D10.4 SCAN-MED OBSERVATORY FRAMEWORK PLAN

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Multimodal and interconnected hubs for freight and passenger transport contributing to a zero emission 21st century - MOVE21

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Project Executive Summary

The main objective of MOVE21 is to transform European cities and functional urban areas into climate neutral, connected multimodal urban nodes for smart and clean mobility and logistics. MOVE21 will do this through an integrated approach in which all urban systems are connected, and which addresses both goods and passenger transport together. As a result, MOVE21 will improve efficiency, capacity utilisation, accessibility and innovation capacity in urban nodes and functional urban areas.

The integrated approach in MOVE21 ensures that potential negative effects from applying zero emission solutions in one domain are not transferred to other domains but are instead mitigated. It also ensures that European transport systems will become more resilient. Central to the integrated approach of MOVE21 are three Living Labs in Oslo, Gothenburg, and Hamburg and three replicator cities Munich, Bologna, and Rome. In these, different types of mobility hubs and associated innovations are tested and means to overcome barriers for clean and smart mobility are deployed. The Living Labs are based on an open innovation model with quadruple helix partners. The co creation processes are supported by coherent policy measures and by increasing innovation capacity in city governments and local ecosystems. The proposed solutions deliver new, close to market ready solutions that have been proven to work in different regulatory and governance settings. The Living Labs are designed to outlast MOVE 21 by applying a self-sustaining partnership model.

MOVE21 partners

The MOVE21 consortium consists of 24 partners from seven different European countries, representing local city authorities, regional authorities, technology and service providers, public transport companies, SMEs, research institutions, universities, and network organisations.

- Norway: City of Oslo, Viken County, Ruter, Urban Sharing, Mixmove, Institute of Transport Economics, IKT-Norge
- Sweden: City of Gothenburg, Rise Research Institutes of Sweden, Business Region Gothenburg, Volvo Technology, Renova, Parkering Göteborg
- Germany: City of Hamburg, City of Munich, Hafencity University Hamburg, Deutsche Bahn Station & Service
- Italy: Metropolitan City of Bologna, Roma Servizi per la Mobilità, Roma Tre University
- Belgium: Eurocities, Polis
- The Netherlands: TNO
- Greece: Hellas Centre for Technology and Research

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Deliverable executive summary

Keywords
urban nodes, TEN-T, multimodal hubs, Scandinavian – Mediterranean corridor, SUMP, SULP, freight transport, new governance

Executive summary
The legislative proposal for the revision of Regulation (EU) 1315/2013 – Union guidelines for the development of the trans-European transport network (TEN-T) is a key action of the European Green Deal (EGD) and the Sustainable and Smart Mobility Strategy.

Major discussions on the TEN-T have been driven mostly by national stakeholders (governments, national ministries) so far. Major infrastructure works, missing links, cross-border bottlenecks and interoperability issues have been the main focus, with the local level more in the background in decision-making processes. The new TEN-T regulation seeks to mediate some of these issues by placing more focus on urban nodes and their role in the TEN-T. However, the link between urban nodes and the TEN-T dimension is yet to be explored and clarified. Therefore, new approches are needed.

Under the Horizon 2020 innovation project MOVE21, six cities and important nodes on the TEN-T,– Oslo, Gothenburg, Hamburg, Munich, Bologna and Rome – are working to accelerate the transition to smart, zero-emission and just transport. MOVE21 cities view passenger and freight transport together in an integrated way that encompasses infrastructure, technology, governance, and vehicles and their energy sources.

The TEN-T regulation requires cities to develop interfaces between TEN-T corridors and the urban dimension to enable multimodality and seamless transport, which means developing multimodal transport hubs and last mile solutions in cities – for freight, passenger transport or a combination of the two. As stated by the Project Coordinator of MOVE21, "*these hubs and their connection to the TEN-T can represent a game-changer for transport in Europe, but require vertical and horizontal policy coherence on local, national and EU levels*. *Horizontal and vertical regulation and policy goals exist in a sort of balance, but the pace of change can create policy incoherence and conflicts*"[1]. In parallel, there is a growing interest from stakeholders at local and regional level seeking guidance to set into action the requirements of the TEN-T regulation.

It is here the Scan-Med Observatory (SMO) comes into play. The SMO – under the MOVE21 project – aims to bring local and regional stakeholders into the TEN-T and urban nodes discussion, and to have them playing a relevant role in the decision-making process. The SMO is an open platform that aims to gather a committed group of representatives from the local level located along the TEN-T Scandinavian – Mediterranean corridor which have been identified as urban nodes by the new revised TEN-T regulation. After a preliminary analysis based on newly published maps of the EC (TENtec), 73 urban nodes have been preliminary identified along the TEN-T Scandinavian – Mediterranean corridor and will be contacted and invited to join the SMO. The SMO Framework Plan identifies five main priority topics under which the working activities will be organised: (i) Governance coordination and advocacy, (ii) Data sharing principles and practices, (iii) Funding and financing, (iv) Capacity building, (v) Networking and outreach.

This represent a unique opportunity for local authorities to debate and share views, challenges, concerns, needs, knowledge, ideas and best practices to bring the discussion on TEN-T and urban nodes to a more operative ground. This is a bottom-up approach, and a bridge between two policy

[1] Extract from the op-ed published by the project coordinator Tiina Ruohonen (city of Oslo) on 22/10/2022 on the Parliament Magazine. Source: https://www.theparliamentmagazine.eu/news/article/innovative-urban-transport-solutions

dimensions (long-distance, cross-border and urban). The SMO aims to exploit the full potential for effective cooperation that has so far been lacking.

Table of contents

List of figures

List of tables

List of boxes

List of abbreviations and acronyms

Acronym	Meaning
CEF	Connecting Europe Facility
EC	European Commission
EGD	European Green Deal
EP	European Parliament
EU	European Union
GA	Grant Agreement
GIS	Geographical Information Systems
GDP	Gross Domestic Product
LEZ	Low Emission Zone
NUTS	Nomenclature of Territorial Units for Statistics
SMO	Scan-Med Observatory
SSMS	Sustainable and Smart Mobility Strategy
SULP	Sustainable Urban Logistics Plan
SUMI	Sustainable Urban Mobility Indicators
SUMP	Sustainable Urban Mobility Plan
TEN-T	Trans-European Network for Transport
TRAN	Committee of Transport and Tourism
UMF	Urban Mobility Framework
WBCSD	World Business Council for Sustainable Development
ZEZ	Zero Emission Zones

1 Purpose of the deliverable

This deliverable aims to provide a clear understanding of the purpose and type of activities of the Scan-Med Observatory (SMO), as well as its organisational set-up. The SMO is a collaborative platform that will promote a coherent set of actions to facilitate institutional networking by reinforcing a community at urban nodes / TEN-T corridor level and encourage common funding mechanisms and joint systems components.

Chapter 1 provides a clear understanding of the most relevant EU policy documents regarding TEN-T network and urban nodes planning. **Chapter 2** explains the main challenges and reasons that motivate the creation of the SMO, as well as its organizational set-up and main target audiences, here understood as participant stakeholders. It also outlines the five priority topics that will be tackled by the SMO, including main actions and potential outputs**. Chapter 3** provides more details on the kind of iteration that will be established from 2023 until the end of the project, followed by a final section focusing on the next steps.

This deliverable will be followed by the publication of the SMO Action Plan that will define the vision, strategy and set of actions required to establish the SMO as a permanent community and body.

1.1 Attainment of objectives and explanation of deviations

The submission of the SMO Framework Plan has been delayed. Local authorities need more time to define their policy positions and priorities related to their role as urban nodes on the TEN-T, while many clarifications also are pending from the Commission. A technical workshop was organised in November 2023 to identify pain points, concerns, and priorities. These are included into this document and taken into consideration for future activities.

1.2 Intended audience

The most relevant stakeholders and targeted audience of this document are:

- Key staff from the EU Commission and other EU institutions, working on TEN-T Revisions Guidelines, urban mobility, spatial and logistics policies, climate policies.
- A wide audience composed by political representatives, policy makers, practitioners and experts in transport working for cities and local authorities (urban nodes) along the TEN-T Scandinavian-Mediterranean corridor.
- Private stakeholders, notably from the logistics sector (freight forwarders, shippers, etc.)

The SMO will be coordinated by POLIS and supported by the MOVE21 Project Coordinator (City of Oslo) and by the project partners involved in tasks linked with urban nodes, to ensure coherence between the Scan-Med Observatory, the Urban Nodes Forums and the Urban Nodes Competence Centre activities within the MOVE21 project.

1.3 Structure of the deliverable and links with other work packages/deliverables

The SMO has links and synergies with the following work packages in MOVE21:

- WP6 (Living Labs), as the work and pilot activities tested and implemented in MOVE21 Living Labs and replicator cities are of potential interest for other cities and urban nodes.
- WP7 (Replication and Take-Up), as Urban Nodes Forums are going to be organised to foster exchange of knowledge and good practices in urban nodes and along TEN-T corridors.
- WP8 (Measuring and Impact Assessment), related to:
    - D8.7: TEN-T Analysis: TEN-T Accessibility and project impact on the TEN-T network. This deliverable contains the result of the evaluation of interventions at TEN-T level,

project impact at a wider scale. It will assess the project's impacts on the TEN-T network by scaling up the expected impacts from the Living Lab cities, the replicator and cascade cities against performance indicators identified for that purpose.

