**Inventory of gaps NAPCORE 2023**

The goal of H.2 is to identify topics that are not (yet) covered by scope of NAPCORE and its yearly working programs. Gaps can come from internal sources or external sources:

* Examples of internal sources are WG1-WG5 outputs and CAT meetings.
* Examples of external sources are EU policy papers, EU website, Mobility Data Space concepts and documents, Revised ITS Directive and Delegated Regulations, Sustainable and Smart Mobility Strategy 2020, European Data Strategy, H2020/ CEF funded projects, other platforms (CCAM, C-Roads, MaaS Alliance, …), etc.

**Identification of gaps**

According to the Grant Agreement and Workplan 2023, both internal and external gaps have been identified in 2023.

In total, 50 gaps have been identified through a process of contacting the various WG leaders and participation in the CAT meetings. Each gap was described using the following entries:

* Identified gap
* What is at stake?
* Relevance for NAPCORE
* Stakeholders
* Urgency

In the next step, the gaps were scored on a series of so-called ‘gap criteria’, e.g. number of NAPs impacted, relevance for EU regulations, potential for improving added value of NAPs, complexity of the required action, etc.

In the end, ten gaps were ranked as most relevant, and these gaps are shown in table 1 to 3 below. For each of the gaps additional criteria were added in order to structure/categorize the gaps. These criteria included among others the type of gap, EU/national level, stakeholders impacted, reason for change, coverage in workplan and timing of action needed.

**Recommendations for further action**

For each of the nine gaps a recommendation for further action was formulated (to be taken up within NAPCORE or elsewhere). These recommendations will then be discussed in the SCOM, where a decision will be taken on the follow-up of these recommendations.

From the nine gaps ranked as most relevant five gaps have been highlighted as gaps that are critical. These are presented in table 1. Three more gaps have been identified as hindering/disturbing the work processes. These are presented in table 2. One gap is from another category (see table 3), not critical, not hindering the process, but could be a serious risk for the reliability of the NAPs, and thus their use. For this moment (2023) it seems not necessary to formulate an action, but it is recommended to keep it on the list for reconsidering at a later point in time.

Moreover, several gaps identified are suggested to be taken up in the follow-up project of NAPCORE (NAPCORE-X). For reasons of completeness, these gaps are presented in table 4. However, no recommendations to tackle those gaps are made. This will be done during the proposal writing process of NAPCORE-X.

