

## **ANNEX I**

### **DESCRIPTION OF THE ACTION**

#### **ARTICLE I.1 – IMPLEMENTATION OF THE ACTION**

The action is a Programme Support Action in the meaning of Article 5(2)(a) and 7(2)(j) of Regulation (EU) No 1316/2013 establishing the Connecting Europe Facility the Commission Implementing Decision C(2014)1921 of 26.3.2014 establishing a Multi-Annual Work Programme for financial assistance in the field of Connecting Europe Facility (CEF) - Transport sector for the period 2014-2020, as last amended.

This Programme Support Action aims at supporting the implementation of Delegated Regulations under Directive 2010/40/EU regarding the requirements to make infrastructure, safety, traffic and travel data accurate and available to users such as transport authorities or service providers through National Access Points (NAPs). It will stimulate and accelerate the coordinated provision of ITS data through National Access Points to enhance the quality of services based on these data. Through a Secretariat and five dedicated Working Groups the project will:

- Set up a long-term governance structure to facilitate national and European wide operational co-ordination for the implementation of the European specifications;
- Harmonise the development and evolution of the NAPs in order to improve the compatibility and interoperability of the features;
- Design and development of common tools related to data accessibility and exchange;
- Plan and coordinate data collection initiatives;
- Harmonise assessment of compliance.

Thus, both public and private stakeholders will benefit from the project. Through increased digitalisation and support to new sustainable mobility services the project will also contribute to the common European mobility data space and the objectives of the Green Deal.

#### **ARTICLE I.2 – LOCATION OF THE ACTION**

##### **I.2.1 Member State(s):**

Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden

##### **I.2.2 Region(s) (using the NUTS2 nomenclature): *not applicable***

##### **I.2.3 Third country(ies): United Kingdom**

#### **ARTICLE I.3 – SCOPE AND OBJECTIVES OF THE ACTION**

##### **I.3.1 Objectives of the action**

The European data strategy enables the European Union to become a leading player in a data-driven society. The creation of a single market for data will allow the free movement of data within the EU and between sectors, to the benefit of citizens and travellers across Europe,

businesses, researchers and public administrations. It should also enable the European Union and its Member States to chart a data economy where public and private interests are balanced, based on respect for personal data and the implementation of ethical standards.

By 2025, the value of the data economy in the European Union will be close to 830 billion euros, compared to 300 billion euros in 2018. Thus, the data-based economy is a lever to foster the emergence of a 3.0 mobility industry, based on intermodality and diversification of services to citizens. Data-based technologies will also make it possible to limit the impact of the transport sector on the environment. Indeed, data are the fuel for technological development in the transport sector and the digital transformation of infrastructure.

Consequently, access to a volume of quality data and the value it generates are essential for innovation in transportation: traffic regulation, improved safety, and supply chain optimization. For example, road transport navigation using real-time traffic avoidance devices can save up to 730 million hours. This represents up to 20 billion euros in labour costs.

The general objective of this action is to empower the National Access Points (NAPs) as the backbone for ITS digital infrastructure. Also, it will facilitate national & EU wide operational coordination for the harmonisation and implementation of the European specifications.

It has become apparent that NAPs and national bodies in each country are faced with common challenges and are looking for common solutions through working together. New challenges such as data collection activities and negotiations with private data providers and/or global players would benefit from being addressed jointly. The action « NAPCORE » (National Access Point Coordination Organisation for Europe) was built in this spirit of consultation and cooperation. It is supported by all the Member States of the European Union as well as Norway and Switzerland as associated partners.

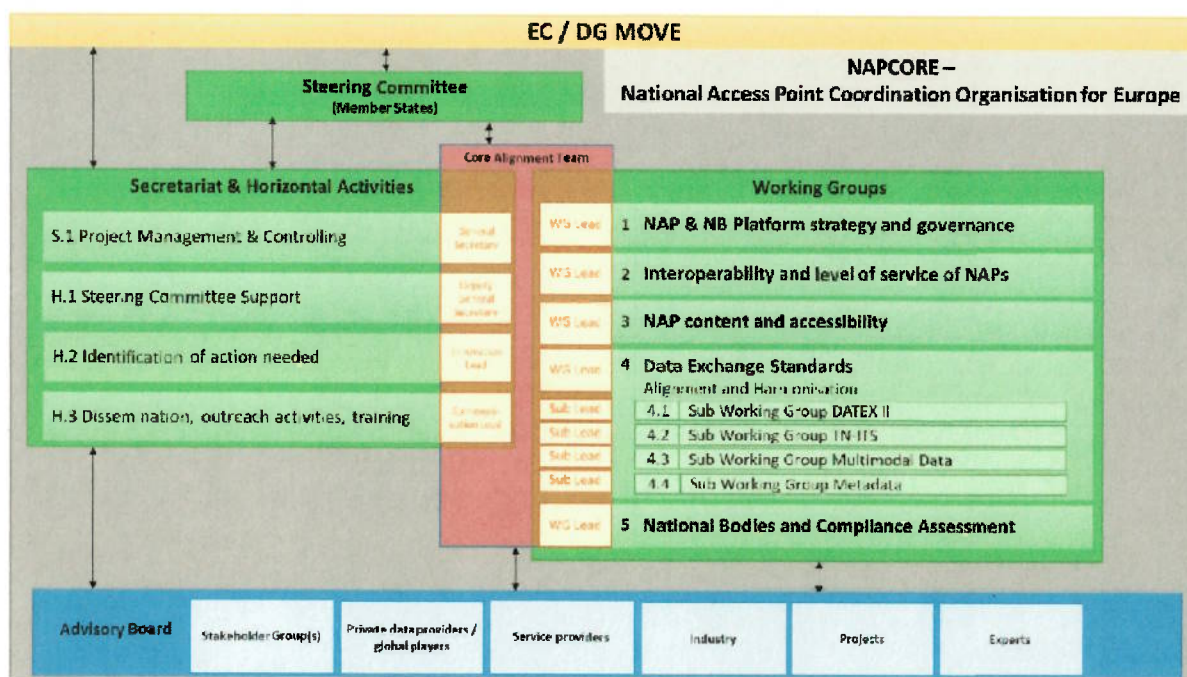
Its specific objectives are to create a coordinated European mechanism of national access points based on a coordinated governance and architecture, interoperability, standards and services. It is based on the position paper of the NAP&NB Harmonisation Group from February 2020 with the goal of strengthening the position and the role of NAPs and to support steps towards the creation of European-wide solutions to facilitate the use of EU-wide data.

### 1.3.2 Scope and expected results of the action

The basic idea of the governance structure of the proposed NAPCORE organisation is to create a future-oriented platform structure right from the beginning. This is contrary to a full project structure, which is ending after the project duration. With the basic governance set-up of NAPCORE the participating parties already create the basis for a long-lasting platform. Therefore, the NAPCORE project is comprised of four main pillars:

- the Steering Committee;
- the Secretariat & Horizontal Activities;
- the Working Groups;
- the Advisory Board.

This figure shows the overall structure of the NAPCORE proposal:



The Steering Committee is formed by Member State representatives of all European Member States. A participation of Non-Member-State partners (Norway and Switzerland) as associated partners possibly with voting rights on certain topics is foreseen and will be defined in the Terms of Reference. The Steering Committee will be the decision-making body and will point towards strategic directions for the Working Groups. The Steering Committee will endorse the NAPCORE projects results. The conditions and the scope of the Steering Committee will be described in the Terms of Reference.

The Project Management of the NAPCORE as well as the content wise internal alignment of all activities will take place within the Secretariat activity S.1. Additionally, the interface to the European Commission will be taken over by the Project Management. NAPCORE is going to be managed by the Core Alignment Team, which is led by the General Secretary. The Core Alignment Team is composed by the leaders of the Horizontal activities, the Working Groups and (if needed) the Sub-Working Groups. The Deputy General Secretary will be the main interface towards the Steering Committee and the Advisory Board. The Innovation Lead will focus on recommendations for further actions and future activities. The Dissemination Lead will be in charge of all dissemination and training activities, across the Working Groups.

Each Working Group and Sub-Working Group Lead has a position in the Core Alignment Team in order to jointly address interfaces and strategically aligning the direction of the single activities, to better achieve the overall objectives of the project. The Core Alignment Team will also decide on the general progress of the project and will monitor and adapt the budgetary situation, if needed, during the runtime of the project.

Horizontal activities will overarch all Working Groups and will embrace the Steering Committee and the Advisory Board. Hereto Activity H.1 will support the Steering Committee Members operationally and strategically in their tasks and will be responsible for setting up



the Advisory Board in cooperation with the European Commission services. During the runtime of the project the Advisory Board will be managed and supported by H.1. All Working Groups will have an active link to the Advisory Board in terms of content-wise cooperation and coordination.

The gathering of identified needs and their future required actions will be done by the Horizontal Activity H.2. This will be done by collecting all gaps and unattended upcoming requirements out of the Working Groups. Recommendations for future projects or other actions will be created.

Activity H.3 will implement the project's dissemination and outreach activities and will support the Working Groups by organising trainings, giving tutorial and didactical advice and provide up-to-date methodologies for knowledge transfer. In addition, three multi-day events (in 2022, 2023 and 2024) will be organised to disseminate the NAPCORE results and to enable networking and cooperation with stakeholders and the community.

The content towards the harmonisation of NAPs and NBs will be prepared by the Working Groups. For this, five Working Groups and four Sub-Working Groups are set in place. The first Working Group "NAP & NB Platform strategy and governance" aims at reflecting recent and future developments to prepare the NAPs/NBs for coping with them. Strategic positions of NAPs & NBs in EU policies and towards other mobility related initiatives will be analysed and defined. After a period of two years the current platform structure will be reviewed and the concept and strategy for long-term governance will be updated.

In Working Group 2, the NAPs interoperability and level of service will be analysed and defined. Requirements concerning data standards, reference profiles, metadata and support tools will be defined. Common NAP architecture(s) will be elaborated and the concept of interoperability demonstrators will be planned and implemented.

The content and accessibility of NAPs will be dealt within WG3. Current and future developments will be considered for the requirements definition of data. The quality of data will be analysed and criteria to define quality will be developed. The visualisation of existing data will be addressed as well as the FAIR-principle for NAP data (findable, accessible, interoperable and reusable) will be implemented. Conditions and terms for data re-use will be defined and a vision for automated data exchange will be developed. Content for trainings for potential NAPs user will be provided to H.3.

The enhancement and further development of data exchange standards are the objectives of WG4. The Working Group will align and harmonise the developments within the Sub-Working-Groups as required. Sub-Working Group 4.1, the DATEXII activities, will be continued and intensified to correspond to the NAPs' requirements. The same is planned for Sub-Working Group 4.2, dealing with TN-ITS. The Sub-Working Group 4.3 will act as the interface towards the MMTIS standards and within Sub-Working Group 4.4. the standardisation of the Metadata will be driven.

Authorities and National Bodies are working together in Working Group 5 on the development of harmonised processes for random inspections and compliance assessment. This will consider the application of common quality and evaluation criteria as well as the common strategy and approach to motivate and encourage data holders to provide data. Non-compliance will be also discussed and common approaches to deal with this will be developed.

The Advisory Board will be composed of relevant stakeholder groups, global private players in the field of data and service providers, industry representatives, ambassadors of flagship data projects, and well-known data (driven) experts. This group will provide extra non-binding strategic advice and expertise on business and technical aspects.

In the following chapters, the individual activities of NAPCORE will be described in more detail, including the planned participation levels of each partner, a time plan and milestone table. In the listing of participation levels per partner, we differentiate "L" for the activity lead, "A" for active contributors and "F" for followers. The Followers will be able to participate in the activities in a limited fashion, e.g. reviewing and commenting documents or attending selected virtual meetings. Associated partners are marked with a black cell background.

## ARTICLE I.4 – ACTIVITIES

### I.4.1 Activities timetable

Activity number	Activity title	Indicative start date*	Indicative end date*	Milestone number
1	<b>Secretariat S.1: Project management and administration</b>	Q2 2021	Q4 2024	MS.1.X series**
2	<b>Horizontal Activity H.1: Steering Committee Support (SCS)</b>	Q2 2021	Q4 2024	MH.1.X series**
3	<b>Horizontal Activity H.2: Identification of actions needed</b>	Q2 2021	Q4 2024	MH.2.X series**
4	<b>Horizontal Activity H.3: Dissemination, outreach activities, training</b>	Q2 2021	Q4 2024	MH.3.X series**
5	<b>WG1: NAP &amp; NB platform strategy and governance</b>	Q2 2021	Q4 2024	M.1.X series**
6	<b>WG2: Interoperability and level of service of NAPs</b>	Q2 2021	Q4 2024	M.2.X series**
7	<b>WG3: NAP content and accessibility</b>	Q2 2021	Q4 2024	M.3.X series**
8	<b>WG4: Data Exchange Standards</b>	Q2 2021	Q4 2024	M.4.X series**
9	<b>WG5: National Bodies and compliance assessment</b>	Q2 2021	Q4 2024	M.5.X series**

\* Detailed timetables in the description of activities (Article I.4.2)

\*\* Detailed list of deliverables in Article I.5

### I.4.2 Activities description

#### **Activity 1: Secretariat S.1: Project management and administration**

Participants:

AT	BE	BE-FL	BG	HR	CY	CZ	DK	EE	FI	NH	UITP
A	F	F	F	F	F	F	F	F	F	F	F
FR	DE-BAS	DE-AB	GR	GR-EG	HU	IE	IT	LV	LT	ERTICO	ITxPT
A	L	F	A	F	F	F	A	F	F	F	A
LU	NL	MT	PL	PT	RO	SK	SI	ES	SE	NPRA	FEDRO
F	A	F	F	A	F		F	F	F		

L = activity/task leader, A = active contributor, F = Follower

**General description of activity**

The activity encompasses all project management related tasks. This includes mainly managing the project's reporting requirements, the consolidation of annual working programs, financial controlling, the management of risks and quality as well as the external contact to the European Commission and the internal alignment between all consortium partners and activities. The coordinator acts as General Secretary, lead of activity S.1 and thus project leader.

**Task S.1.1: Project management and controlling, quality and risk management**

This is the main task of the secretariat: making sure that the project is managed and running according to the requirements of the Grant Agreement and further agreements between the consortium partners and the EU Commission. This task includes:

- preparation, consolidation, finalization and submission of the financial reports
- monitoring the expenses versus the budget
- review and monitor the project status
- milestone monitoring
- consolidation of the project's annual work programme from all activities;
- plan, manage and monitor incoming and outgoing deliveries
- change management: anticipate, evaluate and manage changes in project structure, project participation, budget allocation changes, leadership appointments etc.
- escalation management: resolve escalated issues
- risk management: Create, monitor and update risk management plan
- identify and mitigate project risks
- analyse project deficiencies and needs
- quality management: set up and monitor quality assurance guidelines
- minute taking of project meetings of the Core Alignment Team
- setup, generate and manage procedures, templates and tools to support above tasks (including the initial creation of a NAPCORE "brand" with logo, design, colour scheme etc.)
- setup, operation and management of a project management/document/collaboration platform

- provision of a virtual meeting (and webinar) solution to enable planned and ad-hoc virtual meetings of project partners (internally and with external partners)

All applicants will be active in this task to fulfil their obligations relating to their respective financial reporting and general project management tasks.

### Task S.1.2: Single-Point-of-Contact for the European Commission

The General Secretary is the single point of contact (with the Deputy Secretary General as secondary/backup contact) for representatives of the European Commission and DG MOVE in relation to this project. The Secretary General will manage the relationship and steer contractual arrangements with the European Commission as well as the reporting of finalized deliverables and other required project documentation to the European Commission.

### Task S.1.3: Internal alignment

The Core Alignment Team is responsible for the internal alignment of all stakeholders and activities. The team consists of the Secretariat activity leads and the Working Group leads of the project.