- Task 8.4: Upscaling impacts on TEN-T accessibility and network performance.
  This task will assess the project's impacts on the TEN-T network by scaling up the expected impacts from the Living Lab cities, the replicator and cascade cities, against performance indicators identified for that purpose. Results from this analysis provides input to the SMO and provide performance evidence for the megaregion in Northern Europe.
- Synergies with the Urban Nodes Competence Centre to engage with all the newly selected urban nodes.

2 The EU policy context

2.1 Overview

Transport provides vital functions to the European Union (EU) and their cities, enabling economic growth and access to jobs and services. Urban mobility planning and management has a central role in improving the lives of people in cities. It affects the way citizens access goods, services or employment, their quality of life and impact on climate change.

The EU's transport policy aims to ensure the smooth, efficient, safe, and free movement of people and goods throughout the EU by means of integrated networks using all modes of transport (road, rail, water, and air). It also aims to make mobility smarter, remove major barriers in key areas and fuel growth and employment. Articles 90-100 of the Treaty on the Functioning of the EU provide the legal basis for the EU's transport policy, in compliance with the principles of subsidiarity and proportionality.

The transport sector is undergoing a time of great changes. E-commerce is increasing rapidly; policies and measures for greener cities with less cars are becoming more popular; mobility and logistics-as-a-service is spreading; there is a greater citizen demand for seamless transport options; digitalised and new disruptive technologies are revolutionizing mobility, just to mention some. This requires unprecedented action at the policy level, in which the EU institutions are called to make ambitious plans to decarbonise the EU in the next 30 years.

In particular, the European Commission (EC) adopted the **European Green Deal** (EGD) in December 2019, a package of policy initiatives which aims to set the EU on the path to a green transition, setting the overarching objective for the EU to become the first climate neutral continent by 2050. For transport, it foresees a 90% reduction in emissions to be achieved in the perspective of 2050.

Subsequently, the EC proposed the **Sustainable and Smart Mobility Strategy** (SSMS) presenting an Action Plan of 82 initiatives in the field of transport to contribute to the goals set in the EGD and guide the work in the field of EU transport policy for the period 2021-2024. This strategy lays the foundation for how the EU transport system can achieve its green and digital transformation and become more resilient to future crises. The result will be a 90% cut in emissions by 2050, delivered by a smart, competitive, safe, accessible, and affordable transport system.

On 14 December 2021, the EC presented the proposal for a **revised Regulation** for the development of the **trans-European transport network** (TEN-T). The proposal for a new TEN-T Regulation aims primarily at reinforcing the contribution of TEN-T to the decarbonisation and digitalisation objectives of transport policy.

In parallel – as part of the wider Efficient and Green Mobility Package released on the same day - the EC proposed a new **Urban Mobility Framework (UMF)** that complements the proposal for revised guidelines for the trans-European transport network (TEN-T revision). The framework sets out European guidance on how cities can cut emissions and improve mobility, including via Sustainable Urban Mobility Plans (SUMPs).

The key actions and focus areas identified in the new UMF are digitalisation, multimodal integration, and improved TEN-T connections. At present, the TEN-T network faces challenges relating to missing links, bottlenecks, and poor connections between suburban and urban regions. The UMF acknowledges the need for efficient and inclusive connectivity between rural, peri-urban, and urban areas while planning the TEN-T network.

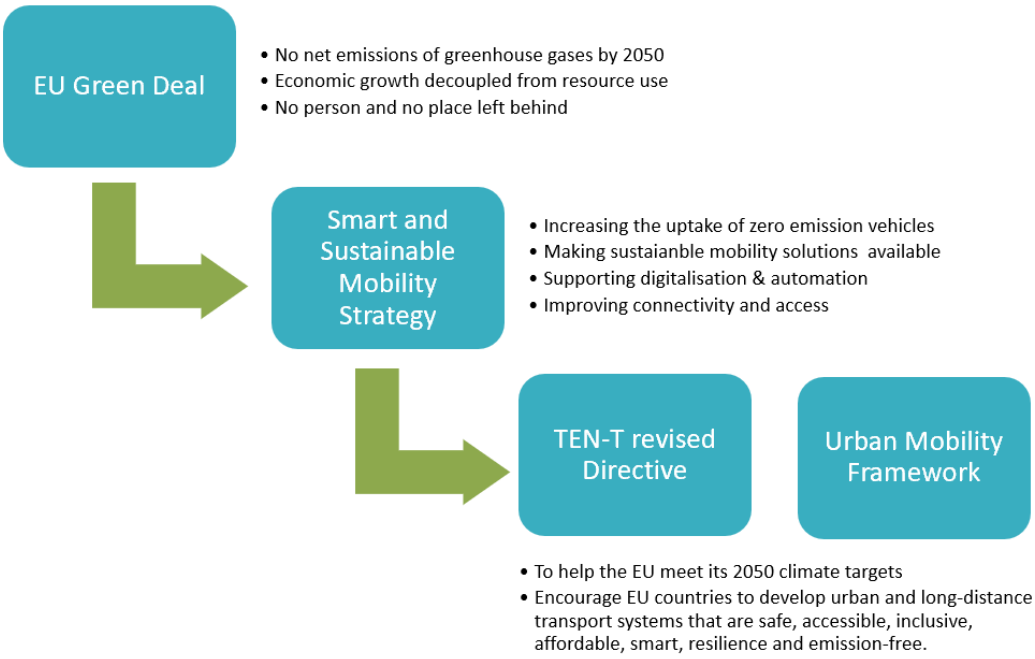

Figure 1: Overview of most relevant policy packages

2.2 Urban Nodes as a policy concept

While TEN-T corridors and network is a well-known topic among stakeholders and broadly discussed at all levels, the concept of urban nodes is much more recent and was introduced for the first time in 2013 by Regulation No 1315/2013. It has recognised and formalised the role of urban nodes in these transport networks as important hubs that facilitate the flow of people and goods.

According to Eurostat, 80% of journeys in Europe take place in urban nodes[2]. Similarly, according to EC data, congestion costs amount to approximately €100bn annually in Europe and are, to a large extent, concentrated in urban nodes[3].

Urban nodes are crucial for the effectiveness of the core network of the TEN-T, as they are the origin and / or destination of most long-distance transport flows. They host major multimodal transport hubs[4] and are crucial in terms of the interfaces of long haul and last mile delivery. The interdependencies of these challenges demand a multidimensional and multi-layer approach. Examples of these challenges include:

- Infrastructure, mobility, and spatial development are closely linked.
- Different transport modalities coexist, and each has its own specific demand.

[2] https://www.polisnetwork.eu/wp-content/uploads/2021/05/ERRIN-Polis_opinion-on-the-revision-of-the-TEN-T-guidelines.pdf
[3] https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0551:FIN:EN:PDF
[4] The EU-funded MOBIMIX project carried out and extensive literature review about how to define mobility hubs. Varius definitions have been identified and still continue to emerge. A mutimodal hub can be defined as a "*place that regroups shared mobility modes while integrating or being connected to public transport, taking into account also urban freight and including facilities for last-mile deliveries*".

- Passenger and freight transport often compete in the same network and infrastructure.
- The different (inter) national-regional-local scales affect each other.

The following sections will focus on the new UMF and the TEN-T revision guidelines and highlight the most relevant measures and requirements that are expected to be transposed into EU law in a near future[5].

Definition of urban node[6]

According to the definition listed in the TEN-T Guidelines (Regulation (EU) No. 1315/2013) an urban node means an urban area where the transport infrastructure of the trans-European transport network (TEN-T) is connected with other parts of that infrastructure and with the infrastructure for regional and local traffic.

Urban nodes have become an integral part of the TEN-T development. A number of 88 urban nodes have been identified in the TEN-T Guidelines on the basis of a set of socio-economic criteria. They play key roles as socio-economic and technological centres in the structure of the TEN-T network.

Box 1: Definition of urban node

2.3 The Urban Mobility Framework

On 14 December 2021, the EC launched a new UMF as part of the wider **Efficient and Green Mobility Package**. The UMF should help all scales of European governance accelerate the shift to sustainable urban mobility.

The TEN-T network is the central focus area, and the strategies and actions detailed in the framework aim to improve connectivity to the TEN-T urban nodes through sustainable modes of transport.

The UMF announces a more ambitious approach to Sustainable Urban Mobility Plans (SUMPs) and related indicators. This complements the proposal for revised guidelines for the TEN-T network, according to which the 424 largest EU cities[7] should adopt a SUMP by 2025 and collect relevant data. The framework emphasises the changes required in the SUMP guidelines as well as the governance framework to increase the adoption of these strategies and actions.

The new framework also covers making urban transport resilient, environmentally friendly, and energy-efficient by identifying zero-emission solutions for urban logistics.

Measures include obligations to put in place recharging and refuelling infrastructure for electric and hydrogen vehicles in cities, improved coordination, dedicated funding for cities under the EU Mission on Climate-neutral and Smart Cities and integrate Sustainable Urban Logistics Plans (SULPs) within the SUMP framework.

[5] This will be dependent by the completion of policy iterations between the EC, EP and the Council, the three co-legislative bodies of the EU.
[6] The definition or urban node could be amended in the new TEN-T Regulation.
[7] With more than 100,000 inhabitants or the main regional city of regions classified at NUTS II level.

SUMPs have been established as a concept in many large and medium-sized European cities, and their implementation in cities has spread in recent years. Yet, for a SUMP to be successful, it needs to be the output of a process that involves many stakeholders and requires sufficient resources, as it is essential to ensure efficient and sustainable integrated transport planning at urban level.

The EU should ensure that all cities that are urban nodes on the TEN-T network and as many other cities as possible produce a high-quality SUMP or have a similar integrated transport strategy document in place by 2025.

