XLS	--	--	--
Hungary	--	--	--	--
Ireland				
Italy	--	--	--	--
Latvia	--	--	--	--
Lithuania	--	--	--	--
Luxembourg	Not Applicable	Not Applicable	Not Applicable	Other(s)
Malta	--	--	--	--
Netherlands	--	--	Other(s)	Other(s)
Norway	NeTEx	--	Other(s): GBFS	--
Poland	--	--	--	--
Portugal	Other(s)	Other(s)	Other(s)	Other(s): DATEX
Romania	--	--	--	--
Slovakia	--	--	--	--
Slovenia	--	--	--	Other(s): DATEX
Spain	--	--	--	--
Sweden	--	--	--	--
Switzerland	--	--	--	--
United Kingdom	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Standards for "Trip plans" category			
Country	**Operational Calendar, mapping day types to calendar dates**	**Detailed cycle network attributes**	**Parameters needed to calculate an environmental factor**	**Parameters such as fuel consumption needed to calculate cost**
Austria	NeTEx	--	--	--
Belgium	NeTEx, Other(s): GTFS	Other(s): INSPIRE, WMS/WFS	Other(s)	Other(s)
Bulgaria	--	--	--	--
Croatia	NeTEx	Other(s): Open API	--	--
Cyprus	Other(s)	--	--	--
Czech Republic	Other(s): JDF	--	--	--
Denmark	Other(s): GTFS	--	--	--
Estonia	Other(s)	Other(s)	--	--
Finland	NeTEx, Other(s)	--	--	--
France	NeTEx, Other(s): GTFS	Other(s): CSV	Other(s): CSV	--
Germany	MMTIS data conform to multiple standards/formats			
Greece	Other(s): XLS	--	--	--
Hungary	--	--	--	--
Ireland				
Italy	NeTEx	--	--	--
Latvia	--	--	--	--
Lithuania	NeTEx	--	--	--
Luxembourg	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Malta	--	--	--	--
Netherlands	NeTEx	Other(s): SHP	Other(s): JSON	--
Norway	NeTEx	Other(s): OSM, NVDB	--	--
Poland	--	--	--	--
Portugal	Other(s): GTFS	Other(s): GeoJSON	Other(s)	Other(s)
Romania	--	--	--	--
Slovakia	--	--	--	--
Slovenia	Other(s): GTFS	Other(s): Open API	--	--
Spain	Other(s): GTFS	--	--	--
Sweden	--	--	--	--
Switzerland	--	--	--	--
United Kingdom	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Standards for "Trip plans, auxiliary information, availability check" category	
Country	**Basic common standard fares**	**Vehicle facilities**
Austria	--	--
Belgium	Other(s)	Other(s)
Bulgaria	--	--
Croatia	--	NeTEx
Cyprus	Other(s)	--
Czech Republic	--	--
Denmark	--	--
Estonia	Other(s)	--
Finland	Other(s)	--
France	--	--
Germany	MMTIS data conform to multiple standards/formats	
Greece	Other(s)	Other(s)
Hungary	--	--
Ireland		
Italy	--	--
Latvia	--	--
Lithuania	NeTEx	NeTEx
Luxembourg	Not Applicable	NeTEx
Malta	--	--
Netherlands	Other(s)	Other(s)
Norway	NeTEx, Other(s): NRP	NeTEx
Poland	--	--
Portugal	Other(s)	Other(s): SHP
Romania	--	--
Slovakia	--	--
Slovenia	--	--
Spain	--	--
Sweden	--	--
Switzerland	--	--
United Kingdom	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Standards for "Trip plan computation - scheduled modes transport and road transport" category					
Country	**Connection links where interchanges may be made, default transfer times between modes at interchanges**	**Network topology and routes/lines**	**Transport operators**	**Timetables**	**Planned interchanges between guaranteed scheduled services**	**Hours of operation**
Austria	NeTEx	NeTEx	NeTEx	NeTEx	NeTEx	NeTEx
Belgium	NeTEx	NeTEx, Other(s): GTFS	NeTEx, Other(s): GTFS	NeTEx, Other(s): GTFS	--	NeTEx, Other(s): GTFS
Bulgaria	--	--	--	--	--	--
Croatia	NeTEx	NeTEx	NeTEx	NeTEx, Other(s): GTFS	--	NeTEx
Cyprus	--	Other(s)	Other(s)	Other(s)	--	Other(s)
Czech Republic	--	--	Other(s): JDF	Other(s): JDF	--	--
Denmark	Other(s): GTFS	Other(s): GTFS	Other(s): GTFS	Other(s): GTFS	--	Other(s): GTFS
Estonia	Other(s)	Other(s)	Other(s)	Other(s)	Other(s)	--
Finland	Other(s)	Other(s)	NeTEx, Other(s)	NeTEx, Other(s)	Other(s)	NeTEx, Other(s)
France	NeTEx, Other(s): GTFS	NeTEx, Other(s): GTFS	NeTEx, Other(s): GTFS	NeTEx, Other(s): GTFS	NeTEx, Other(s): GTFS	NeTEx, Other(s): GTFS
Germany	MMTIS data conform to multiple standards/formats					
Greece	--	--	Other(s): XLS	Other(s): XLS	Other(s): XLS	Other(s): XLS
Hungary	--	--	--	--	--	--
Ireland						
Italy	--	--	--	--	--	--
Latvia	--	--	--	Other(s)	--	--
Lithuania	NeTEx	NeTEx	NeTEx	NeTEx	NeTEx	NeTEx
Luxembourg	Other(s): API	NeTEx, Other(s): shp	--	NeTEx	--	--
Malta	--	--	--	--	--	--
Netherlands	NeTEx	NeTEx	NeTEx	NeTEx	NeTEx	NeTEx
Norway	Other(s): OSM	NeTEx	NeTEx	NeTEx	NeTEx	NeTEx

