LEADING RESEARCH & INNOVATION
UITP (International Association of Public Transport) is the only worldwide network to bring together all public transport stakeholders and all sustainable transport modes.

WHO WE ARE

+1,600 MEMBER COMPANIES

FROM 99 COUNTRIES

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WHAT WE DO

OUR MISSIONS: every day we make a difference for our members and for the wider sustainable transport community.

ADVOCACY & OUTREACH

We engage with decision-makers, international organisations, key stakeholders

KNOWLEDGE

We generate cutting-edge knowledge and expertise

NETWORK & BUSINESS

We bring people together to exchange ideas, share best practice and forge partnerships
Research & Innovation (R&I) are important drivers in developing public transport. They also are key factors in bringing added-value solutions - both to the sector and society. UITP strives to excel in this area, adopting a ‘think global, act local’ approach. The association provides its members and the wider urban mobility community with cutting-edge solutions and a clear focus on sustainability and efficiency. Additionally, UITP helps its members to assess the impact of innovation in their business.

The research and innovation activities within UITP fall under the Knowledge and Innovation (K&I) department. Our priority working topics result from the analysis of internal developments and external trends affecting the public transport market, supplemented by issues identified by UITP’s working bodies in relation with the day-to-day business operation.

With third party support, UITP plays a key role in improving quality of life around the world.

THE FOUR TOP OBJECTIVES OF THE UITP R&I STRATEGY:

- Identifying Regional Priorities for R&I
- Identifying and Exploiting Opportunities to Fund Innovative Projects
- Performing Interregional Transferability of Innovative Solutions
- Supporting UITP Members in Accessing, Coordinating and Participating to Third-Party Funded R&I Activities
CONNECTED AND AUTOMATED DRIVING EMPLOYMENT

ARCADE is a project that coordinates consensus-building across stakeholders for a harmonised deployment of Connected, Cooperative and Automated Driving (CAD).

The ARCADE project aims to establish a joint stakeholders forum in order to coordinate and harmonise automated road transport approaches at European level (e.g. strategic alignment of national action plans for automated driving) and international level (in particular with the US and Japan). Exchange of knowledge, lessons and experiences from past and ongoing activities will be at the core of this forum.

FAST AND SMART CHARGING SOLUTIONS FOR FULL SIZE URBAN HEAVY DUTY APPLICATIONS

ASSURED addresses the electrification of urban commercial vehicles and their integration with fast charging infrastructure solutions in different cities across Europe. Its fundamental aim is that each of these solutions will be able to charge various types of vehicles, and are designed to supply energy for a whole fleet of buses.

Using innovative charging management strategies, ASSURED will contribute to reducing noise and air pollution, as well as the total cost of ownership and operational costs of large fleets of electric vehicles. Seeking to help enhance the upscaling of fleets, the project also looks at the impact of these charging solutions on grid stability and reliability.
EUROPEAN FORUM AND OBSERVATORY FOR OPEN SCIENCE IN TRANSPORT

BE OPEN aims to create a common understanding on the practical impact of open science and to identify and put in place the mechanisms needed to make it a reality in transport research.

Openness, transparency, fairness, and reproducibility of science are key aspects around which BE OPEN will seek to establish the ground rules for the transport research communities, ultimately establishing a community of transport research organisations willing to work on the basis of a commonly agreed ‘Open Science Code of Conduct’. To achieve this, BE OPEN will gather and connect key transport and open science related communities.

AUTOMATED DRIVING PROGRESSED BY INTERNET OF THINGS

To realise the full potential offered by automated vehicles (AVs), the AUTOPILOT project combines them with the concept of the Internet of Things (IoT), which enables connections between objects or ‘things’ at any time and in any place, using any service over any network.

Within the AUTOPILOT project, the IoT ecosystem will involve vehicles, road infrastructure and surrounding objects, with a particular focus on the safety aspects of automated driving. Knowledge and technology from the automotive and the IoT value chains are brought together in order to develop IoT architectures and platforms and test new mobility services, such as driverless car rebalancing and automated valet parking, in demonstrators across Europe.
**BIO-BASED MATERIALS FOR THE AUTOMOTIVE INDUSTRY WITH INCREASED ENVIRONMENTAL SUSTAINABILITY**

BIOMOTIVE is paving the way for the production and market entry of bio-based automotive interior parts with an improved environmental profile that are economically competitive.

The BIOMOTIVE project seeks to replace existing fossil-based, non-biodegradable counterparts with new bio-based materials, leveraging innovative production techniques. Such materials will be validated into cars’ interior parts such as door handles and seats, demonstrating advanced properties in terms of resistance to fire, mechanical strength and flexibility as well as improved recyclability of the end-of-life products.

