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As predicted, 2018 proved to be an exciting and inspiring year for ERTICO - ITS Europe and our Partners. Over the last year, ERTICO’s innovative projects in our four focus areas, our range of successful events and enhanced international cooperation have kept us very busy. At the same time, it is my pleasure to see that the ERTICO Partnership has continued to grow in strength. Nevertheless, ERTICO believes what we have learned and achieved so far is just a mere stepping stone to even greater accomplishments in our collective future.

This year ERTICO is likewise determined to be the driving force for change for industry users, public authorities and research, and to remain at the forefront of developments in ITS. Consequently, we continue to prioritise projects, events, and activities that enrich our Partners and develop the ITS community and the knowledge contained within it.

We understand that Europe is at the heart of smart mobility development. Our primacy is not based solely on technology but also on policy. There are areas in which Europe is clearly a leader, such as urban mobility, connectivity and standardisation. Despite our focus on smart mobility in Europe, we are always on the lookout to foster closer collaboration with interested parties at a global level. As ITS Europe, ERTICO has evolved into a strong Partnership, developing expertise in various areas which can inspire and spur on other countries and ITS associations worldwide.

As one of the key enablers of the European Union Digital Single Market strategy, ERTICO has long recognised the budding potential of start-ups. We have understood that it is high time to launch the ERTICO Start-up initiative where start-ups will benefit from ERTICO’s extensive knowledge and experience whilst at the same time provide us with inspiration from their innovative approaches and breakthrough concepts.

The developments and growth, which have distinguished ERTICO’s recent past are a source of pride, but primarily a stimulus to work harder. I believe we are indeed moving closer to smart mobility. The main challenge ahead is sustaining this momentum. Change is inevitable to continue moving forward, and this year ERTICO is looking at different ways it can deliver on change in innovation and deployment, but also in the way our organisation communicates. This year will be a pivotal year for ERTICO’s corporate branding as we evolve the way we present ourselves. It is important that we continue to reach out to our target groups and continue to spread the word on the benefits of ITS for mobility.
Fore
Europe

Innovation for tomorrow’s journey.
ABOUT ERTICO

ERTICO brings together private companies and public institutions to make mobility cleaner, safer and more efficient. We develop, promote and deploy technology solutions for smarter mobility, in collaboration with our Partners. ERTICO connects around 120 Partners from a wide range of transport sectors: service providers, suppliers, traffic and transport industry, research, public authorities, user organisations, mobile network operators, and vehicle manufacturers.
OUR VISION:
BRINGING INTELLIGENCE INTO MOBILITY FOR:

SAFER MOBILITY
ZERO ACCIDENTS

SMARTER MOBILITY
ZERO DELAYS AND FULLY INFORMED PEOPLE

CLEANER MOBILITY
REDUCED IMPACT ON THE ENVIRONMENT

OUR MISSION:
ERTICO DEVELOPS, PROMOTES AND DEPLOYS INTELLIGENT MOBILITY SERVICES, WHICH NEED MULTI-STAKEHOLDER ENGAGEMENT BY:

IMPLEMENTING NECESSARY DEPLOYMENT ENABLERS

EVALUATING, ADAPTING AND USING MOST ADVANCED RELATED TECHNOLOGIES
OUR VISION FOR MOBILITY IN 2030

Seamless, green, and safe transport; cross-border travel information; implementation of digital infrastructure; inclusive policies: the ERTICO Partnership has a clear vision of what mobility will look like in 2030. ERTICO’s unique position within the transport ecosystem makes us the ideal enabler for the smart mobility solutions that will achieve this vision.

Some of the major challenges that the transport sector is currently facing include population growth, increasing urbanisation of societies and therefore growing transport demand, and climate change. These challenges place different demands on existing mobility services and infrastructure systems. To ensure a holistic mobility management that tackles all these challenges in cities and regions by 2030, we will need to have established strategies for managing the shared use of infrastructure by passenger and freight traffic, including personal vehicles and public transport. Cities will become aware that coping with population growth and other transport demand requires the coexistence of passengers and goods in outer- and inner-urban environments. ERTICO already facilitates and pushes for further development of thought-leading concepts in this area, with activities such as MaaS, AEOLIX, TM 2.0, and will continue to do so.

Transport for all modes will be provided by clean and sustainable vehicles. Europe-wide policies for emission-free transport and vehicle standards will be in place. By 2030 logistics stakeholders will need to track, document and disclose their CO2 emissions. Improvement of energy efficiency, a move away from carbon-sourced electricity and an extensive development towards electro-mobility will be characteristic for energy usage in 2030. ERTICO will use the experience gained through its Partnership actions to continue taking the lead towards establishing a common methodology on measuring the impact of road-based mobility on air quality.

