

Main action area (3): Safety and (Cyber-) Security in Transport

Roadmap on Safety and (Cyber-) Security in Transport

Main action area (3): Safety and (Cyber-) Security in Transport				
Action Field (1) Technical and Operational Layers of Mobility	Action Items			Responsible Stakeholders
	Short term (2020)	Mid-term (2025)	Long term (2030)	
1,a) Vehicles	Reinforce the development and deployment of driver assistance systems protecting vulnerable road users (e.g. Intelligent speed assistance, Alcohol Interlocks, On board telematics units, Lane keep assistance, Automated emergency braking, etc.). High impact for urban mobility could be especially generated by focusing on trucks in cities. In this regard financing models to support delivery fleet operators in equipping fleets with driver assistance systems need to be proposed.	Achieve a high market penetration by promoting C-ITS applications, especially for heavy vehicles. Promote automated functions, within an initial phase especially for buses, trucks and high-end cars	Address issues of mixed traffic of road users with and without assistance systems , e.g. through enhancing conspicuity of non-equipped users (new VRUs).	<ul style="list-style-type: none"> • Industry • R&D community • Policy
	Enhance safety and security in logistics by interoperable tracking using containers/boxes equipped with embedded sensors/codes which reveal data about contents.	Develop a framework for cybersecurity in logistics and ensure IT connectivity which allows plug and play data sharing.		<ul style="list-style-type: none"> • Freight service operators • Industry • R&D community

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1,b) Infrastructure	Enhance safety in transport by promoting research on the impact of different types of infrastructure in different scenarios, e.g. use of segregated lanes in different types of cities.	Improve safety and security in transport by <ul style="list-style-type: none"> • promoting benefits of urban design that incorporates context-based considerations for security and safety at infrastructural level (for instance walkways that feel secure when used) • segmenting infrastructure in cases proven beneficial through research • focusing on resilience of key infrastructure • implement C-ITS infrastructure for safety applications 		<ul style="list-style-type: none"> • Policy Maker • R&D community • Industry • Operators
	Improve safety and resilience of infrastructure by researching self-monitoring and self-healing infrastructure (smart materials, smart systems, smart connected operations).	Pilot self-monitoring and self-healing infrastructure. Identify business and financing models.	Deploy self-monitoring and self-healing infrastructure while continuously advancing through research.	<ul style="list-style-type: none"> • Industry • R&D community
1,c) Transport offers	Improve safety and security of the cross-modal seamless transport system by developing assessment methods of safety and security performance of			<ul style="list-style-type: none"> • Industry • R&D community • Operators • Freight operators

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	seamless journeys and digital technologies, e.g. IoT, AI, when used in transport.			
	Enhance safety of vulnerable road users by promoting research on <ul style="list-style-type: none"> • safety/security systems taking into account urban design/environmental conditions into the route of seamless journeys • IoT-enabled safety devices towards “digitally visible” active users 	Improve usability and security of different service interfaces through IoT by renewing technical standards and conducts of co-development. Increase privacy protection of applications with more detailed and universal user data specifications and standardization.	Make Mobility as a service (MaaS) safe and secure.	<ul style="list-style-type: none"> • Industry • R&D community • Operators • Policy
		Increase data security and privacy in passenger and freight in authentication and payment processes for mobility services, as e.g. a concept of Trustee Roles which define security terms and imply the rules for accessing data on user information or blockchain. Support activities of respective initiatives i.e., the Mobility Open Blockchain Initiative,		<ul style="list-style-type: none"> • Industry • R&D community • Operators • Freight service operators

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			and communicate results to policy makers.	

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Action Field (2) Societal Aspects of Mobility	Action Items			Responsible Stakeholders
	Short term (2020)	Mid-term (2025)	Long term (2030)	
2,a) Policy and regulatory framework	Support the holistic implementation of data/cybersecurity on a systemic level (including hardware, software, communication channels, infrastructure, interfaces between modes/HMI) across the entire supply chain by <ul style="list-style-type: none"> empowering EU wide harmonized security and privacy regulations for the collection, use and processing of (personal) data in transport-related issues (cybersecurity laws, Network and Information Security Directive) fostering a common agreement on data collec- 	Create higher acceptance of cross-modal, shared and automated transport offers by providing a clear legal framework regarding users' data. Promote data protection related to logistics by enacting a new General Data Protection Regulation (GDPR) for freight, defining data ownership and access rights to collected information.	Support policy makers in the implementation of policies and regulation.	<ul style="list-style-type: none"> Policy makers Operators Industry NGOs

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	tion/use/transfer between data controller and data processor for the intelligent management of traffic and public transport systems <ul style="list-style-type: none"> ensuring that the new General Data Protection Regulation (GDPR) is having an impact on all issues related to the collection, use and processing of (personal) data supporting member states to implement the European NIS (Network and Information Security) Directive in the national transport systems 			
2,b) User perspective	Raise user awareness of the importance of data security and privacy in transport-related applications by facilitating a PR campaign and education programmes.	Reassure end-users regarding potential threats (e.g. cyber-crime, data leaks) by promoting transparency and proper information regarding data collection, ownership, processing and use and making the conformity of these issues mandatory throughout the EU.	Foster the communication of users' needs to operators by developing common intra-EU privacy and safety statements in terms of a European „Personal Mobility Needs and Privacy Choices Declaration“. Provide a predefined set of needs with opt-in options within a module or electronic sheet that can be shared between user and operator before travel start.	<ul style="list-style-type: none"> Policy makers Industry NGOs Operators User representatives European Transport and Mobility Forum

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Action Field (3) Multi-Stakeholder Interaction and Processes	Action Items			Responsible Stakeholders
	Short term (2020)	Mid-term (2025)	Long term (2030)	
3,a) Collaboration of Stakeholders	Improve transport services and enable synergies between transport providers while at the same time, ensuring data security and privacy by <ul style="list-style-type: none"> educating mobility providers about data security and open data promoting knowledge on new General Data Protection Regulation (GDPR) and application among mobility providers sharing best practices especially for new entrants updating Sustainable Urban Mobility Plans (SUMPs) in major and smaller cities, based on new forms of mobility and innovative transportation model implementation 	Provide new training schemes and education curricula for the future transport workforce (i.e. automated transport drivers).		<ul style="list-style-type: none"> Policy Operators R&D community
	Improve data/cyber security in transport by supporting cooperation with experts from other application fields.			<ul style="list-style-type: none"> Policy Industry R&D community
	Improve safety in public transport by smart managing public transport staff and improving resilience capacity of public transport.			<ul style="list-style-type: none"> Operators R&D community

3,b) Standardization	Establish stable, standardized communication protocols for all C-ITS in all application areas			<ul style="list-style-type: none"> • Industry • R&D community • Standardization bodies
	Increase interoperability and compatibility by harmonizing or developing national standards. Achieve compliance to “The Network and Information Security Directive” (NIS Directive)			<ul style="list-style-type: none"> • Policy Makers • R&D • Operators