**CLEANER AND BETTER TRANSPORT IN CITIES**

The CIVITAS SATELLITE project supports and coordinates the endeavours of the current and upcoming CIVITAS 2020 projects, which promote better and cleaner transport in cities.

The project helps cities gain better access to innovative solutions to address their transport challenges. It brings the latest innovations from European urban mobility research to cities through cross-project coordination and exchange mechanisms. Furthermore, the project provides city practitioners with the necessary skills to apply innovations in their own context, and helps to prepare for the actual take-up of these solutions through peer-to-peer learning.
STUDY ON EXPLORING THE POSSIBLE EMPLOYMENT IMPLICATIONS OF CONNECTED AND AUTOMATED DRIVING

The aim of this tender is the analysis of possible implications of Connected and Automated Driving (CAD) on employment and the elaboration of policy options to timely address these impacts.

Within the study, focus is on the possible implications of CAD on employment, including the required skills and competences, the new business models, work patterns and the related cross-cutting issues.

TRANSFORMING CITIES WITH BUS RAPID TRANSIT (BRT) SYSTEMS: HOW TO INTEGRATE BRT?

The joint UITP, Volvo Research and Educational Foundations (VREF) and Centre of Excellence (CoE) BRT+ report explores the key elements necessary to implement BRT systems in cities; namely the planning and funding of the system as well as operational and maintenance aspects.

The report ‘Transforming Cities with BRT Systems: How to Integrate BRT?’ targets decision makers and is based on the work done by the organisations involved. It draws on the Latin-American experience and seeks to present lessons that are transferable to other contexts, in particular to Africa, with Dakar and Cape Town cases. The report proposes five principles that would help integrating BRT systems and optimising their performance, ensuring that they form a credible alternative to cars.
NEEDS, WANTS AND BEHAVIOUR OF DRIVERS AND AUTOMATED VEHICLE USERS TODAY AND INTO THE FUTURE

Drive2theFuture aims to prepare ‘drivers’, travellers and vehicle operators to use connected, cooperative and automated transport modes, while supporting the industry in understanding what users’ needs and wants are.

The project will test and compare various automated transport and Human Machine Interface (HMI) applications for different modes and all types of users, with the aim of optimising sustainable market introduction of these applications. Within the project, 12 pilots across Europe will seek to investigate the impact of the proposed tools and concepts on user acceptance and awareness, operation efficiency and cost effectiveness.

REDUCING ENERGY LOSSES THROUGH INCREASED SYNERGY BETWEEN RAILWAYS AND ELECTRICITY DISTRIBUTION NETWORKS

E-LOBSTER seeks to reduce energy losses in European power distribution networks and light-railway networks by creating synergies between them.

The E-LOBSTER project intends to capture the potential of creating synergies between the two types of networks through the development of an innovative, economically viable and easily replicable electric Transport-Grid Inter-Connection System. This system will be able to reduce energy losses by maximising the use of local renewable energy sources and making electricity distribution networks and electrified transport networks interact with each other.
FUTURE SECURE AND ACCESSIBLE RAIL STATIONS

The FAIR Stations project aims to develop solutions that improve user flows both within stations and at train platforms. The project puts customer satisfaction, security and safety at the centre of the station design, while paying particular attention to needs of passengers with reduced mobility.

FAIR Stations seeks to develop various station designs and solutions for platform train interface and train door access, which would help to make the journey more pleasurable, safe and smooth. More concretely, the project will focus on specific solutions, such as arranging the station facilities and infrastructure to ensure a smooth flow of passengers, especially in peak times and in emergency situations.

FUTURE RESEARCH, ADVANCED DEVELOPMENT AND IMPLEMENTATION ACTIVITIES FOR ROAD TRANSPORT

FUTURE-RADAR supports the Technology Platform ERTRAC (European Road Transport Research Advisory Council) and the EGVI (European Green Vehicle Initiative) in creating and implementing the research and innovation strategies required for a sustainable and competitive European road transport system.

Linking representatives from all stakeholder groups, FUTURE-RADAR activities include project monitoring, strategic research agendas, international assessments and making recommendations for innovation deployment, as well as twinning of international projects and comprehensive dissemination and awareness activities. Moreover, FUTURE-RADAR facilitates the exchange between cities in Europe, Asia and Latin America on urban electric mobility solutions.
FOSTERING THE ADOPTION OF GALILEO FOR MOBILITY AS A SERVICE

Galileo 4 Mobility aims to support the introduction of Galileo technology within the Mobility as a Service (MaaS) context. The project analyses the needs in terms of geolocation and demonstrates the benefits of Galileo on location based-mobility services through pilot demonstrators.

The project’s objectives are to understand, define and validate the requirements for Global Navigation Satellite System (GNSS) in the MaaS sector. It will identify the benefits that Galileo might bring compared to existing solutions, by improving the accuracy and availability of passengers’ and vehicles’ locations and enhancing the continuity as well as the ease of use of shared mobility services in urban environments.