In (at least) monthly (mostly virtual) meetings the Core Alignment Team will get together, report each other on finished, ongoing and planned activities, important developments, challenges and issues. The team will discuss and align actions to be taken. The General Secretary is chairing the Core Alignment Team.

### Timeplan

Year	2021			2022				2023				2024			
Quarter	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task S.1.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task S.1.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task S.1.3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

### Activity 2: Horizontal Activity H.1: Steering Committee Support (SCS)

#### Participants:

AT	BE	BE-FL	BG	HR	CY	CZ	DK	EE	FI	NH	UITP
L	F		F	F	F	A	F	F	F		
FR	DE-BASt	DE-AB	GR	GR-EG	HU	IE	IT	LV	LT	ERTICO	ITxPT
A	A	F	A	F	F	F	A	F	F		



LU	NL	MT	PL	PT	RO	SK	SI	ES	SE	NPRA	FEDRO
F	A	F	F	F	F		F	F	F		

L = activity/task leader, A = active contributor, F = Follower

### General description of activity

The activity aims at supporting the Steering Committee in all of its Tasks aiming at harmonised Steering Committee Members decisions. This encompasses, in close cooperation with the Chair of the Steering Committee, the management of the rules and agreements for cooperation within the Steering Committee, the preparation of decision points, the support of the execution and post-preparation of Steering Committee meetings as well as the follow-up on required actions. Additionally, the SCS is responsible for interacting with 3<sup>rd</sup> Parties on behalf of the Steering Committee and preparing cooperation agreements or deals with other high-level strategic stakeholder interaction requests on behalf of the Steering Committee. The SCS is led by the Deputy General Secretary of the NAPCORE core alignment team in close cooperation with the General Secretary.

#### Task H.1.1 Operational support for Steering Committee

Within this task the following actions will be carried out:

- Steering Committee management: help establish and manage Steering Committee member list
- being the first level support for the Steering Committee members including take-up of actions requested by the Steering Committee members with regard to the overall NAPCORE platform
- Setting up and managing Terms of Reference and monitor their fulfilment/adherence
- Preparing Steering Committee Meetings at least twice a year: agenda-setting, invitation, decision points gathering and preparation, facilities and refreshments
- Meeting support: support the execution of the meetings according to the Terms of Reference in close cooperation with the Chair of the Steering Committee
- Post-preparation: minutes of the meetings, follow-up on action points and decisions

#### Task H.1.2 Strategic support for the Steering Committee

Within this task the following actions will be carried out:

- Prepare strategic decisions points for the Steering Committee;
- Prepare harmonised Steering Committee inputs for the European Commission with regard to open consultations, e.g. the revision of the ITS Directive 2010/40/EU and its delegated regulations in cooperation with WG1;
- Prepare and support exchange and discussions between the Steering Committee and the Advisory Board;
- Support WG1 in the development of a long-term governance structure for the NAP/NB platform;



- In cooperation with the General Secretary engage with different stakeholders on behalf of the Steering Committee or represent the Steering Committee on requested occasions; Prepare and organise strategic discussions with 3<sup>rd</sup> parties or relevant stakeholders for the Steering Committee; Prepare necessary cooperation or collaboration agreements between the NAPCORE Steering Committee and external actors.

### Task H.1.3 Setting up and management of the Advisory Board

An Advisory Board will be set up made up of different actors, ensuring sectoral and geographical representativeness in order to advise the NAP/NB platform in the definition of strategic objectives, business and technical aspects. The size and members of the Advisory Board will be defined in cooperation with the EU Commission services.

Once the Advisory Board is set up, it will be supported by the SCS for membership management, meeting organisation and preparation of minutes.

#### Timeplan

Year	2021			2022				2023				2024			
Quarter	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task H.1.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task H.1.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task H.1.3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

### **Activity 3: Horizontal Activity H.2: Identification of actions needed**

#### Participants:

AT	BE	BE-FL	BG	HR	CY	CZ	DK	EE	FI	NH	UITP
A	F			F	F	A	F	F	F		F
FR	DE-BAST	DE-AB	GR	GR-EG	HU	IE	IT	LV	LT	ERTICO	ITxPT
A	F	A	A	F	F		A	A	F		F
LU	NL	MT	PL	PT	RO	SK	SI	ES	SE	NPRA	FEDRO
F	L	F	F	F	A		A	F	F		

L = activity/task leader, A = active contributor, F = Follower

## General description of activity

The activity aims at reviewing all activities throughout the project runtime, identify missing elements and formulate recommendations for further action in the related ITS domain.

### Task H.2.1 Identification of further topics to be addressed

Working Groups and the Core Alignment Team will identify topics throughout the project runtime that are not (yet) covered by this project's scope and yearly working programs or other, external parties and projects. These gaps could be NAP data content related, NAP interoperability related but also with regards to legislation, business models or funding needs. Another source for actions will come from outside of the project such as the revision of the ITS Directive and its Delegated Regulations, the Common European data space and funding programs. For this, external innovation monitoring and interaction with stakeholders and other Platforms needs to be a continuous effort to detect relevant developments that call for consideration and action.

### Task H.2.2 Recommendations for further actions

Based on the information identified in H.2.1, the topics will be evaluated and prioritized. Then recommendations will be formulated towards further actions that should be undertaken. Appropriate measures and action descriptions are generated and prepared for internal distribution back to the WGs or external stakeholders. These recommendations can cover a wide range of actions:

- Proposals for new actions funded by the EC/INEA
- Proposals for new regulations
- Proposals for new harmonisation activities
- Proposals for further research
- etc.

Information, alignment, confirmation and/or endorsement necessities with/from relevant stakeholders will be considered, initiated and managed.

### Timeplan

Year	2021			2022				2023				2024			
Quarter	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task H.2.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task H.2.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

**Activity 4: Horizontal Activity H.3: Dissemination, outreach activities, training****Participants:**

AT	BE	BE-FL	BG	HR	CY	CZ	DK	EE	FI	NH	UITP
F	F			A	A	A	F	F	F		A
FR	DE-BASt	DE-AB	GR	GR-EG	HU	IE	IT	LV	LT	ERTICO	ITxPT
A	A	F	A	F	A		L	F	F		A
LU	NL	MT	PL	PT	RO	SK	SI	ES	SE	NPRA	FEDRO
F	A	A	F	F	A	F	A	F	F	F	

L = activity/task leader, A = active contributor, F = Follower

**General description of activity**

Horizontal Activity H.3 covers all communication and outreach activities, having the objective to make all achievements and results available to Member States and stakeholders inside and outside the Action, other than to the EC. This activity encompasses the dissemination of results, benefits, best practices and lessons learned with users, Member States and stakeholders via various channels such as a website, social media, newsletters, printed materials as well as the participation and organisation of relevant events.

Another goal is to provide an active support for the operational level, through the organization of trainings dedicated to experts and/or users using virtual courses or on-site trainings. While the contents to be communicated will be defined in the various Working Groups, this activity will focus on the dissemination of results and the organization of events.

**Task H.3.1 Dissemination**

All dissemination activities, also concerning events and trainings, are covered by this task. A comprehensive communication plan is developed to define the communication channels and to plan main products and their timeline. This will include a website (regular, portal, wiki...), social media channels, newsletters, printed documents (as brochures and promotional flyers), articles on professional newspapers and magazines or other.

Dissemination reports will be created yearly to report on all dissemination activities and on the main progresses in collaboration with WGs.

**Task H.3.2 Events**

Both the participation in relevant industry and stakeholder events as well as the organisation and management of own events will be covered by this task. The goal is to ensure interaction with stakeholders, experts, data providers, data users and related communities to create and keep open an information channel in both directions: in and out.

The PSA plans to organize multi-day physical (or virtual depending on possible future COVID-related travel and meeting restrictions) events that cover project meetings, conference sessions, industry/community workshops, trainings and more.

### Task H.3.3 Training and user support

The general goal of this task is to enable NAP users to use the NAPs and their data by offering specific (e.g. for novice user, for expert interface developers) trainings both in digital (via webinars) and physical modes. Support will be provided for specific trainings that WGs will develop for content providers (to access the NAP), NAPs and NBs themselves in order to disseminate best practices and harmonization opportunities.

An outreach plan will define the concrete actions to be performed towards the following general objectives:

- Development of training concepts and a training plan for selected target groups together with Working Groups
- Organisation of trainings and workshops, together with the Working Groups
- Didactical settings of trainings
- Coordination of the platform experts in adapting consolidated training tools to national conditions / language and in the execution of trainings at national level
- Training of the trainer and industry experts to build up expertise across Europe
- Adaptation of trainings according to on-going and consolidated experiences of pan-European trainings (feedback from experts and users)

The "content" of the trainings will be developed by the Working Groups.

### Timeplan

Year	2021			2022				2023				2024			
Quarter	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task H.3.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task H.3.2			X	X	X	X	X	X	X	X	X	X	X	X	X
Task H.3.3			X	X	X	X	X	X	X	X	X	X	X	X	X



**Activity 5: WG1: NAP & NB platform strategy and governance**Participants:

AT	BE	BE-FL	BG	HR	CY	CZ	DK	EE	FI	NH	UITP
A	A		F	A	F	A	F	F	F		A
FR	DE-BASt	DE-AB	GR	GR-EG	HU	IE	IT	LV	LT	ERTICO	ITxPT
A	L		A	F	F	F	A	A	F	F	
LU	NL	MT	PL	PT	RO	SK	SI	ES	SE	NPRA	FEDRO
A	A	F	A	A	A	F	F	A		A	F

L = activity/task leader, A = active contributor, F = Follower

**General description of activity**

This WG is dealing with all issues concerning the long-term set up of the National Access Points and National Bodies harmonisation as well as with considering foreseeable future and upcoming requirements, challenges or developments that NAPs and NBs will face. The NAPs and NBs need to reflect on recent and future developments having implications on either their scope, functionality or operational level. Moreover, the position and role of the NAPs/NBs in European policies will be analysed and the embedding within relevant policies will be promoted. Additionally, the strategy of the NAP/NB platform concerning other mobility data related players as well as within the European Mobility Data Space will be developed.

**Task 1.1 NAPs/NBs strategy for EU developments and policies**

Task 1.1 will be conducted in close cooperation with Task H.1.2, hereby preparing strategic decision points for the Steering Committee.

The NAPs and NBs need to take up recent and future developments on EC level having implications on either their scope, functionality or operational level. Additionally, in order to increase the importance of the NAPs and NBs they need to develop their strategic position towards EU policies and the European Mobility Data Space and should get involved properly. The results of the Task will be relevant for setting up the sustainable long-term governance structure (Task 1.3)

Specific focus will be laid on the revision of the ITS Directive and the related Delegated Regulations. New requirements, deriving thereof need to be considered and addressed during the duration of the NAPCORE as well as, when planning for the long-term governance of the NAP/NB platform.

Additionally, embedding the NAPs and NBs in EU policies like the Green Deal, European Data Strategy, Sustainable and Smart Mobility Strategy, etc. will increase the visibility and role of the NAPs in the EU mobility data policy. Therefore, the relevant EU policies should be identified and NAPCORE should contribute appropriately.

The NAP/NB platform also needs to locate itself within the European Mobility Data Space. Hereto the key functions and benefits of the European Mobility Data Space will be collected, a possible ecosystem will be drafted and the potential role of the NAPs within this ecosystem will be defined. To define interfaces with other stakeholders and initiatives the draft ecosystem will be exchanged and discussed with the relevant actors.

The NAPs and National Bodies also should find a common way to approach related EU legislation like the INSPIRE directive, the PSI directive, GDPR or others.

### **Task 1.2 NAPs strategy towards other mobility data related activities, global players and emerging technologies**

This task will serve to monitor existing and upcoming projects, activities or initiatives in the mobility data and data exchange domain, to consider or incorporate relevant or valuable results from these activities, via regular liaisons. Stakeholders within the NAP/NB environment and their role will be identified. Additionally, specific focus will be set on the cooperation with global players and on the impacts of emerging technologies for delivering input to Task 1.3.

Global players in the mobility data area both public and private will be addressed concerning the availability and accessibility of mobility data (safety related data in particular) by jointly starting discussions to identify potential for cooperation.

Impacts of emerging technologies (e.g. AI, 5G, Big Data, linked open data...) and mobility concepts (e.g. CCAM, MaaS ...) will be analysed with regard to their influences on the NAP operation in order to set up a future-proof concept for the long-term NAP/NB governance.

### **Task 1.3 Future and sustainable governance structure of the NAP/NB platform**

Based on the results of the Tasks 1.1 and 1.2, WG3 and in strong cooperation with Activity H.1 Steering Committee Support a future and sustainable long-term governance structure of the NAP/NB platform will be developed. For this, the national needs and requirements concerning the long-term governance structure and national NAP/NB strategies will be taken into consideration. New requirements and experiences, arising during the NAPCORE runtime will be considered properly and continuously reviewed. A strategic and operational implementation plan for harmonised European wide operation will be set up and will form the basis for the overall governance structure, considering future management, financing, membership opportunities and connection to external actors.

Within the set-up of the long-term governance structure, the demonstration of commitment and buy-in from all concerned stakeholders will be foreseen in order to ensure the implementation of the Working Group results.

Key application areas, where NAPs will play a key role will be identified and new business models will be analysed in cooperation with WG3 and considered if appropriate, e.g. they meet the ethical criteria of the European strategy for data and AI: respect for personal data, user rights and digital sovereignty.

Timeplan

Year	2021			2022				2023				2024			
Quarter	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task 1.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 1.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 1.3						X	X	X	X	X	X	X	X	X	X

**Activity 6: WG2: Interoperability and level of service of NAPs**Participants:

AT	BE	BE-FL	BG	HR	CY	CZ	DK	EE	FI	NH	UITP
A	A	F	F	A	A	A	A	F	A	F	F
FR	DE-BAS	DE-AB	GR	GR-EG	HU	IE	IT	LV	LT	ERTICO	ITxPT
A	A		A	F	A		A	F	A	F	A
LU	NL	MT	PL	PT	RO	SK	SI	ES	SE	NPRA	FEDRO
F	A	F	A	L	A	F	A	F	F	A	

L = activity/task leader, A = active contributor, F = Follower

**General description of activity**

This Working Group aims at defining minimum conditions and coordination of the development and evolution of the NAPs in order to enhance the compatibility and interoperability of the features (access, management, look & feel etc.). This Working Group will also enhance the harmonisation of the levels of service of the NAPs, taking account of the existing architecture of the NAPs in the Member States and maintaining and developing NAP architecture while building upon existing investments. Demonstrators of the best practice i.e. higher levels of interoperability and improved levels of service of NAPs as they exist in Member States will be described and developed via the project partners. WG2 is expected to work closely together with WG3 and WG4 for complementarity and in order to avoid overlapping or duplication of activities, in particular when it comes to the description of scope and the need to harmonise requirements and common definitions.

**Task 2.1: Levels of service of NAPs**

Objective: a uniform description of Level of Service (Types) of NAPs Architecture

Activities:

- Identification and listing of gaps & action needed regarding interoperability and level of service for the adoption of NAPs by the different Member States.
- Sharing experiences of NAP pre-studies, NAP reference architectures, NAP impact assessments, etc.
- Assess the state of practice on NAPs sustainability models (e.g. local language barriers, search functionality, guest/registration, ...)
- Further elaborate the EU EIP support document Common Features and Level of Service
- Assess Member States practices regarding access to data under terms and conditions, via the NAPs
- Assess costs and benefits of the different NAP architectures
- Provide recommendations for stepwise approach to support Member States road-mapping into more complex NAP architectures
- Define several fixed levels of service of NAPs (Register, Data Portal, Market Place or Clearing House). Member States can express ambitions and needs aligned to these levels

Outcome:

- Overview of gaps, short comings, barriers and actions needed
- Overview of existing functionalities, capabilities, technical interfaces, etc. of the NAPs at European level (in cooperation with WG3)
- Repository of documents of experiences with the preparation and deployment of individual NAPs
- Typology of NAP types/architectures based on the description of levels of service and assessment of associated costs and benefits
- First layout of potential European NAP or federation of European NAPs (in cooperation with WG1 and subWG4.4)

**Task 2.2: Definition of requirements concerning data standards, reference profiles and metadata and support tools**

Objective: Improve data interoperability by defining common data standards, reference profiles and metadata as well as requirements for them.

