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outcomes



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1 EXECUTIVE SUMMARY

The main goal of DATA4PT project is to enable the implementation of the Delegated Regulation (DR) on Multimodal Travel Information Services (MMTIS) 2017/1926 and its revised version, 2024/490. To achieve this goal, project activities is organised in four (4) pillars: a) the capacity building, b) the technical support, c) the exchange of experiences and best practices, d) the long-term support.

This report focuses on the activities run throughout the duration of the project, relevant to the exchange of best practices and experiences between stakeholders in the field of multimodal mobility. These activities include stakeholders' fora and workshops, either in international or national level, involving mainly the providers of the data and operators of National Access Points, as primary implementers of the delegated regulation. The impact of those activities is significant especially for the partners of the project but not explicitly. The impact on the stakeholders of the project experience exchange workshops is reflected in different ways: a) by the creation of collaborations between Member States, b) the adoption of similar system architecture for data sharing between national stakeholders, c) the usage of documentation issued by other Member States or Public transport authorities d) in general by getting inspired for actions relevant to national regulations, data quality assessment methods and stakeholders engagement strategy.

List of partners

Partner's name	Acronym	Country
Union internationale des transports publics	UITP	Belgium
Information technology for Public Transport,	ITXPT	Belgium
Bundesministerium für Klimaschutz, Umwelt, Energie, Mobilität, Innovation und Technologie	BMK	Austria
Ministry of the sea, transport and Infrastructure	MMPI	Croatia
Centrum dopravního výzkumu, v. v. i.,	CDV	Czech Republic
Trafikstyrelsen (Danish Civil Aviation and Railway Authority),	TBST	Denmark
Direction générale des infrastructures, des transports et de la mer	DGITM	France
Ministero delle Infrastrutture e dei Trasporti	MIT	Italy
Instituto Da Mobilidade E Dos Transportes, I.P.,	IMT	Portugal
Republika Slovenija, Ministrstvo za Infrastrukturo	MZI	Slovenia
Trafikverket (Swedish Transport Administration)	STA	Sweden

Abbreviations and Acronyms

DR	Delegated Regulation
NAP	National Access Point
NeTEx	Network Timetable Exchange
PTO	Public transport Operators
PTA	Public Transport Authorities
SaaS	Software as a Service
SIRI	Service interface for real-time information
TRANSMODEL	Public Transport Reference Data Model
MMTIS	Multimodal Travel Information Services
MS	Member States

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INTRODUCTION

DATA4PT project aims to enable the implementation of the Delegated Regulation (DR) on Multimodal Travel Information Services (MMTIS) 2017/1926 and its revised version, 2024/490. The implementation of the DR encompasses different aspects considering the included requirements. On the one hand, it refers to the development of a mobility data sharing platform (the National Access Points – NAPs), but it also implies the adoption of CEN Transmodel based standards, it raises data quality in terms of interoperability and content, it requires a specific timeline. On the other hand, it provides many degrees of freedom on what architecture to deploy to address these parameters. DATA4PT considering these aspects and with the objective to reply to different levels of support, is built on (4) pillars equally important: a) the capacity building, b) the technical support, c) the exchange of experiences and best practices, d) the long-term support plan. The importance of experience and best practices exchange is undoubtable, taking into account that affects positively all parameters of DR implementation. It showcases benefits and drawbacks of different approaches, it allows harmonisation between approaches, and it optimises the dedicated resources by leveraging the knowledge of the mobility sector community.



Figure 1 DATA4PT pillars in providing support for advancing MMTIS DR implementation.

For all these reasons, DATA4PT consortium put a special emphasis on promoting the exchange of knowledge and experience between stakeholders, organising workshops and panel discussions with participants representing different kind of entities, like Public Transport Authorities, operators, IT suppliers and National Access points- NAP operators. The events were mainly organised in three levels: a) European (or international), b) national, c) regional. The events at European level were open to stakeholders from different countries across Europe and around the world, when organised in the context of international conferences (i.e. UITP Summit). In the events at national level, mobility actors active in different areas in a specific country were participating, while regional events were addressed to stakeholders from specific regions in a country.

The focus of the events was adapted to participants characteristics and interests but was within the perimeter of the following topics of experience:

- NAP architecture (what interfaces are considered, which protocols, where the CEN MMTIS standards are placed,
- the usage of Transmodel standards in public transport operations and passenger information systems,

- the quality assessment of the exchanged data, in relation to the use of NeTEx data validator created by DATA4PT (Greenlight).