GOVERNANCE PRINCIPLES AND METHODS ENABLING DECISION MAKERS TO MANAGE AND REGULATE THE CHANGING MOBILITY SYSTEMS

GECKO’s main goal is to support authorities with tools and recommendations for new regulatory frameworks to enhance the transition to new mobility solutions, acknowledging that existing frameworks may be inadequate in terms of protecting society, fostering business development and achieving integrated, sustainable mobility.

GECKO will outline an implementation plan including actions required up to 2040, aiming to advise policy makers on challenges and policies that need to be addressed to move towards integrated, accessible and sustainable mobility across modes for both passenger and freight transport.
UNLOCKING LARGE-SCALE ACCESS TO COMBINED MOBILITY THROUGH A EUROPEAN MAAS NETWORK

The main objective of IMOVE is to accelerate deployment and unlock the scalability of MaaS schemes in Europe, ultimately paving the way for a ‘roaming’ service for MaaS users on a European level.

IMOVE investigates and validates advanced solutions for improving the deployment and operation of MaaS and its underlying business models. IMOVE solutions are investigated and validated in five European Living Labs - Turin, Greater Manchester, Berlin, Gothenburg and Madrid - all of which are currently engaged in, or having plans for, MaaS development.

JOINT INITIATIVE FOR HYDROGEN VEHICLES ACROSS EUROPE

JIVE aims to enhance the commercialisation of fuel cell buses by deploying 139 vehicles across five countries, which will double the number of fuel cell buses operating currently in Europe.

JIVE uses coordinated procurement activities to unlock the economies of scale which are required to reduce the cost of the fuel cell buses. The project also tests new hydrogen refuelling stations with the required capacity to serve fleets of 20 buses or bigger. This activity aims to reduce the costs of hydrogen and increase the availability of equipment.
The main objective of the JIVE 2 project is to support the transition of fuel cell buses from technically proven, but high cost, demonstrators, to a more mainstream solution for public transport authorities and operators.

JIVE 2 builds on existing initiatives, in particular the closely related JIVE project. The project addresses several challenges for the sector, such as reducing vehicle ownership costs, increasing the use of hydrogen fuel cell bus models, or proving the feasibility of operating large fleets. JIVE 2 will see the deployment of 152 fuel cell buses in seven countries across Europe.

The goal of MOMENTUM is to develop a set of new data analysis methods, transport models and planning support tools able to capture the impact of new transport options on urban mobility.

Disruptive technologies, such as MaaS and Connected and Automated Vehicles (CAVs), are bringing radical changes in urban mobility. The MOMENTUM project aims to support cities in the task of designing the right policy mix to exploit the full potential of emerging mobility solutions.
MORE seeks to optimise road space in Europe by addressing problems such as congestion, air pollution, noise, and lack of road safety. The project will specifically focus on urban nodes and the main roads that carry traffic to and from the interurban links of the Trans-European Transport Network (TEN-T).

MORE will enable city authorities to make the best use of available road-space, by optimally allocating the available capacity dynamically, in space and time; hereby taking advantage of advances in big data and digital eco-systems, and in new vehicle technologies and operating systems, in materials and construction technologies, and in dynamic traffic signing and lane marking capabilities.

My-TRAC is devoted to developing a new user-centric transport application that will enhance the passenger multimodal door-to-door experience. This application should help citizens develop greater confidence in multimodal transport services.

The My-TRAC application will connect information from operators and MaaS providers and is designed for users as well as public and private transport operators. By applying advanced behavioural transport analytics and artificial intelligence (AI) algorithms, the My-TRAC application will seamlessly integrate services and improve passenger experience by allowing travellers to control and manage their journey in real time.
**PROCUREMENTS OF INNOVATIVE, ADVANCED SYSTEMS TO SUPPORT SECURITY IN PUBLIC TRANSPORT**

PREVENT focuses on pre-empting attacks in public transport by enabling earlier detection of terrorists and potentially dangerous objects, tracking of detected individuals or situations and coordinating the response of security forces.

The PREVENT project aims to define six common security scenarios that capture threats and vulnerabilities in public transport. Furthermore, it aims to share and harmonise current security practices, prioritise the list of innovations required to address the scenarios, and deliver the documents needed to initiate a joint procurement to address the highest priority innovations.

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**OPTIMISATION OF ENERGY USE**

OPEUS aims to develop a simulation methodology and an accompanying modelling tool that will optimise energy consumption of rail systems, with a particular focus on in-vehicle innovation.