***Table 1: critical gaps***

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| --- | --- | --- | --- | --- | --- |
| **Identified gap** | **What is at stake?** | **Relevance for NAPCORE** | **Stakeholders** | **Action proposed** | **Action for** |
| Lack of definition of the roles and the relationship between the NAPs and the European Mobility Data Space, including a special focus on trust and authentication issues. | Definition of the role of the NAPs in the European Mobility Data Space and its relationship with the NAP Reference Architecture; Moreover, in data exchange and when data are made available, they must be trustable. On the other hand, the authentication of data users must be checked. | This is relevant because the existence of the EMDS may require specific features/functionalities from the NAPs, which must be part of the NAP architecture. This is also important for governance aspects. Cyber security is essential for the trustworthiness of the NAPs and the services building on NAP data. | EC, Service Providers, Data providers (Road authorities, Road operators, Traffic Managers), NAP operators, users of NAPs, Member States, whole mobility data community. | 1) Keep close alignment with the EC in order to receive further updates regarding the progress of the discussions about the EMDS  2) Develop studies addressing the possible roles that the NAPs can assume, always bearing in mind the most up to date "concept" of the EMDS  The topic of trust and authentication is already covered in the upcoming NIS2 directive. The Member States have the new task to inspect essential and important services. NAP operators need to take action towards cyber security and national authorities have to carry out checks. NAPCORE could give guidelines or training courses on the topic towards NAP operators. Within the current NAPCORE project there will be a workshop organised by WG1 to collect more detailed input for the topic. | NAPCORE WG1, WG2, WG4 |
| Lack of harmonised implementation of available data standards (e.g. DATEX II versions). | Data is published, exchanged and made available in a non-uniform way, e.g. by the use of different standard versions. It is very difficult to promote and enhance the interoperability among NAPs if the data standards are not implemented in a harmonised manner. | NAPCORE is a harmonisation project that should provide guidelines for achieving a harmonised data formatting. | Data consumers, standardisation bodies, NAP operators, EC. | 1) Analyse collected utilised data formats from the Member States  2) Identify common topics, existing challenges, and best practices  3) Provide guidelines for data providers, best practices or recommendations for data standards.  The EC could support closing this gap by making the use of specific standards (or version thereof) obligatory in the regulations. This could be taken up in the working programme of the EC to agree on recommended standards per data category. | NAPCORE WG4, WG3  EC |
| Limited knowledge of the financial costs of the NAPs and making data accessible. | 1) Which investments have to be made by the NAPs to improve harmonisation? E.g. with respect to minimum LoS, and implementing DCAT-AP, but possibly also other aspects?  2) Member States have to implement the various (revised) Delegated Regulations. Which investments does this require from the Member States (e.g. extension of the geographical scope, digitisation of data, other types of investments)? | Relevant for all NAP operators, and thus for NAPCORE. | NAP operators, Ministries, data owners, EC. | NAP operators and Ministries should be in the best position to answer these questions (estimate or based on research). The EC could support to close this gap by carrying out an inventory of (estimated) costs for all Member States. This could be taken up in the working programme of the EC to collect the information e.g. via a study. | EC  Member States |
| Increase the level of commitment of the Member States towards the implementation recommendations from NAPCORE. | Without a stronger commitment, the risk of developing non-compatible/ non-harmonised NAPs is rather high. This reduces the value of the NAPs. To what extent can/should decisions of the SCOM be obligatory to be implemented on the NAPs/National Bodies? | This touches the core value of the NAPCORE project: coordination between the NAPs and National Bodies, e.g. the usage of minimum Level of Services for NAPs to be interoperable amongst each other and with other data ecosystems, the use of mobility-DCAT-AP, the use of common terminology of data types, the use of harmonised compliance assessment processes/forms etc. | NAP operators, National Bodies, data and service providers, EC. | Prepare and agree mechanisms for stronger commitment of the Member States to the NAPCORE recommendations, e.g. new terms of reference, more agile decision processes, new mode of joint elaboration of work items etc. | NAPCORE, Member States |
| Management of Electronic Traffic Regulations (METR). | METR is a framework standard enabling the trustworthy data creation and distribution of the rules of the road in an interoperable way cross jurisdictions. The scope of METR addresses both the business process, as well as the rules that are laid down in traffic laws and traffic regulations respecting the national and local legal settings. Both the relatively static (e.g. static speed limits) as well as those that are dynamic (e.g. variable speed limits, lane closures at incident scenes) are in scope. | How do METR and Datex II/TN-ITS relate to each other? | Road authorities, Service Providers, OEMs | SWG4.1 (Datex II) is initiating action as this group is constituted mostly out of the affected road authorities and road operators. However, METR is wider than just the standardisation of the semantical data standards. Also, the processes with respect to digitalisation of the rules of the road and digital ecosystem are addressed, as well as the distribution technical and trust ecosystem. Governance on EU contribution and participation in the global METR community is required. It requires European coordination among Member States at policy level and technically. It is recommended to ask the CMB of DATEX II to organise the process that this kind of coordination is organised, as they are the representatives of the affected community in Europe. It is to be seen whether in the end this coordination is a NAPCORE role. However, as this affects the functional and technical scope of the ecosystem in which the NAPs have a key function, it could be a NAPCORE task (as today the scope of the referred standards in the EU-regulations are wider than necessary for the aim of the regulations). | NAPCORE SWG4.1 |

