



EUCAR PERSPECTIVE ON URBAN MOBILITY

Europe's urban areas¹ are home to 70% of the EU population² and generate up to 85% of Europe's GDP³. Thus they play a central role for the future development of the EU and Horizon Europe, the coming framework programme, needs to address challenges that cities are facing. As one action in this direction, the Commission services has presented preliminary ideas in the form of possible "Missions" within Horizon Europe including one on "*Clean cities: the first xx carbon-neutral cities with clean air by 20xx*"⁴. The document highlights "high quality mobility services and logistics", "applying the most efficient available technical solutions, developed by EU R&I" and cooperation with private industries. These are all aspects that are closely related to EUCAR and the EUCAR Members.

The aim of this paper is to constructively contribute to a dialogue on how to increase the quality of life in cities by improving mobility and making the cities cleaner, more silent, safer and eventually fossil free. The preliminary ideas of "Clean cities" is a suitable starting point for the discussion as well as the ERTRAC vision⁵ stating that "*People and goods can reach their destinations in cities in a way that is healthy, safe, affordable, reliable and comfortable*".

POINT OF DEPARTURE

EUCAR is convinced that quality of life is complemented and enhanced by quality of mobility. We are prepared to use our expertise in the mobility area to help create sustainable cities of the future. We think that the effort and focus needs to be based on a number of insights and aspects including:

- **One single stakeholder cannot solve the challenges alone**

A holistic approach and multi-stakeholder collaboration is essential

- **Cities have different challenges**

Cities come in various forms and sizes. A toolbox and platform for tailored solutions is required

- **User and citizen focus**

One solution does not fit all, address the multiple needs that exist

- **Vehicles and mobility solutions cannot be designed for single cities**

Develop flexible and scalable solutions. Take advantage of economy of scale and preserve the integrity of the internal market

- **European competitiveness**

New solutions should be developed, tested and deployed in Europe while keeping their export potential in mind

The automotive industry is one of the most important growth engines for economic welfare in Europe. The full strength of industry should be used to address the mobility challenges we are facing in European cities. Novel and advanced versions of the passenger car and the commercial vehicle will contribute to integrated public transport solutions as well as improvements of the transport system at large. This will contribute tremendously to societal, environmental, and economic welfare, job creation and growth of Europe. Superior solutions can be exported globally and thus position Europe as a world leader in innovation, production and services.

Quality of mobility will require new partnerships, new ways of thinking and new technologies. We are, however, not starting from scratch. On the contrary, EUCAR is already working on key enablers for future urban mobility such as:

- Vehicle electrification
- Vehicle automation
- Mobility services
- Mobility solutions based on energy from renewable sources
- Digital connectivity and big data
- Integration of materials from sustainable resources (green solutions for a circular economy)

¹ For the sake of simplicity, urban areas are called "cities" in this document

² Eurostat

³ http://ec.europa.eu/regional_policy/en/policy/themes/urban-development/

⁴ Commission's Non - paper - October 2018

⁵ ERTRAC, "Future Road Transport 2050" document

Some of the building blocks required, already exist in various stages of development or can be developed in a reasonable timeframe. What is needed now, in order to move in the direction of “carbon-neutral cities with clean air” is development, testing and large-scale implementation of new solutions. The way forward must be based on close stakeholder collaboration and integration of solutions from various technological and scientific domains. In order to realize all this, we propose a new concept: the European Urban Mobility Labs.

EUROPEAN URBAN MOBILITY LABS

European Urban Mobility Labs is about mobility-related demonstrators, pilots and pre-deployment activities under the umbrella of an urban mobility mission (such as the tentative Horizon Europe Mission on “Clean cities”). The goal is scalable, affordable and efficient urban mobility solutions that are based on the precise needs of users, cities and communities. In brief, mobility providers, cities and other relevant stakeholders will work together. Cities will be more than “customers” of project results; they will be invited to become active project partners.

