

Sector 6: SMART TRANSPORT & LOGISTICS

Areas of Intervention & Priorities 2021-2027

AREAS OF INTERVENTION	PRIORITIES
6.1 Strengthening the freight transport and logistics system to increase added-value and boost competitiveness	6.1.1. Development of models, algorithms, technologically advanced platforms and systems (e.g. control towers) to boost competitiveness of Greek ports (and collaborating land terminals) and transport systems.
	6.1.2 Development of a technologically advanced freight transport observatory able to support Greek transport (trucks, trains, short-sea-shipping) at the national and international levels
	6.1.3 Development of novel collaborative models to strengthen synergies between links in the supply chain, including outsourcing to specialized 3PL/4PL service providers
	6.1.4 Development of freight transport forecasting models using artificial intelligence (AI) tools and big data techniques
	6.1.5 Development and use of novel systems and technologies for optimal management of available (road, sea, air) resources as well as optimal route planning/scheduling of offered freight services
	6.1.6 Development and use of applications and systems for safer driving in road transport
	6.1.7 Use of technologies to optimize port and land freight management terminals
	6.1.8 Use of technologies to increase vertical integration of offered services.
	6.1.9 Developing and strengthening synergies between links in the supply chain through development and use of smart auctioning platforms, online marketplaces, blockchain technologies and cargo community systems
	6.1.10 Strengthening connections of the transport value chain with other value chains (e.g. agri-food, energy, telecommunications, environment, etc.)
	6.1.11 Development of methods, infrastructures and technologies in Agro-logistics to support agricultural product management and sale in the local and the international markets
	6.1.12 Developing tools to support international transport drivers in case of incidents in Greece and abroad (through automatic information updating)
	6.1.13 Safe management of hazardous goods in freight terminals and on road networks
	6.1.14 Development of innovative solutions for efficient management of truck parking spaces
	6.1.15 Design of alternative fuel (e.g. LNG, biofuels, ammonia, hydrogen) supply network,

	facilities and storage infrastructures for ship refueling.
	6.1.16 ICT applications aimed at improving reverse supply chain efficiency
	6.1.17 Shifting of transport volumes from road to rail and sea transport
	6.1.18 Utilization and technological upgrading of unused storage spaces, especially in big cities
	6.1.19 Development of small-scale land and sea transport systems for alternative fuels (including LNG)
	6.1.20 Development of online markets for direct marketing of agricultural products from producer to consumer (in Greece and abroad).
	6.1.21 Digitalization of small public-use truck companies and agencies
6.2 Development of intelligent infrastructures and infrastructure systems and services	6.2.1 Use of novel infrastructure technologies to increase road safety and efficiency, through embedded systems applications in the construction of road elements, e.g. road signings and markings, for improved communication with drivers
	6.2.2 Driver support systems (e.g. e-Call, driver vigilance, active safety, vehicle-infrastructure interface systems, operations automation, convoy systems and applications, etc.); development and application of methodologies and technologies incorporating the human factor and its interface with the means of transport (vehicle, ship, train, etc.) including drivers, operators and crews.
	6.2.3 Development and implementation of integrated intelligent transport systems architectures
	6.2.4 Use of new technologies to improve transports and their interoperability (including automation, electromobility, cloud services, IoT, data traffic and management systems, etc.)
	6.2.5 Advanced applications for transport systems interconnection (trucks, trains, ships) with terminals, distribution centers and storage facilities (ports, airports, warehouses)
	6.2.6 Design of smart port infrastructures and use of Port Community Information Systems (PCSs) to achieve efficient information provision and communication of port operators to complete formalities from a single access point (Maritime Single Window).
	6.2.7 Vehicle, ship and train electromobility technologies
	6.2.8 Interconnection technologies emphasizing 5G, mobile edge computing and hybrid communication technologies, IoT, cloud services, etc.
	6.2.9 Security and cybersecurity applications for transport and logistics

