EGUM OPINION ON THE SUSTAINABLE URBAN MOBILITY INDICATORS

Best practice on monitoring SUMP implementation, especially on defining and applying sustainable urban mobility indicators and data collection

Adopted by the EGUM Plenary on 04.07.2024

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1. EXECUTIVE SUMMARY

a) Summary

In order to support the European Commission in defining a set of Urban Mobility Indicators ('UMI') able to assess the sustainability, road safety and accessibility of urban nodes, the EGUM subgroup on SUMP monitoring and implementation have analysed a proposal for UMI and formulated recommendations on way to facilitate their collection[1].

Objectives of UMI Collection

As a first recommendation, the EGUM recommends to clearly define the purpose and objectives of the UMI collection. According to the group, the primary goals are to enable urban nodes to monitor their the impact of sustainable urban mobility plans implementation using EU-wide indicators, provide valuable insights to authorities at all levels about urban mobility and infrastructure development, facilitate evidence-based planning, and highlight the benefits of data collection, evaluation and monitoring for urban nodes. Recommendations include

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[1] This text does not prejudge the future position of Member States on the implementing act in the TEN-T Committee.

clearly communicating the objectives and benefits of UMI collection, ensuring that indicators include TEN-T dimensions, and maximizing the use and accessibility of the collected data.

Governance & UMI Collection

Effective governance is crucial for the successful collection of UMI. Member States need to engage in dialogues with local and regional authorities to define data collection and aggregation responsibilities. They should leverage existing structures like National Access Points (NAPs) under the Intelligent Transport Systems (ITS) directive. It is recommended that governance dialogues be established, private stakeholders involved in data transmission, and the role of NAPs in data availability and transmission explored.

Developing a Phased Approach

To prepare for the 2027 deadline, it is advisable to begin with pilot projects in selected urban nodes to identify challenges before full implementation. Starting with a core group of essential indicators and expanding over time can help manage the transition. Recommendations include setting up pilot phases with volunteering urban nodes and gradually increasing the number of indicators.

Available Support for Data Collection

Given the varying capacities across cities, support is essential. The CEF Technical Assistance instrument, with a budget of €11M, can provide the necessary assistance. This support should target urban nodes participating in pilot projects, those with low availability of critical indicators, and capacity building in data collection expertise and infrastructure.

The ELTIS consortium's proposal for sustainability indicators in urban mobility focuses on GHG emissions, air quality, and noise pollution, aligning with existing legislative frameworks to minimize the reporting burden on authorities. Key observations and recommendations have been made for each area to enhance the relevance and accuracy of these indicators.

Air Quality

Existing requirements under the Ambient Air Quality Directives (AAQD) necessitate monitoring and reporting on pollutant concentrations and exceedances. The proposed approach includes tracking annual concentrations of pollutants like NO_2, $PM10$, and $PM2.5$, the number of exceedance days, and vehicle fleet composition in the geographic areas covered.

Several discrepancies were noted between current legislation and the proposed indicators, particularly regarding geographical scope and pollutant limits. The current AAQD defines zones and agglomerations with different population thresholds compared to the urban nodes outlined in the TEN-T regulation. Moreover, some proposed pollutant limits, such as the WHO interim target for $PM2.5$, are less ambitious than the revised AAQD targets.

To address these issues, it is recommended to align the geographical scope of AAQD and TEN-T reporting requirements to avoid double-reporting and set more ambitious pollutant concentration thresholds. Including questions on vehicle age, fuel type, and private ownership in household surveys will consolidate fleet composition data. Prioritizing data collection on high-impact vehicles like private cars and vans, and allowing urban nodes to select representative sampling points if no traffic-oriented points are available, will further streamline the process.

Noise Pollution

The Environmental Noise Directive (END) requires Member States to report noise levels every five years for specific agglomerations, major roads, railways, and airports. The proposed indicators focus on the number of inhabitants exposed to different noise levels, broken down by decibel levels and transport modes.

Most urban nodes already meet these requirements, but some, especially in overseas territories, are not subject to the END. It is recommended to use existing END reporting to meet the TEN-T obligations and align the reporting requirements to reuse existing data effectively.

Greenhouse Gas Emissions

Collecting data at the city or Functional Urban Area (FUA) level presents challenges, especially regarding vehicle kilometers driven and fleet composition. In-vehicle generated data from On-Board Fuel Consumption Monitoring (OBFCM) devices could provide valuable insights, but their current market penetration is limited. Additionally, using energy carrier data may not accurately reflect urban GHG emissions.

To enhance data accuracy, it is recommended to limit input data to vehicle fleet composition, vehicle kilometers driven, and emission factors. The focus should be on vehicles with high CO_2 emissions, such as passenger cars and light commercial vehicles. Exploring the use of OBFCM data for CO_2 emissions will provide more precise insights. Relying solely on model-derived indicators and fuel sales data should be avoided to prevent distortions at the sub-national level.

Collection Tools

Comprehensive data sets are needed, yet current methods fall short. A standardized survey of travel behaviors, conducted regularly, is recommended to provide a baseline for all cities and modes and to augment direct data collection efforts. Recommendations include assessing Eurostat guidelines for UMI, developing standardized surveys based on best practices, and ensuring these surveys enhance existing data collection methods.

Road safety

The collection of road safety indicators at the EU level is facilitated by the CARE database, which tracks crash locations within urban areas. Proposed safety indicators focus on road crashes and injuries, using data on kilometers driven, number of trips, and extent of roads with safety measures.

Observations indicate limited availability of specific indicators, such as accidents involving private e-scooters, and private bicycles, trips per mode, and kilometers traveled per mode. Injury severity definitions vary across Member States, hindering comparability. Experts recommend using multi-modal traffic models, but the EGUM advises against relying solely on these models due to potential discrepancies.

Proposed indicators should align with common practices, such as expressing safety outcomes in kilometers traveled rather than trips. Harmonizing terminology for road safety indicators with EU-wide definitions is essential, using existing frameworks like the Delegated Regulation on EU-wide multimodal travel information services.

Access to Mobility Services

Proposed indicators for accessibility include the number of public transport departures per hour, the extent and usage of shared mobility services, and the annual distance and number of trips via public transport. Successful implementation requires smooth collaboration between public authorities and private operators, necessitating data-sharing agreements. While some urban areas have established these agreements, others may need support to do so. The European Commission should leverage existing work on Business-to-Government (B2G) data sharing and potentially develop contractual templates to facilitate these partnerships. Additionally, common definitions and standards for shared mobility services are crucial to address data inconsistencies.

Modal Share

Indicators for modal share include the total population, the number of trips per mode per year, and the types of trips based on origin and destination. This indicator area is considered as one of the most critical by the group to be able to assess progress in urban mobility developments. Challenges in data reliability and accuracy arise due to limited coverage by bicycle counters and low survey response rates. Standardizing data collection methods and definitions, encouraging national mobility surveys to include city-specific data, and exploring alternative data collection methods like mobile phone data can improve the accuracy and comparability of modal share indicators.