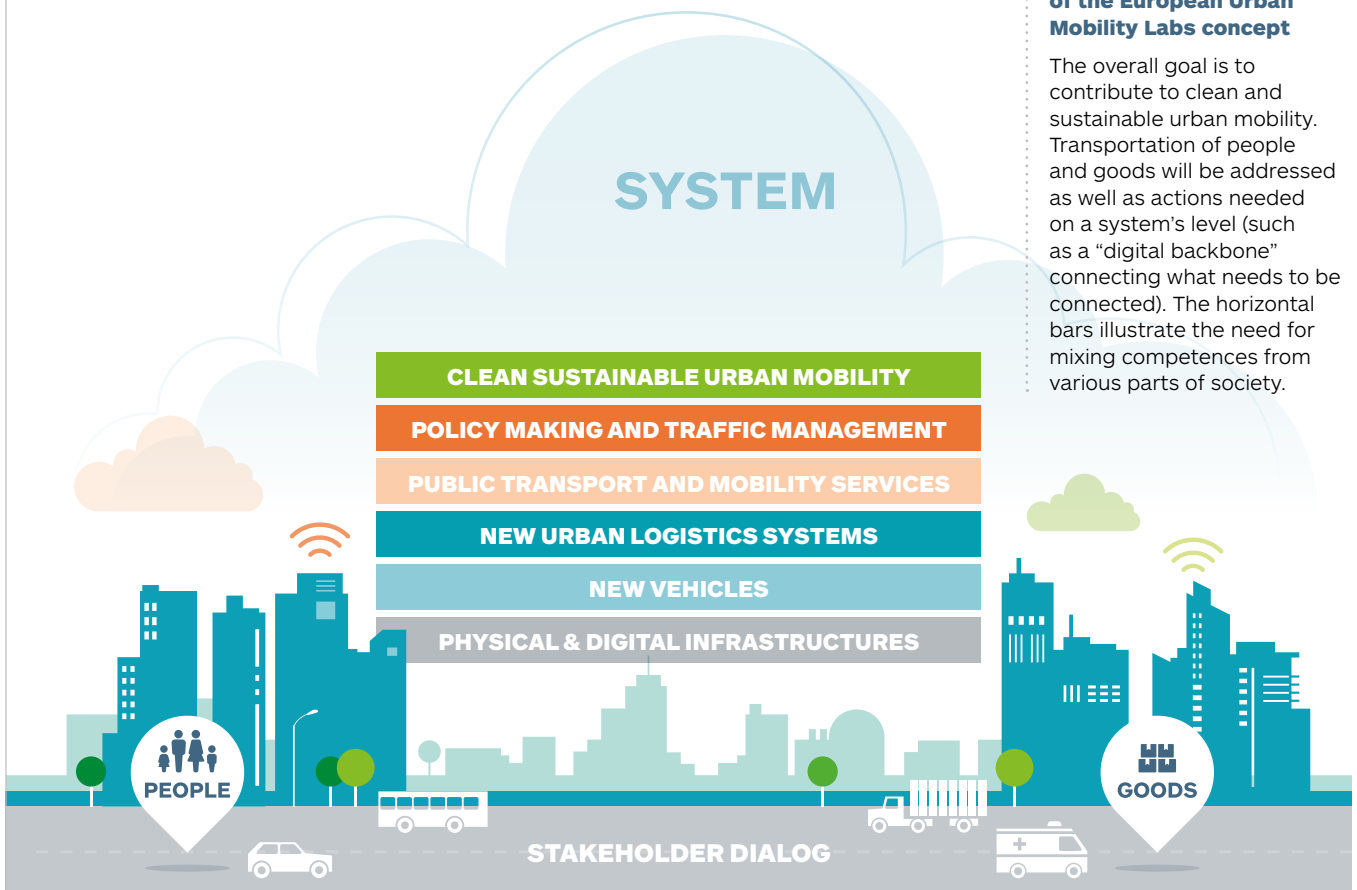
The European Urban Mobility Labs will...

- Provide room for the development, test, implementation and scale-up of efficient urban mobility solutions
- Foster technology development accompanied by policy making for holistic, human-centred solutions
- Enable multi-stakeholder dialogues and common planning
- Take full advantage of virtual comparative tests of alternative systemic solutions
- Provide access to expertise in running large and complex projects (this is a key competence of the automotive industry)
- Interact with European platforms for harmonization and standardization
- Be linked to national and regional initiatives
- Offer an ecosystem for “cross-fertilization” by the mixing of ideas, perspectives, solutions and stakeholders
- Address physical and digital infrastructural measures

The underlying thinking behind the European Urban Mobility Labs is illustrated by FIGURE 1.