Activities:

- Inventory and prioritisation of short comings concerning (the use of) data standards, reference profiles and metadata, + link with CEN TC278 WG3 (ITS Public Transport where are specified TRANSMODEL/SIRI/NeTEx) for recommendations on standardisation gaps, hampering the interoperability of NAPs, in collaboration with SWG4.3.
- Setting up a list of requirements concerning data standards, open data, reference profiles and metadata
- Assess how to create and maintain UpToDate technical artefacts and support tools for NAP relevant standards (such as the tools developed for DATEX UVAR m2m readable formats).



- Handover of prioritised list of requirements to WG4 on standards and/or standardisation organisations.
- Look into possible implications from the developments of the 'common EU data space' and 'mobility data space'.
- Comparison of existing requirements by using FRAME
- Development, review and prepare for Steering Committee final recommendations concerning standards to be used for specific categories. This process can be repeated after two years.

**Outcome:**

- A list of requirements concerning (the use of) data standards, open data, reference profiles and metadata, developed on a regular annual basis, to be handed over to subWGs on standardisation and/or standardisation organisations, taking data quality into account.
- Provide recommendations (e.g. position papers) on standardisation gaps to EC, CEN, ISO, etc.
- Recommendations for WG4 and Steering Committee (act. 1.3) concerning standards to be used and reference profiles
- Provide a list of recommended and basic reference data sets supported by member states for service interoperability
- Provide a list of recommended and basic delivery processes supported by member states for service interoperability
- Make available Support Tools for NAPs (e.g. UVARBox), in cooperation with WG4 on standardisation and with NAPCORE Secretariat for centralised dissemination.

**Task 2.3: NAP architecture**

NAP Architecture is a critical part of the NAP backbone. According to the architecture the NAPs are developed, maintained and operated. The architecture defines a functional view where main functionality (3 different types for NAP) are laid out, physical architecture defining how the NAP should be implemented together with dataflows at respective interfaces and standards / procedures to be applied at those interfaces. In Organizational / enterprise view it defines the interrelationship between stakeholders / organizations between themselves and between physical objects, it defines roles, set ups the template agreements etc.

**Objective:** Maintain the NAP reference architecture and assess the degree of interoperability in the NAP architecture and how it should be harmonized. Identify new requirements through use case analysis to ensure secure and private data exchange for all aspects of interoperability.

**Activities:**

- Identify current NAP architectures (incl. each NAP architecture and reference architectures – e.g. FRAME)
- Compare the implemented NAP architectures with the reference architecture and identify additional requirements from each key application area

- Define where and how a common NAP reference architecture should be able to support NAP operators and users.
- Define necessary changes of FRAME Architecture to reach the requested level of service interoperability – common denominators (i.e. minimum desired harmonization of architectures to align European NAPs)
- Maintain and develop of the NAP Architecture tools
- Develop of the NAP model architecture itself
- Support the NAP Architecture user community by content creation (for webinars)
- Review new developments in B2B and B2G mobility data sharing/exchange domain and supported data delivery processes from the NAP.
- Review new developments in the field of ITS data security and privacy (incl. new legal, technical and/or organizational measures)

**Outcome:**

- NAP reference architecture which shows the minimum common denominator of European NAPs and which supports NAP operators and users
- A set of functional and technical requirements to improve trust and promote secure and private data exchange.
- Updated and maintained NAP reference architecture as common FRAME architecture

**Task 2.4: NAP service interoperability demonstrators**

Interoperability is hardly, ever as simple as, plug play, especially in high complexity projects such the NAP. Ensuring interoperability requires a bottom up approach from the level of the standards to the ITS service roll-out. Considering the different NAP architectures and the different policy and priorities taken amongst the Member states, looking into best practices and lessons learned from the more advanced NAPs in Europe, can provide others, with valuable insights for their own NAP evolution roadmap. The purpose of Task 2.5 is not about deployment or piloting, rather to understand how to better enable cross border interoperability and how to ensure continuity of ITS Services. Looking into different options, while fostering Member States cooperation around topics of common interest, Task 2.5 is designed to support those concepts to come to life, by developing the demonstrators. This is probably one of the most important aspects of the NAPCORE Federation and an important step to bring us closer to the EU mobility and transport digital layer.

**Objective:** To showcase experiences and best approaches on real-world use of the NAP reference architecture information to support interoperability and continuity of ITS Services.

**Activities:**

- Definition and operationalization of interoperability demonstrators that make real-world use of the NAP information, to test scenarios, e.g. cross-border, intermodal scenarios, a mix of urban and inter-urban environments, or continuity of services based upon already harmonised data sets or stable data profiles (e.g. UVAR)
- Definition and operationalisation of interoperability demonstrators to test the development of a marketplace or clearing house NAP.

- Definition of concepts/requirements for interoperability implementations, e.g. the Metadata aggregator (federation of metadata), in cooperation with subWG4.4.
- Elaborate concept and (optional) interoperability demonstrator of a European Access Point (EAP), allowing visibility of NAP datasets from multiple countries in one platform. As prime dataset candidates for such demonstrator - Safety Related Traffic Information or the UVARs, expected soon to be in the scope of the RTTI Delegated Regulation.
- Assess the opportunity to develop common NAPs by two or more Member States on selected specific datasets (e.g. for cross-border data).
- Evaluation of these interoperability demonstrators, lessons learnt, recommendations.

#### Outcome:

- In between three and four interoperability demonstrators with real-world use of data and different Levels of Service (Reinforcing collaboration with T2.1)
- Lessons learnt, recommendations on road mapping the evolution of simpler NAP architectures, into more complex ones, considering data structure, technology, etc. for marketplaces and clearing houses.

#### Timeplan

Year	2021			2022				2023				2024			
Quarter	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task 2.1: Levels of Service of NAPs	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 2.2: Standards requirements	X	X	X	X				X	X	X	X				
Task 2.3: Architecture	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 2.4: NAP Interoperability Demonstrators				X	X	X	X	X	X	X	X	X	X	X	X

**Activity 7: WG3: NAP content and accessibility****Participants:**

AT	BE	BE-FL	BG	HR	CY	CZ	DK	EE	FI	NH	UITP
A	A	F	F	A	A	A	A	A	A		A
FR	DE-BASt	DE-AB	GR	GR-EG	HU	IE	IT	LV	LT	ERTICO	ITxPT
A	A	F	L	F	A	F	F	A	A	A	A
LU	NL	MT	PL	PT	RO	SK	SI	ES	SE	NPRA	CH
A	A	F	F	A	A	F	F	A	F	A	F

L = activity/task leader, A = active contributor, F = Follower

**General description of activity**

WG3 titled "NAP content and accessibility" aims to assess and enhance the content and accessibility of European NAPs. The activities of this Working Group will contribute to harmonization of European NAPs content, considering also current developments and future progress in the ITS domain. The activities will assist 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 visualization. Its specific objectives can be summarized as follows:

1. 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.
2. Monitor and assess the availability of ITS-related data at both national and Pan-European NAP level.
3. Identify data gaps and provide guidelines to mitigate these gaps.
4. Set a robust framework for and bring into practice the evaluation of European NAP platforms' data quality.
5. Investigate commonly accepted frameworks and technical options to achieve fair, trusted, and enhanced accessibility to ITS-related data through European NAPs.
6. Create added value visualization tools to be used by NAP operators, data providers, and data consumers.
7. Support the enhanced use of NAPs in key application areas of priority and added value for EU Member States.
8. Align the achievements on the NAP content and accessibility level with the remaining activities and needs of the project, including training.

**Task 3.1 – Data content requirements arising from current and future developments**

The current task supports the fulfilment of the first three objectives of WG3. The analysis of data content requirements will be implemented at three main dimensions:



- Analysis of existing legislation including as a starting point the ITS Directive and the Delegated Regulations supplementing it. Attention will be paid on the identification of new requirements and new data categories that may result from the currently implemented revision of Delegated Regulation no. 962/2015 (provision of EU-wide real-time traffic information services), as well as the impact assessment study for the revision of the ITS Directive. During this analysis, the Open Data Directive, including its related Delegated Regulations and the INSIPRE Directive will also be considered.
- Review of content of all NAPs, as well as on the content of other mobility- and transport-related data platforms operated within and beyond Europe.
- Review of existing literature and new developments that are currently discussed in relevant consortia and fora (e.g., developments related to Cooperative Connected and Automated Mobility, Big Data, Linked Data, and Artificial Intelligence) and included in the results of relevant project (e.g. Data4PT), in the light of key application areas that will be analyzed within WG1 (NAP & NB platform strategy and governance).

The data content requirements that will be defined by adopting the above-mentioned approach will be divided in three time horizons (short-, medium- and long-term) responding to the need for defining mid- and long-term strategic objectives and will be used to formulate supportive material in the form of data categories, catalogues and dictionaries, in an effort to support harmonized NAP contents and data publications among all Member States. Moreover, the analysis will lead to the identification of data gaps in each Member State's NAP supplemented with a comprehensive identification of important data holders that may be approached by NAP operators, in order to enrich the content of their platform. As part of this analysis a report that will be updated on a 6-month basis will be drafted, supporting DG-MOVE and other relevant EC bodies or agencies, on monitoring the data availability of European NAPs. The report will be initially based on the existing related template of EU EIP and it will be gradually extended to cover additional key performance indicators. The data availability of each NAP will also be visualized on-line by using state-of-the-art visualization tools. The outputs of this task are associated with the first eight milestones (3.1-3.9) included in the table below.

### **Task 3.2 – European NAPs data quality**

This task is intended to set a robust framework for and bring into practice the evaluation of European NAP platforms' data quality. Specifically, this task will deepen and expand previous harmonization efforts in the area of data quality, looking from the wider perspective of several potential ITS actors and services. The work will deal with the creation and enhancement of data quality frameworks as well as with bringing such quality frameworks into practice. The task is divided into three subtasks analysed below.

#### **Subtask 3.2.1 – Quality Frameworks**

Generic frameworks will be established for various ITS domains, containing agreements and definitions for quality criteria and (minimum) requirements for the case (i.e., covering aspects such as geographic coverage, timeliness, latency, position accuracy, and error level), when corresponding datasets are offered in NAPs. Some Quality Frameworks have been already initiated by the EU EIP platform (for all ITS directive's priority services and C-ITS services) but may need further validation and maturity. Besides, other frameworks need to be newly established, e.g., for emerging data categories, such as UVAR, or for emerging technologies,

such as vehicle-generated data. Relevant data categories to be covered by such Quality Frameworks will be identified in the context of Task 3.1. As an initial action, relevant roles and processes in the quality context are determined, considering any stakeholders along the value chain of ITS data, including public and private data providers or relevant associations. Also, an analysis assessment of existing Quality Frameworks, as well as a scoping for updated/new Quality Frameworks is conducted. A set of Quality Frameworks, as identified within these preparation works, is then elaborated under this subtask.

#### Subtask 3.2.2 – Guidance & best-practices for quality assessment

Efficient ways how to assess individual NAP datasets have not been explored on a wide basis, i.e., there is a lack of experience and common understanding on how to apply the Quality Frameworks in practice, e.g., by NAP operators or by the National Bodies. This subtask will involve best-practice research and practitioners' exchange, in order to provide guidelines how to introduce, monitor and enforce Quality Assessment, regarding NAP datasets at individual organizations, accounting also for differences in the application of related standards. The guidelines will be accompanied with some pilot assessments of selected, real-life NAP data sets, to prove and demonstrate the identified Quality Assessment methods. Such pilot assessments will consider as many European partners as possible, to get a full picture of the quality state-of-play. Any outcomes from such assessment will be also used as a feedback loop to the above-mentioned Quality Frameworks. i.e. the Frameworks will be validated and eventually updated upon the assessment results.

#### Subtask 3.2.3 – Quality certification for NAP datasets

This task will concretise and formalise the above-mentioned Quality Assessment methods, as a model for a neutral and harmonised Quality Certification process. Such Quality Certification allows neutral parties (i.e., a party other than the data provider) to sufficiently and comparably assess NAP data sets, for the compliance with specific data quality requirements. In addition, explicit Quality Certificates may be provided, which may demark "high-quality" NAP data sets. Such certification process will be targeted at the assessment procedures of National Bodies, so the results of this task will be taken into consideration by the Working Group 5 dealing with the harmonization of National Bodies processes, placing special emphasis on compliance assessment. In particular, subtask 3.2.3 will provide a guideline about Quality certifications, whereas WG5 will apply this guideline and, potentially, provide a validation back to subtask 3.2.3. Finally, on the same basis and building upon relevant discussions among the Member States, the contents of data quality reports to be submitted by each Member State to DG-MOVE and other relevant instruments of the European Commission will be agreed.

The outputs of Task 3.2 are associated with Milestones 3.9, 3.10, and 3.11 included in the table below.

### **Task 3.3 – Data access and reuse**

This task will investigate commonly accepted frameworks and technical options to achieve fair, trusted, and enhanced accessibility to ITS-related data through European NAPs and will create added value visualization tools to be used by NAP operators, data providers, and data consumers. These objectives will be fulfilled by the dividing the work plan included in this task into four subtasks analyzed below.

### Subtask 3.3.1 – Technical options for data visualization

This subtask involves the investigation of commonly accepted data visualization options. These options can be utilized by all NAP platforms as an additional tool to enhance the understandability and accessibility of their content (i.e., open data feeds may be interactively visualized, while sample data visualizations may be provided for non-open data feeds), as well as to provide added value services. The options to be investigated will also include tools for facilitating an interactive monitoring of data availability, thus providing a valuable contribution to the work to be carried out within the course of Task 3.1. Open-source technologies will be investigated with the aim of avoiding additional licensing and operational costs for NAP operators. Finally, the options to be investigated will be customized based on several parameters, including: a) whether data feeds and data publications are real-time, nearly real-time, historical, or static, b) the nature of each dataset according to the categories to be defined in the context of Task 3.1 and c) the transport mode(s) covered by each dataset.

### Subtask 3.3.2 - Terms and conditions of data reuse (incl. data pricing)

This subtask involves the development of an appropriate framework to ensure the proper terms and conditions for data reuse. This framework will include the definition of reference licenses, including open licenses, to be used by NAP data providers considering their needs and expectations. Therefore, this task includes a close cooperation with various data providers and the execution of a comprehensive needs and requirements analysis. Apart from the reference licences to be included in the aforementioned framework, specific requirements will be identified concerning the operational procedures of European NAPs and the share of liability among data providers, data consumers and NAP operators. Finally, considering that data to be hosted on/provided through European NAPs are not always without charge, this task will contribute to fair accessibility by developing an appropriate methodology for data valuation and pricing. This methodology will: a) rely on the input of data providers, data consumers and NAP operators but also on the contents of the data quality framework to be elaborated in Task 3.2 and b) consider various business models for data sharing as well as parameters, such as the quantity of data made available, the number of their users, and the potential value of services that may be based on that data.

### Subtask 3.3.3 – Implications of GDPR

This subtask involves the identification of the implications of GDPR on the publications of European NAPs and on their usage by data providers and consumers. Special attention will be paid on new types of high-resolution datasets that may concern NAP operators in the future, the privacy requirements of which are not widely known at present (e.g., requirements with respect to data anonymization).

The outputs of Task 3.4 are associated with Milestones 3.12 and 3.13 included in the table below.