2.4 The TEN-T Policy

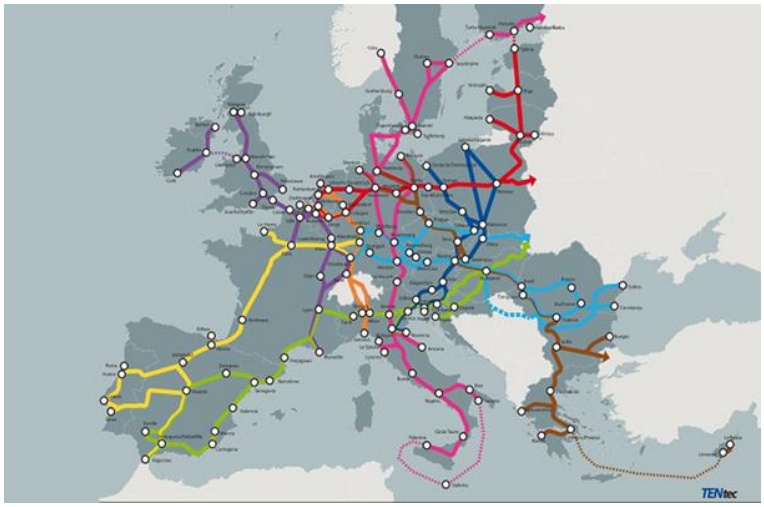

Figure 2: Map of the nine TEN-T corridors

The TEN-T network aims to create a single European transport area based on a single, comprehensive, integrated, and multimodal trans-European network between land, sea, and air transport, encompassing and connecting all EU member states in an intermodal and interoperable manner.

It promotes the integration of European countries in view of a single market and supports a policy for the decarbonisation of transport and an active EU role in the global fight against climate change.

In 2013, the EU regulation 1315/2013 revision was adopted. According to the EP, it aims to "*transform the current patchwork of roads, railways, airports and canals into a unified transport network integrating all Member States*".

The shift from individual projects and nodes to strategic core network corridors and intermodal urban nodes is the new pan-European transport network approach. Interoperability and intermodality are the core concepts for the further development of the core network and urban nodes. There is also a growing awareness that urban development, transport, and infrastructure planning in urban nodes has an impact on flows along the corridor and vice-versa.

The multi-annual TEN-T work programme focusing on the development and integration of urban nodes within the TEN-T corridor considers different strategies:

- Solutions for missing links and bottlenecks between and within transport modes of TEN-T in urban nodes.
- The link between SUMPs and TEN-T implementation (i.e., last mile) and their impact.

- Deployment on alternative fuels infrastructure.
- Deployment on sustainable urban freight delivery (including freight logistic hubs).
- Infrastructure connections within and between modes in urban nodes.

The new Regulation aims to align the development of the TEN-T network to the European Green Deal objectives and the climate targets of the EU Climate Law.

Regarding the new revised TEN-T Regulation (section 1), it more clearly defines the role of the urban nodes within the network and their constituent elements and sets additional requirements.

Those additional requirements include the development of SUMPs, the use of sustainable urban mobility indicators and the development of multimodal passenger hubs and freight terminals. In addition, the proposal extends the list of recognised urban nodes from the previously limited list of 88 urban nodes to all cities with at least 100.000 inhabitants and, for NUTS II[8] regions without such a large city, to the capital of those regions. Depending on the final version that will be adopted by the European Council and Parliament, the number of urban nodes per corridor – currently amounting to 424 - would thus significantly increase.

Another requirement set by the new TEN-T Regulation is to have at least one multimodal passenger hub and one multimodal freight terminal in every urban node by 2040. This should allow sufficient transhipment capacity in or near the urban node wider definition of TEN-T terminals: in addition to RRT terminals, also terminals in inland / seaports and in urban nodes.

2.5 Position of the EU Parliament and the Council

The Transport and Tourism (TRAN) Committee of the European Parliament (EP) published its draft report on the revision of the TEN-T regulation on 26 October 2022. The draft report led by Members of the EP Barbara Thaler (European People's Party) and Dominique Riquet (Renew Europe) made progress on the provision for urban nodes and proposes, for instance, to broaden the definition of urban nodes to include the functional urban area (FUA)[9], composed "of *a densely inhabited city and of a surrounding area (commuting zone) whose labour market is highly integrated with the city*".

Additional relevant amendments cover art. 39 par. 2, where it is proposed that "*the list [of urban nodes] can be updated to add new urban nodes, subject to the approval of the respective Member State*". Then, it is proposed that when the Regulation comes into force, "*the Member States shall designate a national SUMP contact point and shall establish a national SUMP programme with the aim of supporting the urban nodes to adopt and implement the SUMP's*". The appointed SUMP Coordinators should "provide technical assistance and expert support for the preparation and implementation of SUMPs […]".

The amendment of Art. 52 (par. 2) proposes that the Corridor Forum should ensure representation, when appropriate, also of "*urban nodes and the designated authorities as defined in the Smart TEN-T Directive*". The amendments for par. 6 propose that the European Coordinators "*shall consult also urban nodes in relation to the work plan and its implementation*".

A few weeks later, on 5 December 2022 in Brussels, the Council – formed by the EU Ministers responsible for Transport and Telecommunications and chaired by Martin Kupka, Minister of Transport

[8] Nomenclature of Territorial Units for Statistics (NUTS) is a geocode standard for referencing the administrative divisions of countries for statistical purposes. In most of the EU countries, this refers to the regional level (Source: EC).
[9] A FUA is composed of a 'city' and its surrounding, less densely populated local units that are part of the city's labour market ('commuting zone'). (OECD, 2019)

of the Czech Republic - adopted its common position (general approach) regarding the Commission proposal on the revised regulation for the TEN-T.

Interinstitutional negotiations between the European Commission, the European Parliament, and the European Council (trilogue) will take place throughout 2023.

2.6 The link between TEN-T network and urban nodes

Cities are substantial contributors to climate emissions and face complex challenges related to urban and peri-urban transport. Cities are important points of transfer and last-mile connection within or between different transport modes on the TEN-T, and it is important to ensure that neither capacity bottlenecks nor insufficient network connectivity within urban nodes hamper multimodality along the TEN-T network. The way to do so is not by building new motorways and increase road surface / lanes, but rather on prioritising traffic reduction, increase efficiency and promoting sustainability and zero emission solutions.

At present, the TEN-T network faces challenges relating to missing links, bottlenecks, and poor connections between suburban and urban regions. The UMF acknowledges the need for efficient and inclusive connectivity between rural, peri-urban, and urban areas while planning the TEN-T network.

The EC has emphasised the relevance of strategic transport planning and the development of SUMPs in several policy documents. This includes the Action Plan on Urban Mobility (2009), the White Paper Roadmap to a Single European Transport Area (2011) and the Urban Mobility Package (2013).

The requirement of both TEN-T guidelines and the UMF is that urban nodes should fulfil their function for the TEN-T, which is the connection between transport arteries, connection of modes, and connection of the different transport layers. But urban nodes are in the first-place areas where people live and work. As a matter of fact, urban areas must tackle negative impacts of transport like poor air quality, exposure to noise, road safety, congestion, and lack of green areas. This tension between different needs (connectivity vs. liveability) is being addressed through several policies in the EU but remains a source of conflicts between different needs and governance levels.

Urban nodes are constitutive elements of the TEN-T and foster the integration of the network into urban circumstances like spatial structure, economy, and regional development. As noted by the EC in its Staff Working document *Evaluation of the Regulation (EU) N° 1315/2013 on Union Guidelines for the development of a trans-European transport network*, a very large number of stakeholders call for more attention to be paid to the integration of urban nodes in TEN-T policy. Sources refer to insufficient relevance and lack of ambition, notably in the light of new challenges such as decarbonisation, digitalisation / innovation, demographic change, inclusiveness, efficiency and territorial cohesion.

As already suggested in the Third Work Plan (April 2018) of the European Coordinator Scan-Med: "*further dialogue aimed at sharing more good practices [is required], (…) synergies [should be] identified between urban nodes, be they with city governments, regions or the actors within the area, such as public transport operators, [freight carriers, infrastructure providers] and others; in order to lift economies of scale, coordinated strategies, harmonised specifications or even joint tendering of innovative products may be an issue*"[10].

In order to fully implement the TEN-T network and to pursue stronger action to create climate-neutral cities across the EU, new and innovative approaches and initiatives are needed.

[10] https://transport.ec.europa.eu/system/files/2020-10/work_plan_scanmed_iii.pdf

3 Why the Scan-Med Observatory is needed

3.1 Status quo

Major discussions on the TEN-T have been driven mostly by national stakeholders (governments, national ministries). The focus has been on major infrastructure works, missing links, cross-border bottlenecks, and interoperability issues. The new TEN-T regulation seeks to place focus also on urban nodes (including SUMPs) and their role in the TEN-T network.

The Fifth Work Plan of the TEN-T Scandinavian – Mediterranean corridor recognized that urban nodes do not receive sufficient attention in the work of the Corridors, as well as in the current TEN-T regulation. On the same level, the outcomes and recommendation of the Horizon 2020 VitalNodes project highlighted that currently long-lasting and efficient collaboration mechanisms between urban nodes along transport corridors do not exist.

Next to linear infrastructure, urban nodes are a crucial component and integral part of TEN-T corridors merging and redistributing transport flows. The overall goal of the urban node network development is the appropriate interconnection of passenger and freight transport between all modes of transport. For rail transport, the seamless connection between long-distance TEN-T infrastructure and access points such as terminals, ports and airports play a significant role.