Significant safety and efficiency gains, in great part due to enhanced automation and connectivity, will ensure fewer accidents and fatalities related to transport in 2030. We will see a gradual transformation of the transport network: from a mix of vehicles and infrastructure with some active management towards a fully automated system of vehicles and infrastructure with substantially higher safety. Highly automated vehicles will be routinely produced and deployed for a growing market by 2030. In line with this, the integration of transport networks and the Internet of Things (IoT), coupled with concerns regarding the hacking of computers, connected and automated cars and payment systems, will have prompted EU-wide action on data formats, management and storage by 2030. ERTICO will continue its work on identifying how technological advancements and new trends affect smart mobility solutions.

Considerable deployment of Cooperative Intelligent Transport Systems (C-ITS) will facilitate the production of precise and constantly updated digital maps and accurate localisation of the vehicle. EU-wide similar regulatory regimes will make cross-border travelling seamless. Driverless buses, multi-brand platooning on inter-urban corridors for trucks as well as unmanned vehicles on various transport modes will ensure seamless logistics solutions. The answer to solving the ‘last mile’ problems will be manned electric vehicles; using unmanned vehicles for moving goods from freight hubs to shared delivery points in cities; more use of consolidation centres; and Delivery as a Service (DaaS).

The technological evolution and expected wide uptake of 5G (and later generations) along with the opportunities for more and innovative services offered by the availability of the plethora of data (Big Data) will bring a ‘revolution’ in both infrastructure and vehicles. Blockchain technology will be implemented in many transport and mobility services. It will also be used in wider industrial applications where data accessibility and transactions between multiple actors are required but are now done in siloes. Highly innovative technologies such as blockchain and drones will ensure progress in many transport and mobility services, as they will enable fast and secure data sharing in transport. ERTICO is leading the digitalisation of mobility and it promotes the benefits of continuous connectivity for the seamless integration of mobility services. In addition, ERTICO will take an active role in assessing the mobility-related technological evolution in terms of societal wellbeing.
Seamless travel services will bring the cooperation of the public and private sectors to a new level, since public transport will continue to be an integral part of travel choices offered to travellers by future mobility providers. The key to the successful large-scale deployment of ITS and smart mobility solutions lies in private-public stakeholder cooperation. Organising, facilitating and enhancing the close relationship of the two sectors has been and will continue to be central to ERTICO activities.

In its function as thought leader, knowledge multiplier, and catalyst, ERTICO is a key player in achieving this mobility Vision 2030. ERTICO identifies key trends for mobility, considers how to best encourage multi-modality and modal integration, assesses the case for data platforms in all areas and helps to specify and develop European and global standards. ERTICO’s role furthermore includes alerting decision-makers to potentially significant new developments with technologies and services and similarly advise them on how established mobility services can support delivery of their objectives. ERTICO is a facilitator while at the same time will guide processes and promote innovative concepts that are beneficial and feasible for the Partnership in all its interactions with decision-makers and in all its Partnership activities.
As a public-private partnership, ERTICO-ITS Europe embodies thought leadership and stakeholder engagement. Together with our Partners, we develop, promote and deploy Intelligent Transport Systems and Services (ITS) through a variety of activities including European co-funded projects, innovation platforms, international cooperation, advocacy and events.
ERTICO works to achieve its vision and to fulfill its mission by bringing the relevant stakeholders together to advance our smart mobility agenda. Synergies created by our activities in Stakeholder Engagement and Thought Leadership enable us to take a leading role in the development of innovative mobility solutions. Our work centres around four focus areas: Connected and Automated Driving, Urban Mobility, Clean Mobility, and Transport and Logistics.

Internally within ERTICO, in our headquarters based in Brussels, we have at our disposal a range of thematic industry experts, experienced in preparing European Commission proposals as well as the task of coordination and management to carry forward our ambitions. ERTICO benefits not only from our own internal experts, but from the network of experts from our Partner organisations covering a rich and diverse set of topics related to smart mobility.
STAKEHOLDER ENGAGEMENT

We always involve all mobility stakeholders. This way we are able to find and implement the most innovative solutions. We do this on a global scale thanks to...

Cross-sectoral dialogue
Within the ERTICO Partnership we share knowledge and information through our workshops and events.