Congestion

Proposed congestion indicators measure satisfaction with cycling, public transport, and car networks, as well as average travel times for different modes during peak and off-peak hours. However, the relevance of congestion indicators varies across Member States, with some prioritizing user satisfaction over congestion metrics. The group recommends renaming "congestion" to "accessibility" to encompass broader sub-indicators like network length and satisfaction. If congestion indicators are maintained, they should focus on travel distances within a given time, quality of flow, network reliability, and recurrent congestion. Alternative data sources, such as occupancy data from loop detectors and average vehicle speeds, should also be considered to provide a comprehensive view of network performance.

b) Recommendations for a list of core indicators

The following list of core indicators has been set due to their relevance for the indicators fields mentionned in the TEN-T regulation and based on the indicators areas proposed by the commissionned experts. The availability and criticality of the indicators has also been considered to set up this list, based on the survey results on the availability of UMI.

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Preferred list of core indicators

- Modal share measured by regular household surveys or other surveys, expressed as:

  - Number of trips per mobility mode for all available modes *(relevant for Safety, Accessibility)*;

  - Distance travelled per mobility mode for all available modes *(relevant for Safety, Accessibility)*;

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- Accessiblity data - travel times by all available modes to major transport hubs within the functional urban area and the variability of such travel times (*relevant for Accessibility*)

- Annual CO_2-equivalent emissions from road transport in the city/FUA (*relevant for Sustainability)*

- Vehicle stock composition by engine fuel or power sources and Euro emission standards for vehicles pertaining to the biggest categories of emitters, due to their volume or high annual milage: at least privately owned passengers cars, light commercial vehicles and public transport vehicles *(relevant for Sustainability)*

- Total length of the road network (#km) *(relevant for Safety, Accessibility)*

- Total population of city/FUA (#inhabitants) *(relevant for all areas)*

- Number of persons fatally or seriously injured in road crashes by age category, type of vehicle used by the person fatally or seriously injured and by other main vehicle involved in the crash (relevant for Safety)

- Total fleet size of free-floating and station-based shared mobility services (E-micromobility/ bicycles (including pedelecs)/ mopeds / cars) (Relevant for Accessibility)

- Number of passengers-km on public transport *(Relevant for Accessibility)*

2. Introduction

One of the new TEN-T regulation objective is to further integrate urban nodes into the TEN-T network while supporting a seamless, efficient and multimodal transport in Europe across all modes.

The text of the regulation emphasises that urban nodes play an important role in the trans-European transport network as a starting or finishing point ("last mile") for passengers and goods moving on the trans-European transport network and are points of interchange within or between different modes of transport.

The local connectivity within urban nodes should be addressed by the competent local, regional or national authorities, in particular through relevant measures of the Sustainable Urban Mobility Plans (SUMP). In that regard, the TEN-T regulation lays down that a SUMP should be adopted for each urban node by 31 December 2027, covering the functionnal urban area ('FUA').

Member States shall ensure the adoption and monitoring of a SUMP for each urban node, in compliance with their administrative structure and the allocation of competences within their territory. It includes inter alia measures to integrate the different modes of transport and shift towards sustainable mobility, to promote efficient zero and low-emission mobility including urban logistics, to reduce air and noise pollution and where appropriate, to assess the user's accessibility to transport.

Furthermore, by 31 December 2027, Member States should ensure the collection of urban mobility indicators (UMI) per urban node in the fields of sustainability, safety and accessibility in view of underpinning the current and future performance of the trans-European transport network. The new TEN-T regulation states that indicators are adopted in close cooperations

with Member States and their local and regional authorities. It also specifies that the availability and accessibility of data at the local level should be taken into consideration. In order to monitor accessibility to all users, disaggregating data based on age, gender and disability should be encouraged where possible and in accordance with national law.

In its recommendations on National Support Programmes for Sustainable Urban Mobility Planning[2], the European Commission encourages Member States to support the adoption of SUMP by local authorities but also "to calculate sustainable urban mobility indicators (…), to coordinate and support data collection and facilitate access to, sharing and use of national, regional or private data needed to calculate urban mobility indicators".

The UMI requirement is likely to bring several challenges that should be anticipated to limit the burden exerted on the competent authorities while attaining the objective pursued by the collection exercice. One of such measures to limit the pressure on the responsible authorities could be selecting a limited number of relevant indicators.

The present opinion aims at highlighting the challenges encountered by public authorities already collecting certain urban mobility indicators, proposing recommendations adressed to European (European Commission - EC), national (Member States - MS), urban nodes authorities (Local authorities - LA) and private stakeholders (PS) to overcome these challenges as well as introducing some best practices from the public and private sectors to draw inspiration from.

The opinion takes into account the survey conducted in Summer 2023 regarding the availability of urban mobility indicators collected by cities at the center of the urban nodes, as well as on a proposal for a set of indicators prepared by experts from the ELTIS consortium, commissioned by the European Commission. Feedback from members of the EGUM's subgroup on SUMP monitoring and implementation served as a basis for the drafting of the opinion. Further feedback was also collected from city representatives part of the Eurocities network.

3. Description

c) General considerations

i.   Objectives pursued by the UMI collection

To ensure a correct implementation of the new requirements regarding UMI collection, the objective behind the UMI collection shall be clearly stated and shared by all entities involved in the data collection and calculation of the indicators .

In that regard, the new TEN-T regulation merely states that "Member States should ensure the collection of urban mobility data per urban node in the fields of sustainability, safety and accesibility in view of underpinning the current and future performance of the trans-European transport network. In order to monitor accessibility to all users, disaggregating data…".

In addition, the Urban Mobility Framework[3] gives more details on the pursued objective by mentioning under the section on sustainable mobility indicators that comprehensive data has to be made available "to understand the progress achieved and improve existing plans" and that sufficient data would allow cities to "share best practices". It should also be borne in mind

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[2] Commission Recommendation (EU) 2023/550 of 8 March 2023 on National Support Programmes for Sustainable Urban Mobility Planning
[3] Commission Communication, The New EU Urban Mobility Framework , 14.12.2021

that the Commission mentioned in the urban mobility framework that it intends to "improve and streamline" the set of indicators used in the first pilot project where the collection of sustainable mobility indicators was tested by several cities (hereafter refered as "UMI 1").

The EGUM considers that in order to ensure sufficient buy-in from the authorities responsible for the indicator collection and to ensure a harmonious implementation of the requirements, a clear objective should be stated in the upcoming implementing regulation and communicated extensively by both European and national authorities.

The group therefore recommends that the following objective should be reiterated: the collection of urban mobility indicators aims at allowing urban nodes authorities to track progress on the implementation and effects of their sustainable urban mobility plans based on an EU-wide set of indicators. Bearing in mind the TEN-T dimension, indicators should also provide indications to European, national (including NSSP coordinators), regional and local authorities, TEN-T coordinators and interested stakeholders on the state of urban mobility and infrastructure development of urban nodes located on the TEN-T corridors.Thus, the indicators could serve as a way to foster evidence-based planning on the local, regional, national and EU level.

In addition, when preparing and implementing the collection requirements, the European and national authorities should also deploy extra efforts to demonstrate the benefits of the collection requirements for urban nodes authorities involved in the collection process. This could be done by describing more precisely the intended usage of the collected indicators e.g. to better target national support instruments for urban nodes lagging behind or by showing the benefits of having certain indicators aggregated at the FUA level for a better informed policy-making process. It should also be precised that the collection and aggregation of the indicators will not be carried out solely by the urban nodes as other stakeholders are expected to contribute to the data collection.