The following figure sketches a conceptual scheme where the urban policy dimension (left side) and the TEN-T policy one (right side) overlap and interrelate each other (centre).

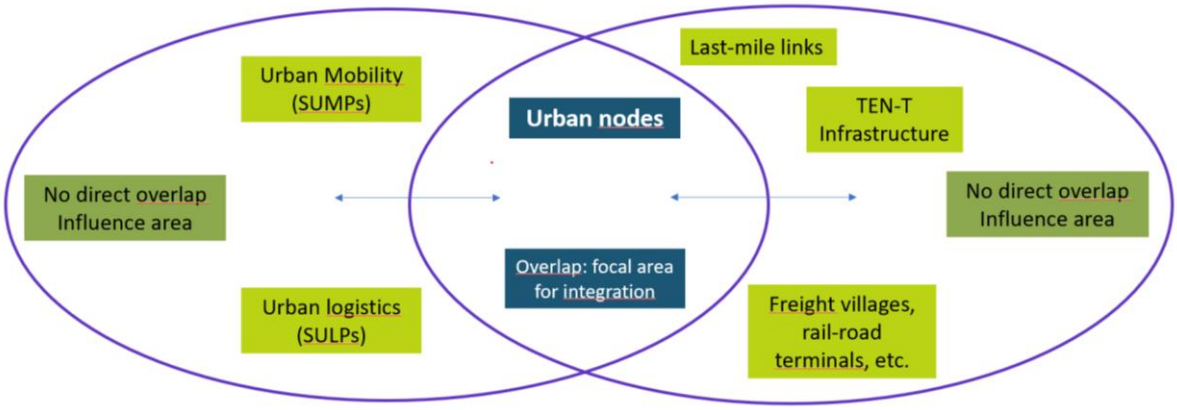

Figure 3: Interrelations between TEN-T and urban nodes, inspired by VitalNodes.

According to the Fifth Plan of the TEN-T Scandinavian – Mediterranean corridor, the actual situation of the TEN-T Scandinavian – Mediterranean corridor is characterised by non-compliance of the last-mile infrastructure to the access points. As pointed out in the same document, referring to rail transport, the train length is restricted on many access lines, requiring additional splitting/composing procedures of long-haul trains. Dedicated projects designed to improve the situation on the last-mile rail infrastructure are currently missing.

3.2 The way forward

Innovation in urban nodes is key to meet the challenges of building a modern integrated transport system that meets the challenges of decarbonisation, efficiency, and inclusive growth. In parallel, new instruments and governance tools are urgently needed to address such complexity within urban areas. People and freight often share the same road and rail infrastructure, often resulting in bottlenecks, for example at river crossings and urban ring roads. All activities compete for the same space, but planning, development and management is organized in silos: this is the so-called “tragedy of the commons”.

As highlighted in the VitalNodes recommendations, when focusing on the spatial and network implications for passenger and freight flows, all stakeholders need to look at different spatial scales and beyond administrative boundaries, also considering functional urban areas and the overall TEN-T network[11]. In turn, national stakeholders need to heed legitimate concerns in cities about congestion, climate emissions, air pollution and liveability.

Maximising the potential of funding streams – both from European mechanisms and national programmes – is expected to support urban nodes to meet current and future challenges, while providing smart, efficient, and sustainable transport. On several occasions – both at project level and during European gatherings – technical and political representatives from cities highlight that an integrated approach like the one recommended by VitalNodes also requires an integrated approach to funding infrastructure and specific transport measures. Urban nodes alone cannot carry the burden but need financial muscles on EU and national levels.

In MOVE21, different types of mobility hubs for both passengers and freight and associated innovations are being tested to realise a swift transition to zero emissions and climate-resilient transport systems. The project has chosen six important urban nodes on one TEN-T Scandinavian – Mediterranean corridor as partners and pilots to promote increased coordination and synchronisation between nodes, enable a two-way replication, and to boost the holistic overall systems perspective needed.

In addition, the project has established the Scan-Med Observatory (SMO). This is a concrete and constructive attempt to bridge some of the identified gaps on a vertical level when discussing, planning, implementing and financing measures and infrastructure to increase European transport connectivity and resilience and decreasing emissions and other problems arising from unsustainable transport.

The SMO is an open platform that gathers a committed group of representatives from the local level located along the TEN-T Scandinavian – Mediterranean corridor which have been identified as urban nodes by the new revised TEN-T regulation.

3.3 The TEN-T Scandinavian – Mediterranean corridor

The TEN-T Scandinavian–Mediterranean corridor is a crucial north-south axis for the European economy. It generates about 20% of EU Gross Domestic Product (GDP) and is the largest TEN-T corridor in terms of core network length.

It crosses the Baltic Sea from Finland to Sweden and passing through Germany, the Alps and Italy, it links the major urban centers and ports of Scandinavia and Northern Germany to continue to the industrialised high production centers of Southern Germany, Austria, and Northern Italy, and further to Italian ports and Malta. The most important current projects in this corridor are the fixed Fehmarnbelt

[11] https://vitalnodes.eu/wp-content/uploads/2020/01/Vital-Nodes-Results-brochure.pdf

crossing and Brenner Basis Tunnel, including their access routes. It extends, across the sea, from Southern Italy and Sicily to Malta.

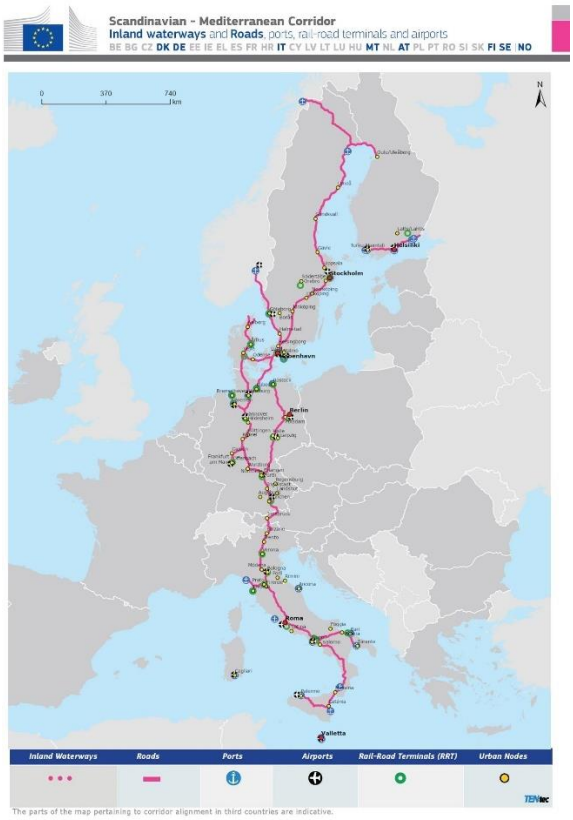

Figure 4: Map of the TEN-T Scandinavian – Mediterranean corridor (source: TENtec)

Rail and road are the key linear modes of transport designated in the Scan-Med corridor. However, a strong component of the network is also composed of nodal infrastructure, such as airports, seaports, rail-road terminals, and freight villages of the core network.

The aim is to complete a wide range of identified projects by 2030. In its current form, before the revision of the TEN-T regulation, the Scandinavian - Mediterranean corridor counts approx. 12.000 km of rails, 8.500 km of roads, 20 core airports, 30 core seaports, 31 core rail-road terminals, and 21 core urban nodes.

Oversight of the corridor lies with EU Corridor Coordinator, nominated by the EC. The role of the EU Coordinator is not an executive function, as it has no power to direct or control local, regional, national, or EU decision-makers. The EU Coordinator is an appointee tasked to act independently as a facilitator, communicator, and advisor to and for the corridor stakeholder community. The EU Coordinator chairs and guides the policy exchanges along the corridors through a variety of corridors tools, such as the Corridor Forum, Ideas Laboratories, and their Work Plan.

3.4 Definition of the Scan-Med Observatory

The SMO is conceived as a peer group and community of urban nodes that will facilitate institutional networking, coordination, collaboration, and data sharing for clean and efficient urban multimodal mobility on TEN-T corridor level. It will be open to all regions, local authorities, and other relevant public

stakeholders crossed by the TEN-T Scandinavian – Mediterranean corridor (NUTS II and III level) that are willing to join discussions and cooperate with the SMO.

The SMO aims to be a bridge between the overall TEN-T implementation process (support to the EU coordinator) and the local level. It aims to ensure that also local and regional perspectives are part of the decision-making process, so that interfaces between the TEN-T network and access to metropolitan areas are both taken into consideration. The improvement of last-mile connections, the set-up of urban consolidation centres and multimodal hubs, are concrete measures and examples that go into this direction, ensuring that a more integrated travel chain for both passenger and freight is established.

The SMO brings insights and additional elements, updates and other relevant information coming from the urban nodes and the local level to the attention of the EU coordinator of the Scandinavian-Mediterranean corridor and the participating national representatives. To this end, the MOVE21 project initiated in 2022 informal discussions with various relevant stakeholders to design the SMO and its initial activities in a way that is useful for local and regional authorities, stakeholders, the EC and other EU-level initiatives.

The SMO approach adopted for the TEN-T Scan-Med corridor can be replicated on other TEN-T corridors, and replication and dissemination activities will be designed to this end. This approach is in line with the validated policy recommendations coming from projects such as VitalNodes and the Work Plan of the European Coordinator for the Scandinavian-Mediterranean Corridor.

The next section provides some more background information about the preliminary efforts that paved the way to the setting up of the SMO, the actors involved and some of the most relevant feedback collected.