International Cooperation
We promote cooperation and business opportunities on the global stage, with a focus on harmonised standards across the world.

ITS Congress
Every year we organize an ITS Congress in Europe and co-organise an ITS World Congress, both the ultimate showcase for mobility services deployment.

Our activities focus on four areas of smart mobility:

INNOVATION & DEPLOYMENT
Together with our partners, we are recognised experts in smart mobility and we use our knowledge to pave the way in this field.

EXPRESS
International Cooperation
We promote cooperation and business opportunities on the global stage, with a focus on harmonised standards across the world.

CONNECTED AND AUTOMATED DRIVING
Accelerating automation and connectivity for safer and smarter mobility.

URBAN MOBILITY
Delivering seamless mobility for all.

CLEAN MOBILITY
Reducing environmental impact.

TRANSPORT AND LOGISTICS
Creating the digital infrastructure for freight transport and logistics operations.

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Cross-sectoral dialogue

ITS Congress

Within the ERTICO Partnership we share knowledge and information through our workshops and events.

Advocating for smart mobility

We are a technology-neutral supporter of mobility and work together with the European Institutions for innovation and deployment.

Envisioning tomorrow’s journey

We develop visionary papers on the future of smart mobility. The expertise within our partnership helps to develop European mobility roadmaps.

Together with our partners, we are recognised experts in smart mobility and we use our knowledge to pave the way in this field.

INNOVATION & DEPLOYMENT

ICT for Transport

ERTICO IN REVIEW 2019

EXPRESS

International Cooperation

We promote cooperation and business opportunities on the global stage, with a focus on harmonised standards across the world.

Accelerating automation and connectivity for safer and smarter mobility

CONNECTED AND AUTOMATED DRIVING

DEPLOYMENT

CLEAN MOBILITY

Reducing environmental impact

TRANSPORT AND LOGISTICS

Creating the digital infrastructure for freight transport and logistics operations
STAKEHOLDER ENGAGEMENT

As a public-private partnership covering eight sectors of mobility, ERTICO has a holistic approach to the digitalisation of transport. We recognise that only by engaging in dialogue with all stakeholders can the most innovative solutions be found and implemented.

Cross-sectoral dialogue

Within the Partnership, cross-sectoral workshops and events are organised to ensure a wide-angle discussion on hot pressing topics. With this purpose, ERTICO organises Focus On topical workshops and the Annual Think Tank, events that focus on the ERTICO Partnership. In 2019, ERTICO is organising a three-series workshop on Connectivity for Automation and Focus On workshops on IoT and Blockchain for mobility.

ERTICO’s Annual Think Tank event in 2018 discussed Multimodality and Access to Data, while in 2019 the focus will be on urban mobility including 3D mobility and smart design of urban space.

ERTICO is the secretariat of the European ITS Nationals Network, through which we disseminate knowledge and information about smart mobility to all stakeholders at the local and national level. The Network provides us with the information on local-national needs and initiatives in ITS deployment.

International Cooperation

As ITS Europe, ERTICO is innately European. Nevertheless, we acknowledge the global nature of smart mobility. A top priority of ERTICO is to ensure that our Partners take full advantage of cooperation and business opportunities available on the global stage. Our international outlook on smart mobility over the years has resulted in the setting up of privileged relations with the US, Japan, Korea, Australia, Singapore, Russia and China.

Through the exchange of best practices and methodologies, ERTICO promotes global and harmonised standards across the continents, while also contributing to the European Commission’s goal of making Europe a leader in the field of smart mobility. We promote interoperability in our international engagement to ensure that the European ITS industry can fully grasp global business opportunities.

ERTICO acts as the European point of contact for the trilateral ‘EU-US-JP Automation in Road Transportation Working Group (ART WG)’. Established in October 2012, this initiative aims to support the cooperation between Europe, the United States and Japan on the topic of automation. The purpose of the working group is to exchange regional information on Connected and Automated Driving, address vehicle and road transport automation topics that apply to public authorities in relation to all stakeholders and identify needs for global harmonisation and standardisation to support international developments and deployment.

Moreover, several of ERTICO’s Innovation Platforms are open to international participation and have fostered international links. These include the Traveller Information Services Association (TISA), Mobility as a Service (MaaS) Alliance, Traffic Management (TM) 2.0 and eMI3, which focuses on interoperability of innovative electro-mobility services.

Several of our European co-funded projects are a stepping stone that ERTICO leverages upon to promote international cooperation. The C-MobiLE project cooperates with the US Department of Transport to contribute to maintaining compatibility of C-ITS standards across continents. In the electro-mobility area, the FABRIC project is liaising internationally and exchanging experiences in dynamic on-road vehicle charging.