Attention shall also be given to clarifying the applicable accessiblity policy of the collected indicators to other stakeholders. This should be part adressed as part of the national dialogue's agenda above-mentionned.

Recommendations

- Invite the EU institutions and Member States, when entering in dialogues with urban nodes authorities, to describe in more detail the exact purpose, benefits and accessibility policy of the indicators collection for the different levels of governance (EC/MS)

- Maintain the TEN-T dimension in the indicators collection by also ensuring that the indicators allow to measure the progress of the TEN-T network (EC)

- Invite the EU institutions and bodies to discuss the best ways to maximise the use of such indicators and consider them as a primary source of information regarding progress in the fields of urban mobility, potentially integrating the collected data into existing reports e.g Eurostat report "Key Figures on European Transport" , Joint Research Centre reports. (EC)

ii. Governance & UMI collection

Setting a clear governance framework in each Member State will be essential to deliver on the UMI collection requirements. As per the text of the new TEN-T regulation, the indicators must be collected at the urban node-level, which boundaries will likely differ from one region/Member State to another, with different levels of governance likely to intervene in the collection. Principles-based approaches on the governance of urban nodes have already been

put forward by certain stakeholders have already proposed high level principles for the governance of urban nodes under the new TEN-T regulation[4].

The EGUM recommends that the Member States, which are the primary recipient of the collection requirement, set up dialogues with local and regional authorities or their representative associations to define together how data owned/collected by the different authorities will be made available, and which authority will be primarily responsible for the collection/aggregation of the data. The dialogues could also lead to an adaptation of the administrative structures e.g through the attribution of competence to a new or already existing agency.

Existing structures set up by EU legislation could also be exploited. One of such structures are for instance the National Access Points, which establishment is required by the delegated regulations under the Intelligent Transport Systems ('ITS') directive [5]. Future developments under the ITS framework, with new datasets made available in the NAPs in the years to come, should be fully considered as the geographical scope of several delegated regulations will be extended to cover the urban nodes. To give an example, in the case of the indicators considered under the access to mobility services indicators area, the data made available in the national access point used for Multi-Modal Traffic Information Services ('MMTIS') regarding historic travel and traffic data on delays could be useful to collect indicators related to urban nodes accessibility. Therefore, transfers of data shall be made possible between NAPs and the TEN-tec plaftorm when the data made available on the NAPs can help to comply with the collection requirements.

Case study – Flemish Transport Regions – Antwerp Transport region

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The Flemish Region, as per the Decree of April 16, 2019, has been divided into 15 transport regions. Even though all these regions may not cover the functional urban areas, in most cases, they include a transport core (urban node) and its area of influence. In terms of organisation aspects, this entity lacks legal or administrative status and governing bodies. Instead, a transport regional council, comprising municipal and regional representatives, is established in each region. This council, led by co-chairperson from the municipalities and the region, has designated tasks including preparing, monitoring, and evaluating a regional mobility plan, which gains legal status upon approval by the Flemish Government. While the functioning of the transport regions is still being set up, this governance model could be used to meet the indicators collection requirements.

For the Transport Region of Antwerp, clear KPIs have been defined. Lantis, a management company of the Flemish government and key stakeholder within the transport region, actively collects data from 33 municipalities and the region. Since most municipalities lack the knowledge and resources to collect, maintain, store and process the various datasets needed for even basic reporting, it is more (cost) efficient to collect, maintain, purchase and make available data on a higher governmental level. Due to the organisational structure, it is easy for Lantis to collect and

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[4] See *Urban nodes empowering cities and regions to build the TEN-T*, published by the Urban Nodes Alliance, April 2024, available on the Civitas Platform

[5] Directive (EU) 2023/2661 of the European Parliament and of the Council of 22 November 2023 amending Directive 2010/40/EU on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport

store data on infrastructure from the regional (Flanders) level. Having a single source for data also makes it more interesting for other organisations to implement data in applications like reporting tools, route planners etc.

➔**Recommendations**

- Invite and support the Member States to set **up dialogues with local & regional authorities to define the adequate governance models** for the UMI collection. (EC,MS,RL,LA)

- Invite Member States, local & regional authorities to facilitate the discussion with private stakeholders on data transmission and define a model of collaboration through for example data standards and business models (EC, MS, RL, LA)

- Explore the role of National Access Points and consult with NAPCORE members to foster the availability of relevant data for the collection and transmission of relevant indicators to the TEN-Tec platform, taking into account the impact of data sharing standards on the protection of personal data and on commercially sensitive data (EC, MS)

iii.   Developing a phased approach

➔ **Preparing for the 2027 deadline**

The first collection requirement will have to be met by Member States by the 31 december 2027, with the collection exercise to be repeated every 3 to 5 years depending on the indicator. While the new requirements may be manageable for urban nodes that have a well-developed practice in the field, urban nodes with less experience or resources will probably face more challenges to meet the requirements.

To prepare the ground in each Member State, one or several urban nodes areas could be selected to experiment with the final set of indicators to be enshrined in the implementing regulation. Given that the European Commission is expected to come up with the final list of indicators one year after the entry into force of the Regulation i.e by 2025, this would give up to 2 years to anticipate and report challenges encountered by volunteering authorities before the actual compliance date. It must be ensured that the local authorities involved in the first stages of "testing" the UMI collection are representative of the diversity of urban nodes (in size, data culture and geographic position).

The implementing act should also clarify the period to be covered by the collection exercise, aligning with already-existing collection periods required by EU legislations, which will be useful for certain indicators proposed by the ELTIS consortium. This would be particularly relevant for certain indicators such as the ones implying fleet composition assessment.

➔ **Starting out small**

When it comes to the number of indicators whose collection will be mandated, the EGUM recommends to start with a core group of indicators that could be expanded over time. The key critera should be the level of availability and the relevance of the indicators covering the three indicators' families : sustainability, accessibility and safety.

In the development of the list of indicators, the European Commission should ensure that the collection requirements remain cost-effective – for Member States and (especially) for urban

nodes authorities with limited ressources – by following certain principles like the "once only principle". In addition, as the list of indicators may evolve in the future, another driving principle to follow is to ensure they remain future-proof. New data, as well as new collection methods, should be easily integrated into the indicators' database.

A prefered list of core indicators has been recommended for each indicators' field adressed in the TEN-T regulation: sustainability, accessibility and safety.

Recommendations:

- Start with a limited number of indicators to form a baseline, to be gradually increased over time in phases from the most important to demand-based indicators. (EC)

- Consider setting up a pilot period to allow a selected number of volunteering urban nodes authorities to test the adaptation to the new requirements (EC/MS)

iv.   Available support to foster data collection

Resources and capacities to fulfil the reporting requirements differ across cities and FUAs depending on size, established data culture and national support systems. It is therefore essential to name existing or complementing instruments for support where available.

Budget has already been earmarked for providing support to urban nodes and Member States under the CEF Technical Assistance instrument, with a budget of €11M for the 2025-2027 period.