The participants shared different aspects of their experience such as: what are the benefits of the chosen practices, what are the lessons learned, what are the challenges they face and how they deal with the, what are the recommendations to share, what is their vision for the future.

In this report, the aim is to present the several activities that took place in the context of best practices exchange and to show the outcomes derived from this exchange.

Therefore, the report is structured in two parts. In the first part there is a reference to the workshops and discussions organized in the framework of DATA4PT, as the main vehicle to enable best practice exchange. In this chapter European and national/regional level activities are described. The second part of the report is dedicated to the presentation of the outcomes of this exchange.

2 BEST PRACTICE EXCHANGE ACTIVITIES

For the exchange of best practices and in general the exchange of experience in the implementation of different aspects of the implementation of MMTIS DR 2017/1926 and 490/2024, DATA4PT approach was mainly based on organising events, like workshops and panel discussions where participants had the opportunity to present their deployment cases. As complementary action, we run interviews and published as articles in DATA4PT webpage. In this chapter, an overview of those activities both in EU level and national/regional level are analysed.

2.1 EUROPEAN LEVEL

One of the communication means used to achieve the objective of exchange of best practices, was the Stakeholders' fora. These events were key to allow the exchange of knowledge and experience between MS partners of the project and external stakeholders, giving the floor to both of those categories of actors to present their practices and to interact directly. The Stakeholders' fora that were dedicated to this objective are the ones that took place after the first 2 years of the project. That was the time were implementations of the standards but also of the NAPs were in place or took form for some period. In addition, Greenlight validator (main DATA4PT output) was publicly released and used by the wide range of actors. The set-up of these events was the panel discussion with short presentations. In this paragraph we will provide insights of the stakeholders' fora which aimed the best practice exchange. It is worth to mention that these events had also impact on the dissemination of DATA4PT achievements and outputs and therefore are described from such perspective in deliverable D.5.3 Dissemination report (M54).

2.1.1 STAKHOLDERS' FORUM #3, BRUSSELS 2022

The first forum dedicated to best practice exchange was the one of 29 November 2022, held in Brussels. It was an hybrid event with the possibility to participate online and onsite. The forum was dedicated to the topic of data quality with the title "Exchange of accurate qualitative data using DATA4PT tools: Real life examples". The main objective was to exchange experience on existing system architectures that incorporate data validation in both data production chain and data sharing with NAP. For the first aspect, two PT authorities were invited to share their experience and adopted practices: a) the Metropolitan Area of Porto and b) the STA (Südtiroler Transportstrukturen) of Bolzano. Both PTAs they have adopted in their architecture NeTEx and SIRI (Transmodel standards). In Bolzano implementation was in more advanced stage than in Porto at that time. The two representatives presented the key characteristics of the operational area and the requirements that derived from those characteristics and showed the overall architecture of the system. In the case of Bolzano, data quality checks are designed to take place before the publication of the data shared to different consumers (NAP but also to passenger information applications etc.). AMP (Porto) was directly involved in the project as implementing body and pilot site of Portuguese partner, while STA was indirectly involved as national stakeholder of Italian partner of the project.

For the second aspect (data validation in NAP architecture), three types of stakeholders presented their implementations and approaches: a) the French Authority for Transport Regulations (ART), b) AustriaTech, the Austrian NAP operator and c) ENTUR, the Norwegian NAP operator. ART shared the perspective of an authority of which the main responsibility is to assess the deployment of the regulations and to cross-check that all requirements are fulfilled. The Authority defined two objectives that constitute the data control strategy. The first objective contributes to greater territorial coverage, while the second contributes to improving the reliability of travel information.



Figure 2: 3rd Data4PT Stakeholders Forum, Nov 2022, Brussels

2.1.2 STAKEHOLDERS' FORUM #4, KARLSRUHE 2024

This forum was organized in the framework of the DATA4PT final event on the 15th of May 2024. The main objective of this event was to exchange experience with which kind of approached and under which conditions and prerequisites data exchange and EU standards could be the backbone for seamless mobility and NAPs could be change driver for multimodality and interoperability. For the first aspect, the data providers' and data users' perspective was leveraged while for the second aspect National Access Points (NAP) Operators and Authorities shared their opinions and use cases. AustriaTech contributed actively together with the national PTO for Vienna (Wr. Linien). Swedish partner (Samtrafiken) shared their experience by designing and implementing a ticket distribution systems based on NeTEx datasets available at the Swedish NAP. Moreover, Norwegian Authority ENTUR highlighted the lessons learned from their long experience in running the NAP in Norway and shared their valuable recommendations to the other NAP operators to overcome interoperability issues and to leverage the data from the NAP for advancing passenger information systems.