The OPEUS concept centres on the need to understand and measure the energy used by each relevant component in the rail system, in particular the train. This includes energy losses within the traction chain, the technologies used to reduce these losses and optimise energy consumption.
The SPRINT project falls under the Shift2Rail initiative and aims to enable the interoperability of multimodal transport related services by lifting the technical barriers between applications.

SPRINT seeks to synchronise the technical developments that are already made within the Interoperability Framework (IF) within the Shift2Rail initiative. Furthermore, the SPRINT project will improve key aspects of the Shift2Rail IF to bring the market uptake of the multimodal transport ecosystem closer to reality.

Shift2Maas aims to support the uptake of technologies developed in the Innovation Programme 4 (IP4) of Shift2Rail within the MaaS context and overcome the technical and non-technical barriers for the adoption of new and integrated mobility platforms.

Shift2Maas will demonstrate the benefits of IP4 through pilots focused on shared mobility services and seamless passenger experience, conducted in three different demonstration sites in Europe (Lisbon, Malaga and Central East Corridor). The lessons learned will be made available and shared with Shift2Rail IP4.
**SHARE PERSONALISED AUTOMATED CONNECTED VEHICLES**

SPACE is a flagship UITP project aiming at placing public transport at the centre of the AV revolution and helping to build the AV-public transport ecosystem.

SPACE creates an overview of AV pilots and initiatives worldwide, exchanging practices and building on the knowledge of ongoing projects. These initiatives will be used to assess the impact of automated and connected road transport systems on human resources, costs, vehicles, customer experience and public transport, as well as on business models. The impact on the regulatory framework to allow safe AV operation in real mobility scenarios will be also investigated.

**SOCIAL DIALOGUE IN THE URBAN PUBLIC TRANSPORT SECTOR (CEE-COUNTRIES)**

The European social partners of the urban public transport sector, UITP, the European Transport Workers’ Federation (ETF) and EVA Akademie, collaborate together to support the social dialogue in the CEE countries.

This project aims to strengthen the capacity of social partners to develop a national social dialogue as well as further deepening the knowledge of the European social partners on national concerns and demands in the Central and Eastern European (CEE) countries. Collaboration emerges from joint seminars, during which experts and social partners from Lithuania, Latvia, Estonia, Poland, Czech Republic, Slovakia, Hungary, Romania, Bulgaria, Croatia, Slovenia and Serbia exchange experience and information.
SMaRTE aims to identify the primary influences that lead travellers to choose rail transport - or an alternative - for a specific journey.

In order to understand these factors better, SMaRTE develops an experience map, hosts workshops for both travellers and rail stakeholders, and undertakes a number of surveys. These new insights will propose new measures for improving the attractiveness of the rail sector. SMaRTE will also define a new methodology for implementing the latest condition-based maintenance system for railway systems. This approach helps to make maintenance better-tailored, more efficient and more cost-effective.

The SUMP-PLUS project seeks to contribute to creating more sustainable cities by addressing urban mobility related challenges, hereby taking into account the need to establish stronger links with other urban system components such as education, health, retail, and land use planning.

The project aims to develop a strong, rigorous evidence base through a co-created ‘City Laboratories approach’, which will be demonstrated in different cities within the EU. SUMP-PLUS will build on the strengths of the existing SUMP and SULP (Sustainable Urban Logistics Plans)
TECHNICAL SUPPORT RELATED TO SUSTAINABLE URBAN MOBILITY INDICATORS

SUMI is a service contract for the European Commission’s DG MOVE offering technical assistance to selected urban areas for the pilot application of a pre-defined set of sustainable urban mobility indicators.

SUMI aims to support urban areas all over Europe in evaluating the sustainability of their mobility systems, and track the impact of their policies through a harmonised set of urban mobility indicators, to be endorsed by the European Commission and based on a previous approach by the World Business Council for Sustainable Development (WBCSD).

TRANSVERSAL EXPLORATORY RESEARCH ACTIVITIES FOR RAILWAY

The main objective of TER4RAIL is to reinforce the cooperation between rail-related stakeholders to improve the efficiency of research in the rail sector and to facilitate innovative ideas and cross-fertilisation of knowledge from other disciplines.

TER4RAIL aims to determine transversal exploratory research activities among different actors that are beneficial for railways. The project also represents different actors in the European railway community, such as industry, academia, users, researchers, and policy makers. All of these stakeholders have different perceptions regarding technological applications and different objectives for the future.
UMii aims to provide insights into urban mobility and innovation in cities across the world, and to deliver a guide for cities to foster innovation in their urban mobility services and systems.

UMii is based on composite indicators that enable inter-city comparison and conversation, rather than scoring and ranking cities competitively. Data is collected from cities worldwide and then analysed and produced in reports. Cities contributing with their data are invited to take part in the Urban Mobility Innovation Forum, an event which is dedicated to exchanging and learning ‘next and best’ practices. The UMii network is now counting 40 cities.