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Poland	--	--	--	--	--	--
Portugal	Other(s)	Other(s): GTFS, SHP	Other(s): GTFS, SHP	Other(s): GTFS	Other(s)	Other(s)
Romania	--	--	--	--	--	--
Slovakia	--	--	--	--	--	--
Slovenia	--	Other(s): GTFS	Other(s): GTFS	Other(s): GTFS	--	--
Spain	--	--	Other(s): GTFS	Other(s): GTFS	--	--
Sweden	--	--	--	--	--	--
Switzerland	--	--	--	--	--	--
United Kingdom	--	--	--	--	--	--

	Standards for "Trip plan computation - scheduled modes transport and road transport" category							
Country	**Stop facilities access nodes**	**Vehicles (low floor; wheelchair accessible.)**	**Accessibility of access nodes, and paths within an interchange**	**Existence of assistance services**	**Road network**	**Cycle network**	**Pedestrian network and accessibility facilities**	**Estimated travel times by day type and time-band by transport mode/combination of transport modes**
Austria	--	NeTEx	NeTEx	--	--	--	--	--
Belgium	--	--	--	Other(s)	Other(s): INSPIRE	Other(s): INSPIRE	Other(s): INSPIRE	--
Bulgaria	--	--	--	--	--	--	--	--
Croatia	NeTEx	NeTEx	--	--	Other(s): Open API	Other(s): Open API	Other(s): Open API	--
Cyprus	--	--	--	--	--	--	--	--
Czech Republic	Other(s): JDF	Other(s): JDF	--	--	--	--	--	--
Denmark	--	--	--	--	Other(s): INSPIRE	Other(s)	Other(s)	--
Estonia	--	Other(s)	--	--	Other(s)	Other(s)	Other(s)	Other(s)
Finland	Other(s)	Other(s)	Other(s): OSM	Other(s)	--	--	--	Other(s)
France	--	--	--	--	--	Other(s): CSV	--	--
Germany	MMTIS data conform to multiple standards/formats							