Recommendations:

Under this technical assistance instrument, the EGUM would suggest to provide support in the following fields:

- Provide financial and technical support to urban nodes & Member States volunteering to be part of the above-described pilot phase (EC)

- Provide targeted support to urban nodes that reported a low level of availability of indicators which are considered critical for several indicators' fields e.g.: # vehicles-km (MS)

- Provide support to consolidate expertise and capacity in collection enablers: physical and digital infrastructures, expertise in household surveys, human resources, and capacity building offered to cities (MS)

v.   Collection tools

Comprehensive and comparable data sets that include number of trips, distance or time for all mobility modes are needed to complete several recommended UMI Indicators across all categories of data. Examples include modal share, road safety casualties as a function of exposure, greenhouse gas emissions and airborne pollutants related to kilometres travelled per vehicle type.

The survey of data availability showed examples of this weakness in current data availability. Only 35-37% of the respondents collect the number of walking trips and cycling trips. Similarly, only 21% to 32% of the respondents collect the distance travelled per mode and per year. However, these numbers have to be considered together with the fact that only a sub-set of urban nodes responded to the survey in the first place.

Experts agree that apart from surveys, there is no current methodology that can comprehensively capture all data sets on travel trips and distances which would be available to all urban nodes at an affordable price. Aggregation and comparison of partial datasets for

individual modes is almost impossible due to the variability of methodologies used and available resources. Emerging data capture methodologies and modelling techniques will improve the situation. However, for areas such as walking and emerging vehicle types such as private scooters the current data availability is too low for meaningful analysis. Moreover, it cannot be expected that the situation with substantially change in the time frame of the implementation of the new TEN-T regulation when the collection of baseline UMI data is expected to be necessary.

Therefore, a proxy is needed that can provide a baseline for all cities and modes, and that can be used to extrapolate to the total FUA and provide a basis on which other data sets can be created and validated.

For this purpose, the group recommends a standardized survey of travel behaviours, carried out at regular intervals (to be defined, but not less than 3 years and not more than 5 years apart), incorporating best practices in survey design.

Experts acknowledge that there are limitations to surveys. Nevertheless, through these recommendations we encourage a standardised approach that addresses as many of these limitations as possible, and most importantly, provides cities with an affordable and consistent basis to build their work on. Such surveys should augment rather than replace existing and enhanced direct data collection.

➔**Recommandations:**

- Assess to which extent the Eurostat guidelines are relevant to collect certain UMI such as modal share (EC/MS)
- If relevant, develop a standardized survey of travel behaviours to be used by the collecting authorities to comply with the UMI collection requirements. The standardized survey should use as baseline the existing approach to measure travel behaviours. One such example can be the ones developed by Eurostat for the development of passengers transport statistics or by relevant practices at the national level (EC)

d) Recommendations on the indicators' fields

i. SUSTAINABILITY

Under the proposal presented by the ELTIS consortium, three indicators' areas corresponding to the sustainability field were proposed: GHG-emissions, air and noise pollution.

It is worth noting that indicators in the field of sustainability are already subject to existing legislations or voluntary reporting by urban nodes authorities, namely:

- ❖ The ambient air quality directives (directive 2008/50/EC and directive 2004/107/EC hereafter refered to as 'AAQD') currently being revised
- ❖ The environmental noise directive (directive 2002/49/EC, hereafter refered to as 'END')
- ❖ The Covenant of Mayors reporting framework for greenhouse gas emissions from transport

The collection requirements should be aligned with the requirements, collection methodologies and frequency of these existing obligations to limit the burden exerted on the responsible authorities and avoid double reporting of emission data.

Air quality

➔**Existing requirements :**

The AAQD – currently being revised - requires the collection of several indicators regarding the attainment of air quality standards and the number of exceedances of the air quality standards observed over a certain period[6]. It is worth noting that the monitoring requirements are applicable at the following territorial units of reference:

❖ Zones: part of the territory of a Member State, as delimited by that Member State for the purposes of air quality assessment and management

❖ Agglomeration: a zone that is a conurbation with a population in excess of 250 000 inhabitants or, where the population is 250 000 inhabitants or less, with a given population density per km2 to be established by the Member States

The monitoring requirements e.g number of sampling points or the type of monitoring stations can also differ from one zone/agglomeration to another, depending on the number of inhabitants in the area covered or on the level of pollution observed.

The directives require Member States to submit annual reports to the European Commission on an annual basis.

➔**Proposed approach**

The proposed indicators for air quality refer to the annual concentration of several pollutants emitted by road traffic (NO2, PM10 and PM 2.5), the number of days of exceedances as well as the fleet composition of vehicles running in the geographical area covered by the collection exercice.

➔**EGUM observations**

As mentioned in the indicator factsheet, the first two categories of air quality indicators are already made available and aggregated by the European Environment Agency in the framework of the implementation of the current air quality legislations.

However, some discrepancies can be observed between what is proposed by the commissioned experts and what exists in the current legislation e.g on the geographical area covered by the requirements. The 2008/50/EC AAQD refers to "zones" and "agglomerations" – to be defined by Member States – while the TEN-T regulation reads that the indicators shall be collected at the urban nodes level. The three concepts use different inhabitants thresholds which may lead to different collection requirements eventually: while agglomerations should comprise more than 250,000 inhabitants, the inhabitants threshold to be considered as an urban node goes down to 100,000 inhabitants.

Some indicators also do no reflect the current limit values included in the future AAQD. The experts' proposal suggests collecting the number of traffic-oriented sampling points where the annual mean concentration of PM2.5 exceeded the WHO recommended level[7] of 35 μg/m3 in

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[6] See for instance, art. 6 and Annex III of Directive 2008/50/EC for the list of monitoring requirements
[7] World Health Organization. (2021). WHO global air quality guidelines: particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. World Health Organization. https://iris.who.int/handle/10665/345329. License: CC BY-NC-SA 3.0 IGO

the city/FUA. 35 μg/m3 is the first WHO interim target and not considered ambitious, especially considering the insertion of a 25 μg/m3 target in the newly-revised AAQD. This would mean exceeding the current directive by additional 10 μg/m3. Thus, this indicator would give very little valuable/relevant information since in many cases, it is expected that the limit values will be reached and therefore, the number of traffic-oriented sampling stations exceeding the abovementioned value is expected be 0 in most places. Setting the limit value lower would therefore make sense to increase the relevance of the indicator.

The EGUM recommends Member States to align the geographical scope of the reporting requirements stemming from both legislations in order to avoid a double-reporting scenario. The fact that the AAQD were revised in 2022-2024 with a transposition deadline in 2026 gives the opportunity for national authorities to make sure that both legislations are fully aligned in terms of geographical scope.

Regarding the indicators using fleet composition data, the challenge lies in the ability to aggregate fleet composition indicators at the FUA level, especially when it comes to private vehicles. When asked about the data regarding the composition of the fleet of private cars broken down by fuel and/or by Euro norm, less than half of the surveyed urban nodes reported that data were available at the FUA/city level. In many cases, this can be explained by the fact that vehicle registration databases were not managed at the local level.

In addition, the indicator area air quality could be better streamlined by prioritising the types of vehicles that have a significant impact on air pollution concentration in urban areas.