***Table 2: gaps hindering/disturbing the work processes***

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| **Identified gap** | **What is at stake?** | **Relevance for NAPCORE** | **Stakeholders** | **Action proposed** | **Action for** |
| Legal knowledge concerning the obligations of multinationals (with and without headquarter in Europe) with regards to the NAPs and subsequently, the implementation of multi-national Compliance Assessment. | Which options do National Bodies have regarding the compliance assessment of multinationals? What are the legal obligations to be compliant with the ITS Directive? Multi-national compliance assessment would mean a simplification of the process, especially for multi-national organisations. | Need for a coordinated approach and measures to increase available data and comparability of data and services on the NAPs. | National Bodies, multinational organisations. | 1) National Bodies need to consult their legal options/limitations for multi-national compliance assessment.  2) Then, a headquarter-approach (country where the multi-national organisation has its headquarter is in charge of compliance assessment) might be deployed.  3) A strong cooperation between the National Bodies as well as budget are needed to implement this multinational compliance assessment.  4) Possibly, a European body for compliance assessment could be implemented. | NAPCORE WG5, National Bodies, Member States, EC |
| Implement strategies and actions for non-compliance and identify options for (multi-)national enforcement. | Processes for enforcement in case of non-compliance with the requirements set out in the Delegated Regulations are currently missing. | Increase the harmonisation of National Body tasks in case of non-compliance and thereby, the interoperability between the National Bodies; increase the need for complying with the Delegated Regulations. | National Bodies, EC. | First of all, an approach of several stages of action in case of non-compliance with the Delegated Regulations has to be set up. Moreover, (cross-national) enforcement strategies have to be identified developed and implemented. National Bodies need to check their legal options/limitations to figure out their options. | NAPCORE WG5, National Bodies |
| "Random checks" / "random inspections" are a hindering definition for the National Bodies to carry out effective and efficient compliance assessment in accordance with the Delegated Regulations. | Currently, National Bodies cannot carry out effective and efficient compliance assessment, if they stick to the obligation of "randomness" in the selection process without the risk of being sued. | the National Bodies/Competent Authorities would be more efficient, if they could carry out stratified random inspections. | National Bodies, Member States. | It is recommended to change the term “random inspection” in the Delegated Regulations towards “stratified random inspection”, so that National Bodies have the possibility to pre-sort the stakeholders in different groups and apply subjective selection criteria in order to carry out efficient compliance assessment. | EC |

***Table 3: other gaps***

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| **Identified gap** | **What is at stake?** | **Relevance for NAPCORE** | **Stakeholders** | **Action proposed** | **Action for** |
| Lack of definition of the connection of the NAPs to the European Access Point (EAP) for alternative fuels (AFIR) | Although an EAP for alternative fuels has to be established in 2027, there is no definition regarding the EAP for general mobility data (from the ITS directive and its Delegated Regulations). According to the AFIR, however, the NAPs shall be connected to an EAP. | The lack of definition of the relation of the NAPs to the EAP prevents the conceptualisation proposed in work item 2.4.5 of NAPCORE. | EC, NAPs, Member States, AFIR stakeholders | It is recommended that definitions and guidelines from the EC in this regard should be developed. Moreover, a demonstrator on AFIR data with connection to the EAP could be deployed. The STF group refers to NAPCORE for proposing a "preferred" setting between NAP and EAP (EAFO). | NAPORE, EC, AFIR stakeholders |