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Greece	--	--	--	--	Other(s): OSM	--	--	--
Hungary	--	--	--	--	--	--	--	--
Ireland								
Italy	--	--	--	--	--	--	--	--
Latvia	--	--	--	--	--	--	--	--
Lithuania	--	NeTEx	--	--	NeTEx	--	--	NeTEx
Luxembourg	--	NeTEx	--	--	Other(s): API	Other(s): API	--	--
Malta	--	--	--	--	--	--	--	--
Netherlands	NeTEx	NeTEx	NeTEx	NeTEx	Other(s): SHP	Other(s): SHP	--	--
Norway	Other(s): OSM	NeTEx, Other(s): OSM	Other(s): OSM	Other(s): HTML	Other(s): OSM, Elveg, NVDB	Other(s): OSM, Elveg, NVDB	Other(s): OSM, Elveg, NVDB	NeTEx
Poland	--	--	--	--	--	--	--	--
Portugal	Other(s): SHP	Other(s): SHP	Other(s)	Other(s)	Other(s)	Other(s): GeoJSON	Other(s)	Other(s)
Romania	--	--	--	--	--	--	--	--
Slovakia	--	--	--	--	--	--	--	--
Slovenia	--	--	--	--	--	--	--	Other(s): GTFS
Spain	--	--	--	--	--	--	--	--
Sweden	--	--	--	--	--	--	--	--
Switzerland	--	--	--	--	--	--	--	--
United Kingdom	--	--	--	--	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Standards for "Dynamic passing times, trip plans and auxiliary information" category						
Country	**Disruptions (all modes)**	**Real-time status information**	**Status of access node features**	**Estimated departure and arrival times of services**	**Current road link travel times**	**Cycling network closures/diversions**	**Future predicted road link travel times**
Austria	--	--	--	--	--	--	--
Belgium	DATEX, Other(s): JSON	DATEX, Other(s): JSON	--	--	Other(s)	--	--
Bulgaria	--	--	--	--	--	--	--
Croatia	--	--	--	--	--	--	--
Cyprus	--	SIRI, Other(s)	--	SIRI, Other(s)	--	--	--
Czech Republic	--	--	--	--	--	--	--
Denmark	--	--	--	--	--	--	--
Estonia	Other(s)	--	--	Other(s)	--	--	--
Finland	SIRI, Other(s)	SIRI, Other(s)	Other(s)	SIRI, Other(s)	--	--	--
France	Other(s): GTFS-RT	Other(s): GTFS-RT	--	Other(s): GTFS-RT	--	--	--
Germany	MMTIS data conform to multiple standards/formats						
Greece	--	--	--	--	Other(s): XML, JSON, CSV	--	--
Hungary	--	--	--	--	--	--	--
Ireland							
Italy	--	--	--	--	--	--	--
Latvia	--	--	--	--	--	--	--
Lithuania	--	Other(s)	--	Other(s)	Other(s)	--	--
Luxembourg	Other(s): API	Other(s): API	--	Other(s): API	--	DATEX	--
Malta	--	--	--	--	--	--	--
Netherlands	Other(s): BISON	Other(s): BISON	--	SIRI, Other(s): BISON	DATEX	DATEX	--
Norway	DATEX, SIRI	DATEX, SIRI	SIRI	SIRI	DATEX	--	--
Poland	--	--	--	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