### **Task 3.4 – Data Exchange Vision**

This task is meant to support the enhanced use of NAPs in key application areas of priority and added value for EU Member States by building upon existing activities and use cases for the use of NAPs in EU member states. In this context, analyses of best practices and

exchange of experiences related to impactful data exchange will be executed. Key application areas may include (indicatively): multimodal traffic operations (incl. Cooperative Intelligent Transport Systems), road safety, urban mobility & MaaS, Logistics & supply chain, and transport policy support. Examples of use cases included in these application areas are: a) virtual national traffic management centers, b) use of NAPs as tools to provide centralized information to the C-ITS ecosystem, c) use of NAPs as neutral MaaS-related data aggregators, d) national platforms supporting logistics and freight transport data exchange and operations, and e) policy supporting transport observatories. The performed analyses will highlight the benefits of NAPs' usage and will demonstrate new options for added value extraction. The above will be streamlined with the related cross-border demonstrator activities of WG2. The outputs of this task are associated with Milestone 3.14 included in the table below.

### Task 3.5 – Training for NAP content and accessibility

This task is associated with the last objective of WG3. It involves: a) the development of training material for different actors and b) the execution of hybrid (combination of physical and virtual) training events. The training material to be developed will cover all main outputs of WG3 activities, focusing on its achievements including data quality assessment, data accessibility and best practices in data exchange. Therefore, this task will seek to bring into practice the entirety of acquired knowledge. The organization of the training events will be supported by the Secretariat. The outputs of this task are associated with Milestone 3.15 included in the table below.

#### Timeplan

Year	2021			2022				2023				2024			
Quarter	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task 3.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 3.2	X	X	X	X	X	X	X	X	X	X	X	X	X		
Task 3.3			X	X	X	X	X	X	X	X	X	X	X	X	X
Task 3.4				X	X	X	X	X	X	X	X	X	X	X	X
Task 3.5				X	X	X	X	X	X	X	X	X	X	X	X

### Activity 8: WG4: Data Exchange Standards

The WG4 aims to the development and enhancement of standards and the alignment between current EU actions and the enablement of harmonisation. In this respect, it establishes coordination between the different data standards approaches and defines a common roadmap for data standardisation and publication.

In particular considering the current and future needs in the framework of data standards in EU mobility data exchange the following subWGs are formed:



1. SubWG 4.1: DATEX II
2. SubWG 4.2: TN-ITS
3. SubWG 4.3: Multimodal data
4. SubWG 4.4.: Metadata

The alignment challenge is addressed through a common Task between all subWGs, where all subWGs will co-design the roadmap for data standards analysis towards harmonisation. In combination with other activities under SWGs, the identification of complementary actions needed (e.g. conversion, choice of one specification/standard etc.) to enable interoperability in EU is another key aspect of WG4.

#### **Coordination Task: Alignment and harmonisation of data standards**

Coordination of WG4 as a whole including the interaction and harmonisation between the different SWG's (SWG4.1, SWG4.2, SWG4.3, SWG4.4) aiming at harmonising standards over the different domains.

Coordination and harmonising WG4 aiming at the creation of an interoperable ecosystem including the required consensus and governance of information cross standards. The main objectives of the task are:

- Monitor yearly programs and progress
- Harmonise standards
- Prevent double work
- Identify black spots (need for actions)
- Consensus building and prioritisation

The coordination between the subWGs is established through the following activities and the active contribution of the four subWGs:

- Identification of data standards ecosystem
- Roadmap for harmonisation

Coordination meetings and systematic exchange between the subWGs in respect to their progress on the implementation of the roadmap is included.

#### **Task 4.0.1: Identification of data standards ecosystem**

This task aims to:

- identify topics for harmonisation
- define the actors involved and the initiatives/actions that take place

#### **Task 4.0.2: Roadmap for harmonisation**

Based on the results of subtask T4.0.1 a clear roadmap will be defined to be followed by the subWGs to enable harmonisation. The roadmap will define the work method and the topics, actions and milestones of the WG4. Priorities on the areas or Working Groups and initiatives that require more attention and active participation of each sub WG will be set. Roadmap



updates will take into consideration intermediate results of carried out work under SWGs and will define the scope of the work of each of the sub WGs.

Each Working Group will contribute to the identification of the ecosystem and provide their input for the definition of roadmap. SubWGs activities, objectives and contribution to the harmonisation task are presented in details in the following sections.

#### SWG 4.1: DATEX II

##### Participants:

AT	BE	BE-FL	BG	HR	CY	CZ	DK	EE	FI	NH	UITP
A		A	F	F	A	A	F	F	F	A	
FR	DE-BASt	DE-AB	GR	GR-EG	HU	IE	IT	LV	LT	ERTICO	ITxPT
A	A		A	A	F		A	F			
LU	NL	MT	PL	PT	RO	SK	SI	ES	SE	NO	FEDRO
F	L	F	F	A	A	F	A	F	A	A	F

L = activity/task leader, A = active contributor, F = Follower

#### General description of activity

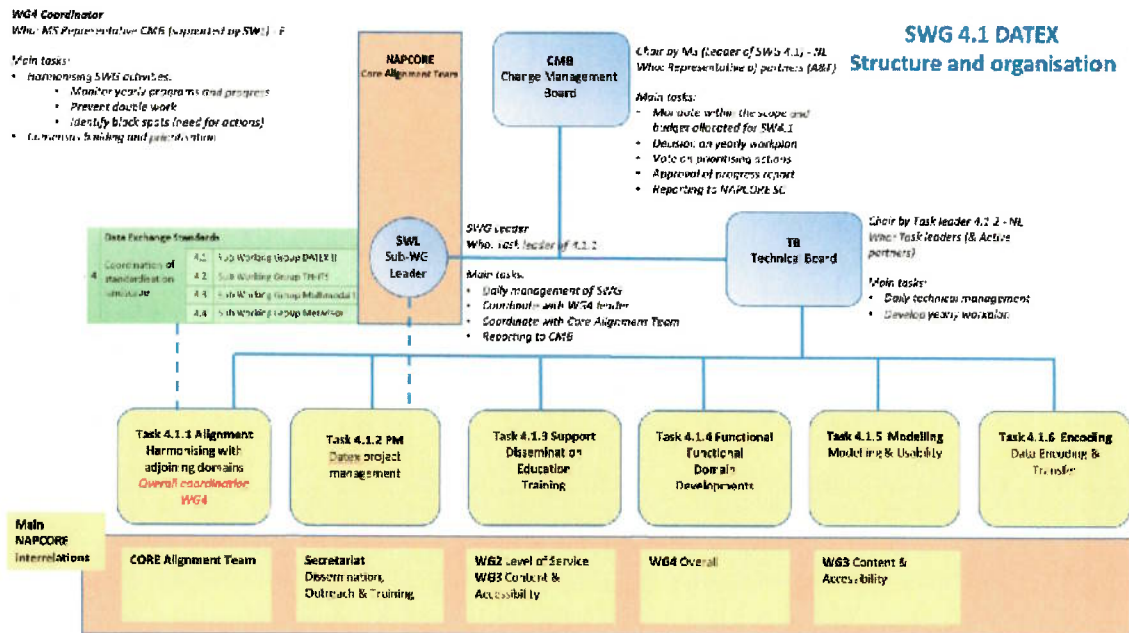
SWG 4.1 in general covers the continuation of the DATEX II work and integration with the standardisation activities with the scope of the NAP's.

From this perspective the following specific objectives are defined:

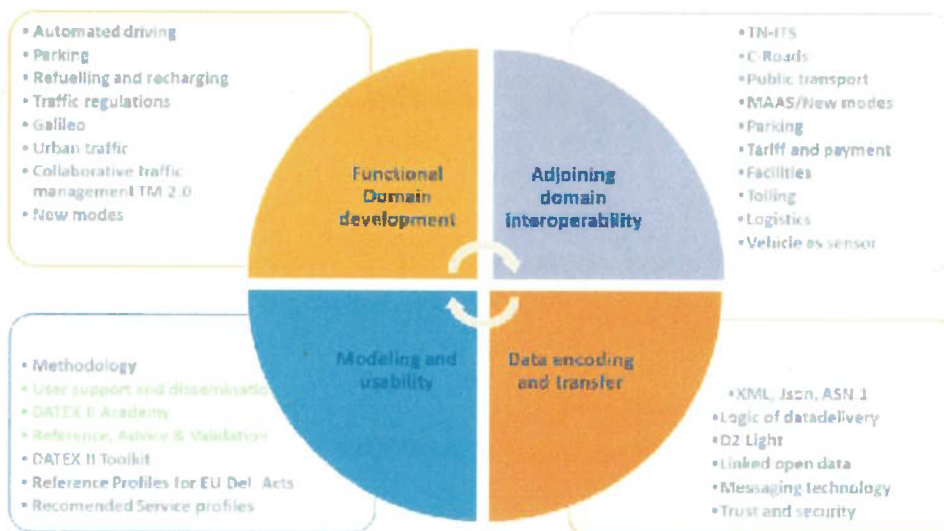
- Involve the non-traditional DATEX II stakeholders in the governance;
- Organise liaison and collaboration with other custodians of relevant standards in the domain;
- Reach out to new domains to help them standardise according to (EU, national, regional, programme etc.) policies;
- Harmonisation between Member States' profiles;
- Continuation of the DATEX II Support (e.g., website, docs portal, ...);
- Educate and train DATEX II users/experts in the different user levels and user groups among Europe, open to public and private organisations;
- Host and maintain an international network of experts on functional and technical level that is capable of delivering required standards;
- 'Safeguard' the work that has been done in the 2016-2020 PSA;
- Maintain and further develop DATEX II standards;

The following structure will safeguard the governance of DATEX II, within the scope and governance structure of NAPCORE. The CMB has mandate to update and modify the DATEX II workplan within the given scope, milestones and budgets. New working items can be added under the following conditions:

- At least 3 Member States have interest and will actively contribute
- One Member State will take the lead
- There are no consequences for the allocated, overall DATEX II budget within NAPCORE.



## DATEX II context and work clustering



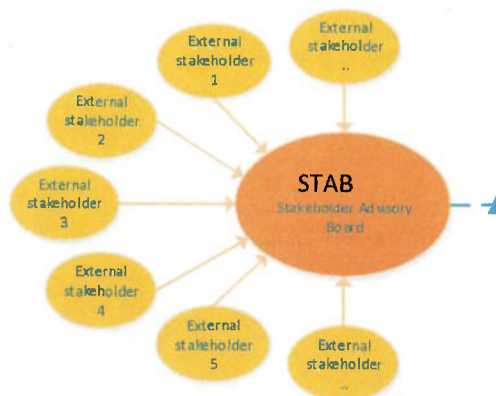
### Task 4.1.1 Alignment and harmonisation

- **Contribute to harmonisation within WG4**

Contribute to the overall coordination of activities and workplan of other WG4 activities by means of the STAB in order to build consensus, harmonise standards, prevent double work and identify black spots (need for actions).

Actions will be taken to ensure liaison and harmonization within the DATEX II value chain on the prioritized subjects.

- **Stakeholder Advisory Board**



Detailed chart of the Stakeholder Advisory Board

A Stakeholder Advisory Board will be installed which provides a platform to disseminate knowledge, experiences and receive feedback on new developments and dovetail on relevant issues or new developments. Participants in the STAB can be public and private organisations.

Objective: To stay connected to the “outside” environment regarding new developments and possible new requirements.

STAB and its members have limited tasks:

1. Provide clear points of contacts for DATEX to the DATEX II organisation.
2. Response (voluntarily) to requests and surveys of DATEX II
3. Provide (asked for or not) advices to the DATEX II organisation, both on strategic and technical level.

- **Impact analysis and alignment of DATEX II with other domains**

This activity focusses on analyzing the possible impact of related standards from other domains. In case of expected impact specific change requests can be provided.



### **Task 4.1.2 Management and coordination**

This task concerns the management and coordination of all DATEX activities. This will be done by the following three 3 entities:

- ***Change Management Board - CMB***
  - Chaired by leading Member State
  - Consists of representatives of the Member States
  - Define the requirements and priorities regarding the annual Workplan to be proposed by the Technical Board
  - Approves the annual progress report and Workplans
  - Mandate within the scope of DATEX II and the defined milestones and budgets
- ***Sub Working Group Leader - SWGL***
  - Daily management, administration, communication, ...
  - Monitoring technical and financial progress and milestones
  - Reporting to the CMB, including deviations and suggested mitigation actions related to the workplan
- ***Technical Board – TB***
  - TB is chaired by SWGL
  - Consisting of Task leaders and active Member States
  - TB is responsible for quality of technical/content
  - Prepare annual progress report and draft Workplan

### **Task 4.1.3 Support, Dissemination Education and training**

This task will deliver content for education and dissemination (e.g. websites, newsletters etc) incl. the actual training etc. The logistics and organisation will be done by the NAPCORE Secretariat.

- ***Organising DATEX II Education and Training***

#### **The DATEX II Academy**

Development and execution of a training programme with the objective to extend the European expertise on DATEX II. This includes supporting material like documentation, (online) training etc.

A pool of experts is available to provide training and instructions:

- General training
- Expertise building – DATEX Masterclass

Logistics and organisation of the trainings will be done by the NAPCORE Secretariat.

The DATEX Masterclass will be a newly developed intensive training programme aiming at increasing the amount of technical DATEX experts in Member States. The course will be given on a yearly basis and is open for potential DATEX experts, from public as well as private organisations.

Substantial part of the DATEX II Academy is the user documentation made available via the documentation portal which is part of the DATEX II website.

This documentation portal will be maintained and extended with user support for different interest groups based on requirements that will be collected continuously.

The support will start addressing with the following target groups:

- management/policy making,
- functional domain (traffic engineering, service provision etc.) requirement mapping to DATEX II data-model and exchange
- information engineers extending the data model,
- and standardisation experts creating new models.

In addition, system developers that have to build the DATEX II systems will be addressed supporting the mainstream programming languages.

Furthermore, the DATEX II Academy will be designed in such a way that use-case oriented users can find the relevant information for them more easily.

- ***Supporting implementing organisations***

#### **DATEX II RAV Centre (Reference Advice and Validation)**

A growing, flexible pool of experts is available in the DATEX II RAV Centre, to give (on-line) support to the implementing organisations (e.g., DATEX II helpdesk). The DATEX II helpdesk will be synced with the activities of H3 to align with other NAPCORE dissemination, training and support activities.

Main service that will be provided:

- Support in defining and testing their DATEX II profiles against the minimum requirements of the Delegated Regulations
- Maintain and extend with supporting functionalities the DATEX II Webtool, supporting:
  - o Navigation of the models
  - o Profiling
  - o Reference profiles
  - o Validation of proprietary profiles
  - o Create implementable scheme files and exchange webservice profiles
- Provision of implementation advice
- Provision of compliancy checks and validations, including recommendations for improvement
- Analysing the national reports on ITS implementations from the Member States relating to the use of DATEX II
- DATEX II helpdesk

- **Dissemination**

### **Website and newsletters**

The DATEX II website will be maintained during the lifetime of the project. Also, all kinds of communication and dissemination activities will be performed e.g., LinkedIn group, website forum, newsletters etc.

The website will accommodate, support and provide documentation for Deployed DATEX II Service Profiles with a Euro(regional) geographical scope (e.g., the SRTI profile for the Data for Road Safety group and the EV Charging point profile for the IDACs group)

### **User forum**

A DATEX II user-forum will be organised to inform the relevant stakeholders on managerial, tactical and technical level on the DATEX II developments. This forum will be part of the overall yearly NAPCORE forum, organised by the NAPCORE secretariat.

### **Task 4.1.4 Functional Domain Development**

The activities in this task are addressing the following topics:

- Adapt the DATEX II standard according to the functional demands stemming from the operational implementation of the Delegated Regulations 885 (Truck parking), 886 (SRTI), 1926 (MMTIS) and 962 (RTTI) in the Member States.  
Support Member States by providing and maintaining Recommended Reference Profiles for each data-category in the delegated regulations.  
This will be done based on requirements coming from WG 2 and the revision of the delegated regulations as such, which will lead to new datasets to standardise.
- The scope of operation of DATEX II is wider than data provision to the NAP's. It is an important tool in the creation of a standardised Traffic Management ecosystem of collaborating traffic and travel management services.  
Support Member States by providing and maintaining Recommended Service Profiles for each use case in the EU-EIP reference handbook.  
Maintain the existing DATEX II standards and publishing annual updates of revised parts by processing and implementing user feedback.

