

General Information	
Preliminary title of the European Partnerships	European Partnership on Mobility and Safety through Automated Road Transport (MOSART)
Short description of the partnership	The partnership aims to provide a long-term framework for pooling resources and strategic planning in order to address the challenges that connected and automated driving brings to EU roads including, among others, systemic challenges, technical and non-technical enablers and societal impacts.
Services directly involved	Lead service: DG MOVE Co-chef : DG RTD
Context and problem definition	<p>Mobility is crossing a new – digital – frontier with increasing automation and connectivity. Automated road transport is a complex ecosystem in which the physical infrastructure, the digital infrastructure, vehicles, technologies and human beings (traffic controllers, drivers, passengers, cyclists, pedestrians) are interacting. The development of innovative connected and automated road transport systems poses a multitude of issues that need to be addressed at several levels: human, technical, societal, economic, legal.</p> <p>Research and Innovation efforts in automation have been significant in the last ten years, supporting the development, testing and validation of several technologies, systems and applications aiming at increased road safety and better traffic efficiency. There are many national R&I projects, and a number of projects funded at EU level under several programmes such as Horizon 2020 and Connecting Europe Facility (CEF). Those projects cover many aspects, from the equipment on board vehicles to traffic control centres, including communication technologies and digital infrastructures.</p> <p>While technological solutions are available, they are at different levels of maturity; they need to be integrated in the road automation ecosystem and be validated on a large-scale basis.</p> <p>However, so far the research, innovation and testing efforts in support of CCAM have been quite fragmented (annual calls for proposals, national rules for testing, gap between research and deployment, etc.), with no long-term strategic vision. There is currently no mechanism to pool investments at local, regional and national level, both for public and private investments.</p> <p>In order to avoid a patchwork of different technical/legal solutions across EU, hampering interoperability and continuity of services and leading to inconsistencies and duplication a large number of actors (local and regional authorities, road operators, service providers, car manufacturers, telecom and IT providers,) needs to be involved in these efforts. However, at the moment there is no suitable coordination mechanism for research, innovation, testing and large-scale pre-deployment available.</p> <p>If EU continues on a project-by-project basis without overall coordination, there is a high risk that its industry will not be able to be competitive on the global stage. Furthermore, it will make it more difficult for the EU industry and Member States to speak with one voice and to lead the development of global standards for smart mobility, as these standards are often defined at regional level (EU, US, JP, CN).</p>
Objectives and expected impacts	<p>The general objective of the Partnership is to create a clear framework for pooling resources, strategic planning and streamlining all relevant cooperative, connected and automated mobility (CCAM) research, innovation and development activities and linking them with large-scale validation and pre-deployment. The ultimate goal is to help (1) significantly improve road safety and traffic efficiency (2) reduce impact on the environment (including air quality, energy consumption and climate change) (3) provide new and better mobility services to citizens, increasing inclusiveness, improving rural mobility and (4) Increase the effectiveness of R&I in the field contributing to developing and maintaining EU industry leadership in this field.</p> <p>The specific objectives are to:</p> <ol style="list-style-type: none"> 1. Foster focused, coordinated and long-term investment in CCAM development and pre-deployment in line with EU policy objectives

	<ol style="list-style-type: none"> 2. Establish sustained networks and knowledge exchange between diverse stakeholders 3. Increase the leverage of funding, including more (private) co-financing 4. Mitigate risks linked to innovation, by improving knowledge valorization and handling of IPR 5. Increase the operational performance and effectiveness of R&D funding in this field: reduce administrative costs & delays <p>The estimated timeframe to achieve the Partnership objectives is 2021- 2030. The deployment of CCAM is expected to have positive impacts on international competitiveness, research and innovation and the Digital Single Market through the promotion of innovative emerging solutions, putting the EU industry and service provision market in a stronger position to export outside the EU, further enhancing the creation of new jobs and business opportunities.</p> <p>Accelerated deployment of CCAM will entail large investment and operational costs, in particular for vehicle manufacturers, road and transport operators, public authorities, services providers/developers and individual users. On the other side, improved traffic flows are expected to lead to significantly less time spent in traffic and could also reduce needed expenditure in road infrastructure expansion and maintenance.