2.1.3 PT AUTHORITIES AND OPERATORS WORKSHOP, BARCELONA 2023

This workshop took place as parallel event to UITP Summit in Barcelona on the 7th of June 2023. The topic of the workshop was the EU Data Exchange Standards (NeTEx, SIRI) for multimodal transport and implementation strategies for PTOs/PTAs. The goal of the workshop was to equip PTOs/PTAs with up-to-date knowledge on EU data exchange standards for multimodal transport, discuss the added value of adopting these standards and provide examples from implementing countries/organisations. The exchange of insights was mainly between PTAs involved in the project, as implementing bodies of DATA4PT outputs, with PTAs across Europe, that they do not yet adopt the EU standards and apply different strategies. In this context, they discussed benefits and challenges. From DATA4PT the AMP (Porto) PTA and MOVIA (Danish PTA of

Copenhagen) presented and participated in questions and answers session. In addition, AustriaTech and Italian NAP Operator (5T) also shared their experience from the national PTAs and PTOs of their countries.

2.1.4 WORKSHOP WITH DATA USERS, IN UMD SEVILLA 2023

The topic of this workshop was “Open data for better Urban Mobility”. How to build better urban mobility was the key focus of Urban Mobility Days in Seville and therefore DATA4PT initiative to run a parallel session was on sharing the acquired knowledge of the consortium on how to leverage mobility data to build better, seamless, and more agile urban mobility services for all European citizens. During this interactive, fast-paced, and informative session with ITxPT, AustriaTech (Austria), IMT (Portugal), CDV (Czech Republic), as DATA4PT representatives, it was showcased how:

- To leverage EU standards to exploit mobility data to their full potential,
- To start from a robust data system to create an agile and upgraded mobility offer,
- To take advantage of the National Access Points mandate of open data to fully integrate innovation into citizens’ needs.

2.2 NATIONAL AND REGIONAL LEVEL

2.2.1 AUSTRIA

Within project DATA4pt Austria is represented by the federal Ministry (BMK) in charge of implementing the ITS directive and MMTIS. AustriaTech as affiliated entity of the ministry, is hosting the Austrian NAP and is in close cooperation with the national ITS Contact Point (nominated ITS body for Austria), which is responsible for conducting the Assessment of compliance (MMTIS, Article 9).

AustriaTech leads the Austrian activities with the focus on:

- implementation and coordination of data validation activities with Austrian stakeholders to enhance quality of the provided data sets/ meta data description
- Preparing information and supporting for Austrian stakeholders with technical questions and cooperation with national standardisation activities
- Designing national information and dialogues with stakeholders in Austria
- Testing the Validation tool - helping to shape the requirements - primarily from the perspective of the Austrian NAP and the designated ITS body - validation of the results of the validation tool with stakeholders, involvement and support of stakeholders,
- Contributing to national initiatives and multimodal strategies/ action plans in alignment with the DATA4pt aims in the establishment of national data profiles

The national activities in context of MMTIS implementation and within the frame of DATA4 project include best-practice activities on different levels:

The Austrian stakeholder engagement activities:

The biggest **national DATA4pt stakeholder** event was held in April 2023. The aim of the physical event was to address new stakeholder groups in the area of shared mobility, demand orientated mobility and small PTOs which are not covered by PTA and other already established stakeholder network (scheduled transport). Austriatech identified and invited almost 400 national organisations and stakeholders like bike sharing providers, car sharing providers, E-scooter providers, E-moped providers, sharing booking platforms, shuttle bus & shared taxi operators and mobility associations as well as operators of conventional scheduled public

transport. 84 participants, representatives from almost all Austrian regions, mostly from eastern area joint the DATA4PT national event.