➔**Recommendations:**

- Align the geographical scope of the reporting requirements applicable to zones and agglomerations under the new AAQD with reporting requirements for urban nodes under the TEN-T regulation and reuse the already collected data. (EC)

- Ensure that the thresholds for annual mean concentrations of $PM_{2.5}$ or other air pollutants are ambitious enough for the indicator to be relevant. (EC)

- To consolidate the indicators on fleet composition requiring the use of vehicle registration datasets, it is recommended to also include questions on the age, type of fuel, power source, the number of privately owned and used vehicles in households surveys. (MS/LA)

- Encourage Member States to add new categories of information in the vehicle registration database e.g on the power source of the vehicle, when not present (MS)

- Prioritise the kind of vehicles having a significant impact on air quality in cities i.e vehicles with high annual mileage or representing a significant volume in the total fleet composition such as private cars (M1), vans (M2, M3), municipal and public transport fleets (namely M3). (EC)

- Leave the competent authorities the ability to select the most representative sampling point in the functional urban area if no traffic-oriented point available. (MS)

Noise

➔**Existing requirements**

The Environmental Noise Directive ('END') lays down requirements for Member States to report on noise levels (via the preparation of noise maps) every 5 years for

- agglomerations with more than 100 000 inhabitants
- major roads (more than 3 million vehicles a year)
- major railways (more than 30 000 trains a year)
- major airports (more than 50 000 take-offs or landings a year)

➔ Proposed approach

The commissioned experts proposed for indicators on the number of inhabitants exposed to different day-evening-night or night-only noise levels broken down per decibel levels and per mode of transport, to be calculated and reported by the urban nodes authorities. The figures will be used by the Commission to calculate the exposure of the urban node's population to noise caused by the different modes of transport.

➔ Observations

The EGUM notes that, similarly to the air quality indicators area, the experts proposed to rely on existing requirements stemming from the END or based on an alternate methodology considered similar. The conducted survey also showed high levels of availability of noise indicators among the urban nodes authorities.

It is worth noting that not all urban nodes are subject to the END e.g. overseas territories in certain Member States. It is up to the national authorities to determine the list of agglomerations covered by the END requirements.

➔ Recommendations

The EGUM recommends to :

- Ensure that the existing reporting requirements under the END requirements and their outputs are considered as sufficient to fulfil the reporting obligations under the TEN-T regulation. (EC)
- Align the geographical scope of the requirements by aligning reporting requirements applicable under the END with reporting requirements for urban nodes under the TEN-T regulation and reuse the already collected data. (EC)

Greenhouse gas emissions

➔ Existing requirements

Under the Regulation on the Governance of the Energy Union and Climate Action, Member States are required to report the final energy consumption in the transport sector as well as the share of renewable energy used in this sector. However, the data are aggregated at the national level and do not require a collection at the FUA level.

The only non-binding framework that exists for the urban level is the Covenant of Mayors reporting guidelines, which encourage cities taking part in the initiative to report on the final energy consumption for the transport sector per type of fuel[8].

➔ Proposed approach

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[8] Reporting guidelines, Covenant of Mayors for Climate and Energy – Europe, March 2020

Similarly to the air quality indicators' area, the greenhouse gas emissions indicators' area, refers to the fleet composition data as one of the main input indicators together with indicators related to the energy carriers used for transport e.g annual fuel purchased in the city.

➔ **EGUM observations**

EGUM members would like to highlight that the main input data for the calculation of the indicators on the average well-to-wheel (or tank-to-wheel) GHG emissions per vehicle-km per mode of transport will be the vehicle-km input indicator, which is common to various indicators' areas. However, it is also one of the indicator on which several cities indicated difficulties in collecting them. Regarding the vehicle fleet composition, the same comment applies as the one formulated under the air quality section regarding the difficulty to encounter data aggregated at the city/FUA level.

One way that could be explored further to fill in this gap – at least for certain categories of vehicles – could be to tap into the potential of in-vehicle generated data, namely the ones obtained through on-board fuel consumption monitoring ('OBFCM') devices. Regulation (EU) 2017/1151 requires new passengers and light commercial vehicles to be equipped with such devices since 2021 and 2022 respectively. It allows to monitor the "real-life" CO2 emissions of these categories of vehicles[9] by collecting data on the total fuel consumed and total distance travelled by a single vehicle. However, due to the limited market penetration rate of vehicles equipped with an OBFCM and the fact that it currently does not provide information on the location of the vehicle, the potential this solution can offer will probably be limited in the short-term. When it comes to data related to energy carriers, EGUM participants reported it may not provide an accurate assumption of the level of GHG emissions emitted in the urban nodes' territory in certain situations e.g. in the case of proximity of a Member State's border or in cases where a motorway crosses the territory.

Regarding the annual GHG emissions from transport, EGUM members commented that different sources co-exist, either based on input data like like suggested by the commissioned experts, derived from models, or obtained through a combination of both. When it comes to indicators based on models, it is worth noting that in some cases, their use tends to inflate certain figures. This is the case for instance of the forecast used to predict the trend in vehicle-km figures, which tends to be overestimated when compared with the actual values. In addition, transport models usually only provide vehicle-km data for a specific set of years (e.g. base year and two or three forecast years, making it less useful for a regularly updated indicator).

➔ **Recommendations**

- Limit the number of input data to the following list (EC):

  a) vehicle fleet composition,

  b) vehicle kilometers driven by vehicle type and

  c) emission factors for each vehicle type (including the three emission scopes)

- Focus on fleet composition input indicators for vehicles that generate more CO2 emissions: indicators on at least private cars (M1), vans (M2, M3), municipal and public transport fleets (namely M3). (EC)

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[9] See first report "Commission report under Article 12(3) of Regulation (EU) 2019/631 on the evolution of the real-world CO2 emissions gap for passenger cars and light commercial vehicles and containing the anonymised and aggregated real-world datasets referred to in Article 12 of Commission Implementing Regulation (EU) 2021/392", 18.03.2024

- Explore potential ways to consolidate data obtained on CO2 emissions of passengers cars and vans through the re-use of data obtained through the vehicles' OBFCM. (EC)

- Avoid to rely solely on model-derived indicators and as much as possible on input data, bearing in mind the cost incurred. (LA)

- Avoid to rely solely on fuel sales/energy carrier data as it can distort emissions at sub-national level. (EC)

ii. SAFETY

➔**Existing requirements**

The collection of road safety indicators is already organised at the EU level via the establishment of the CARE database. This database is populated via voluntary contributions from Member States on common data, definitions and variables. It is worth noting that this initiative includes to report on the location of the crashes i.e whether it happened within an urban area or not. The composition of the database is subject to recurrent discussions to make sure it remains relevant and gives a correct overview of road safety in Member States.
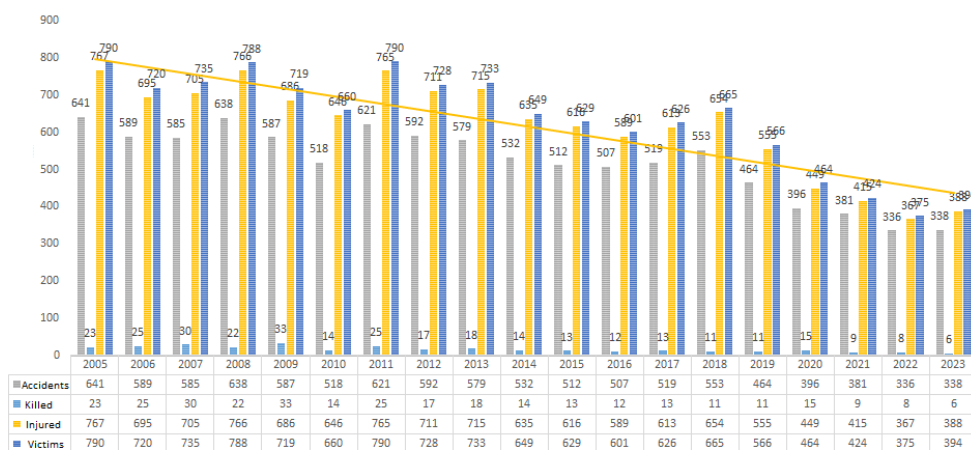
➔**Proposed approach**

The area of safety includes suggested indicators on road crashes and injuries. The proposed set of indicators comprises input indicators related to the number of kilometres driven per mode per year, the number of trips per mode per year and the length of roads subject to road safety measures (30km/h speed limit, presence of dedicated cycle tracks, etc).