Last year, ERTICO further enhanced its close collaboration with international stakeholders. Following a very productive visit to Beijing and Shanghai, ERTICO signed a Memorandum of Understanding (MoU) and initiated a new Joint Innovation Centre with ITS China. This Joint Innovation Centre focuses on connected and automated driving, Mobility as a Service, smart cities, freight transport and logistics. The 25th ITS World Congress in Copenhagen was the stage for a significant agreement between the Mobility as a Service Alliance hosted by ERTICO, and ITS America which has recently established the Mobility on Demand (MOD) Task Force. The work of both entities will support the broad implementation of Mobility as a Service and Mobility on Demand.

Agreements of this kind denote Europe’s leadership in specific mobility areas such as urban mobility, connectivity and standardisation. Our aim is to put to good use this acquired expertise in order to inspire other countries and ITS associations.
ERTICO Startup Initiative

With its robust network of 120 Partners and key players in the smart mobility sector, ERTICO offers start-ups the unique opportunity to ‘Connect. Innovate. Grow.’ With this new initiative launched in June 2019, ERTICO will encourage selected start-ups to innovate and grow their business by involving them in ERTICO activities and facilitating their interaction with some of the most important companies in the mobility industry, the ERTICO Partners. Start-ups will have access and contribute to the latest state of the art on smart mobility and grow their network of contacts thanks to targeted match-making with ERTICO’s network, who will play a role as potential customers or investors. In addition, selected start-ups will have the opportunity to gain visibility through a series of events at European and international level, such as the ITS European and World Congress, ERTICO’s annual Think Tank and many of the initiatives which ERTICO supports, such as the European Startup Prize for Mobility. Access to the work carried out in EU-funded projects will give start-ups the opportunity to build on cutting edge solutions emerging onto the market.

ITS Congresses

The ITS Congress represents the ultimate showcase of mobility services deployment. Each year a World or European Congress is held in a major European city. The European Commission, ITS America and ITS Asia-Pacific are strong partners of ERTICO in organising the World Congress, which is held in Europe every third year.

Congresses are the yearly celebration of smart mobility; they underline the importance of ITS, particularly in cities and regions where they are hosted and are important channels to raise awareness of smart mobility solutions among policy makers, experts and the public. They include live sessions where industry experts present the latest developments in ITS, a showcase of cutting-edge technology and an exhibition space. The Congresses offer stakeholders and participants the ultimate platform to meet with industry influencers, discuss ideas and initiatives, make new contacts and promote their businesses by taking part in a range of activities.

ERTICO ensures that the themes of the ITS Congresses challenge, deepen and support current and future ERTICO activities. The Congresses represent an ideal channel through which ERTICO fosters cooperation with the international industry community in the Americas and in the Asia-Pacific regions.

ITS World Congress Copenhagen 2018

In 2018 the City of Copenhagen welcomed more than 10,000 participants to the 25th ITS World Congress.

With the theme ‘ITS – Quality of Life’, the Congress looked at how ITS is enabling new mobility services, faster and more reliable freight movements and new ways to reduce emissions to help air quality. User-centric mobility was another focal point, as well as best practices on developing smart cities.

Discussions took place over five days in over 250 sessions and workshops, while the exhibition gave forward-thinking businesses and organisations a platform to share their mobility solutions and services with ITS enthusiasts and industry professionals from around the world.

Participants experienced the smart city of Copenhagen, learning about how the city has improved the quality of life for its citizens. This was complemented by diverse demonstrations of the state-of-the-art products and solutions for real-world mobility scenarios, providing answers to some of the world’s most pressing challenges like climate change, air quality, urbanisation, congestion and traffic safety.
Brainport Eindhoven 2019

The 13th ITS European Congress was hosted from 3-6 June 2019 by the Brainport region of Eindhoven-Helmond in the Netherlands and welcomed more than 2,500 participants to the biggest exhibition ever at an ITS European Congress.

With the theme ‘Fulfilling ITS Promises’, the Congress focused on impactful, innovative technologies that make our life and mobility more enjoyable, safer and cleaner. The Congress was organised by ERTICO, the European Commission and the local host, Brainport Eindhoven. The latest ITS technologies implemented by the Brainport region and Europe were showcased, and a variety of Dutch private and public parties joined forces to show visitors what ‘Smart Mobility, Dutch Reality’ means.