	6.2.10 Innovative interoperable solution applications for seamless access to multimodal transport services (one-stop-shop for seamless intermodality)
	6.2.11 Novel simulation models and applications for transports, traffic models etc. taking into account the impact of new technologies (e.g automation)
	6.2.12 Unmanned air vehicle (drone) technologies to improve city logistics and last-mile delivery.
	6.2.13 Development of technologies and applications for construction of small short sea-shipping vessels and pleasure crafts including electric outboards, smart security and anchoring systems
	6.2.14 Development of intelligent applications and systems for safer and more efficient passenger transport
	6.2.15 Methods and technologies for inspection, monitoring and maintenance as well as for resilience control of transport infrastructures (using sensor networks, UAS, etc.)
	6.2.16 Design and development of next generation traffic management systems (adaptive / collaborative traffic management systems)
	6.2.17 Development of C-ITS services on motorways and on the road network at large; specifically, infrastructure development for C-ITS equipment certification and issuing/management of digital certificates for use in C-ITS services; establishment of a testing site/track for C-ITS services
	6.2.18 Use of 5G technology and connected and intelligent mobility applications (autonomous vehicles, vehicle-to-infrastructure communication, etc.)
	6.2.19 Development of real-time traveler information systems, parking management systems, integrated ticketing systems, Mobility-as-a-Service (MaaS) platforms and collaborative mobility systems.
	6.2.20 Development and application of big data analytics for mobility, transport & logistics; smart mooring applications
	6.2.21 Development and application of sensors for low-cost and high efficiency mobility management for all means of transport
	6.2.22 Digital infrastructure mapping (digital twins)
6.3. Green transports – Sustainability and viability in transport	6.3.1 Development of integrated personalized and electronic services to promote use of environment friendly means of transport for sustainable transportation

	6.3.2 Development of energy consumption optimization technologies in port operations and in transport infrastructures at large
	6.3.3 Development of innovative solutions to reduce emissions from transport means and infrastructures (e.g. ships, airplanes, ports, etc.)
	6.3.4 Development of urban network structure and operation simulation and study models for implementation of smart mobility systems and infrastructures
	6.3.5 Methodologies and tools to support the creation and operation of freight transport management hubs in metropolitan areas.
	6.3.6 Development of vehicle powertrain technologies and systems (including electromobility for vehicles, ships, aircrafts, air vehicles and other transportation systems, hybrid vehicles, hybrid propulsion systems, rechargeable hybrid vehicles with external power supply, electric cars with batteries and power- generating units, electric cars with solar panels, power stations) and electromobility promotion services
	6.3.7 Development of integrated personalized and electronic services to promote use of environment friendly means of transport for sustainable transportation
	6.3.8 Development of real-time traveler information systems, parking management systems, integrated ticketing systems, Mobility-as-a-Service (MaaS) platforms and collaborative mobility systems
	6.3.9 Development and application of big data analytics for mobility, transport & logistics; smart mooring applications
	6.3.10 Development and application of sensors for low-cost and high efficiency mobility management for all means of transport
	6.3.11 Applications, technologies and systems for optimization (as regards energy, operation, etc.) of design, construction and use of ships, vehicles and trains.
	6.3.12 Reduction of transport chain carbon footprint
	6.3.13 Strengthening liquid natural gas (LNG) transport chains
	6.3.14 Smart energy management technologies and strategies for electric vehicle charging with a two-way power flow option (bidirectional EV charging)
	6.3.15 Development of blockchain technologies and application thereof to verify improvement of environmental footprint due to alternative fuel use
	6.3.16 Development of effective and energy-efficient onboard CO ₂ capture technologies.

	6.3.17 Novel technologies in toll collection and management (interoperability, proportionality of toll charges, compatibility with EU directives)
	6.3.18 Development of infrastructures for C-ITS information diffusion (National Open Data Portal, National Access Points, mobile apps, digital radio)
	6.3.19 Reduction of the environmental footprint of ships during their approach and stay in port
	6.3.20 Recycling and circular economy applications in transport and logistics (management of batteries, used tires, etc.)
6.4 Strengthening intermodality and autonomy in passenger and freight transports	6.4.1 Providing door-to-door mobility through the public transportation system (covering the so-called “last-mile” of people movements)
	6.4.2 Promoting vehicle-sharing systems, especially for electric vehicles
	6.4.3 Interconnection and interoperability applications for means of transport (public and private)
	6.4.4 Automated driving in Greek cities: prospect evaluation, applications and pilot actions for passenger and freight transport
	6.4.5 Applications for integration of the transport and logistics pillars in smart cities
	6.4.6 Facilitating and developing multimodal and combined transport through development of relevant technological systems; methods and technologies for integrated combination and coordination of multimodal transport (ports-ships-trains-vehicles).
6.5 Enhancing territorial accessibility and territorial cohesion in Greece	6.5.1 Development of innovative solutions and services to address problems faced by islands served by non-profit lines
	6.5.2 Improving long-distance transport efficiency.
	6.5.3 Improving access to remote parts of the Greek land territory through multimodal transport
	6.5.4 Development of applications to serve logistics in insular regions
	6.5.5 Electric boats and sailboats for short- and medium-duration trips with fast charging (or battery-changing) infrastructures in intermediate ports
	6.5.6 Automated freight delivery/collection in regional/island ports not equipped with necessary infrastructures
	6.5.7 Analysis of the short-sea-shipping network by developing an integrated system of monitoring indicators and utilizing big data for its optimal use
	6.5.8 Dynamic allocation of short-sea-shipping capacity in islands using AI and big data
	6.5.9 Development of novel “hub and spoke” transport/distribution networks specifically for Greek islands with storage/loading option in central “hub” islands