Case study: Gdansk (PL)

The City of Gdansk, as part of its vision zero objective to reduce the total number of fatalities and serious injuries by 80% compared to 2015, collects indicators on road crashes and victims since 2005. The main indicators collected are the number of accidents and the number of person killed or injured.

ROAD ACCIDENTS AND VICTIMS GDAŃSK 2005-2023

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Accidents	641	589	585	638	587	518	621	592	579	532	512	507	519	553	464	396	381	336	338
Killed	23	25	30	22	33	14	25	17	18	14	13	12	13	11	11	15	9	8	6
Injured	767	695	705	766	686	646	765	711	715	635	616	589	613	654	555	449	415	367	388
Victims	790	720	735	788	719	660	790	728	733	649	629	601	626	665	566	464	424	375	394

The City administrations relies on different sources of dataset:

- Monthly (national) police reports (Traffic Dept.), which includes

- General statistics incl. collisions
- Drugs and drink driving
- Perpetrators
- The most common causes
- Dangerous streets (location of the highest number of crashes)
- Day of week and time
- Type of incident (pedestrian, side impact, etc.)
- Characteristics of the incident site (tram crossing, footpath, bridge, etc.)
- Info about incidents with pedestrians, cyclists and motorcyclists
- Fines and other offences identified during the police check

- Gdansk Traffic Research: conducted every 5-7 years, this research measures indicators such as the number of passengers in public transport or the modal split. It is based on households interviews (15,000 interviews conducted in 2022) and on traffic flow measurements. The data obtained through this reasearch feeds into Gdansk's traffic model.

Indicators collected via both the monthly police report and Gdansk's traffich research are featured in the general report on road safety published every 3 years and are communicated annualy by local politicians.

➔ **Observations** :

The EGUM notes that the survey on the availability of the indicators shows a limited availability of certain indicators such as:

- Accident risks (relative values connected to vehicle km) are available for shared mobility (ex. bikes and scooters) services, but not from private vehicles
- number of trips per year per mode(walking, cycling, shared mobility…) – only 35-37% of the respondents collect the number of walkings trips and cycling trips for instance
- number of km travelled per mode and the distance travelled per year (walking, cycling, shared mobility…) – 21% to 32%
- Definitions of injury severities aren't aligned across MS. A harmonised approach would be beneficial to enable comparability

To address the limited availability of various indicators, the commissionned experts recommended to use **multi-modal traffic model**. When possible, the EGUM advises local authorities not to rely solely on traffic model as estimations and projections may not be necessarily representative of the reality of the indicator subject to measurement. With excluding their use entirely, the new requirements may imply the update of traffic models in situations where their geographical coverage does not correspond to the FUA. In addition, while traffic models can be accurate for a given base year, the same cannot be always said for the following years, which therefore calls for a regular update of the traffic model by urban nodes and raises the issues of the costs for local authorities. More transparency on the methodology and data used for traffic modelling should be encouraged to strenghthen the data comparability.

Certain indicators **do not reflect the common practice** to express road safety indicators. This is the case for instance for the results indicators which use the number of trips in relation

to the number of persons seriously injured. The usual practice is to express this in number of persons injured per km travelled as mentioned by certain organisations such as the OECD.

Terms used for the purpose of collecting road safety indicators should be aligned with the **harmonized EU-wide definitions**. As observed by the experts, certain concepts such as bike lanes are subject to differing interpretations from one Member State to another. For instance, the Delegated Regulation on the provision of EU-wide multimodal travel information services offers a good baseline to distinguish the different categories of bike infrastructure (cycle tracks, cycle lanes, bus-and-cycle lanes, on-road shared with vehicles, etc.) and, therefore, offers a possibility to harmonise the different definitions and ensure a consistent collection of bike infrastructure-related indicators. In a similar manner, different road classifications coexist at the national level.

The European Commission should seize the opportunity offered by the upcoming UMI implementing regulation to enshrine harmonised EU transport infrastructure definitions in the law, opening the door for a more granular collection of indicators in the future. The in the future work it commissionned to define a baseline for the measurement of bycicle infrastructure. The Glossary of transport statistics[10] and the definitions used in the CaDaS glossary[11] offer a good baseline for common defintions and could be completed with new road categories e.g residential steets, distribution roads, etc. Harmonised road categories definition could open the door for a more granular collection of road safety indicators per type of urban road infrastructure.

➔**Recommendations** :

- Avoid the use of use of traffic models to collect indicators with limited availability. (LA) and rely on other tools such as household surveys (see part 3. a. v. on collection tools)

- Align accident indicator with modal share indicators to gather exposure data consistently. (EC)

- Include informations on the fleet composition under the safety indicator, especially regarding the type of fuel or power source of vehicles invovled in crashes

- Output indicators (Number of crashes, number of persons seriously injured) should always be reported in relation to exposure data (EC)

- Collect separately the number of person fatally injured and the number of person seriously injured (EC)

- Express safety exposure in km or travel time, not trips, aligning with the usual approach used for this type of indicator. (EC)

- Align the definitions used for the purpose of collecting the indicators with already-existing definitions used in EU legislation e.g definition of cycle network in Annex C of the revised MMTIS delegated regulation (cycle tracks, cycle lanes, bus-and-cycle lanes, on-road shared with vehicles, on-path shared with pedestrians) (EC)

- If possible, separate data regarding privately owned vehicles and shared fleet vehicles due to the difference made in road safety indicators collected so far. (EC)

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[10]

[11] CARE Database – Common Accident Data Set, last update 26/09/2023

iii.   ACCESSIBILITY

The area of accessibility includes indicators on access to mobility services, congestion and modal share.

Case study: Data sharing best practices of shared micromobility services

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Shared micromobility comprises mechanical and e-bikes, e-scooters and mopeds. They come in different operating models such as station-based (docked), hub-based (dockless), free-floating or a combination thereof.

Most privately organised services share operational data via API based on the Mobility Data Specification (MDS) Format, an internationally renown standard for mobility data sharing, curated by the Open Mobility Foundation (OMF). This non-profit organisation brings together public and private stakeholders to co-create data standards[12] useful for Authorities to manage private mobility services in public spaces.