Brainport Eindhoven is part of Europe’s technological backbone and enjoys global recognition as a centre for innovation and automotive solutions. Combined with ERTICO’s work on promoting and developing smart mobility services, an excellent programme was put together and innovative live demos showcased the power of ITS on the roads between the Evoluon congress centre in Eindhoven and the Automotive Campus in Helmond.

Singapore 2019

Singapore will proudly host the 2019 ITS World Congress from 21-25 October 2019. The event will bring together governments, companies, and academic/research institutions to share the latest global ITS products, services, and upcoming trends. The Congress is expected to attract a high number of participants, with more than 5,000 people flying in from all over the world, to discuss the most important transport issues.

The 26th ITS World Congress focuses on the application of technology across an extensive range of travel modes to enhance road and rail management and offer road users safe, comfortable and efficient transport. The topics covered are pertinent to land-scarce Singapore as ITS is the core enabler for sophisticated traffic and control systems which allow the maximisation of road network efficiency and optimisation in the use of land capacity.
ERTICO and its Partners are recognised experts in smart mobility and that knowledge makes us thought leaders in the digitalisation of transport and seamless mobility.

Advocating for smart mobility

As a technology-neutral proponent of mobility, ERTICO is engaging in dialogue with the European Institutions both in respect to innovation and deployment.

ERTICO participates in the Digital Transport and Logistics Forum (DTLF) which brings together EU policy-makers and ITS industry actors to develop a European vision for further digitalisation of freight transport and logistics. The second DTLF mandate began in January 2019 and will run for the next five years. DTLF assists the European Commission in implementing activities and programmes to foster more efficient exchange of electronic information in transport and logistics. DTLF also provides a platform for structural dialogue, exchange of technical knowledge, cooperation, and coordination between the European Commission, Member States, and relevant transport and logistics stakeholders. The main tasks of the working groups ERTICO participates in are to provide advice and technical expertise to the European Commission and its services in relation to the preparation of legislative proposals and policy initiatives in the field of digital transport and logistics, as well as in their implementation.

ERTICO supports the European Commission’s Single Platform for open road testing and pre-deployment of cooperative, connected, automated and autonomous mobility (CCAM) and is committed to contribute to the selected thematic areas that will be discussed within the Single Platform. The purpose of the platform is to work towards a European agenda for testing CCAM and addressing the challenges for its deployment in Europe.

As a recognition of ERTICO Partnership’s expertise in urban mobility, ERTICO was invited to contribute to the revision of the Guidelines for Sustainable Urban Mobility Plans (SUMPs) coordinated by the European Commission. The guidelines were initially designed in 2014 to provide principles and step-by-step guidance in urban transport to public authorities, national and local decision-makers and other stakeholders. As part of a wider coalition, ERTICO will contribute by bringing into the SUMPs elements of ITS and MaaS, thus moving a step further towards the integration of technology into urban mobility for the benefit of sustainability. For this task, ERTICO is engaging its public authority Partners via the ERTICO Public Authorities Platform as well as fellow Partners of the Mobility as a Service Alliance.

The potential of Blockchain and Distributed Ledger Technologies (DLT) to address challenges in mobility is a topic that ERTICO started exploring early on and it came as a natural step to take an active part in the International Association for Trusted Blockchain Applications (INATBA), joining the Association as one of the Founding Members. An initiative of the European Commission, INATBA targets to unlock the potential and spread the benefits of Blockchain and DLT across businesses and society. It wants to support the development and adoption of interoperability guidelines, specifications and global standards, to enhance trusted, user-centric services, upholding an open and transparent method of multi-stakeholder cooperation. INATBA promotes an open, transparent and inclusive global model of governance for Blockchain. Moreover, it seeks to maintain a permanent and constructive dialogue with public authorities and regulators that will contribute to the convergence of regulatory approaches to Blockchain and other distributed ledger technologies globally. Through ERTICO’s proactive engagement, our Partners will be strategically positioned as frontrunners in deploying DLT-based applications and services.
ERTICO contributes to the European Technology Platform ALICE, set up to develop a comprehensive strategy for research, innovation and market deployment of logistics and supply chain management innovation in Europe. The strategy’s ambition is the achievement of EU-wide co-modal transport services within a well-synchronised, smart and seamless network, supported by corridors and hubs, providing optimal support to supply chains. It involves a step change from the current system, towards the ultimate vision of the Physical Internet, by synchronising intermodal services between modes and with shippers, aligning equipment and services on corridors and hubs and integrating these into networks.