The working programme of national stakeholder workshop included information about EU MMTIS obligations and data provision at the NAP, information to NeTEx, SIRI and required data categories. Another highlight of the event was to introduce best practice examples and to share PTA/PTO experience in the MMTIS implementation with the audience. The ministry (BMK) reported about the strategic context and the national action plans, PTAs/ PTOs like Mobilitätverbände Österreich (MVO – overall association of all Austrian PTA), national research projects like DOMINO or Austrian Rail (ÖBB-Infra) infrastructure operator as well as the biggest PT operator in Vienna region (Wr. Linien) presented their experience in implementing or using NeTEx and SIRI. Beside the prepared information the aim was to intensify the dialogue with the new group of stakeholders. With interactive sessions during the workshop and question & answers session the stakeholder formulated their specific demand and the needs.

Beside the big national workshop individual consultation meetings were held with Austrian Stakeholders.

Cooperation with the ITS Contact Point

The work on identifying the wide group of shared mobility and alternative modes stakeholders was used for the national stakeholder engagement and for the direct communication with the organisations affected by the MMTIS and obligation to provide data at the NAP. The cooperation between the Austrian ITS- Contact point, the designated ITS body, to conduct the national assessment (MMTIS, Article 9) process and the DATA4pt stakeholder activities supported further the engagement of the national stakeholder. The formal approach, the clear approach and explained process steps of the national self-declaration leads to a higher number on data at the NAP.

Interaction with National Standardisation body

Further developing the MMTIS standards NeTEx and SIRI and to ease the harmonised application by providing guidelines, explanations and technical artefacts is one important achievement from the DATA4pt consortium work. The information shared by the Data4pt standardisation experts were disseminated and discussed on nation level. AustriaTech and representatives from transport authorities reflected the drafts of the CEN standards in the discussion meetings with the member of the National Standardisation Body (Austrian Standards: Komitee 220 – Intelligente Verkehrssysteme) [link: https://www.austrian-standards.at/de/standardisierung/komitees-arbeitsgruppen/nationale-komitees/committees/4303/details](https://www.austrian-standards.at/de/standardisierung/komitees-arbeitsgruppen/nationale-komitees/committees/4303/details))

2.2.2 CZECH REPUBLIC

Several national events were organised by the Czech partner. The main objective of these events was to disseminate the results of the project nationally through professional seminars and working groups led by various organizations, such as the association of PTO transport integrators, and at conferences like 'Transport Online'. Moreover, as part of the operation of the ITS Library platform, a section dedicated to the standardization and support for the implementation of NeTEx and SIRI in national level has been established as another instrument of sharing best practices. In this context, the results of the project were regularly presented at meetings of the professional standardization group in the field of ITS. In particular, lastest meeting with Stakeholders to disseminate new architecture of NAP was organised on 18th of June 2024. The participants highlighted the need of financial support to PTO from Ministry of Transport to comply with NeTEx profile and the need of harmonized data quality and integrity of data. Moreover, required more information about the required standards.

2.2.3 CROATIA

In Croatia two main events were organised where the requirements of MMTIS directive were presented:

- The National Workshop for Cycling Development held in February 28th, 2024
- the National ITS Coordination body in November 29th, 2023

2.2.4 DENMARK

Denmark was also very active by supporting the organisation of local events. Some of them were:

-The Danish Civil Aviation and Railway Authority organized two combined webinars and physical meetings for coach and ferry operators respectively. We presented MMTIS, NeTEx and NAP.

-Organisation of a conference about open mobility data and Mobility as a Service (MaaS) in collaboration with ITS Denmark and The Capital Region of Denmark. We presented MMTIS, standards, DATA4PT and the Danish implementation plans.

- The Danish Civil Aviation and Railway Authority and the Danish Road Directorate organized two webinars about infrastructure for all the Danish municipalities.

Besides organising, the Danish partner also contributed with presentations on MMTIS DR on local events such as:

- ITS Denmark's annual meeting. The presentation was part of a two hours opening session about green mobility and digitalization.
- Webinar arranged by ITS Denmark. The webinar focused on NAP activities.

, while also contributed to a Nordic meeting about best SIRI practice.

2.2.5 FRANCE

In France, activities on exchanging knowledge and experience on data standards NeTEx and SIRI was the main focus. The first workshop was run on September 30th, 2021, with the Grand-Est region and the Greater Nancy agglomeration, organized by the French partner together with the ITxPT. During the workshop, Christophe Duquesne, DATA4PT expert, presented the modelling possibilities offered by the NeTEx standard, particularly in terms of multimodality and accessibility, while acknowledging that the richness of the standard results in particularly large files and database quality issues.