MDS consists of different modules for different mobility services including shared micromobility, ride-hailing, drones and robo-taxis. The MDS module most widely used in shared micromobility is MDS Provider. The Provider API endpoints are intended to be implemented by mobility providers and consumed by regulatory agencies. Data is pulled from providers by Authorities. When a municipality queries information from a mobility provider, the Provider API has a historical view of operations in a standard and aggregated format to ensure GDPR compliance

MDS is built upon the General Bikeshare Feed Specification (GBFS): GBFS is widely considered as an open data format and has been adopted by the European Standards Organisation (CEN- CENELEC) as obligatory feed to National Data Access Points (NDAPs).

Relevance of MDS data for the Sustainable Urban Mobility Indicators

MDS data can be particularly relevant for the SUMI indicator "Access to Mobility". Cities typically have access to data on

- fleet size
- area size
- number of stations/parking hubs
- number of trips
- vehicle km

also broken down into different modes of shared mobility.

Available data beyond MDS - example safety incident data

In line with the proposed SUMI dimension "Road Safety" MMfE members track safety incident data reported by users & third parties. Data is categorised into

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[12] https://github.com/openmobilityfoundation/mobility-data-specification

- incident type (incl. crashes, damaged assets, anti-social behaviour, etc.)
- incident date and location
- Incident severity levels (minor, major, severe, fatal or similar)

Data can be aggregated by all operators following an aligned methodology, implemented by MMfE in 2022.

Access to mobility services

➔**Existing requirements**

N/A

➔**Proposed approach**

The commissioned experts proposed various output indicators based on the number of public transport infrastructures with the number of departures per hour, on the size of free-floating and station-based shared mobility services, on the area covered by such services, on the number of associated infrastructures used for the provision of these services, on the number of subscriptions or passengers for public tranport. The proposal also includes the annual distance travelled via public transport and the annual number of trips for shared mobility services.

➔**Observations**

Many indicators included in the proposal imply a smooth collaboration between public authorities and private operators. In practical terms, it implies that data sharing agreements will have to be signed between private operators and the authorities reponsible for the data collection. While the frontrunning urban nodes have already developed advanced data sharing policy and agreements with private operators, others may not have either the bargaining power or the knowledge to strike such agreements. When drafting the implementing regulation on UMI, the European Commission should refer to the existing work on B2G data sharing, especially from the work of the High-Level Expert Group on Business-to-Government Data Sharing. One of the recommendations of the report calls for the establishment of national structures for B2G data sharing tasked with assisting public sector organisations and private companies in entering into new data-sharing partnerships. When it comes to the ability of public authorities to conclude data sharing agreement, the elaboration of contractual templates either at the EU or national level could also be explored. Collaborative approach such as the "Mobility Data Specification"[13], developed by the Open Mobility Foundation should also be encouraged.

Private operators are also not always able to provide all the datasets underpinned by the proposed indicators. Furthermore, different definitions co-exist within the shared mobility industry. The concept of "subscriptions" for instance resonates differently from one operator to another. Common definitions and standards developed in cooperation with the industry can help to address these gaps.

➔**Recommendations:**

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[13] https://www.openmobilityfoundation.org/about-mds/

- Include in the list of NSSP' activities a mission to promote B2G data sharing for the purpose of UMI collection, including the provision of contractual templates for data sharing agreement when relevant (MS)

- Standardise the data collection methods for mobility services and reference existing solutions to facilitate data collection (EC)

- Consider additional data sources, such as Open Street Map, GPS traces, city land register/land use maps, or mobile phone data where the location of infrastructure elements and services can be pulled out to compute the accessibility indicators. (EC/RL/LA)

- Clarify and standardise micromobility indicators and definitions e.g. on the conceptions of subscription models) in cooperation with the industry(EC)

Modal share

➔**Existing requirements**

N/A

➔**Proposed approach**

The proposal includes a input indicator on the total population of the city/FUA. Regarding the output indicators, it includes the number of trips by city/FUA inhabitants per year, broken down per mode collected via households surveys, a representative sample survey or data from a multi-modal traffic model. A variation of this indicator is also included, specifying the type of destination or point of origin of the trip: school, shops, leisure place, workplace. Urban nodes are also expected to collect the number of trips by different types of shared vehicles (shared bicycle, e-micromobility devices, ect) as well as the number of subscriptions (or public transport passes) per year by type of shared mobility services. Finally, it is also suggested to collect the number of cars or bicycles measured at traffic counters.

➔**Observations**

The potential challenges regarding the implementation of this indicator stem from several key points. Firstly, there is a lack of reliability and accuracy in the data collected. For example, the data on modal share cycling is often limited to main routes equipped with bicycle counters, which does not provide a complete picture. Additionally, low response rates to surveys make it difficult to obtain comprehensive and representative data. Furthermore, city-to-city comparisons can be inaccurate due to variations in the data collection methods employed, such as differences in household survey techniques from one city to another.

➔**Recommendations (see also part 3 a. v. on collection tools)**

- Further standardise the indicator on the number of trips by city/FUA and by modes with survey experts (collection tools such as household surveys and travel diaries) (EC)

- Clarify the definition of modal share (within an area, from and to an area or the total within an area) (EC, LA)

- Encourage national authorities conducting national mobility surveys to include the possibility for cities/FUAs to procure a representative sample for their area within the national survey (MS)

- Complement modal share survey with the number/increase of alternative modes (EC, LA)

- Encourage local authorities to reconsider contracts with survey services providers on scope of surveys to include # of trips in final results (LA, MS, PS)

- Clearly distinguish data from private and shared mobility, using harmonised parameters, where feasible

- Consider alternative collection methods to consolidate the indicators obtained (EU, LA):

  ✓ Journey planning application can be used to estimate isochrones to calculate nodal accessibility by modeuse – satnav type systems for private cars and public transport information systems for bus/rail. Simple geographic and infrastructure mapping and average travel speeds can be used to derive indicators for walking and cycling.

  ✓ In some cases, mobile phone data (from telecommunication companies), specifically on mobile phone movements, can be used to gather origin-destination pairs and modal split information, under the assumption of clear guidelines on data usage being provided to address the privacy concerns. However, mobile phone data have proven more effective in analysing modal share in long-distance transport than in urban areas.

Case study: Germany, Munich

In Germany mobility behaviour of the urban resident population (such as modal share, vehicle and person km) is determined via two extensive traffic surveys carried out on a regular basis (approx. every 5 years each):

- **"Mobilität in Deutschland" (MiD)**, organised by the German Federal Ministry for Digital and Transport (BMDV) and jointly conducted by the infas Institute for Applied Social Sciences, the Institute for Transport Research at the German Aerospace Center (DLR) and IVT Research.
- **"System of Representative Travel Surveys** (SrV) by Technical University Dresden

Both surveys are based on a random selection of households and collect information about their members' trips on a particular day based on a travel diary, as well as personal and demographic characteristics. MiD covers the whole of Germany. However, transport authorities, regional authorities and cities can also request the surveying of additional households or with a specific geographical scope such as data from the metropolitan area. SrV must be individually booked by cities. All big cities use at least one of the two. Some cities like Munich carry out additional surveys every year to bridge the 5 year gaps.

Selected topics of Munichs' most recent survey study were the users, the potential of public transport and cycling. Other in-depth areas included the usual use of transport over the course of the week (multimodality), local mobility, regional commuter networks, sharing services and an analysis of CO2 emissions. In addition, the survey results for the regional (MVV) network area were documented. They contain basic analyses of all characteristics both for the network area as a whole and for the city of Munich and the surrounding area as well as for socio-demographic and content-related analysis groups in further subdivisions.