ERTICO cooperates with the European Parliament on specific issues such as electro-mobility, truck platooning, multimodality, start-ups and Mobility as a Service and holds events under the auspices of Members of the European Parliament.

Envisioning tomorrow’s journey

ERTICO has a unique position due to its diverse Partnership, its extraordinary team of experts in mobility and privileged access to the European policy arena. This gives ERTICO great advantages in understanding mobility trends, foreseeing where opportunities lie ahead, and envisaging the measures required to continue the progress of smart mobility solutions for tomorrow.

ERTICO’s analysis is disseminated and further enhanced through Focus On workshops organised for Partners and the discussion of new concepts and technologies. ERTICO is developing visionary papers to contribute to the discourse on the future of smart mobility and its experts are regularly invited, as ‘influencers’, to contribute to the development of European roadmaps for mobility.
ERTICO takes a leading role in the development and deployment of innovative mobility solutions in the areas of Connected and Automated Driving, Urban Mobility, Clean Mobility and Transport & Logistics.
Innovation and Deployment activities play a key role in ERTICO’s work to make mobility smarter, safer and cleaner. European Commission co-funded projects and ERTICO Innovation Platforms are central to developing and deploying innovative mobility solutions together with its Partners. ERTICO is currently active in over twenty research, pilot and deployment projects engaging many Partners in their consortia. These collaborative activities are carefully selected to build on the work and knowledge of earlier projects and activities, leading to extensive downstream deployment. Through these projects, ERTICO can push forward its focus activities and priorities in the areas of Connected and Automated Driving, Urban Mobility, Clean Mobility, and Transport & Logistics.

Development, innovation and demonstration project activities culminate with pre-deployment results and guidelines. Building on the results of projects, when appropriate, ERTICO creates Innovation Platforms that focus on the deployment of intelligent transport solutions. These platforms receive their financing from ERTICO and through membership fees. They are open to both ERTICO and non-ERTICO Partners to maximise deployment outreach. Innovation Platforms target mainly European markets and are mindful of possible global scaling.

Currently, ERTICO manages eight Innovation Platforms covering a range of deployment services from traffic management, spatial data, electro-mobility, traffic and traveller information to ADAS linked digital maps, Mobility as a Service and cloud-based vehicle sensor data.

The following sections outline ERTICO’s work in our four focus areas, as well as the projects and Innovation Platforms ERTICO is leading or in which we play an active role.


**2030**
Driverless mobility commercial deployment

**2025**
Next generation V2X enabled SAE L4 automated mobility

**2022**
CAD using Big Data trusted platform for Open Data Access

**2020**
Testing and validation of automated mobility

**2019**
CAD progressed by cloud computing, IoT, Big Data and hybrid V2X

**2018**
Common framework for CAD pilots

**Automated**
ERTICO works toward the long-term goal of using highly automated vehicles and responsive infrastructure for the transport of goods and people.

Partly automated vehicles, already operating on European roads, are on a fast track to becoming highly automated. Contributing to this evolution are the increase of computing power allowing the next generation of automated vehicles to use resource-intensive software and artificial intelligence for driving-control tasks; and the abundance of real-life data collected by in-vehicle and road infrastructure sensors. Collected data will make it possible to build a detailed real-time digital representation of the driving environment to train deeper machine-learning algorithms for highly automated mobility.

Connected and Automated Driving (CAD) has grown beyond the vehicle sector to be closely implicated in the deployment of the next generation of digital roadside infrastructure. ERTICO is committed to paving the way for this convergence of Cooperative Intelligent Transport Systems (C-ITS), cellular connectivity and automated vehicles.

Several initiatives are being carried out at European, Member State and city level covering all aspects of the CAD development cycle through to pre-deployment. This includes research and innovation, implementation of CAD technologies, testing, piloting, impact assessment and validation. Large scale testing is required to validate CAD systems and ensure that they have reached a sufficient level of safety for market introduction and in particular the challenge of integration in real-life traffic. Both testing and EU-wide deployment need a harmonised approach to ensure interoperability, cross-border functionalities and to enable comparable results and impact assessment. ERTICO will continue to facilitate consensus building across a range of stakeholders to support a harmonised deployment of CAD in Europe, with a focus on enabling the sharing of data, knowledge and experiences from CAD development and pilots.