To support both kind of implementations, generic activities have been defined. The required new or updated DATEX II standards and accompanying Reference Profiles for the EU regulations will be provided through specific sub activities. The process will be as follows:

- requirement collection
- creating European consensus about modifications
- managing the implementation of the agreed modifications to the content models through either:
  - o submitting proposals for new (parts of) standards ITS-rolling workplan towards CEN
  - o drafting and submitting updates of standardised parts to CEN

- maintaining the existing (parts of the) standards according to the CEN revision scheme.
- publishing the updated parts

#### **Task 4.1.5 Modelling and usability**

The DATEX II standards are based on a Methodology of design. This way all DATEX II standards and its consecutive parts will follow the same design patterns and conceptual data modelling approach. Within the scope of this programme it is foreseen that new requirements on the usability, both in the conceptual as well as the technical domain have to be served by DATEX II. These new developments require evolution and extension of the Methodology, in order to safeguard a systematic, reliable and sustainable development of the standards.

This Task will assess at least the following topics for modifications of the D2 methodology for the following developments extending and improving the usability of the DATEX II encoded data:

- Historical datasets modelling and data publications
- D2 Light publications including open-API and linked open data developments
- Metadata
- DATEX II for asset management
- Sensor to centre communication
- Self-description
- Filtering and querying of datasets (including geofencing)
- Investigate the functional impact of new technical options on the content and exchange models
- Trust and data authenticity / Security
- Message-brokers
- Bandwidth development impact

Annually this Task will identify new developments that could become relevant, which will be proposed to the CMB for inclusion in future workplans.

The normal process for each topic will be:

- requirement collection
- creating European consensus about modifications of methodology
- managing the implementation of the agreed modifications to the content models by means of proposals for updates on existing parts in subtask maintenance of standards

#### **Task 4.1.6 Encoding & transfer**

Where task 4.1.4 addresses the data-structure of the information to be exchanged, this task addresses the way the data is transferred. There are two topics to address here:

- the exchange technologies that are required and evolving



- the exchange patterns in case of information exchange between systems with additional requirements on top of the simple data provision. Especially trust and data security require additional features in the standards.

This Task will implement enhanced technical options and features on exchange and CIS in the DATEX II exchange standards (which are standardised at ISO level) for the following developments:

- Trust and data authenticity & security
- Bandwidth management
- Message-brokers
- Message queues (AMQP)
- Data distribution service
- support IOT
- Metadata
- Self-description
- Filtering and direct querying of datasets (including geofencing)

Data exchange logic and technology supporting Traffic management developments will be implemented on the following topics:

- Digitalisation of the enhanced Centre-to-centre collaboration process
- Common operational data-picture for traffic- and incident management with multi-actor and multiple data-sources involved.

Annually this Task will identify new developments that could become relevant and which will be proposed to the CMB for inclusion in future workplans.

The normal process for each topic will be:

- requirement collection
- creating European consensus about modifications
- managing the implementation of the agreed modifications to the content models through either:
  - o drafting and submitting updates of standardised parts to ISO
  - o maintaining the existing (parts of the) standards according to the ISO revision scheme.
  - o publishing the updated parts

### Timeplan

Year	2021			2022				2023				2024			
Quarter	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task 4.1.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Task 4.1.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 4.1.3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 4.1.4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 4.1.5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 4.1.6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

**SWG 4.2: TN-ITS**Participants:

AT	BE	BE-FL	BG	HR	CY	CZ	DK	EE	FI	NH	UITP
F		A	F	A	A	A	F	F	A		
FR	DE-BASt	DE-AB	GR	GR-EG	HU	IE	IT	LV	LT	ERTICO	ITxPT
F		F	F	F	A	F	A	F	F	L	
LU	NL	MT	PL	PT	RO	SK	SI	ES	SE	NPRA	FEDRO
F	F	F	F	F	F	F	A	F	F	A	

L = activity/task leader, A = active contributor, F = Follower

**TN-ITS references**

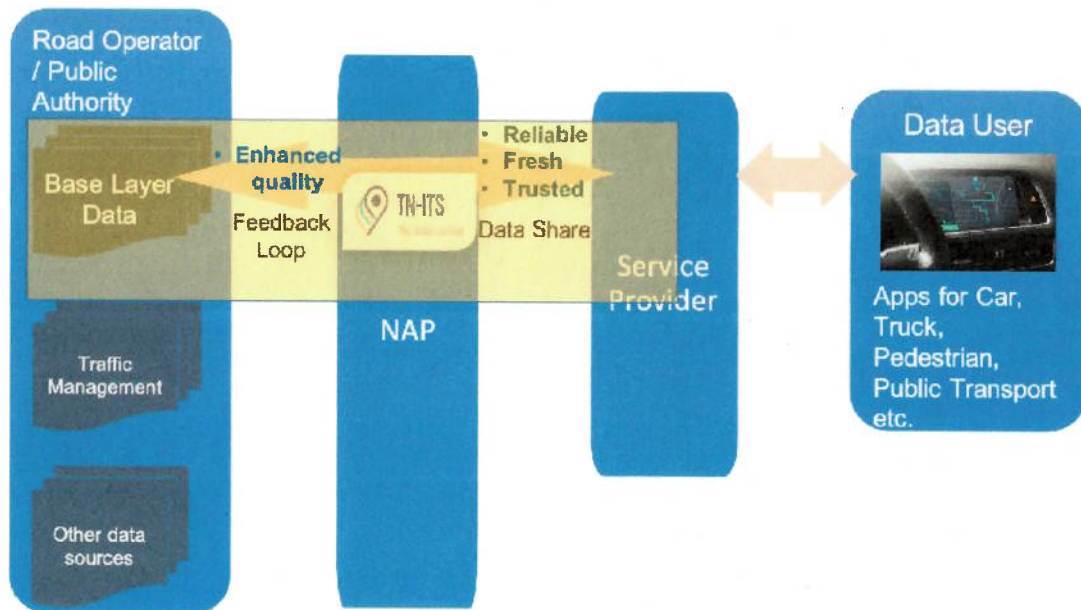
See <https://tn-its.eu>.

TN-ITS (Transportation Network for ITS (intelligent transport systems)) is a 'generic' brand-like name, identifying both:

- A trusted and a market driven Mobility Data Exchange Service currently implemented in 14 Member States based upon the CEN TC278 WG
- An Association (Under ERTICO platform umbrella)
- It's an essential building block for the today's and future mobility data space contributing to the NAP federation architecture and implementation

The TN-ITS current position and role within the digital mobility infrastructure can be illustrated by the next picture:

- 5 Operational MS
- +9 Implementing MS



Exchanging data itself is nothing unique in some countries as it is also distributed via e.g. Inspire. However, the way it is packaged and distributed is less common, i.e. frequent automated distribution of deltas in base road data packaged according to a standard, is the focus of the TN-ITS data update exchange mechanism.

TN-ITS plays therefore an important role in the NAP federation architecture, as it is one of the basic data sharing services, accessible via the NAP. As the NAP experience in every country should be the same, it is important many European Member States' road authorities consider the implementation of the TN-ITS data exchange mechanism.

Reasons for MS road operators to implement TN-ITS interfaces in their mobility data space are therefore manifold:

- Services using the TN-ITS standard interface are market driven:
  - TODAY: There is a need for accurate maps
  - TOMORROW: A necessity to support applications like ISA
  - 2025+: Supporting Regulations for Automated drive, etc.
- Services using the TN-ITS standard interface are a needed asset in the Mobility data space:
  - EU based: Delegated Regulation on RTTI (static data)
  - Standards: Strong co-operation with and member of CEN/TC 278 WG7
  - TRUST: Data originates from the public authority ◊ A basis for TRUST: a unique feature of TN-ITS data

*da*

### General description of activity

Modern vehicle & traffic technologies need a (map) base layer which is kept up-to-date by authoritative public data. The activities in SWG 4.2 will take advantage of the pre-existing knowledge and expertise of the TN-ITS association<sup>1</sup>, which has already resulted in operational road data sharing services in several Member States (FI, FL, HU, SE, UK) and pilots in 9 others (NL, GR, CY, SI amongst others)<sup>2</sup> and will focus on the specification and further elaboration of the TN-ITS standard.

This SWG4.2 in general covers partly the continuation of the TN-ITS work and focuses on the integration with the standardisation activities within the scope of the NAP's. Building on the work that has been done in the previous PSA CEF project 'TN-ITS GO', where in this new NAPCORE project following priorities are set:

- prepare extensions and enhancements of the TN-ITS stakeholder network services - both from public and private side,
- continue to develop and promote the TN-ITS technical specifications, by safeguarding harmonisation between Member States, and in interaction with other custodians of relevant standards in the domain, with a specific focus on bidirectional data/information exchange between public and private stakeholders.
- provide feedback on TN-ITS standardisation work to ensure uptake of findings and needs identified by NAPCORE stakeholders.
- enhance the reliability of the TN-ITS data chain & data trust to enable new emerging applications or functional domains (in agreement of EU policies, cfr. revision of the ITS Directive), e.g. ADAS & AD systems,
- engage the EU Member States community of experts in defining strategy & growth of the TN-ITS services and its assessment, capable of delivering required standards,
- to promote knowledge dissemination of such data sharing services and their benefits. Continue the TN-ITS support (website, documentation portal, etc.) and educate & train TN-ITS users/experts (in the different user levels and user groups within Europe, open to public and private organisations).

### Governance structure of the TN-ITS association and its relation to NAPCORE

The following picture gives the overview of the governance structure of the TN-ITS association and the relationship with NAPCORE:

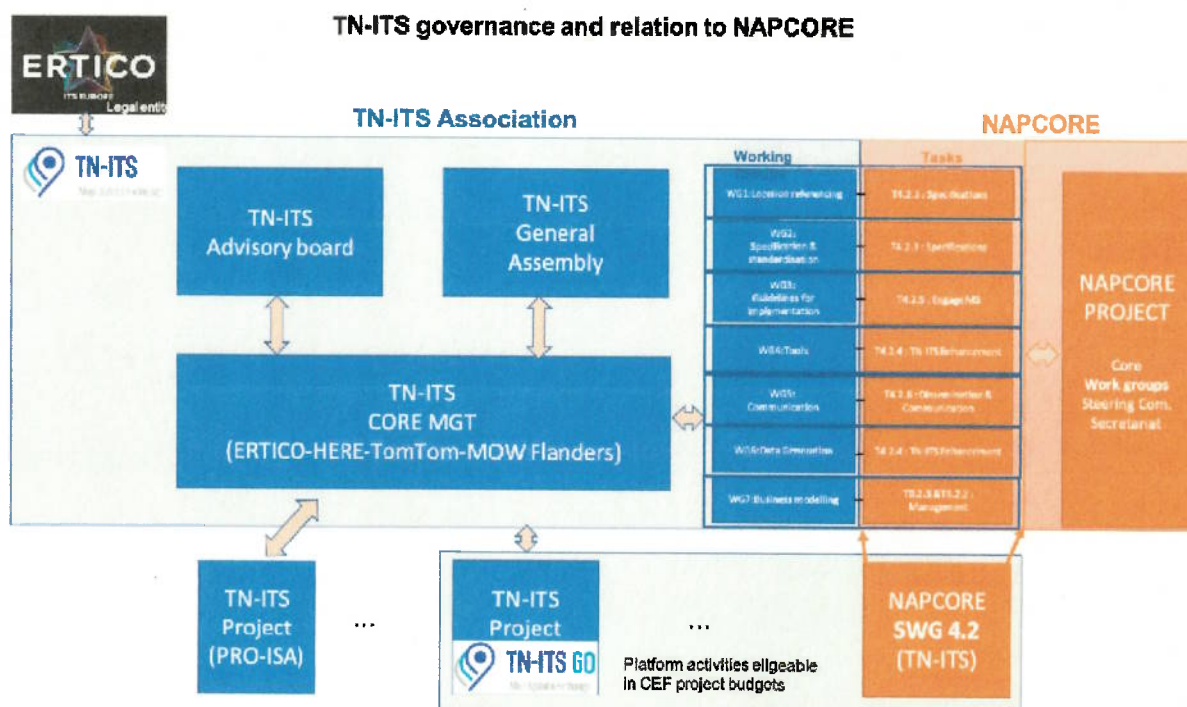
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<sup>1</sup> TN-ITS is an association under legal ERTICO entity

<sup>2</sup> Via the current CEF TN-ITS GO project







TN-ITS association is the executing body for the NAPCORE project, under the legal umbrella of ERTICO. The association itself organises its work in work groups. The several NAPCORE tasks, described below are well fitted to the assignments of the workgroups. The NAPCORE project comprises all below tasks, to be carried out with the help of the association's Working Groups.

NAPCORE provides the means to the association to further develop on specifications, disseminations and awareness creation, providing assessments and insights to Member States and road authorities for further future potential implementation within EU Member states (Implementation being outside the scope of the NAPCORE project), insights in how to ensure TN-ITS data access via NAP integration, and enhancing data related aspects (as quality & accuracy control methodologies, maintaining trust along the data sharing chain, ...).

However, the association also focusses on deployment and implementation of the services, including its implementation related necessary technical trainings and support. All activities carried out by the association, related to implementation of TN-ITS services are therefore out of scope of NAPCORE.

#### **Task 4.2.1 Alignment and harmonisation (WG4-Coordination)**

SWG 4.2 will coordinate with WG4 as a whole including interaction and harmonisation between all other sub Working Groups (SWG4.1, SWG4.3, SWG4.4).

Coordination and harmonising WG4 is aiming at the creation of an interoperable ecosystem including the required consensus and governance of information across data standards. The main objectives are:

- Monitor working programs and progress
- Harmonise standards
- Prevent double work
- Identify black spots (need for actions)
- Consensus building and prioritisation

#### **Task 4.2.2 Management and coordination**

The SWG 4.2 will be managed according to the following structure:

- Sub Working Group management
  - o Consists of the SWG task leaders:
    - 4.2.3 Specification (Technical Lead)
    - 4.2.4. TN-ITS enhancements in relation to the data sharing supply chain
    - 4.2.5 Engage the European Member States community
    - 4.2.6 TN-ITS focused dissemination and communication
  - o Chaired by ERTICO (as the legal entity representing the TN-ITS association)
  - o Daily management, administration and monitoring
- A TN-ITS focused Member States assembly (at least 2 times/year) guiding the TN-ITS tasks in NAPCORE
  - o Consists of representatives of the Member States involved in the SWG
  - o Participates in the definition of requirement, priorities and change requests of the Sub Working Groups
  - o Approves annual progress of the Sub Working Groups
  - o Serves as a coordinated TN-ITS input preparation for attendance to *WGI (NAP& NB platform strategy and governance)*
  - o Serves as a coordinated TN-ITS input and potential attendance to task S.1.3, *Internal alignment and H.2.3 Advisory Board*
- TN-ITS association NAPCORE support
  - o Provides dissemination support and guidance to the NAPCORE project, from the TN-ITS community as a multi stakeholder membership, including the industry and service providers, especially focusing on cooperation and trust elements between public and private stakeholders.
  - o Approves the definition of requirements, priorities and change requests, in line with the TN-ITS association roadmaps
- Liaisons, support and promotion
  - o Identify emerging (road) data sharing initiatives within the EU NAPCORE partners and propose interaction/alignment with them to the TN-ITS focused member state assembly.