Additionally, France organised a webinar with national stakeholders with the goal of presenting NeTEx profiles and use-cases. During this national event there was the opportunity to share opinions and provide feedback to DATA4PT expert on the use of the NeTEx profiles in France while was an opportunity for national stakeholders to share use cases from their experience.



Figure 3 National webinar organised by French partner.

2.2.6 ITALY

Italy was very active in engaging and facilitated the interaction between national and regional stakeholders through workshops and meetings with public transport operators and authorities. One of the most important events was the best practice exchange event held in Torino with Workshop with Italian stakeholders in Torino (1/2/2024). With presence of the European Commission, the Italian Ministry of Infrastructure and Transport, Italian Public Transport Authorities and Operators as well as authorities of the 9 Member States of DATA4PT consortium, participants discussed the learnings of implementing standards, facilitating passenger information and journey planning. These elements constitute the foundation of multimodal and seamless mobility, making these discussions held under the DATA4PT umbrella essential to advance cross-border mobility in Europe.

As presented by the partners, implementing the EU data exchange standards again proved to be a way forward to provide quality data to foster interoperable real time passenger information services, booking and smart ticketing solutions. This easy access to public transport is key to achieve sustainable transportation goals.



Figure 4 Torino workshop with Italian stakeholders.

2.2.7 PORTUGAL

Portugal, besides the very active role in the European events organised by DATA4PT on the topic of best practices exchange, worked also very intensively in providing the floor for experience and knowledge sharing between the big PT actors in the country. In particular, it co-organised, together with ITxPT, a workshop between PTA from Porto and Lisbon (TML) on the 11th of July 2023.

The goal of the workshop was to inform about the Transmodel standards the representatives from TML (Lisbon) and allow the direct exchange of knowledge and experience with Metropolitan Area of Porto. TML was at the stage of making a very big project on integrating passenger information systems where interoperability was key success factor. In this context the workshop was built in two parts: the presentation of the benefits of NeTEx, SIRI and in general Transmodel based data standards (like ITxPT specifications) and then showcase the example of Porto, followed by questions and answers session.

Moreover, in Portugal, a national wide project on intermodal ticketing technology platform is in progress (Bilhete project). This project will enable the interoperability between existing systems, and the introduction of new ticketing systems. Technological sharing between Transport Authorities - Lisbon Metropolitan Transport (TML) and Porto Intermodal Transport (TIP) and future adhesions is planned. The Portuguese partner is active partner of this project where informed stakeholders about the importance of the standards, particularly NeTEx and SIRI, the importance of NAP and the need to include them in the next specifications for the new tenders of the project.

2.2.8 SWEDEN

In Sweden, it was leveraged the Annual Data Quality of Swedish PTAs and PTOs, held on the 15th of March 2023, to exchange knowledge and best practices with local stakeholders. In this meeting, ITxPT participated to show NeTEx and SIRI adoption use cases from other countries (like PTAs from Bolzano, Norway, Denmark), to promote cooperation between PTAs inside the country and abroad and collect feedback on greenlight data validation and in general on tooling.

3 OUTCOME OF BEST PRACTICE EXCHANGE

3.1 OVERALL OUTCOME

From MS point of view the stakeholder fora enabled to get an inside view of individual challenges operators and authorities have to face, when implementing MMTIS standards. The fora provided the platform to address not only technical aspects but to discuss and explain the organisational hurdles MS and operators have to overcome.

The experience exchange and the individual solution the MS representatives demonstrated at the workshops and fora, were of great help, when it comes to define requirements for national actions. For example, the different approaches of the MS to develop a national SIRI profile influenced the description of Austrian requirements for a national SIRI profile. The responsible department in the Austrian federal Ministry BMK used the collected information to define tasks for national funding calls 2023. Especially the information provided by the Italian DATA4pt project partner to their national SIRI profile development is seen as best practice example for upcoming steps.

The Norwegian information on their approach in making a common journey planner was forwarded to the national stakeholder working on OJP implementation. The exchange of information to different national approaches and implementation status fertilize the discussions and cooperation beyond the ongoing open journey planner projects in Austria and influence the next steps in developing harmonized OJP solutions on national level.

The events contributed to enrich the understanding of the complexity and dependencies between data provision, meeting the EU requirements and addressing the goal to enable reliable and good mobility services. To hear and learn from the different national main content areas of the MS and how they apply the technical specification and cooperate with the national operator, is knowhow and experience exchange very valuable for the own national applications.