</p> <p>CCAM is expected to make a strong contribution to improving road safety, as well as improve traffic efficiency and making mobility more inclusive. That implies more people will spend less time in traffic, and the time spent could be used differently when the driving task is no longer taken by humans. Areas traditionally less connected would take advantage of CCAM solutions while more user-centric services would address better people's needs, including those of people with reduced mobility.</p> <p>CCAM is expected to contribute to reducing negative environmental externalities of transport (in particular pollutant and CO2 emissions), through improved use of transport infrastructure and smoother flow of traffic, provided that it increases occupancy rates of vehicles and does not lead to an increase in road traffic, and that it facilitates inter-modality and more inclusiveness, enabling the shift towards more efficient and environmentally-friendly modes.</p>
Necessity test: rationale for a European Partnership	<p>Automated road transport is a complex ecosystem in which the physical infrastructure, the digital infrastructure, vehicles, technologies and human beings (traffic controllers, drivers, passengers, cyclists, pedestrians) will need to interact. A system level approach is vital, given the need to preserve and enhance interoperability across the EU network, and to ensure a critical mass of demand to allow industrialisation of innovation.</p> <p>Meanwhile, EU support and calls for proposals for cooperative, connected and automated mobility have so far been looking mainly at specific technical solutions, their integration in specific use cases, and their impacts on the users. More recently, several large-scale pilots have been launched to test the robustness and reliability of automated driving technologies, systems and functions and to assess socio-economic impacts.</p> <p>However, a lot of non-technological challenges need to be addressed in an integrated way, to achieve a systematic breakthrough in line with EU policy objectives. These include, among others personal data protection, cyber-security, ethics, social acceptance, as well as impacts on labour and skills, road safety targets, emissions, land use and global competitiveness.</p> <p>In addition, a large number of actors (local and regional authorities, road operators, service providers, car manufacturers, telecom and IT providers etc.) need to be involved in such large-scale validation of solutions to address technical and non-technical challenges. Coordination at EU level is needed in order to develop harmonised solutions and to avoid fragmentation, duplication, inconsistencies and gaps.</p> <p>Hence the EU needs a strong R&I partnership in which all actors will pursue common objectives and clear deliverables.</p>

Relevant for the following parts of Horizon Europe	<p>Pillar II 'Global Challenges and European Industrial Competitiveness'</p> <p><input type="checkbox"/> Cluster Health</p> <p><input type="checkbox"/> Cluster Culture, creativity and inclusive society</p> <p><input type="checkbox"/> Cluster Civil Security for Society</p> <p><input type="checkbox"/> Cluster Digital, Industry and Space</p> <p><input checked="" type="checkbox"/> Cluster Climate, Energy and Mobility</p> <p><input type="checkbox"/> Cluster Food, Bioeconomy Natural Resources, Agriculture and Environment</p> <p><input type="checkbox"/> Cross-cluster</p> <p><input type="checkbox"/> Pillar III 'Innovative Europe'</p>
Currently identified links with other partnership candidates / Union programmes	<p>Synergies and common activities are possible with:</p> <ul style="list-style-type: none"> • Partnerships on Integrated Air Traffic Management and Transforming Europe's rail system in order to cover interfaces with other transport modes such as drones (urban air mobility) and light rail; • Partnerships in the field of zero-emission and batteries; • Partnership on Key Digital Technologies; • the 5G and Big Data partnerships. • the future Cybersecurity Competence Centre and Network. <p>A link with Digital Europe Programme could be developed, as well as with the interregional partnership for Smart Specialisation on Safe and Sustainable Mobility.</p> <p>Moreover, the step from the research & development stage to the market could be improved through synergies with other programmes (e.g. Cohesion Fund and CEF which will focus on deployment of new transport technologies generated under Horizon Europe and elsewhere).</p>
Does the proposed partnership build on currently active ones?	No