With ambitions set steadfastly on the goal of commercially deployed driverless mobility by 2030, ERTICO has devised a roadmap with milestones marking the achievement of several objectives: a common framework for CAD pilots, a CAD roadworthiness testing framework where user acceptance is central and the next generation in V2X-enabled Level-4 automated mobility.
INNOVATION & DEPLOYMENT

Fully flexible and personalised mobility for all

C-ITS widely deployed in cities
Widespread availability of integrated mobility solutions

Integrating multimodality and traffic management systems
Connecting traffic management networks

Plug-and-play cities for C-ITS

Interoperability framework for MaaS (APIs)
Accelerating deployment of C-ITS in cities

Guidelines and framework for Mobility as a Service (MaaS) deployment
Urban Mobility advances seamless and sustainable mobility in European cities supported by wide deployment of the latest technologies and public-private-partnerships to deliver innovation.

The importance of a well-functioning urban mobility landscape is vital for the liveability of cities. Its significance has recently increased to be one of the most important attractiveness factors for municipalities. Although policy goals are often set by international agreements or at European level, urban mobility in Europe lies mainly at local competence. Cities are taking more and more leadership for actions in the environmental sector. The most urgent challenges for urban mobility are related to CO₂ emissions and air quality, noise, congestion, the space required for transportation and inclusivity. To this end, ERTICO leads the development of sustainable urban mobility and logistics solutions, bringing together public and private stakeholders and acting as a matchmaker for suppliers, public authorities and research. ERTICO seeks to support innovations and the swift deployment of the most advanced technologies and supports cities in exploring new governance, partnership and data management models. An important role of ERTICO is to actively coordinate the integration of new transport modes, like Urban Air Mobility and micro mobility, and new urban logistical solutions into the transport system.

A key priority for ERTICO in the area of urban mobility is to support the widespread deployment of a new generation of cooperative, connected and personalised mobility services. ERTICO’s goal for 2030 is to achieve full integration of all these mobility solutions. This will reduce traffic congestion and increase the use of low-carbon and low-emission solutions, leading to high-quality travel for all citizens and businesses.

With its unique MaaS Alliance Innovation Platform, ERTICO has a strong international leadership in the development of one of the most promising mobility solutions, Mobility as a Service (MaaS). MaaS Alliance works to establish the foundation needed for a MaaS ecosystem and to solve urgent questions related to technical interoperability of services, governance and business models, and regulatory questions. Integrated multimodal and MaaS solutions are very advanced in Europe and based on that experience, ERTICO supports the scalability of smart mobility solutions (also internationally) in close collaboration with Partners in the North America and Asia-Pacific regions.
2018
Start activity on measuring ITS effects on air quality and emission

2019
Smart electric charging tested and validated (Hyper-Network for electro-mobility)

2020
Electric Light Vehicles (ELVs) integrated in with transport and energy networks in several European cities

2022
Common methodology showing the environmental benefits of different ITS applications

2025
Smart electro-mobility widely deployed in cities

2030
Ultra low emission mobility widespread in both urban and non-urban areas
ERTICO is developing sustainable and clean mobility solutions to reduce the impact of transport on the environment.

Smart mobility solutions can make a major contribution to reducing the impact of transport on the environment, particularly in terms of fuel consumption and emissions. Transport currently accounts for almost a quarter of the world’s greenhouse gas emissions and making mobility more sustainable is a key policy objective of governments, European and international organisations and the ERTICO Partnership. Improving air quality is another key policy objective at the top of public authorities’ list of priorities. Intelligent Transport Systems can help meet clean mobility goals by enabling more efficient use of different transport modes and by facilitating a shift to cleaner vehicles.

For many years, ERTICO has been active in the field of ITS for clean mobility, including energy efficiency and reducing emissions from road vehicles. Examples include the use of cooperative technology to reduce CO₂ emissions and fuel use for cars and commercial vehicles, as well as traffic management measures and driver assistance. ERTICO has developed specifications for predictive powertrain management for goods vehicles resulting in a 5% reduction in fuel consumption. One of the challenges is to provide quantitative and comparable evidence of how ITS applications can help to reduce emissions. ERTICO recognises this as an important goal and is engaged in developing a reference methodology to assess the impact of ITS deployments on CO₂ emissions. The next steps are to identify remaining needs and gaps for assessing different applications and deployments, so that their effects under different framework conditions are clear and comparable.