	6.5.10 Technologies and methods responding to increased supply needs (FMCG) of Greek islands during summer season by smart reserve creation and distribution
6.6 Emerging technologies in Transport and Logistics – 4th Industrial Revolution	6.6.1 Improving construction and extending the lifecycle of means of transport through development of smart self-diagnosis materials and technologies
	6.6.2 Development of groundbreaking and multi-parameter design solutions for vehicle frames in order to promote electromobility, reduce vehicle cost and improve supply chain flexibility and responsiveness.
	6.6.3 Optimization of multimodal transportation chain using distributed databases (blockchain) technologies
	6.6.4 Augmented-reality and AI technologies (systems and tools) for virtual prototyping, testing, certification and improvement of transportation services, means of transport and logistics
	6.6.5 Automation technologies and (smart) sensors, built-in monitoring and optimization systems for vehicles, ships and trains – interconnection with related sectors including robotics, AI, machine learning, etc.
	6.6.6 Application of 4 th Industrial Revolution technologies in small- and medium-size port facilities networks
	6.6.7 Other emerging technologies
6.7 Urban Passenger and Freight Transport	6.7.1 Development of novel collaborative freight consolidation models for more efficient urban deliveries
	6.7.2 Development of City Logistics applications for a more efficient and environment friendly supply of retailer shops in urban areas; emphasis on end-to-end applications.
	6.7.3 Promotion of electromobility and design of a fast-charging system for urban deliveries
	6.7.4 Development of on-demand passenger and freight transport systems (dial-a-ride and pickup and delivery)
	6.7.5 Development of innovative organization, management and optimization systems for delivery in urban areas
	6.7.6 Development of novel Mobility-as-a-Service (MaaS) systems
	6.7.7 Methods and technologies for smart parking space management to facilitate urban deliveries and MaaS services
	6.7.8 Development of new smart algorithms for route planning/loading/scheduling of drivers and vehicles taking into account modern needs and uncertainties (due to traffic, vehicle breakdowns, electric vehicle charging and delivery problems)

6.8 Modern Major Freight and Storage Facilities	6.8.1 Technologically advanced methods for consolidation of informal concentrations of logistics facilities in Attica and Central Macedonia (a single platform for load and resource management combined with predictive models)
	6.8.2 Applications for interconnection of transportation with distribution centers and storage facilities
	6.8.3 Utilization of state-of-the-art technologies and equipment in major freight and storage facilities (economotechnical study and applications)
	6.8.4 Analysis and innovative solutions for adaptation of freight centers in the context of redesigning e-commerce distribution networks
	6.8.5 Development of robotic technologies and other warehouse automations to optimize picking and management of freight
	6.8.6 Utilization of 3D printing and distributed manufacturing technologies to offer added-value services within logistics facilities
	6.8.7 Development of innovative and efficient technologies to assist picking (drone swarms, pick-to-light, automated vision, smart carts)
	6.8.8. Technologies to facilitate e-commerce warehouses and food supermarkets (dark stores) and tools to optimize distribution and next-day deliveries
6.9 Strategies and Tools – Training/Retraining/Specialization	6.9.1 Augmented and virtual reality and AI technologies (systems and tools) for training, retraining and specialization of drivers and operators
	6.9.2 Novel driver, operator and personnel training methods, applications and tools, particularly in new technologies - new technology efficiency, acceptance and penetration studies
	6.9.3 AI and AR technologies to support development and integration of AI in connected, cooperative and automated mobility (CCAM) at the vehicle and system levels, as well as for training and data validation approaches (e.g. digital twins).
	6.9.4 Development/Utilization of virtual reality applications for training the personnel of infrastructure operators (in order to be able to handle incidents)
	6.9.5 Development and utilization of novel Open Science/Open Data applications to enhance and strengthen knowledge and innovation in the transport sector