Expected type and composition of partners	<p>A strong involvement of the transport sector represented at Member State level is needed in order to ensure interoperability of services across the EU and secure the needed infrastructure investment. Hence the members of the partnership should include:</p> <ul style="list-style-type: none"> ▪ The EU, represented by the Commission ▪ The Member States, represented by the road authorities or other entities (such as regional or local authorities) depending on the agenda ▪ A wide range of stakeholders including, among others: car manufacturers, automotive suppliers, public as well as private transport operators, fleet operators, maps and navigation systems and services suppliers, data management and artificial intelligence providers, user organisations, Emergency / Police services, service providers (insurance, maintenance, etc.), telecom operators and digital infrastructure providers (including Galileo), digital services and platforms providers. <p>The Commission also intends to involve civil society organisations in the assessment of the potential effects of connected and automated mobility as well as on emerging ethical issues to ensure that technologies are developed in line with European values.</p> <p>An appropriate and flexible governance structure will be defined during the preparatory phase. With regard to fundamental research, collaborative projects completely open in terms of participation would be funded in accordance with the Horizon Europe rules. Particular attention will be paid to participation of SMEs and start-ups to ensure that new ideas, would find an opportunity to connect with the sector and explore the possibilities to scale up. In the process of setting up the programme of the proposed partnership, different consultation processes with key stakeholders, regions, scientific communities as well as with end users would take place to ensure upstream involvement and commitment.</p>
Contributions and commitments	The partnership is expected to combine EU, national and private funding , including financial contribution from the EU, in-kind and financial contributions

expected from partners	<p>from MS, as well as from the industry e.g. main car manufacturers, telecom and digital operators.</p> <p>A number of research and innovation activities/resources will be supporting market, regulatory, societal or policy uptake.</p>
Currently envisaged implementation mode(s).	<p><input type="checkbox"/> Co-programmed European Partnership</p> <p><input type="checkbox"/> Co-funded European Partnership</p> <p><input checked="" type="checkbox"/> Institutionalised European Partnership</p> <p><input type="checkbox"/> Article 185</p> <p><input checked="" type="checkbox"/> Article 187</p> <p><input type="checkbox"/> EIT-KIC</p>
Justification of the implementation mode	<p>Automated road transport is a fast evolving and complex ecosystem in which the physical infrastructure, the digital infrastructure, vehicles, technologies and human beings (traffic controllers, drivers, passengers, cyclists, pedestrians) are interacting. The development of innovative connected and automated road transport systems poses a multitude of challenges that need to be addressed at several levels: human, technical, societal, economic, regulatory. Hence the EU needs a coordinated approach on R&I at EU level to help develop adequate responses to these challenges. This approach should ensure the engagement of all relevant stakeholders (Member States, EU institutions, industry, service providers, citizens) to come up with a stable framework facilitating their decisions on long-term investments, deployment of digital infrastructure, adaptation of roads and development of new vehicle types.</p> <p>The suggested Institutionalised Partnership approach would allow to:</p> <ul style="list-style-type: none"> • Ensure an EU strategic approach towards research and innovation supporting tackling this complex and pressing challenge, ensuring strong ownership of industry, stakeholders and Member States in view of Europe's leadership in this complex and disruptive mobility area • Combine EU, national and private funding, and establish synergies between programmes and facilities for large-scale experimentation and deployment • Set up a legally binding governance structure with upfront commitment to pursue common objectives and clear deliverables, creating scale and aligning efforts. • Support European consensus among stakeholders and Member States towards global standards and regulatory issues, fostering pre-deployment activities <p>In practice, it means that this would allow not only to coordinate research and innovation activities and large scale testing on roads, but also e.g. contribute to the development of technical specifications for interoperability making sure that investments at local, regional and national level, both of public and private nature, are complementing each other towards a fully integrated European road mobility system.</p> <p>Without prejudice to the final outcome of the Impact Assessment, at this stage of the analysis, other forms of partnerships are not likely to be as effective in overcoming fragmentation, pooling investment, gathering stakeholders and ensuring their commitment to deliver such transformation in a complex ecosystem. The other forms of partnerships under Horizon Europe do not allow for creating equally strong governance structure ensuring the alignment of efforts and policy objectives (beyond technology development only), co-managing budget from different sources and implementing R&I and demonstration projects in an integrated manner (as opposed to ad-hoc projects), which is necessary to ensure coherence and interoperability in the complex mobility system.</p> <p>The proposed approach is building on the positive experience of the Institutionalised Partnerships in the transport sector (SHIFT2RAIL, SESAR) where the model with industry and Member States has proven very successful.</p>
Proposed starting year	2021