### **Task 4.2.3 TN-ITS Specifications – Technical lead**

#### **Maintenance and Extension of Technical Specification (TS)**

- Collect all corrections and request for extensions of the technical specifications, based on CEN TC 17268:2018, from the NAPCORE community and from the other different stakeholders, for instance from the SWGs, taking into consideration the priorities of the NAPCORE strategies.
- Formulate and consolidate updates to the technical specification related to the three parts defined: data content, data format and data exchange webservice
- Initiate the investigation into novel & future data sharing methods and concepts
- Review and operate a streamlined service to harvest modifications & updates for TN-ITS technical specifications
- Develop, implement & deploy next generation of technical specifications in TN-ITS services with a specific focus on bidirectional data exchange between public and private parties, fully aligned with relevant other standardisation actions, supporting priority systems & services, considering other existing data sharing initiatives and the updates mandated in the updated regulation.
- Support the preparation of pilot services based on TN-ITS' technical specifications.
- Serves as a coordinated TN-ITS input and potential attendance to task 4.2.2.
- Some tools pre-development and maintenance for TN-ITS setup and deployment by NAPs,
- Some validation tool pre-development for maintenance and a potential test centre.

#### **Task 4.2.4 TN-ITS enhancements in relation to the data sharing supply chain**

Serves as a coordinated TN-ITS input and potential attendance to Task 3.2 – European NAPs data quality.

#### **Build up the Trust basis and ensure quality, integrity and security**

- Step 1. (2021-2022): Trust Identification
  - o Establish a technical experts team with the NAPCORE Member States to research, make an inventory and perform an assessment of data trust related items and mechanisms, suitable to serve the bidirectional TN-ITS data exchange purposes within the complete data exchange chains:
    - producer – publisher (NAP) – processor – consumers of data
    - Consumers of data – processor – producer (feedback loop)
  - o Research the most optimal quality system that can be applied to TN-ITS services, based on the inputs performed by the EU-EIP D4.1. Define the quality levels for an identified quality system
  - o Assess new applications in view of the data attributes and services provided by TN-ITS (e.g. ISA, automation)
- Step 2. (2023-2024): Defining the Trust assessment method

- Specify, and define a deployment approach for bidirectional TN-ITS data exchange ensuring the most suitable trust mechanism, taking into account the limitations and available resources of stakeholders involved.
- Assess the complete end to end chain of TN-ITS data for vulnerabilities. Identify and classify potential attacks. Phrase countermeasures
- Identify the potential for certifications
- Workshops, (2 /year) to develop the results

### **Develop and deploy a data quality assessment methodology**

This task is a further progression on the evolution methodology TN-ITS GO<sup>3</sup> Deliverable D4.1 (evaluation plan). The deliverable was aimed at evaluating the implementations within the TN-ITS GO project and especially related to the data and protocol structure itself. This task will develop a generic data quality assessment methodology, taking into account all aspects of the TN-ITS data space, some of those based upon the document of the EU-EIP<sup>4</sup> forum, in its activity 4.1<sup>5</sup>. This activity has described a detailed analysis to address data quality, related to Real Time Traffic Information (RTTI). It also describes methods to maintain the data quality:

1. Continuous monitoring of equipment performance and availability
2. Manual verification of entities, events or conditions
3. Monitoring of data completeness and latency
4. Monitoring of timeliness and data completeness
5. Surveys of perceived quality by users
6. Collection of direct user feedback
7. Monitoring of service use statistics

The task will take this background into account in its specific deployment to TN-ITS data space. Specifically, a clear co-operation with WG3 of NAPCORE will be established to ensure the alignment and coherence within the total NAPCORE.

### **Develop data quality evaluation and enrichment tool concepts and mechanisms**

Based upon the findings of the previous subtasks, a concept will be worked out for data quality enrichment and assessment tools. The concepts of the existing tools such as those developed in the TN-ITS GO project (The TN-ITS Go feedback loop, The Data Evaluation tool keeping the scheme structure, assessing the conformity of the data sharing to the Specification) will be further enriched and shortcomings will be addressed.

The concepts of the tools will be assessed to a number of developed criteria including technical, feasibility and business aspects. A methodology proposed can be an ideation like approach to kick off the conceptual ideas, followed by a further innovation management approach to come to the final concepts. These concepts can be subject for realization

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3 TN-ITS GO: see: <https://tn-its.eu/tn-its-go>

4 EU-EIP: <https://eip.its-platform.eu>

5 <https://www.its-platform.eu/filedepot/folder/1077>



proposals in potential future responses to CEF project calls. They will be presented in the dissemination to contribute to the overall ITS attention of data quality.

Specifically, a clear co-operation with WG3 of NAPCORE will be established to ensure the alignment and coherence within the total NAPCORE.

#### **Task 4.2.5 Engage the European NAPCORE Member States community**

##### **Create a methodology to assess the actual status and future expectations of the Member States interested to TN-ITS**

- Technical and non-technical aspects
- Survey/interview to the Member States to understand barriers, status quo, etc.

##### **Deploy the assessment to each new MS**

- Identify and align with the Member States on their gaps and make a proposal to them for mitigating the roadblock to implement TN-ITS
- Make an overall summary of potential actions, as results of the extension of Geo and data coverage and assessment activities, as a recommendation towards DG-MOVE how to support (data creation) e.g. by new CEF calls, as follow up of the current TN-ITS Go CEF project.

#### **Task 4.2.6 TN-ITS focused dissemination and communication**

- Ensure dissemination of results and the newly acquired TN-ITS knowledge via website, webinars, participation to conferences, etc. The work will ensure a consistent and efficient dissemination of all SWG results, also in coordination with activity 4.2.1
- Maintaining an active TN-ITS expert community. In detail:
  - organise regular meetings (bi-yearly) with the TN-ITS experts and interested Member States to exchange lessons learned
  - ensure a good communication of the project and the dissemination of the acquired knowledge
  - Act as single point of contact for maintaining a repository of support materials.
  - Make proposals to the TN-ITS focused member state assembly concerning promotion of TN-ITS technical specifications & raising awareness via relevant media.

#### **Timeplan**

Year	2021			2022				2023				2024			
Quarter	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task 4.2.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 4.2.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Task 4.2.3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 4.2.4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 4.2.5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 4.2.6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

### SWG 4.3: Multimodal Data

#### Participants:

AT	BE	BE-FL	BG	HR	CY	CZ	DK	EE	FI	NH	UITP
F	F			F	F	A	F		A		A
FR	DE-BAS	DE-AB	GR	GR-EG	HU	IE	IT	LV	LT	ERTICO	ITxPT
A	A		A	F	F	F	A	F	F		L
LU	NL	MT	PL	PT	RO	SK	SI	ES	SE	NPRA	FEDRO
F	A	F	F	F	A	F	A			A	

L = activity/task leader, A = active contributor, F = Follower

### General description of activity

The main objective of "SWG4.3: Multimodal data" is to contribute to harmonization and alignment of standardization work to establish interoperability of EU multimodal data standards. In particular, it will actively support the elaboration of WP4 respective task, where the four NAPCORE Sub-Working Groups will align their activities and design commonly the roadmap for standardisation.

The challenges for the coordination of the multimodal data standardisation landscape are many. The broad and cross- sectoral nature of multimodality integrates many different actors which make part of standardisation ecosystem, while innovations in mobility pave continuously the way for new initiatives and requirements in terms of data standards. Some already recognised interactions between different mobility modes include the data exchange standards for parking data; rail data; new mobility modes data (e.g. shared mobility); energy infrastructure data (e.g. electric vehicles); traffic management; multimodal hubs (including airports and ports); booking data; data for C-ITS.

From the perspective of the ITS ecosystem for MMTIS, standardisation bodies and relevant Working Groups (i.e. CEN TC278 - WG3 on ITS Public Transport, WG8 on Road Traffic Data and WG17 on Mobility Integration, ISO TC204 - WG8 on ITS Public Transport) are only one of the key actors. More entities and initiatives to be considered are the European rail initiative Shift2Rail; ERA (EU Railways Agency); IATA (International Air Transport Association); Alliance for Parking Data Standards (APDS); DATEX II; MobilityData (GTFS support).

In this context, NAPs implementation bodies, national authorities and other stakeholders, called to comply with EU regulations, need to have a clear horizon to which they head on in terms of data exchange requirements in EU. They also need to follow the evolutions and remain up-to-date. In this respect, the outputs of the SWG4.3 will focus on providing a clear picture of the multimodal landscape throughout the timespan of the project, both at a conceptual and technical level, as well as on the guidance to overcome the harmonisation and implementation challenges. SWG4.3 will also leverage the results and outputs of DATA4PT Programme Support Action. DATA4PT paved the way to native implementation of the European public transport data standards with development and deployment of Transmodel, NeTEx and SIRI. SWG4.3 will offer complementary activity to secure harmonization and interoperability of data formats in multimodal landscape. Finally, SWG4.3 outputs will feed other activities of the project such as dissemination, outreach, and training activities, and NAP platform strategy and governance.

#### **Task 4.3.1 Contribution to alignment and harmonisation Task (WG4)**

SGW4.3 will contribute to WG4 alignment and harmonisation Task of which main objectives is to align/coordinate the four Sub-Working Groups (SWG4.1, SWG4.2, SWG4.3, SWG4.4), and to design a data standardisation roadmap for the creation and publication of data for all modes of transport. Coordination between SUBWGs will be established in a regular base until the end of the project.

In this context, the following activities will take place:

##### **4.3.1.1: Identification of multimodal data standardization ecosystem**

The identification of the data standards categories applied/considered for multimodal travel information systems (MMTIS) makes part of the WG4 alignment and harmonization Task.

As regards data specifications (in particular standards) dedicated to support multimodal systems, the following data domains are in scope for alignment/harmonisation: parking data; rail data; new mobility modes (e.g. shared mobility); energy infrastructure data (e.g. electric vehicles); traffic management; multimodal hubs (including airports and ports); booking data; data for C-ITS. However, further investigation will be carried out in collaboration of all subWGs in the framework of subtask 4.1.

In addition, this task aims to support the identification of current standardization Working Groups, initiatives and projects linked with relevant data standards, external to NAPCORE consortium. SubWG4.3 will consider both national and international initiatives and interfaces with activities under sub Working Group 4.1: DATEX II, 4.2: TN-ITS of this proposal, to provide the necessary input to WG4 Task Alignment & harmonization. DATA4PT relevant outputs will be also leveraged to feed subtask 4.3.1.1.

##### **4.3.1.2: Contribution to the definition of roadmap for harmonisation**

The aim of subtask 4.3.1.2. is to contribute to the definition of an integrated roadmap to be adopted by WG4 Task. SubWG4.3 will provide input regarding the different aspects of the roadmap (topics, actions, milestones). In this context, considering the coordinated roadmap, a detailed action plan will be created to address the activities under subWG3 scope. The detailed plan will set priorities on the areas or Working Groups and initiatives that require



more attention and active participation of sub WG 4.3 in coordination with the other subWGs. Active participation in meetings will focus on underlining the scope of NAPCORE, and of sub WG 4.3. Nevertheless, it is foreseen the follow up of all identified ongoing works in regard to multimodal data standardization.

#### **Task 4.3.2 Identification of gaps and overlaps of existing standards and guidance to Member States on the use of multimodal data standards**

The aim of the Task 4.3.2 is the identification of gaps and overlaps between the different existing and under development standards relevant to multimodal data, in coordination with the other SWGs. Based on the decided roadmap, collaboration between different entities will be built, and the ground for coordination will be set. Furthermore, this subtask will disseminate indirectly NAPCORE objectives to different actors outside the consortium. The outputs of this Task outputs will be used to provide guidance to stakeholders, in how and when to implement the different EU standards for multimodal services, supporting also training. In the framework of this activity, SubWG4.3 will define use cases and provide guidance in respect to multimodal data to Member States based on their capacity building needs.

#### **Task 4.3.3: Mapping of different standards for multimodal data and standard update recommendations**

Based on task 4.3.1 outputs and task 4.1., the reference data standard will be chosen and an assessment of the standards requiring a mapping to the reference will be made. The data elements from identified standards will be analyzed. Then, data elements of same scope will be highlighted. Based on the mapping results, recommendations on further steps and actions needed (harmonization, conversion, or choice of specifications) will be identified to avoid overlap, feeding H-2 Task of this proposal.

#### Timeplan:

Year	2021			2022				2023				2024			
Quarter	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task 4.3.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 4.3.2				X	X	X	X	X	X	X	X	X	X		
Task 4.3.3								X	X	X	X	X	X	X	



**SWG 4.4: Metadata**Participants:

AT	BE	BE-FL	BG	HR	CY	CZ	DK	EE	FI	NH	UITP
A	F			F	F	A	F		F		
FR	DE-BAS	DE-AB	GR	GR-EG	HU	IE	IT	LV	LT	ERTICO	ITxPT
F	L		A	F	F		A				
LU	NL	MT	PL	PT	RO	SK	SI	ES	SE	NPRA	FEDRO
	A	F	F	F	A		F		A	A	F

L = activity/task leader, A = active contributor, F = Follower

**General description of activity**

Metadata are a crucial building block for accessibility and exchange of NAP datasets. A common metadata approach will ease and harmonise accessibility and exchange mechanisms, thus enhancing the efficiency of individual NAPs. In previous works, some common concepts have been elaborated, namely the "Coordinated Metadata Catalogue". This concept, however, does so far lack of wide-scale acceptance and interoperability with other data domains.

Addressing the EC Call for Proposals, this subWG will foster the definition and maintenance of a common metadata catalogue for all NAPs in Europe. To do so, the "Coordinated Metadata Catalogue" will be enhanced via building relationships to established, European metadata specifications (task 4.4.2). Moreover, a formal data specification will be elaborated, including maintenance and governance structures (task 4.4.3). Lastly, the common approach will be an input for a conceptualisation for a cross-border metadata registry (task 4.4.4), resulting in a planned demonstrator, to be realised under WG 2.

**Task 4.4.1: Alignment and harmonisation (WG4-Coordination)**

SGW4.4 will coordinate with WG4 as a whole including interaction and harmonisation between all Sub-Working Groups (SWG4.1, SWG4.2, SWG4.3, SWG4.4).

Coordination and harmonising WG4 is aiming at the creation of an interoperable ecosystem including the required consensus and governance of information across data standards. The main objectives are:

- Monitor working programs and progress
- Harmonise standards
- Prevent double work
- Identify black spots (need for actions)
- Consensus building and prioritisation

**Task 4.4.2: Development of a new metadata specification for the NAP domain**

This task intends to advance with the existing "Coordinated Metadata Catalogue", as a commonly agreed metadata blueprint for European NAPs, covering data categories from all EC Delegated Regulations and other/future transport data domains.

A concrete advancement is the planned adoption of "Coordinated Metadata Catalogue" towards established metadata specifications. In particular, the "Catalogue" will be converted into a data model compatible with DCAT-AP, a well-established metadata specification in the domain of European Open Data portals, developed by a joint initiative of the EU organizations DG DIGIT, DG CONNECT and the EU Publications Office. Some NAP stakeholders expressed the wish to consider DCAT-AP in their NAPs, e.g. because their NAPs also host Open Data. However, there is so far no Europe-wide approach to establish DCAT-AP-compatible metadata in NAPs, so the need for an own NAP metadata specification is evident for interoperability reasons. Under the antecessor project (EU EIP), a concept for a formal NAP metadata specification was drafted under the working title "napDCAT-AP", being an extension of the DCAT-AP specification to meet the specific demands of NAPs, e.g. by adding NAP-specific model elements.

Within this task, the above-mentioned napDCAT-AP extension will be further elaborated and introduced on a wider scale. With this approach, the NAP metadata domain will be brought together with other platforms domains (e.g. Open Data) and with the principles of interoperability and linked data. Also, NAPs will be put into a wider context, enabling new exploitation opportunities for NAP data offerings, and allowing a more consolidated European data approach (also addressing the 2020 European Data Strategy).

As a first step, requirements for such new NAP metadata specification will be defined, looking at different aspects of metadata efficiency and interoperability. An important input from the NAP community will come from WG 3 (Task 3.3), looking at the roles and needs of NAP deployers, metadata creators and metadata users. Further, experts and policy makers outside the NAP domain will be engaged, e.g. DG DIGIT and the Semantic Interoperability Community (SEMIC).