3.5 Initial mapping activity

There is a momentum at European policy level about TEN-T network issues and the role of urban nodes. In parallel, there is a growing interest from stakeholders and local / regional authorities that are seeking guidance on further actions, provisions and requirements that will be reflected in European law.

In 2022, MOVE21 actions were mostly devoted to raise awareness of the upcoming creation of the SMO and to inform relevant stakeholders about this new endeavour within the MOVE21 project. This has been done through participation at EU-level events such as the Connecting Europe Days[12] in June 2022, the Urban Mobility Days[13] in September 2022 and the EU Week of Regions and Cities (EWRC)[14] in October 2022 at which also the SMO was officially launched[15].

[12] The Connecting Europe Days, formerly known as TEN-T Days and Europe's mobility flagship event - bring every year together politicians, industry representatives and the EC to discuss transport and mobility, and their role in achieving the ambitious goals set out in the EU Green Deal and the Sustainable and Smart Mobility Strategy.

[13] The Urban Mobility Days takes place every two years and combines two previously leading events from Europe's transport calendar: the CIVITAS Forum Conference and the European Conference on Sustainable Urban Mobility Plans (SUMPs).

[14] The EWRC is the biggest annual Brussels-based event dedicated to cohesion policy. Its main purpose of the EWRC is to discuss common challenges for Europe's regions and cities and examine possible solutions by bringing together a wide range of stakeholders.

[15] Speakers of the high-level session that launched the SMO were Pat Cox, EU Coordinator for the TEN-T Scandinavian-Mediterranean Corridor – EC's Directorate-General for Mobility & Transport (DG MOVE), Isabelle Vandoorne, Deputy Head of Unit Innovation & Research of EC's DG MOVE, Siril Stav, Vice Mayor for Environment & Transport of the City of Oslo, and Georg Dunkel, Head of Department of Mobility, City of Munich. The session was moderated by Karen Vancluysen, Secretary-General at POLIS Network. Video testimonials from Mr Toni Orsulic, Deputy Mayor on Transport of the City of Gothenburg, and Dr Anjes Tjarkes, State Minister (Senator) for Transport and Mobility Transition Free and Hanseatic City of Hamburg were pre-recorded and shown during the high-level session.

The Corridor Coordinator has made the admission that integrating an enlarged number of urban nodes with all their complexity into the TEN-T Forum community is a challenge. The Corridor Forum is an important measure for urban nodes to voice their concerns and priorities, which also the Corridor Coordinator recognises, and the SMO aims to assist in this work through coordination with and between urban nodes and the possible outline of joint policy positions. The SMO is a great opportunity to set up a peer group of urban nodes to drive and coordinate this work.

The project has also organised a technical workshop for local and regional authorities to discuss topics and salient challenges in November 2022. As many cities need to develop policy positions and define internal and political responsibilities related to TEN-T network and urban nodes issues matter, this session represented an opportunity to start collecting inputs and concerns from local authorities and regions and make it useful as a tool for developing their policy positions. The feedback collected has been incorporated into this deliverable in chapter 5.

4 The structure of the Scan-Med Observatory

4.1 Stakeholders

The TEN-T regulation that is still currently in force, pending adoption of the revised regulation, identifies 21 urban nodes on the Scan-Med Corridor. After a first analysis based on the Annex II of the new proposed TEN-T regulation and the maps on the TEN-T network (TENtec[16]), this number is going to grow considerably: 73 urban nodes are crossed by or located near the Scandinavian -Mediterranean corridor. The new ones are listed below, from North to South, subdivided by State[17]:

State	Urban node
Finland	Oulu / Uleåborg, Lathi, Helsinki, Turku – Naantali.
Sweden	Umeå, Sundsvall, Gävle, Uppsala, Västerås, Örebro, Stockholm, Norrköping, Linköping, Jönköping, Göteborg, Halmstad, Lund, Helsingborg, Malmö.
Denmark	Copenhagen, Odense, Vejle, Aalborg, Århus.
Germany	Kiel, Rostock, Lübeck, Hamburg, Bremerhaven, Bremen, Hannover, Berlin, Potsdam, Hildesheim, Göttingen, Kassel, Leipzig, Halle, Gießen, Offenbach, Frankfurt am Main, Würzburg, Fürth, Nürnberg, Erlangen, Regensburg, Ingolstadt, Landshut, Augsburg, Munich.
Austria	Innsbruck
Italy	Bolzano/Bozen, Trento, Verona, Modena, Bologna, Prato, Firenze, Livorno, Roma, Latina, Napoli, Salerno, Foggia, Andria, Bari, Taranto, Messina, Reggio Calabria, Palermo, Catania, Siracusa.
Malta	Valletta

Table 1: List of urban nodes along the TEN-T Scandinavian - Mediterranean corridor.

The following table provides additional information about the involvement of urban nodes in European-wide networks (POLIS and EUROCITIES) and EU-funded projects and initiatives.

[16] TENtec is the information system used by EC to coordinate and support TEN-T policy. It stores and manages technical and financial data for the analysis, management, and political decision-making of the TEN-T programme. TENtec acts as a bridge to Member State ministries and other key institutional stakeholders and includes support for modelling of future policy and budgetary scenarios, briefings, interfacing with GIS (Geographical Information System), monitoring and reporting, the electronic submission of applications and online conduction of surveys.

[17] It is not confirmed yet, however it is likely that Norway will also implement the new TEN-T regulation as part of the European Economic Area (EEA), and include all cities with a population above 100’000 as urban nodes in the new TEN-T. This would give the following cities status as TEN-T urban nodes: Oslo, Bærum, Trondheim, Bergen, Stavanger. Narvik in northern Norway has been singled out as an important rail-to-port node – connecting maritime transport in the Artic to the TEN-T rail corridor down to Sweden.

Urban node	Country code[18]	POLIS / EUROCITIES member	MOVE21 partner	SUMI partner	100 Climate-neutral Cities Mission	On several TEN-T corridors
Oulu / Uleåborg	FI	X				
Lathi	FI	X		X	X	
Helsinki	FI	X		X	X	
Turku - Naantali	FI	X		X	X	
Umeå	SE	X			X	
Sundsvall	SE					
Gävle	SE				X	
Uppsala	SE	X				
Västerås	SE					
Örebro	SE					
Stockholm	SE	X	X	X	X	
Norrköping	SE					
Linköping	SE	X				
Jönköping	SE					
Göteborg	SE	X	X	X	X	
Halmstad	SE					
Lund	SE				X	
Helsingborg	SE			X	X	
Malmö	SE	X		X	X	
Copenhagen	DK	X			X	
Odense	DK					
Vejle	DK					
Aalborg	DK	X				
Århus	DK	X		X	X	
Kiel	DK	X				
Rostock	DK					
Lübeck	DK					
Hamburg	DE	X	X			X
Bremerhaven	DE					X
Bremen	DE	X				X
Hannover	DE					X
Berlin	DE	X				X
Potsdam	DE					X
Hildesheim	DE					
Göttingen	DE					
Leipzig	DE	X			X	X
Halle	DE					
Kassel[19]	DE					
Gießen	DE					
Offenbach[20]	DE					
Frankfurt am Main[21]	DE	X				
Würzburg	DE				X	X
Nürnberg	DE	X				
Fürth	DE					
Erlangen	DE					X
Regensburg	DE					X
Ingolstadt	DE					X
Landshut	DE					X
Augsburg	DE					
München	DE	X	X		X	X

[18] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Country_codes
[19] German Hessen State is a POLIS member, the city is included within this region.
[20] See above.
[21] See above.

Innsbruck	AT					
Bolzano / Bozen	IT					
Trento	IT					
Verona	IT					X
Modena	IT					X
Bologna	IT	X	X		X	X
Prato	IT				X	
Firenze	IT	X		X	X	
Livorno	IT					
Roma	IT	X	X		X	
Latina	IT					
Napoli	IT					
Salerno	IT					
Foggia[22]	IT					X
Andria[23]	IT					X
Bari	IT	X				X
Taranto	IT	X				X
Reggio Calabria	IT	X				
Messina	IT					
Catania	IT					
Siracusa	IT					
Palermo	IT	X				
Valletta	MT					X

Table 2: Additional information about the selected urban nodes.

From the above list, it emerges that:

- 28 out of 73 of urban nodes[24] are members of the POLIS or EUROCITIES networks.
- 18 out of 73 have been involved within the Sustainable Mobility Indicators (SUMI) project[25].
- 19 out of 73 are part of the 100 climate neutral cities (100 Climate-neutral Cities Mission)[26].
- 17 percent of all newly identified urban nodes[27] at European level are located along or in close proximity to the TEN-T Scandinavian Mediterranean corridor.
- 20 out of 73 urban nodes are also crossed by other TEN-T corridors, namely:

[22] Italian Puglia region is a POLIS member, the city is included within this region.
[23] See above.
[24] The provisional list does not include the potential Norwegian nodes. If confirmed (see footnote 16), five to six more potential cities could be added.
[25] The EC has developed a comprehensive set of practical and reliable indicators that support cities to perform a standardised evaluation of their mobility system and to measure improvements that result from new mobility practices or policies. The SUMI project offers technical assistance to +50 EU urban areas to pilot World Business Council for Sustainable Develoment (WBCSD)'s SMP2.0 Sustainable Mobility Indicators. Based on the lessons learned, SUMI will prepare recommendations for the improvement of the indicator set and will develop a unified benchmarking tool for European cities.
[26] EU Missions are a novelty of the Horizon Europe research and innovation programme for the years 2021-2027. The Cities Mission will involve local authorities, citizens, businesses, investors as well as regional and national authorities to (i) deliver 100 climate-neutral and smart cities by 2030 and (ii) ensure that these cities act as experimentation and innovation hubs to enable all European cities to follow suit by 2050.