**FIGURE 1
Conceptual outline
of the European Urban
Mobility Labs concept**

The overall goal is to contribute to clean and sustainable urban mobility. Transportation of people and goods will be addressed as well as actions needed on a system’s level (such as a “digital backbone” connecting what needs to be connected). The horizontal bars illustrate the need for mixing competences from various parts of society.



POTENTIAL ELEMENTS OF A SUSTAINABLE SOLUTION

To initiate the European Urban Mobility Labs it will be necessary for stakeholders to meet, to listen, to identify needs, to analyse the situation and to agree on common actions. Such stakeholder dialogues could include topics like carbon-neutral and pollution-free cities, quality of life, affordable mobility for all, reduced need for parking and road-space, as well as how to contribute to a cleaner, safer and resource efficient environment. The discussion also needs to include how to maintain Europe's leading position in mobility, how to create jobs and how to strengthen the competitiveness of European industry in an era of disruption.

The preliminary description of the suggested Horizon Europe Mission on "Clean Cities" introduces the idea of transforming a number of medium-size cities into carbon-neutral and climate resilient entities by 2030. EUCAR believes that the automotive industry has an important role to play in such a transformation. Potential areas where the manufacturers of passenger cars, trucks and buses could make significant contributions are:



PEOPLE

- Products and services for emission free driving in urban centres
- Next generation of car-sharing and ride-hailing services
- Autonomous electric robotaxis (on-demand mobility)
- Collective transportation brought closer to the people via silent emission free buses enabling new opportunities for city planning
- Shared commuter shuttle services
- Integrated last-mile mobility solutions



GOODS

- Novel logistics solutions including e.g. mobile consolidation centres, data-driven logistics and efficient and silent night-time distribution (reduces day-time congestion)
- Safe, modular and flexible autonomous driving trains (convoys) of trucks (and buses)
- Low-speed fully automated vehicles for urban hub-to-hub applications (goods transport to and from cities and logistics terminals)

- Autonomous solutions preventing accidents and increased visibility in dark hours by providing infrastructure-based object detection
- Autonomous docking to charging infrastructures, parking and loading bay automation
- Urban last mile solutions using dedicated trucks or electric vans with range assurance



SYSTEMS

- Integrated cloud platform connecting all users e.g. people, vehicles, infrastructure, logistics partners ("transportation mobility clouds")
- Digital charging solutions (integrated in vehicles and providing easy access to public charge points)
- Charging control system for the stabilization of the power grid for solar power and wind power
- Low-cost inductive (contactless) charging for electric vehicles
- Multimodal mobility and transportation concepts
- Alternative fuel solutions (such as hydrogen and biofuels)

Standardised interfaces between automobile-based mobility solutions, city infrastructures and systems provided by other actors will be promoted when relevant.

NEXT STEPS

EUCAR welcomes a dialogue on urban mobility and the links to Horizon Europe and the Mission instrument. European Urban Mobility Labs can be an integrated part of a European Mission aiming at creating the "*Clean cities: the first xx carbon-neutral cities with clean air by 20xx*". In addition, European Urban Mobility Labs will be complementing other initiatives such as the Knowledge & Innovation Community (KIC) on Urban Mobility supported by the EIT⁶.

EUCAR is prepared to act as a hub and coordination body supporting the development of user-centric future vehicles and urban mobility services through the European Urban Mobility Labs. Please contact the EUCAR Office for more information.

⁶ <https://eit.europa.eu/collaborate/2018-call-for-proposals>

ABOUT EUCAR

EUCAR (European Council for Automotive R&D, www.eucar.be) is the association for collaborative research and innovation of the major automobile manufacturers in Europe. These manufacturers contribute to sustainable mobility and a competitive European industry, investing more than €50bn per year in research and development. The industry's investments are leveraged by the collaborative work performed with support of the European Framework Programmes, currently Horizon 2020. The EUCAR Council comprises the heads of research and advanced development of the member companies