The DATA4pt stakeholder workshops and fora addressed wide MMTIS topics, like supporting data provision at the NAP, introducing sharing aspects, identifying stakeholder needs and including regional engagement results, national initiatives concerning journey planner etc. All this information was noticed and forwarded to colleagues from Ministry or AustriaTech who are directly involved into ongoing projects or strategic activities within the thematic MMTIS field. The DATA4PT project and especially the international stakeholder events and fora provided important and actual information to the deployment of MMTIS. AustriaTech disseminated this information on national level to the different relevant stakeholder groups, which generated common understanding of EU requirements, awareness, knowhow and additional benefit by inspire new ideas and new cooperation on international and national level.

Participation in consortium forums and seminars significantly increased awareness of NeTEx and SIRI standards among experts at the national level in the Czech Republic. This enhanced awareness manifested in a better understanding and efforts towards implementing these standards in the creation of methodologies and professional materials. Consequently, representatives of the Czech Ministry of Transport were informed, leading to the inclusion of a requirement in the technical specifications for new data sharing platforms to store and archive information according to the NeTEx CEN/TS 16614 standard. This requirement was subsequently reflected in strategic materials, such as the ITS development strategy.

The involvement of Portugal in DATA4PT best practice events, in combination with the other pillars of the project (capacity building, technical support, tools etc.) led to the adoption of Transmodel standards by the

second largest metropolitan city in Portugal, Porto. Porto representatives acquired significant knowledge able to exchange and promote their work to other national and international stakeholders, acting as NeTeX experts.

3.2 OUTCOMES FROM NATIONAL AND REGIONAL ACTIVITIES

In Austria the big workshop with National stakeholders had big impact which could be summarised in the following points:

- The creation of list of identified national stakeholder, organisations and interest groups in the area of shared mobility, demand orientated mobility and small PTOs
- Identification of stakeholder demand and requirements, which leads afterwards to a collection of FAQs and established the dialogue with national stakeholders
- Raised awareness for the obligation to provide data in NeTeX and SIRI, to the available information and contact point for support, cooperation and consulting for the national stakeholder.
- This also results in the increased amount of data at the NAP at end of 2023.

Moreover, the exchange activities run in by the Austrian partner with the Austrian national standardisation body led to the the cooperation with the national working committee 220 – on ITS - including the MMTIS standards NeTeX, SIRI; Transmodel, DATEX II., OJP API etc. This cooperation took place 4 times per year. The cooperation enabled to discuss and answer specific details on the standard development within the national standardisation working group, and to pay attention to the national voting process. This supported the awareness and knowhow to the technical specification on the national level but also lead to discussions on national interests that need to be communicated towards the CEN standardisation group itself. So, the cooperation was of benefit for both sides as the Austrian Working group on ITS supported the engagement of the DATA4PT standardisation activities.

In addition, in 2022 the Austrian Ministry BMK defined the Action Plan Digital Transformation in Mobility (AP-DTM) which addresses multimodality goals and elaborated specific measures to support the provision and sharing of data. AustriaTech supported the development of the strategy paper, and the derived measures, especially for MMTIS data provision relying on the development of the standards NeTeX, SIRI and the results on the MMTIS and ITS Directive revision. So being part of DATA4PT was an important to align EU requirements and national activities. The collected information influenced the definition for requirement of national call and tender. In 2023 the national action plan on sharing was published.

https://www.bmk.gv.at/themen/mobilitaet/alternative_verkehrskonzepte/sharing_strategie.html

The national action plans were developed outside the actual DATA4pt project work, but the DATA4pt information was used to ensure compatibility with EU requirements. And when it comes to discuss and implement technical details of the standards, the DATA4PT WIKI, the guidelines and technical artefact were used to address these tasks. ^[1] <https://www.austrian-standards.at/de/standardisierung/komitees-arbeitsgruppen/nationale-komitees/committees/4303/details>

In **Czech Republic** the performed activities in national level led as well to significant results such as the addition of requirements for the application of NeTeX standards have recently been added to the methodology for the area of urban parking, the collaboration of national stakeholders on working on Technical Specification and NAP Analysis. They are currently working on creating a technical specification titled 'Analysis of Definitions, Mission, and Requirements of NAP and Formulation of Vision in the Conditions of the Czech Republic' and a proposal for the implementation and operation of NAP according to this vision. International

collaboration has brought them many good examples, and during 2023 and 2024, the results of the Data4PT project were regularly presented at meetings within the consortium, aiding them in the assembly of analysis and other strategic documents.