- **North-Sea Baltic**: Bremerhaven, Bremen, Berlin, Potsdam, Hamburg, Leipzig, Hannover (Germany).
- **Baltic Sea - Adriatic Sea**: Bologna, Foggia, Andria, Bari, Taranto (Italy).
- **Rhine – Danube**: München, Regensburg, Landshut, Würzburg, Ingolstadt, Erlangen (Germany).
- **Mediterranean**: Verona, Modena, Bologna (Italy).

Bologna is the only urban node that is crossed by three corridors, i.e., the TEN-T Scandinavian – Mediterranean, the Baltic Sea – Adriatic Sea, and the Mediterranean ones.

The following table also highlights the regions at NUTS II level.

State	NUTS II (regions)
Finland	Helsinki-Uusimaa, South Finland.
Sweden	Stockholm, Östra Mellansverige, Västsverige, Småland och öarna, Sydsverige,
Denmark	Hovedstaden, Sjælland, Syddanmark.
Germany	Schleswig-Holstein, Hamburg, Bremen, Hannover, Berlin, Brandenburg, Leipzig, Sachsen-Anhalt, Thüringen, Darmstadt, Gießen, Kassel, Schwaben, Oberpfalz, Niederfranken, Mittelfranken, Niederbayers, Oberbayern.
Austria	Tirol
Italy	Provincia Autonoma di Bolzano/Bozen, Provincia Autonoma di Trento, Veneto, Emilia-Romagna, Toscana, Lazio, Campania, Calabria, Sicilia.
Malta	Whole country

Table 3: List of NUTS II regions along the TENT-T Scandinavian Mediterranean corridor.

4.2 Organisation

The SMO will be coordinated by POLIS, supported by the MOVE21 project coordinator and by MOVE21 project partners involved in tasks linked with urban nodes. There will also be action to ensure coherence between the Scan-Med Observatory, the Urban Nodes Forums and the Urban Nodes Competence Centre activities.

The project has a distinct ambition to see if the SMO can live on after the MOVE21 project has been completed. To account for this ambition, the organisation of the SMO may therefore change both during the MOVE21 project period and after its completion in 2025.

Interested parties are invited to sign a Letter of Intent with the project about its participation in the SMO. Participation is free, but any additional costs such as travel to in-person meetings must be borne by the respective organisations. The administrative level participates to the works and meetings of the SMO, and the political level is drawn into work at regular intervals and relevant milestones.

Most meetings of the SMO will be held online, in order to limit unnecessary travels and reduce the carbon emissions. However, the members of the SMO will be invited to take part to MOVE21 planned events, such as Urban Nodes Forums in various locations in Europe and relevant policy dialogues in Brussels.

The participants of the SMO will be asked to:

- Attend meetings of the SMO.

- Contribute to the working activities of the SMO by sharing information and content relevant for collecting best practices and additional information.
- Provide input about topics of interest.
- Develop joint policy positions to the extent desired.
- Validate results and recommendations for future action and upscaling.

4.2.1 Organisational structure

The first and foremost objective is to ensure that cities and local authorities from all States are represented in the SMO and have the chance to raise their voice. Attention will be payed to newly defined urban nodes and medium sized cities, with a focus on those lagging behind with the new requirements set by the EU regulation (e.g. still with no implemented SUMP or SULP).

Scan Med Observatory – Core group

- MOVE21 partners and Living Labs and replicator cities
- Urban nodes (cities and local authorities) located along the TEN-T Scandinavian - Mediterranean corridor
- Regions interested to join (NUTS II and NUTS III level)

The Replication Advisory Board – involved at a later stage for replication potential

- MOVE21 cascade cities
- Cities, local authorities located on other TEN-T corridors
- Regions interested in dialogue and exchange (NUTS II and NUTS III level)

The following figure sketches a conceptual scheme of the SMO, its target groups and its main interrelations with external stakeholders and initiatives. On the left side, the so-called SMO core group. As highlighted above, the core group includes only local authorities, regions and in general stakeholders that are geographically located along or in close proximity to the TEN-T Scandinavian – Mediterranean corridor. This is to make sure that an approach focused at corridor level is in place.

On the right side, the so-called “Replication board – beyond the SMO” aims to extend to other TEN-T coridors governance levels the approach and way to work of the SMO, focused at single corridor level. The stakeholders involved are local authorities not

- MOVE21 cascade cities
- Cities, local authorities located on the other TEN-T corridors
- Regions interested in dialogue and exchange (NUTS II and NUTS III level) on other TEN-T corridors
- Other external bodies and organisations, established in other countries or areas outside the Scandinavian – Mediterranean corridor, or having a EU / cross border coverage

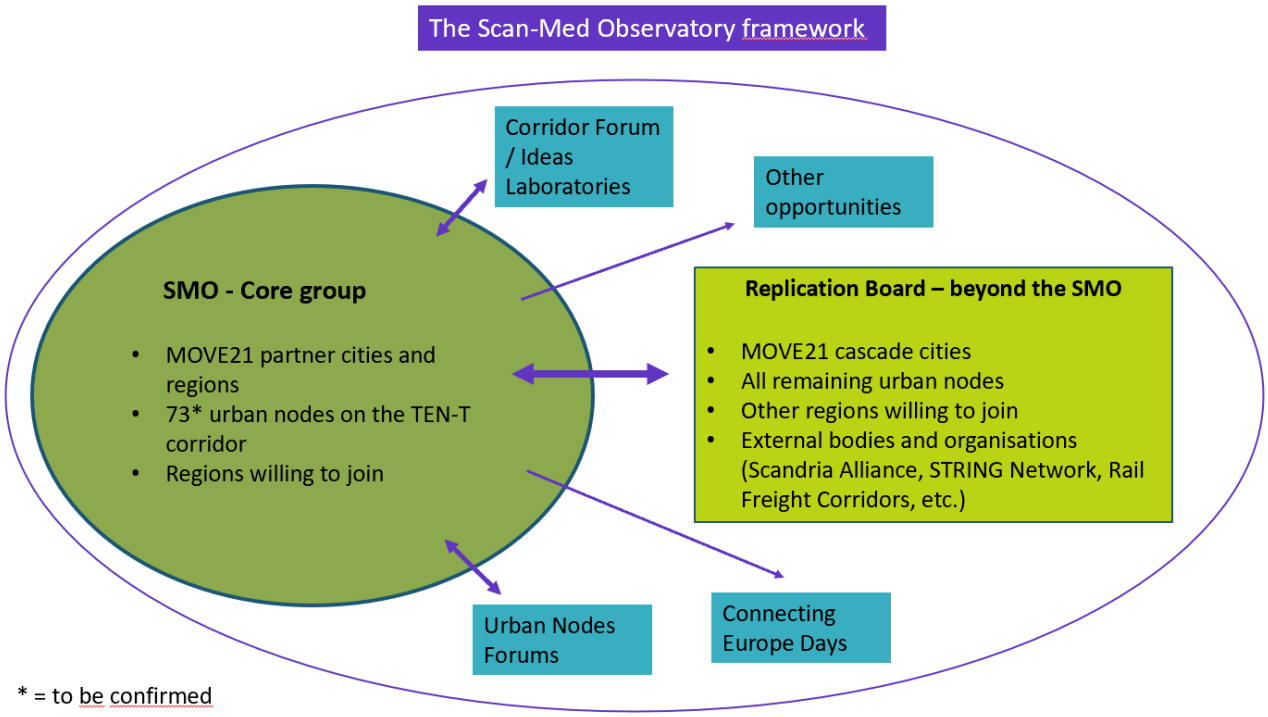

Figure 5 : Conceptual scheme of the Scan-Med Observatory.

4.3 Working meetings and events

The number of cities and entities committed to engage and collaborate within the SMO, and the nature of their TEN-T related priorities, will define frequency and format of meetings in the SMO.

Plenary meetings are foreseen once per year, to provide momentum, overall direction and relevant updates at the policy level, and exchanging about priority topics at general level.

Additional meetings are expected to be convened in between plenary ones, focusing on specific items mentioned in the priority topics highlighted in the next section. Attendance is dependent on capacity and resources (personnel) in each urban node (city or local authority). As cities might be interested only in specific topics, they will be free to focus those. The interest from each city against specific priority topic will be assessed when they will be invited to join the SMO, to gather more info and clarity about their interests and future commitment. According to the feedback received, specific topic clusters or subgroups could be formed to better streamline the work and make it more efficient.

In-person gatherings could be arranged in combination of already existing and scheduled (partner meetings, policy dialogues, MOVE21 Final Conference) or relevant events and conferences organised at EU level by EU services, such as the Connecting Europe Days, the Urban Mobility Days, the CIVITAS Forum, the Cities Forum, the Urban Nodes Forum, the POLIS Conference etc.

Following the invitation to join by the European Coordinator of the TEN-T Scandinavian – Mediterranean corridor Pat Cox, the SMO will seize this opportunity to interact with the Corridor Forum / Ideas Laboratories organised within the TEN-T Scandinavian – Mediterranean corridor platform.

Moreover, two policy dialogues are to be organised with local politicians and relevant EU institutions about strengthening the role of urban nodes in EU policy for showcasing the innovations to the networks' members and collecting feedback.

A tentative calendar is drafted in the table below. A finalized version will be drafted internally in the first half of 2023 and included within the SMO Action Plan. This will also provide a full list of urban nodes that will have joined at that time the SMO and give more precise elements about the set-up of the SMO, its working structure, and potential synergies.