To consolidate the data obtained, Munich authorities also mixes survey data with detector data, counting vehicles and public transport-users and thus calculating the change of trips. However this procedure is not applicable to person-km since counters do not capture the lengths of the trips.

Congestion

➔ **Existing requirements**

N/A

➔ **Proposed approach**

Under the congestion indicator area, it is proposed to measure the degree of satisfaction of cycling, public transport and car network. The second series of output indicators refers to the average measured time to travel 3km by different modes, during peak and off-peak hours on the whole network or on representatives routes.

➔ **Observations**

Many EGUM members considered this indicator as not so relevant given the objectives pursued by the indicator collection. The perception of congestion is also subjective from one Member States or from city to another. Certain countries like Finland also do not rely on such an indicator and rely more on analysing for example how satisfied users are with the transport system.

However, the group recognises that congestion remains important as it can have a deleterious impact on public transport in terms of costs and attractiveness, therefore it needs to be considered as one of the sub-indicators. The impact of congestion can be indicated through the variability of bus travel times between defined nodes both by day/time to show its absolute impact, and by comparing journey by journey at particular times to show its variability (standard deviation).

Rather than measuring congestion, members considered that measuring the degree of reliability of the transport network was more relevant.

➔ **Recommendations**

- Rename "congestion" to "accessibility": "congestion" is misleading as the indicator includes further important sub-indicators like network length, satisfaction, etc.)

- Clarify the purpose of the car congestion indicator and to which extent is it relevant to measure how accessible a city is.

- **If the congestion indicator is maintained:**
  - o For the measurement of 3km, let the urban node location selects an appropriate sampling method to achieve this distance. This measurement could be derived from a minimum of 10 origin-destination pairs, encompassing various characteristics such as radial/orbital routes, road classes, and urban/suburban environments.
  - o Use two quality indicators instead: quality of flow and reliability of the network for the individual modalities. (multimodal network framework) (EC)
  - o Measure/observe the recurrent congestion, instead of congestion caused by planned or unplanned events (EC/RL/LA)
  - o Let urban nodes authorities define "representative route", making reference to the distinction between routes from the primary networks and secondary networks
  - o Use a different definition of "representative route" per mode of transport (EC/LA)
  - o Consider other indicators sources:
    - ✓ Occupancy data from loop detectors which give a reliable indication on the congestion, especially if coupled with flow data from sensors.
    - ✓ Data on average speed of the vehicles and journey times on defined key corridors (EC/RL/LA)
    - ✓ Data from route planners

At route level, the network quality is mapped out on routes with the same function, using nationally available Floating Car Data (FCD). To properly assess the quality of a route, the flow and reliability of the flow are monitored. Reliability indicates how much the travel time on a route varies from peak hour to peak hour.

There are various indicators that can visualize flow and reliability. Research has been conducted in Groningen into which indicators best match the local wishes and possibilities.

- Indicator for flow: peak travel time compared to free travel time

For the flow indicator (F), the monthly average peak travel time (separately for morning and evening rush hours) is calculated per route and this is compared to a reference value: the free travel time experienced on the route, for example at night when there are no obstacles.

Example:

A route has a $F = Tfree / Tpeaks$ of 0.8. If the free travel time Tfree on this route is 4 minutes, this means that the median peak travel time $Tpeaks = Tfree / F = 4 / 0.8 = 5$ minutes. For this size, the higher the F, the better the flow!

- Indicator for reliability: variation of the travel time compared to the expected travel time

There are various measures that show the (un)reliability of the travel time. The planning time index was chosen. The definition of the planning time index (PTI) is "… the percentage of the expected travel time that needs to be planned in order to arrive on time in 90% of the cases".

In this definition, the expected travel time is the median of the travel times in the period considered (the 'middle' travel time in the dataset). The percentage of 90% is configurable and has now been chosen in such a way that 'in most cases' people will arrive on time with the planned travel time.

Example:

A trajectory has a $PTI = Tplan / Texpected$ of 1.5. If the expected travel time Texpected during rush hour is 12 minutes, the traveler must plan $Tplan = PTI * Texpected = 1.5 * 12 = 18$ minutes of travel time to be almost certain to arrive on time. The following applies here: the higher the PTI, the more unreliable the process!

4. Conclusion

The new requirements on the collection of UMI can be a gamechanger to better understand and measure progress of urban mobility in urban nodes. Having Member States and urban nodes authorities providing reliable information will allow public authorities to better address issues that need to be addressed and provide a baseline to continue to improve urban mobility. Companies and businesses will also be able to tape into the information made available to better adjust their product and services to tailor them to the reality on the ground.

The coming years are probably going to show that some adjustments are needed to foster indicator collection but this could be limited if all stakeholders invovled in the UMI collection play their role and collaborate in the implementation of the UMI collection requirements.

Even if the priority in the short-term should be to have a common baseline across urban nodes in the EU, in the future EU policymakers could consider extending the list of indicators to reach a higher level of granularity in the assessment of urban mobility progress. Subgroup 6 of the EGUM proposes to include an indicator measuring the use of urban space by different modes for instance. However, the assessment of the implementation of the UMI collection requirements should serve whether this list is subject to further revision in the future.

5. Annexes

i.   Matrix matching areas of indicators with indicators proposed by the European Commission

Indicators Fields / Areas	Access to Mobility Services	Air Pollution	Congestion	GHG Emissions	Modal Share	Noise Pollution	Road Crashes and Injuries
accessibility	✓		✓		✓		
safety							✓
sustainability		✓		✓		✓	

ii.   List of organizations participating in the subgroup

Member States

Austria	France	Poland
Belgium	Germany	Portugal
Czechia	Greece	Romania
Denmark	Italy	Slovenia
Finland	Lithuania	
Sweden		
The Netherlands		

Cities and Regions

Braga	Groningen
Barcelona	Karditsa
Regional Authority Frankfurt-Rhine-Main	The Hague
	Toulouse Métropole
Stockholm	

European institutions

- Committee of the Regions
- Joint Research Center

Stakeholders organisation

- ACEA - European Automobile Manufacturers' Association
- CEMR - Council of European Municipalities and Regions
- Cycling Industries
- ECF – European Cyclists' Federation
- EPTO - European Passenger Transport Operators Association
- ERTICO
- ETSC - European Transport Safety Council
- Eurocities

- LEVA-EU - Trade association for light, electric vehicles in Europe

- MaaS Alliance

- Micro-Mobility for Europe

- MOVE EU - European Association of On Demand Mobility

- Transport and Environment

- UITP - International Association of Public Transport

iii.   Acronyms

AAQD: Ambient Air Quality Directive

EC: European Commission

EGUM: Expert Group on Urban Mobility

END: Environmental Noise Directive

FUA: Functional Urban Area

ITS: Intelligent Transport System

LA: Local Authorities

MS: (EU) Member States

NAP: National Access Point

NSSP: National SUMP support programmes

OBFCM: On-board Fuel Consumption Measurement Devices

RA: Regional authorities

SUMP: Sustainable Urban Mobility Plan

UMI: Urban Mobility Indicators