In Denmark national activities resulted in increased awareness of MMTIS (Multimodal Travel Information Services) among attendees, in contributing to a better understanding of MMTIS's role in sustainable transport. Furthermore, by presenting Danish NAP (National Access Point) activities, enhanced understanding of national coordination and integration of transport data, increased the interest and engagement from participants regarding the applications of MMTIS in national context. The carried out discussions fostered cooperation between operators and authorities, potentially leading to better implementation of transport solutions. In particular the sharing of best practices in SIRI (Service Interface for Real Time Information) among Nordic countries helped in increasing collaboration and harmonization of standards across borders, potentially leading to improved transnational transport integration.

In France carried out workshop led in engaging the PTA Grand Est Region with the project Data4PT and to benefitted from the services of the group of experts associated to the project. The feedback from local authorities investing in the subject was particularly interesting because it allowed to evaluate the "performance" of data exchange formats and to agree on the options taken when declining from these approaches. The Grand Est region and the Greater Nancy agglomeration, also invited to the meeting, indicated their willingness to move forward with data production. The Ministry of Transport welcomes this dynamic and is positioning itself as a "facilitator" to enable local authorities to meet the ambitious timetable of the Mobility Orientation Law.

In Italy, the Torino meeting was a great opportunity to exchange the learnings from DATA4PT partners with transport authorities and operators from Italy and vice versa. Italian stakeholders share their experience on projects such as "MaaS for Italy" and other initiatives that they have in the pipeline (i.e. mobility observatory) where the data exchange standards are needed. The participants exchanged their point of view of the existing state of the art of the adoption of NeTEx and SIRI (Transmodel based standards), their concerns regarding the added value and the resources needed, giving also recommendations about further implementations. They expressed the importance of avoiding conversion between data exchange formats because of the impact this approach has in data quality. Moreover, they also shared the same opinion that data quality reports in National Access points can help in the improvement of the available data.

In Portugal, the workshops and other meetings carried out among national stakeholders, resulted in the increase of datasets available in the NAP and in the increase of awareness of PTOs about NeTEx in particular. Moreover it helped clarifying the strategy on how to go on in the future, with which vision and how to leverage existing knowledge. The workshop together with TML, also had an important impact on raising awareness to decision makers and identifying possibilities to facilitate integration of passenger information systems in Lisbon by adopting Transmodel.

In Sweden, where collaboration between national PT actors was already achieved by the creation of the organisation Samtrafiken which was also the implementing body of Sweden in DATA4PT, the local event on data quality in the framework of the project, influenced positively the designing the ticketing distribution system based on NeTEx standards and development of tools for NeTEx data creation and data quality assessment to support local operators and authorities in sharing accurate and interoperable datasets.

CONCLUSIONS

The Data4PT Project through its activity on the topic of Best Practice Exchange has been an important instrument to contribute to capacity building and to more sustainable exploitation of resources by the creation of liaisons and the exchange of knowledge and expertise.

The outcomes of the best practice exchange are many and with different perspective. One of the main outcomes was the creation of collaborations between NAP Operators partners of the project and between other NAP operators across Europe. The collaboration on standardisation work on National Profiles development on NeTEx and SIRI. Collaborations also on working on data quality tools and data quality processes. Also enabled the collaborations in the level of working on passenger information systems with similar set-up across countries.

Another important added value besides collaborations, was the knowledge enhancement and the acquisition of more confidence in implementing the standards. The messages that they were conveyed and the lessons learned helped decision making on forming an interoperable architecture based on EU standards and data quality frameworks to overcome current challenges. These messages and knowledge can be leveraged to form guidelines to be disseminated in the bigger audience beyond DATA4PT network.

The main outcome of best practice exchange activities is summarised as follows:

- **Increased adoption or awareness of Transmodel, NeTEx and SIRI Standards**
- **International and interregional collaborations between actors.** Collaboration in DATA4PT led to significant improvements in the efficiency and accuracy of data management and trip planning.

The nine Member States, being part of DATA4PT, were able to ensure alignment regarding MMTIS implementation approach and EC obligations and were strongly influenced for the definition of national requirements for transforming strategic plans into implementation actions and activities. The elaborated bundle on detailed information, website, guideline, technical artefact and the individual support/consulting of the DATA4pt experts enabled best practise exchange in Austria and all the other MS of the project in different ways.

REFERENCES