Event	Tentative timeline
SMO Plenary meeting	1 in 2023 (Q2 / Q3)
SMO Priority topic meetings	2 in 2023 (Q3 & Q4)
SMO Plenary meeting	1 in 2024 (Q2 / Q3)
SMO Priority topic meetings	4 in 2024 (Q1, Q2, Q3, Q4)
SMO Priority topic meeting	1 in 2025 (Q1)
SMO Plenary meeting	Q1 2025
Participation at Urban Nodes Forum	First one taking place in May 2023 in Porto. Three more to be confirmed between second half of 2023 and April 2025.
Participation at Corridor Forums / Ideas Laboratories	Tbc between Mid-2023 and April 2025, depending on the agenda drawn by the EU Coordinator of the TEN-T Scandinavian Mediterranean corridor.
Participation at Connecting Europe Days	Tbc Q2 2024
Participation to other opportunities	Tbc between mid-2023 and April 2025.

Table 4: List of suggested meetings and events, with a tentative timeline.

5 Priority topics of the Scan-Med Observatory

The following figure shows the five priority topics of the SMO, taking stock by the recommendations provided by the VitalNodes project.

Figure 6: Priority topics of the Scan-Med Observatory

The following pages describe each priority topic, the most relevant challenges, and open issues to be tackled, some of the feedback collected during the technical webinar[28] and the suggested actions and outputs that are expected by the end of the project. More precise elements will be outlined in the SMO Action Plan.

5.1 Governance coordination & advocacy

Regional and local authorities play a key role in the management and development of transport systems and as such the empowerment of them should be strengthened. The essence of the TEN-T network itself is changing, shifting from an infrastructure-oriented approach to a **multimodal** and nodal **approach**. The TEN-T core network will be increasingly multimodal, with new connections in key nodes such as ports and airports, and a strengthening of environmental integration. This is also expected to potentially attract a higher amount of EU financing in the future.

The need for policy integration has been acknowledged by key stakeholders such as national and regional Infrastructure Authorities, EC DG MOVE, as well as the Coordinators of the TEN-T corridors. The latter have stressed the importance of integrated strategies, platforms for exchanging experiences and a multilevel governance approach. Similarly, one of the recommendations of the VitalNodes project is to "*explore new forms and innovative types of governance*", specifically addressed to explore and develop **bottom-up governance models** for the TEN-T corridors and for the metropolitan areas of urban nodes.

The risk of increased "policy incoherence" at urban mobility policy level, both across sectors and cross-level, exists and has been highlighted in the MOVE21 Living Labs, and specific work streams have been designed to tackle this topic.

[28] Screenshots taken from the Miro board shared during the technical workshop are included after the introduction of each priority topic. The inputs can also be accessed at this LINK.

On the one hand, **horizontal policy** coherence might be potentially undermined by existing policies focusing on different sectors at the same policy level, such as national or local, that could be conflicting each other in some parts. Some examples include the alignment between mobility policy and urban planning, the alignment between parking policy and space needed for climate neutral ambitions, or the alignment between SUMPs and SULPs.

On the other hand, **vertical** policy coherence is intended as vertical alignment between all administrative levels (EU, national, regional, local) and continuity between existing policies at different policy levels, to ensure that policies designed to improve one mobility system outcome do not undermine others. An example could be the relation between TEN-T corridor and urban nodes, or the connection between national strategic plans and concrete execution at neighborhood / district level.

The question if urban nodes comply with actual and forecasted transport flows and land use also through a freight and logistics perspective has received little attention, so far. The H2020 EU-funded project MORE came to similar conclusions, as one of its findings is the lack of TEN-T / urban network co-ordination. These boundaries are often unrelated to network structures and there is very little day-to-day interaction between city authorities and national / TEN-T network operators. Another aspect that emerged in the preliminary exchanges with MOVE21 pilot cities and other local authorities is related to **institutional readiness**, considered as weak in many urban nodes. This makes it difficult to identify the key stakeholders, get consolidated responses on key questions, or best practices solutions. This then contributes to problem of authorization within a hierarchical administration structure. In some governance systems, the urban node concept is also considered more as a national than a local or regional issue.

The three Living Labs in MOVE21 are co-creating, testing, deploying, and upscaling (combinations of) technological and non-technological mobility innovations. New solutions on local, regional, and corridor (TEN-T) level are being explored and those that are proven to pave the way toward a zero-emission future will be implemented, upscaled, and replicated. The **Living Lab organisational model** followed by MOVE21 could represent an interesting approach to be tested also in other urban contexts along the corridor. The SMO wishes to explore this possibility with cities interested in doing so, by providing them with concrete elements and recommendations to set up brand new Living Labs.

Actions

- Explore forms of governance to facilitate and accelerate the integration of the urban nodes on the TEN-T network.
- Explore ways to improve vertical policy coherence between the local level and TEN-T network operators and national stakeholders
- Help clarify and pinpoint responsibilities at administrative level about urban nodes / TEN-T policy matters and help delineate against responsibilities on national and EU level.

Potential outputs

- Updated inventory of completed / ongoing SUMPs and SULPs at urban nodes at corridor level.
- Factsheet about best practices highlighting concrete examples and action to integrate of last-mile planning into the TEN-T dimension (e.g. multimodal hubs for passenger and mobility, integrating SUMP / SULP approaches).
- A replication of a similar approach to the one of the SMO on other TEN-T corridors, beyond the MOVE21 project duration.

5.2 Data sharing principles and practices

Data and information about TEN-T and urban nodes can be of different nature, format, and collected by several public authorities, both at local and national level. The purpose of this pillar is to tackle this issue, facilitating cooperation and data exchange across different levels (public and private), and potentially identify which kind of data and indicators are the ones best suited to the scope.

There is a need to improve knowledge and evidence by collecting data and information from urban nodes on challenges and visions, ideas, strategies and solutions and their impact. In its policy recommendations, the VitalNodes project recommended to explore **interrelations between infrastructure, multimodal mobility management and spatial planning**. More specifically, there is an urgent need to develop preconditions and methodologies for data-based planning, especially for multimodal hub development, including the relevant datasets and requirements for stakeholder coordination.

The POLIS – ERRIN ad-hoc working group on the TEN-T regulation has suggested to **introduce specific criteria for urban nodes** and monitor mobility status using the **SUMI** indicators[29]. There is a need to determine optimal datasets for traffic flows in both passenger and freight transport, in particular data for policy-making about origin and destination, traffic distribution, loading in order to come to a better data-based planning of infrastructure. As local authorities are increasingly looking to regulate freight distribution under their jurisdiction areas, a better **understanding of transport logistics flows** also deserves attention. This aspect was also highlighted during the technical workshop in November 2022, as shippers should be involved in planning, and they strongly influence transport flows and supply chains.

Again, one of the policy recommendations of the VitalNodes project suggested to **establish indicators** which help determine whether a node is highly functioning in terms of traffic flows or nodal functions on the TEN-T or not, to be able to attribute funding accordingly. As emerged during the technical workshop, Indicators should be ideally based on existing data sources available at local / regional level.

The availability of data is just one of the necessary preconditions. An important requirement for the establishment of optimal datasets is also **data sharing**[30]. Mobility and land-use planning data is often collected by different public authorities at different administrative levels. A recent survey carried out by the EC on urban logistics ("*Study on New Mobility Patterns in European Cities*") showed that there is a **limited availability** of logistics data especially at urban level, and that there are **differences** in the **methodologies** to collect data but little analysis of collected datasets. This makes it difficult to compare results with statistical reliability.

The private sector is also concerned by data sharing issues, especially as far as it concerns logistics and freight flows. Many transport and logistic operators are commercial companies, and the **private sector** is often **reluctant to share** commercial data with third parties. This is often seen as a business sensitive issue, yet very few dialogues exist as to what the private sector would be willing to share and on what terms. The public sector would highly benefit from the set-up of specific policies, protocols and

[29] https://www.polisnetwork.eu/wp-content/uploads/2021/05/ERRIN-Polis_opinion-on-the-revision-of-the-TEN-T-guidelines.pdf
[30] https://www.etp-logistics.eu/wp-content/uploads/2021/12/POLIS_ALICE_Guide-Zero-Emission-Urban-Logistics_Dec2021-low.pdf

agreements with the private sector to move towards more coherent passenger and freight planning and have a better understanding of freight transport flow within and around cities.

Additional concerns and bottlenecks are related to lack of sufficient (quality) data, lack of resources, problems with interoperability. Therefore, new solutions and cooperation models are needed to be elaborated to create more trust between stakeholders, by reaching win-win situations and offer a relevant basis for data collection and sharing.

Actions

- Investigate what kind of data (e.g. freight flows) is currently lacking / needed at city level and what type of indicators are the most relevant.
- Identify a potential set of indicators and macro-categories that could be applied also at the urban node scale, creating synergies with already existing initiatives (e.g. SUMI and the EU Mission on 100 Climate-Neutral and Smart Cities) and building from work done by previous projects (e.g. VitalNodes).
- Harvesting ideas or protocols for data sharing.
- Identify best practices that facilitate data sharing between the public and private sector on urban nodes.

Potential outputs

- Provide guidelines and recommendations to foster increased collaboration and voluntary data sharing between all types of stakeholders.
- Propose more standardised frameworks for further in-depth surveys at city level.
- Suggestions for potential indicators, based also on current initiatives (e.g. SUMI).
- Guidelines / best practices for data sharing.

5.3 Funding and financing

The UMF asserts the need for multi-level integrated governance, ideally to be achieved through a reinforced platform for engagement with cities, regions, and all stakeholders.