Portugal	Other(s)	Other(s)	Other(s)	Other(s)	Other(s)	Other(s)	Other(s)
Romania	--	--	--	--	--	--	--
Slovakia	--	--	--	--	--	--	--
Slovenia	--	SIRI	--	--	--	--	--
Spain	--	--	--	--	--	--	--
Sweden	--	--	--	--	--	--	--
Switzerland	--	--	--	--	--	--	--
United Kingdom	--	--	--	--	--	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Standards for "Dynamic information service" category
Country	**Availability of publicly accessible charging stations and refuelling points**
Austria	DATEX
Belgium	Other(s): JSON (API)
Bulgaria	--
Croatia	--
Cyprus	--
Czech Republic	--
Denmark	--
Estonia	--
Finland	Other(s)
France	--
Germany	MMTIS data conform to multiple standards/formats
Greece	--
Hungary	--
Ireland	
Italy	--
Latvia	--
Lithuania	Other(s)
Luxembourg	DATEX
Malta	--
Netherlands	--
Norway	--
Poland	--
Portugal	DATEX
Romania	DATEX
Slovakia	--
Slovenia	DATEX
Spain	--
Sweden	--
Switzerland	--
United Kingdom	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Standards for "Dynamic availability ckeck" category	
Country	**Car-sharing availability, bike sharing availability**	**Car parking spaces available, parking tariffs, road toll tariffs**
Austria	--	--
Belgium	Other(s): JSON/GBFS	DATEX
Bulgaria	Not Applicable	Not Applicable
Croatia	--	--
Cyprus	Other(s)	Other(s)
Czech Republic	--	--
Denmark	--	--
Estonia	Other(s)	--
Finland	Other(s)	--
France	Other(s): GBFS	--
Germany	MMTIS data conform to multiple standards/formats	
Greece	--	--
Hungary	--	--
Ireland		
Italy	--	--
Latvia	--	--
Lithuania	--	--
Luxembourg	Other(s): API	DATEX
Malta	--	--
Netherlands	--	Other(s): JSON
Norway	Other(s): GBFS	Other(s): NVDB (road toll)
Poland	--	--
Portugal	Other(s)	Other(s)
Romania	--	--
Slovakia	--	--
Slovenia	--	--
Spain	--	--
Sweden	--	--
Switzerland	--	--
United Kingdom	--	--

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Point location enconding (MMTIS)					
Country	**Coordinates**	**Point along linear element**	**TPEG point**	**Alert C point**	**Open LR point**	**Other**
Austria						
Belgium	✓			✓		
Bulgaria						
Croatia						
Cyprus						
Czech Republic						
Denmark						
Estonia	✓					
Finland						
France						
Germany						
Greece	✓					
Hungary						
Ireland						
Italy	✓			✓	✓	
Latvia						
Lithuania	✓					
Luxembourg	✓					
Malta						
Netherlands	✓					
Norway	✓	✓				
Poland						
Portugal						
Romania	✓			✓		
Slovakia						
Slovenia	✓	✓		✓	✓	
Spain						
Sweden						
Switzerland						
United Kingdom						

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Linear location enconding (MMTIS)					
Country	**Linear along linear element**	**TPEG linear location**	**Alert C linear**	**Open LR linear**	**GML line**	**Other(s):**
Austria						
Belgium	✓		✓			
Bulgaria						
Croatia						
Cyprus						
Czech Republic						
Denmark						
Estonia						
Finland						
France						
Germany						
Greece	✓					
Hungary						
Ireland						
Italy			✓			
Latvia						
Lithuania	✓					
Luxembourg						
Malta						
Netherlands					✓	
Norway	✓				✓	
Poland						
Portugal						
Romania	✓		✓			
Slovakia						
Slovenia	✓		✓	✓		
Spain						
Sweden						
Switzerland						
United Kingdom						

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522

	Area location enconding (MMTIS)					
Country	**Alert C area**	**TPEG Area**	**Named Area**	**Open LR area**	**GML multipolygon**	**Other(s):**
Austria						
Belgium						
Bulgaria						
Croatia						
Cyprus						
Czech Republic						
Denmark						
Estonia						
Finland						
France						
Germany						
Greece			✓			
Hungary						
Ireland						
Italy	✓			✓		
Latvia						
Lithuania						
Luxembourg						
Malta						
Netherlands					✓	
Norway					✓	
Poland						
Portugal						
Romania	✓		✓			
Slovakia						
Slovenia	✓					
Spain						
Sweden						
Switzerland						
United Kingdom						

This project has received funding from the European Commission's Directorate General for Transport and Mobility under Grant Agreement no. MOVE/B4/SUB/2020-123/SI2.8522