Second, a proper version of napDCAT-AP will be developed, consisting of a set of digital contents, i.e. a verbal model description, model structures via UML, model schema files, example files and guidance documents. The process will follow other domain data standards, i.e. applying standard modelling principles and iterative steps, in order to reach an agreed and accepted model state.

During the project runtime, subsequent versions of napDCAT-AP will be elaborated, based on feedback and validation of NAP stakeholders.

**Task 4.4.3: napDCAT-AP back office**

Whereas Task 4.4.2 is for the continuous development of the napDCAT-AP specification, this task intends to establish formal maintenance and governance structures supporting this specification, in order to make it more sustainable and efficient in a long run.

Following the working structures of other (meta) data standardisation communities (e.g., DATEX II, DCAT-AP), administrative, management and technical tasks related to such maintenance and governance will be bundled and institutionalised. In other words, a

napDCAT-AP back office is planned with pre-defined tasks and resources. The tasks of this back-office will be to host the metadata model and its accompanying vocabularies (via persistent URIs), to provide communication and training opportunities, and to interact with the user community, by, e.g. collecting input for ongoing revisions for napDCAT-AP.

This task will run until the end of this project and is expected (in case of further success of "napDCAT-AP") to be taken over by other platforms.

#### **Task 4.4.4: Concept for a "Metadata Interoperability Demonstrator"**

The above approach of napDCAT-AP sets a baseline for a harmonized metadata approach in individual NAPs and cross-border accessibility of NAP metadata, i.e. fostering the overarching goal of interoperability (see WG 2).

Such metadata interoperability will be validated via a prototype concept for a "Metadata Interoperability Demonstrator". This concept intends to develop and showcase functionalities, which go beyond currently established NAP mechanisms for metadata, and explicitly foster the usage of napDCAT-AP across multiple NAPs. A preliminary list of envisioned functionalities includes:

- Guidelines and specifications to make individual NAP metadata externally available in a harmonised manner (via export functions, standard interfaces or harvesting techniques)
- A "Metadata Validator", checking the conformity of individual NAP metadata catalogues with napDCAT-AP
- A "Metadata Aggregator", consuming napDCAT-AP-compatible metadata interfaces from multiple NAPs.
- A "Cross-border Metadata Registry", allowing the accessibility of metadata from multiple NAPs via one platform, i.e. a data seeker would be able to discover NAP data offerings from multiple NAPs via one online platform.

Under this task, requirements and potentials of such Demonstrator will be discussed, resulting in a final set of functionalities. This is then conceptualised as an IT architecture, specifying relevant actors, processes and interfaces. Actors in this context may be, among others:

- Metadata interfaces of individual NAPs
- Central back-end elements, such as the "Metadata Validator" or "Metadata Aggregator"
- External metadata consumers, such as the EU Open Data Portal

This approach will address two objectives: the viability of the "napDCAT-AP" specification and a proof-of-concept for cross-border interoperability of NAPs (as it has been already demonstrated for the Open Data domain via the European Data Portal).

The Demonstrator will be open to any NAPs, as long as the NAP partners are willing and able to contribute to one of the functionalities listed above. The concept will consider both advanced and less-advanced NAPs across Europe. This may be done by offering technical alternatives for, e.g. the metadata consumption by the "Metadata Aggregator".

It is, however, noted, that an enhancement of individual NAPs, e.g. to actually build napDCAT-AP-compatible metadata interfaces, is not part of the NAPCORE project, but needs to be taken care of by each NAP operator.

Task 4.4.4 will consist of a conceptual work (pre-study, IT framework). The concrete deployment of a Metadata Interoperability Demonstrator will be executed under WG 2 (Task 2.5 "NAP interoperability demonstrators").

### Timeplan

Year	2021			2022				2023				2024			
Quarter	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task 4.4.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 4.4.2	X	X	X	X											
Task 4.4.3			X	X	X	X	X	X	X	X	X	X	X	X	X
Task 4.4.4						X	X	X	X						

### Activity 9: WG5: National Bodies and compliance assessment

#### Participants:

AT	BE	BE-FL	BG	HR	CY	CZ	DK	EE	FI	NH	UITP
L	A		F	A	F	A	F	A	A		
FR	DE-BAS	DE-AB	GR	GR-EG	HU	IE	IT	LV	LT	ERTICO	ITxPT
A	A		A	F	F		A	A	A		
LU	NL	MT	PL	PT	RO	SK	SI	ES	SE	NPRA	FEDRO
	A	F	F	A	A	F	F	F	F	F	

L = activity/task leader, A = active contributor, F = Follower

### **General description of activity**

The objective of this Working Group is to harmonise the compliance assessment of National Bodies/National Authorities for the Delegated Regulations (EU) Nr. 885/2013 (information services for safe and secure parking places for trucks and commercial vehicles), Nr. 886/2013 (provision of road safety-related minimum universal traffic information), Nr. 2015/962 (provision of EU-wide real-time traffic information services) and Nr. 2017/1926 (provision of EU-wide multimodal travel information services). The revisions of the ITS Directive and its Delegated Regulations will be taken into consideration. Hereto the necessary processes, required forms as well as quality and evaluation criteria are going to be discussed and



harmonised, where appropriate. This leads to a common assessment of the implementation of the Delegated Regulations across Europe and allows comparability of the assessment of international private organisations.

Moreover, the Working Group will work out common strategies to address private organisations and ITS-related platforms to deliver data on the NAPs fully compliant to the Delegated Regulations. Additional focus will be on terms and conditions for data-reuse and to work out suggestions for reasonable and proportionate conditions.

The Working Group will monitor continuously the progress of Compliance Assessment across Europe, evaluate the results of random inspections and review the processes according to the results. Strategies for non-compliance will be discussed and possible actions will be defined.

### **Task 5.1 Best practices, national legislation and NB reference architecture**

The status and success of National Body/National Authority implementation across Europe will be analysed. Maturity levels will be studied/analysed, in order to be able to classify the progress of various Member States. Analysing the national legislation, regulating the National Body implementation in the different Member States, will round up the identification of best practices to support proper compliance assessment. National legislation will also be analysed concerning possible actions in case of non-compliance. The role of National Bodies in relation to a possible reinforcement of compliance on European level will be analysed and defined.

Based on the analysis of National Bodies, maturity level classification and best practice identification, as well as considering the results of Task 5.2 a reference architecture for implementing National Bodies will be defined.

### **Task 5.2 Harmonisation of self-declaration forms, compliance assessment & random inspection processes and methods**

Existing self-declarations forms will be reviewed and missing uniform self-declaration forms will be developed (e.g. for Delegated Regulation (EU) Nr. 2017/1926). This is to ensure harmonised forms across Europe. Additionally, the possible structure respectively the requested content of accompanying documents will be discussed and defined.

Processes and methods for compliance assessment and random inspections will be discussed and compared according to specifically defined criteria. Common process elements for compliance assessment and methods for random inspection will be defined and agreed upon. These can also be specified in the reference architecture (Task 5.1).

### **Task 5.3 Quality and evaluation criteria**

Focussing on the requirements of compliance assessment, (common) quality and evaluation criteria will be defined, to be used by national bodies/competent authorities. This task will be carried out in close cooperation with WG3, referring to quality criteria identified for data and services as published via the National Access Points.

In order to increase the uptake of data/services provided on the NAPs the terms and conditions for data re-use should be reasonable and proportionate. Evaluation criteria for



assessing the degree of compliance concerning reasonable and proportionate terms and conditions for data re-use (worked out within WG3) will be discussed by the National Bodies and implemented for Compliance Assessment, if suitable.

Additionally, requirements from the perspective of National Bodies for semi-automated support tools (e.g. test centres) will be gathered and provided to the respective (Sub-) Working Groups (e.g. WG4 – DATEXII, MMTIS standards ...).

#### **Task 5.4 Develop strategies to address private (international) organisations to comply with the Delegated Regulations**

Addressing private (international) organisations properly, in order to ensure access to relevant data, compliant to the Delegated Regulation is a huge challenge, faced by all Member States. This task aims therefore at the identification of the relevant organisations and implementation of strategies and actions to motivate these organisations (private, international) to provide data on the NAPs, complying with the Delegated Regulations and hand in self-declarations.

Affected data holders or service providers will be identified in cooperation with WG2/WG3 and an information campaign will be set up in cooperation with Activity H.3 Dissemination & Outreach activities. Consulting concerning the requirements of the Delegated Regulations for data/service provision on the NAPs will be offered to organisations, in order to accelerate the provision of data on the NAPs.

With special focus on international organisations, strategies and processes to reduce the efforts for such organisations concerning compliance assessment will be analysed and the possibilities to implement those will be legally evaluated (e.g. issuing of multi-national self-declarations, re-using assessment results of other National Bodies, establishing a European assessment centre ...). Based on the results of the analysis, and the identified possibilities a prototypical process of a multi-national compliance assessment will be demonstrated.

#### **Task 5.5 Continuous evaluation, progress monitoring and improvement of Compliance Assessment**

Within this task, during the runtime of NAPCORE, the implementation of common self-declarations forms, harmonised compliance assessment processes, the outcomes of the random inspections as well as the suitability of the applied quality and evaluation criteria and will be monitored and evaluated. Potential for improvement and existing gaps will be identified and required adaptations of forms, processes, quality and evaluation criteria will be defined.

Additionally, this task will gather opportunities of action in case of non-compliance of data and services with the Delegated Regulations and will draft a process for handling non-compliance cases. Moreover, mitigation measures to avoid non-compliance as well as sanctions or other possible consequences (e.g. penalties or incentives) in case of continuous non-compliance will be drafted. In addition, strategies and possible actions will be developed if non-compliant organisations continuously illegitimately resist to provide data/services on the NAP or provide self-declarations forms (e.g. united request by all Member States).

Timeplan

Year	2021			2022				2023				2024			
Quarter	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task 5.1	X	X	X	X	X	X	X	X	X	X	X				
Task 5.2	X	X	X	X	X	X	X	X	X						
Task 5.3	X	X	X	X	X	X	X	X	X						
Task 5.4			X	X	X	X	X	X	X	X	X	X	X		
Task 5.5				X	X	X	X	X	X	X	X	X	X	X	X

## I.4.3 Sustainability of the action's achievements

Sustainability after the project is secured in the following ways:

- Working Group 1, and more specifically task 1.3, is solely dedicated to develop a future and sustainable long-term governance structure of the NAP/NB platform. Hereto, the national needs and requirements concerning the long-term governance structure and national NAP/NB strategies will be taken into consideration and new requirements and experiences will be continuously reviewed. A strategic and operational implementation plan for harmonised European wide operation will be set up and will form the basis for the overall governance structure, considering future management, financing, membership opportunities and connection to external actors. Within the set-up of the long-term governance structure, the demonstration of commitment and buy-in from all concerned stakeholders is foreseen in order to ensure the implementation of the Working Group results.
- The results of the standardization Working Groups are to be standardised by CEN. Already DATEX II, TN-ITS, SIRI and NeTEx are CEN technical standards, which will ensure a long-term continued use of these standards.
- Above mentioned standards are part of several EU ITS Directives and Delegated Acts. The improvements and extensions made in the NAPCORE project will most likely become part of future EU ITS legislation.
- Most of the Beneficiaries in NAPCORE already use the standards mentioned before for their data exchange, both national and international, for NAPs, traffic centres, service providers, etc. The developments are based on their additional requirements. Solutions will be applied by the Beneficiaries as they are improvements on their existing systems.
- All Member States participate in NAPCORE (Slovakia is not a partner but is associated). The results of NAPCORE are obtained by consensus forming between those partners. The achievements of NAPCORE are thus by default accepted by almost all of the public organisations responsible for the implementation of ITS systems.

Sustainability from an environmental perspective is secured as follows:

- Interoperability of the NAPs will improve the data exchange of all data categories mentioned in the delegated regulations concerning Safe and Secure Parking of Trucks and Commercial Vehicles, Safety Related Traffic Information, Real Time Traffic Information and Multi Modal Travel Information. This improved access to information will allow public and private information service providers to provide better services to end-users, which will lead to a more efficient and thus cleaner road transport system (less congestion, less accidents, less noise, ...).
- More specifically with respect to Multi Modal Travel Information the improved exchange of data will lead to a better integration of the multimodal transport system, better accessibility to data on alternative fuels and options for cycling. It is obvious that this will definitely contribute to a better environmental performance of the overall transport system.

Sustainability from an economic perspective is secured through the following:

There are large socio-economic effects in different areas:

- Due to the standard protocols, the software development costs in traffic centres, NAPs, Service Providers, etc will be considerably lower compared to tailor-made solutions for each new connection.
- Coordination and interoperability of NAPs will stimulate and enable the exchange of traffic data between traffic centres, NAPs, map providers, service providers, PT operators, etc. This will result in better traffic management and traffic information service and thus to improved road safety, reduction of emission and reduction of congestion/vehicle loss hours. All these impacts will lead to an economic benefit to road users and society as a whole.
- The standardised interfaces to be developed as part of the NAPCORE project will potentially stimulate and enable many new (commercial) traffic information service providers to start services that would otherwise not be possible. This provides extra jobs and benefits for society. It will also be strengthening European ITS industries.

## ARTICLE I.5 – MILESTONES AND MEANS OF VERIFICATION

MS #	Responsible Task	Milestone description	Indicative date of completion	Means of verification	External Milestone
MS.1.1	S.1.1	Working Programme 2022	12/2021	Working Programme submitted to Steering Committee	X
MS.1.2	S.1.1	Working Programme 2023	11/2022	Working Programme submitted to Steering Committee	X
MS.1.3	S.1.1	Working Programme 2024	11/2023	Working Programme submitted to	X

				Steering Committee	
MS.1.4	S.1.1	Project Progress Report 2021	12/2021	Project Progress Report submitted to Steering Committee	X
MS.1.5	S.1.1	Project Progress Report 2022	11/2022	Project Progress Report submitted to Steering Committee	X
MS.1.6	S.1.1	Project Progress Report 2023	11/2023	Project Progress Report submitted to Steering Committee	X
MS.1.7	S.1.1	Final Project Report	11/2024	Final Project Report submitted to Steering Committee	X
MS.1.8	S.1.1	Quality and Risk Management (QRM) Plan	2/2022	QRM Plan	X
MS.1.9	S.1.2	NAPCORE – EU Commission communication summary	11/2022	Chapter on communication with EU Commission in Project Progress Report	
MS.1.10	S.1.2	NAPCORE – EU Commission communication summary	11/2023	Chapter on communication with EU Commission in Project Progress Report	
MS.1.11	S.1.2	NAPCORE – EU Commission communication summary	11/2024	Chapter on communication with EU Commission in final Project Progress Report	
MS.1.12	S.1.3	Core Alignment Team report of main activities and decisions	11/2021	Chapter on Core Alignment Team activities and discussions in Project Progress Report	
MS.1.13	S.1.3	Core Alignment Team report of main activities and decisions	11/2022	Chapter on Core Alignment Team activities and discussions in Project	

				Progress Report	
MS.1.14	S.1.3	Core Alignment Team report of main activities and decisions	11/2023	Chapter on Core Alignment Team activities and discussions in Project Progress Report	
MS.1.15	S.1.3	Core Alignment Team report of main activities and decisions	11/2024	Chapter on Core Alignment Team activities and discussions in Project Progress Report	
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of completion</b>	<b>Means of verification</b>	<b>External Milestone</b>
MH.1.1	H.1.1	Steering Committee Meeting	09/2021	Steering Committee Meeting minutes	
MH.1.2	H.1.1	Steering Committee Meeting	12/2021	Steering Committee Meeting Minutes	X
MH.1.3	H.1.3	Advisory Board is set up	03/2022	Advisory Board approved by Steering Committee	X
MH.1.4	H.1.1	Steering Committee Meeting	06/2022	Steering Committee Meeting minutes	X
MH.1.5	H.1.1	Steering Committee Meeting	12/2022	Steering Committee Meeting minutes	X
MH.1.6	H.1.2	Mid-term report on strategic exchange, cooperation or collaboration with externals and identification of further recommendations	12/2022	Report available and approved by Steering Committee	X
MH.1.7	H.1.1	Steering Committee Meeting	06/2023	Steering Committee Meeting minutes	X
MH.1.8	H.1.1	Steering Committee Meeting	12/2023	Steering Committee Meeting minutes	X