***Table 4: gaps that will be input for the work plan in NAPCORE-X***

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| --- | --- | --- | --- |
| **Identified gap** | **What is at stake?** | **Relevance for NAPCORE** | **Stakeholders** |
| In NAPCORE there is limited to no attention on data from vehicles | More and more vehicles are producing data. These data should be made available via the NAPs. | The data collection is not a task of NAPCORE, but NAPCORE could provide standards, use cases, processes for the various data types. | OEMs, traffic managers, road operators, NAP operators |
| Implementation of pre-assessment tools and electronic submission of self-declarations | Simplification of compliance assessment, especially for multi-national organisations | The implementation of pre-assessment tools and the electronic submission of self-declarations would increase the level of interoperability between the National Bodies and facilitate the compliance assessment process for National Bodies as well as data and service providers. | National Bodies, NAPs |
| Need to align on standards used in the rail sector and standards used in public transport and road traffic | Currently there is no alignment between the standards used in these different domains. However, data can have impact on several domains. Interoperability between the domains is therefore necessary. | One of the main goals of NAPCORE is to ensure interoperability in data sharing, cross border and cross domain. | Rail sector, public transport sector, road operators |
| Roll out and maintenance of UVAR BOX tools | Currently, the UVAR BOX tools are not being deployed along the EU, nor are the tools being kept updated. | The UVAR BOX tools can be used for RTTI data on zonal validity, e.g. environmental zones | Road authorities, service providers, OEMs |
| Missing attention for urban logistics (including construction logistics) in relation to traffic management | Currently, the NAPs are mainly focused on data relevant for passenger transport (car, public transport, bike, etc.). Urban logistics is largely neglected, whereas it could be an interesting target group for service providers. | Certain data categories might also be relevant for the logistics sector. In addition, there might be other/new data categories that are highly relevant for urban logistics. | Road authorities, service providers, logistics sector |
| How can urban nodes get hooked up in NAPCORE-X in order to organise the implementation of the Delegated Regulations on RTTI and MMTIS in a harmonised way? How to involve local authorities? | Urban road operators and other data owners will increasingly have to provide RTTI and MMTIS data. For most of them, this will be a new task, which will require new expertise. In addition, local authorities need to get a better knowledge of data standards in order to use them in a proper way. | NAP operators have a big interest in receiving data from the urban nodes in a harmonised way (at national level). Data users have a big interest to be able to find urban data (RTTI, MMTIS) in a uniform way across Europe. | Data owners of data types mentioned in the Delegated Regulations on RTTI and MMTIS, NAP operators, local authorities |
| Unequal coverage of on-demand and personal transport modes (compared to scheduled transport modes) and its effects on data availability | There may be inefficiencies in trip planning processes because trip planning requires a holistic view of the entire transport/mobility system, including both scheduled and on-demand modes. If NAPs do not incorporate data for on-demand modes, trip-planning applications will not suggest multimodal routes. | Relevant | Data and service providers, data users |
| Limited availability of NeTEx and SIRI national profiles | Without standardised national profiles, the data received from various providers may have unknown formats, structures, and content. | Relevant | NAP operators, data and service providers |
| Changes in the layout of the infrastructure (new road or new layout of the road etc.) | How to manage the workflow from the decision (road authority), the implementation by road works (infrastructure manager or operator) and the reports at driver's level through the digital maps (map provider)? | RTTI, MMTIS, TN-ITS, UVAR | Authorities (national and local), road operators and their associations (ASECAP, CEDR), map providers and service providers and their associations (TISA, TN-ITS etc.) |
| RTTI impacting cycling network availability | Cycling is a mode of transport, and bicycles are means of transport, like driving and vehicles. A lot exists for years to measure the traffic of vehicles and to collect and transmit RTTI for this kind of vehicles. How to reuse and adapt it for cycling in order to avoid beginning from scratch is still an open issue. | In the scope of Cycling Ambassadors | Local authorities, road operators (managing cycling networks) |
| How to align the current data silos of public transport and TM? | Different standards are used in public transport and TM. This makes it very difficult to integrate public transport in TM and vice versa, resulting in a sub-optimal traffic system. | Very relevant, NAPCORE deals both with TM data (RTTI, SRTI, truck parking) and public transport data (MMTIS) | Road authorities, service providers, public transport companies |
| Continuation of stakeholder engagement in NAPCORE-X (Advisory Board) | The Advisory Board was set up as connection to the external stakeholder; anyhow it turns out that "Communities" with related "Community Managers" might be a better way to engage with external stakeholders. | Highly relevant | External stakeholders, NAPCORE |
| How to continue/operationalise Cooperation Agreements? | 1. How can the existing Cooperation Agreements be of higher added value/put in operation?  2. Will the Cooperation Agreements be taken over by NAPCORE X? How? | Highly relevant | Cooperation partners, NAPCORE |
| Flexibility in current structure is missing to react properly on new developments | New topics, developments or structures might be needed in order to achieve the highest output based on input | Very relevant | NAPCORE, EC |