To reach these objectives, increased priority needs to be given to the urban nodes in TEN-T policy, which have up until today not been sufficiently supported. Consequently, this is also represented in the funding, as only 2% of Connecting Europe Facility (CEF) funds have been allocated to projects set out to tackle this issue.

Investments should improve the sustainable integration of urban nodes at local, national, and TEN-T level. Maximising the potential of funding stream (CEF, European Structural and Investment Funds, European Fund for Strategic Investment, and private co-funding) should ensure that urban nodes are able to meet current and future challenges providing innovative, smart, efficient, and sustainable transport.

The objective of this pillar is to better understand current and future opportunities for financing in urban nodes and corridors and provide suggestions / inputs for better allocation of future funding and research.

In the financing period 2021–2027, several funding and financing instruments are available at the European such as the Connecting Europe Facility, the InvestEU Programme, the European Regional Development Fund, the Cohesion Fund, Horizon Europe[31], the Digital Europe Programme, and the Recovery and Resilience Facility, to support the transition towards sustainable urban mobility.

[31] The EU's Research & Innovation Programme for the period 2021–2027.

As an example, SUMPs are an effective framework for planning and carrying out urban mobility investments and can therefore serve as a framework for preparing relevant public or private funding. The EC has called Member States to take measures to improve the quality of SUMPs and their alignment with the EU SUMP concept and with the European SUMP Guidelines. At the high-level session that launched the SMO at the EWRC, the EC clarified that the 2021-2027 CEF Programme is still based on the current TEN-T Regulation framework and objectives.

In light of the new requirements to be set by EU legislation, it is of paramount importance that overall coherence and alignment among EU objectives and adequate funding are available to make sure that cities are in condition to fulfill them. This also requires further alignment on national level and with national programmes. This potential misalignment is a topic that has been identified for the SMO.

Actions

- Screening existing funding opportunities for urban nodes at national / regional and local level, in countries crossed by the TEN-T Scandinavian – Mediterranean corridor.
- Highlighting potential vertical misalignments between expectations and requirements vis-à-vis urban nodes and funding programmes/opportunities.

Potential outputs

- Recommendations to the EC services to better streamline the allocation of funds.

5.4 Capacity building

The main objective of this pillar is to investigate how to better equip and provide local and national policy makers, practitioners, entrepreneurs, and operators with the tools, skills and knowledge required. To raise awareness and establish long-lasting capabilities is crucial for an effective implementation and integration of urban nodes.

The matching of TEN-T policy and urban nodes with local transport and urban planning adds a lot of **complexity from a governance** point of view. SUMPs are still missing in many urban nodes and the large majority urban nodes are not familiar with the SULP concept. In recent years, multimodal and rail-road terminals have proliferated across Europe, in some circumstances in a not timely and coordinated manner. The reasons for such a misalignment are multiple, i.e. governance mismatch, as highlighted before. More dialogue between – sometimes conflicting – administrative levels and the private sector is needed to ensure more coherent planning. Capacity building programmes addressed to the local and regional sector can contribute in providing new skills and elements to better interact with the private sector.

These are serious barriers preventing an effective integration of the two TEN-T and urban nodes “dimensions”.

Innovation has a crucial role to play in making mobility in the TEN-T network more seamless, sustainable, efficient, and fit for the future. Some innovation clusters[32] working on the newest sustainable, clean, autonomous, and connected mobility solutions could be introduced as a new element of the TEN-T guidelines. MOVE21 is based collaborative platforms, urban experiments, **Living**

[32] Clusters are groups of firms, related economic actors, and institutions located near each other and with sufficient scale to develop specialised expertise, services, resources, suppliers and skills (Source: European Cluster Collaboration Europe). Examples on this regard are the Logistics Cluster in Belgian Vallonia and Flanders regions.

Labs, or cities as innovative test arenas for the future in forms that differ from traditional urban planning and that only few local authorities have considered and put into practice, so far.

Therefore, the knowledge and experience gained by the MOVE21 Living Labs can be a very useful resource and inspiration for those cities. In parallel, it is important to assess whether the cities need specific learning, training, or capacity building activities.

To define an adequate location of **multimodal hubs and their business models** that allows for efficient and seamless connection for both passenger and freight mobility is a challenge. Potential items emerged from the technical workshop and previous iterations carried out in the MOVE21 project are **urban logistics planning, and regulation**. Measures related to the implementation of SULPs and their action plans to regulation such as low and zero emission zones (LEZs and ZEZs), to considerations relative to TEN-T integration.

Another feedback from the participants of the technical workshop showed that **small and medium sized cities** could benefit the most from capacity building activities. In particular, the newly appointed urban nodes might still not be fully aware of the new requirements set by the EU legislation.

Any further opportunities that could arise, such as peer-to-peer activities, technical webinars, or training sessions related to specific project events will be pursued.

Actions

- Investigate whether cities and local authorities see the need for learning and capacity building, and on which topics.
- Promote joint activities – also with external stakeholders and other entities - for the local and national level, facilitating mutual dialogue and solve potential conflicts from colliding interests.
- Explore possibility to develop capacity buildings opportunities in synergy with the TEN-T corridors, starting from the Scandinavian – Mediterranean one (e.g. via the Corridor Forum).
- Seize additional opportunities like peer-to-peer activities, technical webinars, or training sessions related to specific project events could emerge and will be pursued.

Potential outcomes

- Recommendations for a future potential EU-wide single (learning) portal / knowledge hub available for cities to get access to the information, best practices and material collected.

5.5 Networking and outreach

The SMO is a collaborative platform and open to cooperate with already existing mechanisms, institutions, operators, stakeholders. For this purpose, MOVE21 initiated informal discussions with various relevant stakeholders to design the SMO and initial activities in a way that is useful for local and regional authorities, the EC, and other international or regional initiatives.

As already mentioned, the SMO seeks cooperation with other corridors governance structures to increase synergies, starting with the invitation from Pat Cox to the SMO to join the Corridor Forum and Ideas Laboratories on the TEN-T Scandinavian – Mediterranean corridor.

Mutual exchanges and cooperation are ongoing with EU-funded projects – such as VitalNodes and SCALE-UP - and external stakeholders such as the Scandria Alliance[33] and the STRING Network[34]. In particular, the Scandria Alliance is starting a similar interaction with its members located both along the Scandinavian – Mediterranean and the Baltic corridor. Additional stakeholders identified in the Nordics are the Kvarken Council[35], the Eastern County Network Norway[36] for the TEN-T connection between Norway and Sweden.

Another potentially relevant stakeholder are also Rail Freight Corridors, as the TEN-T regulation is expected to define the alignment of the European Transport Corridors that shall replace the Rail Freight Corridors and Core Network Corridors. This will ensure geographical alignment and coherence in the network for the development of sustainable and multimodal freight and passenger transport flows in Europe and contribute to build synergies between the infrastructure and operational aspects of the network. The involvement of the logistics sector has been highlighted as crucial by multiple stakeholders– including the EC. It is expected to happen together with the European Technology Platform ALICE, as member of the MOVE21 Advisory Board.

Synergies will be created with the Urban Nodes Forums which are organized under both the MOVE21 project and its sister project SCALE-UP.

The SMO Action Plan will focus more into detail all these opportunities.

Actions

- Consolidate collaboration and mutual exchange with above-mentioned projects and initiatives, via dedicated meetings and exchange.
- Attend in person events and bring the approach and elements emerging from the SMO to the attention of policy makers and politicians.

Potential outputs

- Specific collaborations with external stakeholders that go beyond one-off events.

[33] The Scandria Alliance provides an arena for cities and regions to collaborate on climate-smart multimodal transport connectivity at the interface to sustainable regional development between Scandinavia and the Adriatic Sea. It has been founded in 2019, an an initiative of leading political representatives of six cities and regions along the corridor.

[34] STRING is a political member organisation for local and regional authorities in Northern Europe. Cities and regions in STRING join to accelerate the green transition and unlock new potential for green growth. It includes 4 countries, 6 cities, 8 regions, 14 million people.

[35] The Kvarken Council encompasses three Ostrobothnian counties in Finland as well as the counties of Västerbotten and Västernorrland in Sweden. Its members include municipalities, regional associations, landscape associations and development companies.

[36] Eastern Norway County Network (ENCN) is a cooperation body between four counties in the south-eastern part of Norway: Oslo, Viken, Innlandet, and Vestfold og Telemark. The purpose of the cooperation is to contribute to the development of Eastern Norway as a sustainable and competitive region in Europe.

6 Conclusions and next steps

This document has provided an overview about the setting up of the SMO, main challenges, priority topics and the overall policy framework.

The SMO Framework Plan will be followed and integrated by the SMO Action Plan. The Action Plan will provide an updated list about confirmed participants of the SMO, as well as an updated calendar of events and meetings that are expected to take place from September 2023 to April 2025.

It will also include additional elements about the selected priority topics and highlighted any relevant publicly available update coming from the EU legislation process (ongoing negotiations between the EC, EP and Council still ongoing, before the final version of the TEN-T regulation). Additional details about potential synergies, e.g., the new established Expert Group on Urban Mobility and other initiatives, and cooperation with external bodies and stakeholders, already ongoing.

The SMO Action Plan will also explain how the SMO approach can be replicated to other TEN-T corridors and provide inputs for a potential extension of the SMO activities beyond the project duration, as a permanently settled platform.

Newly selected urban nodes will be contacted by POLIS, City of Oslo and other MOVE21 partners and invited in 2023 to cooperate with and join the SMO.

7 References

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