MH.1.9	H.1.1	Steering Committee Meeting	06/2024	Steering Committee Meeting minutes	X
MH.1.10	H.1.2	Final report on strategic exchange, cooperation and collaboration with externals and relevant stakeholder	10/2024	Report available and approved by Steering Committee	X
MH.1.11	H.1.1	Steering Committee Meeting	12/2024	Steering Committee Meeting minutes	X
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of completion</b>	<b>Means of verification</b>	<b>External Milestone</b>
MH.2.1	H.2.1 and H.2.2	Actions needed and recommendations reported in Project Progress Report 2022	11/2022	Actions needed chapter in Project Progress Report 2022 submitted to Steering Committee	X
MH.2.2	H.2.1 and H.2.2	Actions needed and recommendations reported in Project Progress Report 2023	11/2023	Actions needed chapter in Project Progress Report 2023 submitted to Steering Committee	X
MH.2.3	H.2.1 and H.2.2	Actions needed and recommendations reported in Final Project Report	11/2024	Actions needed chapter in Final Project Report submitted to Steering Committee	X
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of completion</b>	<b>Means of verification</b>	<b>External Milestone</b>
MH.3.1	H.3.1	Communication plan	12/2021	Communication plan approved by Steering Committee	
MH.3.2	H.3.1	Website goes live	2/2022	Accessible website	
MH.3.3	H.3.2	First NAPCORE Multi-Day Event	5/2022	Event programme and attendee list	X
MH.3.4	H.3.2	Second NAPCORE Multi-Day Event	5/2023	Event programme and attendee list	X

MH.3.5	H.3.2	Final NAPCORE Multi-Day Event	11/2024	Event programme and attendee list	X
MH.3.6	H.3.3	Outreach and Training Plan	3/2022	Training plan approved by Steering Committee	
MH.3.7	H.3.1	2022 Dissemination activity report (separate or as part of project progress report)	11/2022	Report submitted to Steering Committee	
MH.3.8	H.3.1	2023 Dissemination activity report (separate or as part of project progress report)	11/2023	Report submitted to Steering Committee	
MH.3.9	H.3.1	2024 Dissemination activity report (separate or as part of project progress report)	12/2024	Report submitted to Steering Committee	
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of completion</b>	<b>Means of verification</b>	<b>External Milestone</b>
M1.1	Task 1.1	Develop strategic position of NAP/NB platform for EU policies and developments (incl. Mobility Data Space) and recommendations for long-term governance	09/2022	Report submitted to Steering Committee	X
M1.2	Task 1.2	Develop a common strategy and recommendations for long-term governance for cooperation with global players	09/2022	Report submitted to Steering Committee	X
M1.3	Task 1.3	Develop strategy and structure for future	12/2023	Report submitted to	X

		long-term governance of the NAP/NB platform		Steering Committee	
M1.4	Task 1.3	Long-term governance structure is implemented	12/2024	Steering Committee decision	X
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of completion</b>	<b>Means of verification</b>	<b>External Milestone</b>
M2.1	2.1	Typology of NAPs based on the description of levels of service and assessment of associated costs and benefits	6/2022	Report	X
M2.2	2.1	Overview of gaps and actions needed	6/2022	Report	
M2.3	2.1	Presentation of the Annual Work Plan 2022	12/2021	Work Programme	
M2.4	2.2	A list of requirements concerning (the use of) data standards, reference profiles and metadata to be handed over to subWGs on standardisation and/or standardisation organisations.	12/2021	Report	X
M2.5	2.1	Presentation of the following Annual Work Plan 2023	10/2022	Work Programme	
M2.6	2.4	A first demonstrator with real-world use of data and different Levels of Service – 1st round	12/2022	NAP demonstrators operational	X
M2.7	2.2	An updated list of	12/2023	Report	X

		requirements concerning (the use of) data standards, reference profiles and metadata to be handed over to subWGs on standardisation and/or standardisation organisations.			
M2.8	2.1	Presentation of the following Annual Work Plan 2024	10/2023	Work Programme	
M2.9	2.3	Harmonisation of EU NAP architectures and first layout of potential NAP federation	12/2023	Report	X
M2.10	2.4	At least two further demonstrators with real-world use of data and different Levels of Service – 2nd round	12/2024	NAP demonstrators operational	X
M2.11	2.3	NAP reference architecture TBD	TBD	TBD	
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of completion</b>	<b>Means of verification</b>	<b>External Milestone</b>
M3.1	3.1	Data content requirements, existing gaps, data dictionaries and supporting material	06/2022	Report available and handed over to coordinator	X
M3.2	3.1	First report on NAP data availability	03/2022	Report available and handed over to coordinator	X
M3.3	3.1	Second report on NAP data availability	09/2022	Report available and handed over to coordinator	X

M3.4	3.1	Third report on NAP data availability	03/2023	Report available and handed over to coordinator	X
M3.5	3.1	Fourth report on NAP data availability	09/2023	Report available and handed over to coordinator	X
M3.6	3.1	Fifth report on NAP data availability	03/2024	Report available and handed over to coordinator	X
M3.7	3.1	Final report on NAP data availability	12/2024	Report available and handed over to coordinator	X
M3.8	3.2	Assessment analyses and scoping for Quality Frameworks	03/2022	Report available and handed over to coordinator	
M3.9	3.2	Data quality assessment framework and processes	03/2023	Report available and handed over to coordinator	X
M3.10	3.2	Report on pilot data quality certifications	06/2024	Report available and handed over to coordinator	X
M3.11	3.3	Technical options for data visualization	12/2024	Tools and report available and handed over to coordinator	X
M3.12	3.3	Terms and conditions for data reuse (incl. GDPR implications)	06/2024	Report available and handed over to coordinator	X
M3.14	3.4	European NAPs added value scenarios in key application areas	12/2024	Report available and handed over to coordinator	X
M3.15	3.5	Final training material for NAP content and accessibility and training events' completion	12/2024	Training events executed. Report available and handed over to coordinator	
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of</b>	<b>Means of verification</b>	<b>External Milestone</b>



			completion		
M4.0.1	4.0.1	Ecosystem described and role of standards in relation to services documented.	6/2022	Documentation available	
M4.0.2	4.0.2	Roadmap for harmonisation tasks incl. qualitative impact assessment	6/2022	Roadmap in Project Progress Report	
M4.0.3	4.0.2	Update of Roadmap for harmonisation tasks incl. qualitative impact assessment	6/2023	Roadmap in Project Progress Report	
MS #	Responsible Task	Milestone description	Indicative date of completion	Means of verification	External Milestone
M4.1.100	4.1.1	Change requests for relevant parts of DATEX II for alignment of agreed topics (yearly updated)	12/2021	Change request	X
M4.1.101	4.1.1	Change requests for relevant parts of DATEX II for alignment of agreed additional topics	12/2022	Change request	X
M4.1.102	4.1.1	Change requests for relevant parts of DATEX II for alignment of agreed additional topics	12/2023	Change request	X
M4.1.103	4.1.1	Initiation of STAB	12/2021	STAB meeting	X
MS #	Responsible Task	Milestone description	Indicative date of completion	Means of verification	External Milestone
M4.1.200	4.1.2	Updated DATEX II Rules of Procedure incl. governance of RRP's and RSP's	12/2021	Report	

M4.1.201	4.1.2	Progress report 2021	12/2021	Report	
M4.1.202	4.1.2	Workplan 2022	10/2021	Report	
M4.1.203	4.1.2	Progress report 2022	12/2022	Report	
M4.1.204	4.1.2	Workplan 2023	10/2022	Report	
M4.1.205	4.1.2	Progress report 2023	12/2023	Report	
M4.1.206	4.1.2	Workplan 2024	10/2023	Report	
M4.1.207	4.1.2	Final report 2024	12/2024	Report	X
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of completion</b>	<b>Means of verification</b>	<b>External Milestone</b>
M4.1.300	4.1.3	Existing material handed over from DATEX II PSA and embedded in project	12/2021	Handover report	
M4.1.301	4.1.3	DATEX II user forum	6/2022	Integrate dedicated DATEX II workshops/trainings in NAPCORE multi-day event"	X
M4.1.302	4.1.3	DATEX II user forum	6/2023	Integrate dedicated DATEX II workshops/trainings in NAPCORE multi-day event"	X
M4.1.303	4.1.3	DATEX II user forum	6/2024	Integrate dedicated DATEX II workshops/trainings in NAPCORE multi-day event"	X
M4.1.304	4.1.3	Enhanced user documentation on profiles	12/2024	Report	X
M4.1.305	4.1.3	D2 Academy running and used	12/2021	User statistics reports	x
M4.1.306	4.1.3	Masterclass DATEX II Programme	6/2022	1st round of masterclass organised	x



M4.1.307	4.1.3	Masterclass DATEX II Programme	6/2023	2nd round of masterclass organised	x
M4.1.308	4.1.3	Masterclass DATEX II Programme	6/2024	3rd round of masterclass organised	x
M4.1.309	4.1.3	DATEX II webtool supporting full RAV scope	6/2022	Webtool	
M4.1.310	4.1.3	Report on provided support, dissemination, education and training	12/2021	Report	
M4.1.311	4.1.3	Report on provided support, dissemination, education and training	12/2022	Report	
M4.1.312	4.1.3	Report on provided support, dissemination, education and training	12/2023	Report	
M4.1.313	4.1.3	Report on provided support, dissemination, education and training	12/2024	Report	
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of completion</b>	<b>Means of verification</b>	<b>External Milestone</b>
M4.1.400	4.1.4	Version 3.3 with accompanying RRP's and RSP's (parts 11, 8 and 9)	3/2022	Report	X
M4.1.401	4.1.4	Version 3.4 with accompanying RRP's and RSP's	12/2022	Report	X
M4.1.402	4.1.4	Version 3.5 with	12/2023	Report	X

		accompanying RRP's and RSP's			
M4.1.403	4.1.4	Version 3.6 / 4.0 with accompanying RRP's and RSP's	12/2024	Report	X
M4.1.404	4.1.4	Standardisation proposals (either direct or via ITS rolling workplan) 2022	12/2021	Report	X
M4.1.405	4.1.4	Standardisation proposals (either direct or via ITS rolling workplan) 2023	9/2022	Report	X
M4.1.406	4.1.4	Standardisation proposals (either direct or via ITS rolling workplan) 2024	9/2023	Report	X
M4.1.407	4.1.4	Standardisation proposals (via ITS rolling workplan) 2025	9/2024	Report	X
M4.1.408	4.1.4	Roadmap Harmonised profiles	12/2022	Report	X
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of completion</b>	<b>Means of verification</b>	<b>External Milestone</b>
M4.1.500	4.1.5	Change requests on methodology	3/2022	Report	X
M4.1.501	4.1.5	Impact assessment on content models	3/2022	Report	
M4.1.502	4.1.5	Change requests on models	8/2022	Report	X
M4.1.503	4.1.5	Inventory taking of future work	12/2022	Report	
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of</b>	<b>Means of verification</b>	<b>External Milestone</b>

			completion		
M4.1.600	4.1.6	User requirements on identified topics	3/2022	Report	X
M4.1.601	4.1.6	Standardisation proposals (either direct or via ITS rolling workplan)	9/2022	Report	
M4.1.602	4.1.6	User requirements on identified topics	12/2022	Report	
M4.1.603	4.1.6	Standardisation proposals (either direct or via ITS rolling workplan)	9/2023	Report	
M4.1.604	4.1.6	Annual inventory of new topics	12/2022	Report	
M4.1.605	4.1.6	Annual inventory of new topics	12/2023	Report	
M4.1.606	4.1.6	Annual inventory of new topics	12/2024	Report	
MS #	Responsible Task	Milestone description	Indicative date of completion	Means of verification (deliverables)	External Milestone
M4.2.1	4.2.1	Contribution to the Roadmap for harmonisation	2/2022	Set of recommendation provided to DATEX	
M4.2.2	4.2.1	Contribution to the Roadmap for harmonisation	11/2022	Set of recommendation provided to DATEX	
M4.2.3	4.2.2	Project management procedures in place	12/2021	D 4.x Project and quality management report	
M4.2.4	4.2.3	Technical Specifications	11/2022	Report available	X
M4.2.5	4.2.3	Technical Specifications	6/2024	Report available	X
M4.2.6	4.2.4	Requirements on trust, quality, integrity and security	6/2023	Report available	X



		of data established.  Concepts of data evaluation tools (draft)			
M4.2.7	4.2.4	Guide on ensuring potential deployment of trust, quality, integrity and security of data established  Concepts of data evaluation tools (update)	12/2024	Report available	X
M4.2.8	4.2.5	Recommendation for DG MOVE for TN-ITS deployment in EU Member States	6/2023	Recommendations sent to Coordinator	
M4.2.9	4.2.5	Recommendation for DG MOVE for TN-ITS deployment in EU Member States	9/2024	Recommendations sent to Coordinator	
M4.2.10	4.2.6	TN-ITS network meeting reports	6/2022	Report available	X
M4.2.11	4.2.6	TN-ITS network meeting reports	6/2023	Report available	X
M4.2.12	4.2.6	TN-ITS network meeting reports	6/2024	Report available	X
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of completion</b>	<b>Means of verification</b>	<b>External Milestone</b>
M4.3.1	4.3.1	SubWG4.3 working programme 2022	12/2021	Handed over to coordinator	
M4.3.2	4.3.1	SubWG4.3 working programme 2023	10/2022	Handed over to coordinator	
M4.3.3	4.3.2	Report on gaps, overlaps standards for multimodal data exchange	11/2023	Handed over to coordinator	X
M4.3.4	4.3.1	SubWG4.3 working	10/2023	Handed over to	

		programme 2024		coordinator	
M4.3.5	4.3.3	Mapping of multimodal data standards and recommendations	9/2024	Handed over to coordinator	X
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of completion</b>	<b>Means of verification</b>	<b>External Milestone</b>
M4.4.1	4.4.2	Publication of napDCAT-AP Version 1.0	5/2022	Documentation of online Workshop	X
M4.4.2	4.4.3	Two-year-anniversary of napDCAT-AP, review session and stakeholder workshop	10/2023	Documentation of physical workshop	
M4.4.3	4.4.4	Draft concept for a Metadata Interoperability Demonstrator	3/2023	Report available and approved by the Steering Committee	
<b>MS #</b>	<b>Responsible Task</b>	<b>Milestone description</b>	<b>Indicative date of completion</b>	<b>Means of verification</b>	<b>External Milestone</b>
M5.1	WG5	WG5 Working Programme	12/2021	Handed over to coordinator	
M5.2	5.1	Best Practices and recommendations for harmonised compliance assessment identified	3/2022	Report submitted to Steering Committee	X
M5.3	5.2	Synchronised compliance assessment processes and self-declaration forms defined	3/2022	Report and forms submitted to Steering Committee	
M5.4	5.3	Common quality & evaluation criteria for compliance assessment defined	5/2022	Report submitted to Steering Committee	X

M5.5	WG5	WG5 Working Programme	10/2022	Handed over to coordinator	
M5.6	5.4	Strategies and actions to address (private, international) organisations defined	12/2022	Report submitted to Steering Committee	X
M5.7	WG5	WG5 Working Programme	10/2023	Handed over to coordinator	
M5.8	5.5	Strategies and actions for non-compliance defined	12/2023	Report submitted to Steering Committee	X
M5.9	5.1	National Body Reference Architecture defined and agreed	12/2023	Architecture accepted by Steering Committee	
M5.10	5.5	Prototypical multi-national compliance assessment demonstrated	6/2024	Report submitted to Steering Committee	X