Electrification and automation of transport, as well as a shift from vehicle ownership to shared use, have the potential to transform mobility. Electro-mobility in the road sector is key. The shift from internal combustion engines to electric cars, buses, trucks and light vehicles reduces pollution at the point of use and the use of renewable energy to power these vehicles provides significant advances towards decarbonisation. ERTICO works on using ITS solutions to overcome barriers to electro-mobility and to offer more and better electro-mobility services. Interoperability of charging facilities is imperative and will allow drivers to use seamless and user-friendly services across Europe, making electro-mobility more attractive. Other work includes recent research into dynamic wireless charging and activities exploring the potential of shared light electric vehicles in cities, as a complement to public transport for first- and last-mile solutions.
2030
Seamless and interoperable T&L Towards physical internet

2025
Full digitalisation and automation of T&L
Interoperability on trusted data exchange in T&L

2022
Hubs and traffic management for seamless mobility management systems

2020
Establish European Digital Innovation Hub for data exchange in supply chain and logistics

2019
Automation of freight processes and data exchange

2018
Multimodality in T&L operations
ERTICO’s aim in Transport & Logistics (T&L) is to increase interoperability and connectivity in the optimisation of cargo flows, and to facilitate supply chain management, whilst making better use of existing resources.

Congestion, especially on the road, is one of the biggest transport challenges. It costs Europe about 1% of its GDP every year and is the cause of considerable carbon emissions. To reduce emissions and contribute to a reduction in congestion, logistics actors are implementing environmentally mindful strategies addressing supply chain integration, multimodal transport, consolidation of deliveries and reverse logistics.

A challenge for Transport & Logistics is the digitalisation process of transport networks and infrastructure. If fully implemented, this process could better integrate road, rail, air and waterborne travel into a seamless logistics supply chain across Europe. Many solutions for logistics were developed by individual companies based on their Legacy Information Systems. The many different digital platforms, applications and products that currently exist cause a high degree of fragmentation. This is due to differences in user requirements, data models, standards, system specifications and business models. To overcome this fragmentation and lack of connectivity of systems for logistics decision making, ERTICO is developing solutions for connecting logistics information systems that have different characteristics, are intra- and cross-company, and are based on real-time exchange of information.

By 2030, ERTICO’s goal is to achieve seamless logistics and freight transport and nearer to 2025, achieve full digitalisation and automation of freight and logistics operations.
ERTICO’s strength is to take a 360°-approach for advancing digitalisation in the mobility sector. When opportunities arise, ERTICO is well placed to turn them into a reality through the implementation of projects and platforms across the sector.

Collaboration remains at the core of all that ERTICO does and powers forwards the achievement of the milestones and targets outlined in the roadmaps for the four focus areas. At its fingertips, ERTICO has access to its experienced team of experts, strong and carefully chosen consortia from ERTICO partners and specialised suppliers, industry, manufacturers and other partnership organisations at the cutting edge of innovation. Together, our focus is firmly set on the deployment of smart mobility solutions and ERTICO looks at all activities that can move forward ITS from a holistic perspective to benefit European’s mobility landscape.

ERTICO PROJECTS

Here is a list of the projects that ERTICO is currently running:
5G-DRIVE is a three-year project started in September 2018 to trial and validate the Internet of Vehicles using 5G connectivity across joint trials in Europe and China. The key objectives are to boost 5G harmonisation and increase cooperation between EU and China on the topic. 5G-DRIVE will test and demonstrate the latest 5G key technologies in eMBB and V2X scenarios with pre-commercial 5G networks.

Extensive trials will take place in Finland, Italy and UK, while the Chinese projects will run large scale trials in five cities. These twinned trials will evaluate synergies and interoperability issues and provide recommendations for technology and spectrum harmonisation. 5G-DRIVE will also research key innovations in network slicing, network virtualisation, 5G transport network, edge computing and New Radio features. The project is expected to have an impact on the validation of standards and trigger the roll-out of real 5G networks and V2X innovative solutions.
5G-MOBIX is a three-year H2020 project launched in November 2018. The project will match the benefits of 5G technology with advanced CCAM use cases to enable innovative, previously unfeasible, automated driving applications with high automation levels, both from a technical and a business perspective.

5G-MOBIX will execute CCAM trials along two cross-border corridors (Spain-Portugal and Greece-Turkey) and six urban corridors (in Finland, France, Germany, Netherlands, China and South Korea). The trials will allow 5G-MOBIX to conduct impact assessments, including business impact and cost-benefit analysis, particularly in sparsely populated cross-border areas with mild market failures of mobile network connectivity.

As a result of evaluations and international consultations with the public and industry stakeholders, 5G-MOBIX will identify new business opportunities for 5G enabled CCAM and propose recommendations and options for deployment. Through its findings on technical requirements and operational conditions, 5G-MOBIX will define deployment scenarios and is expected to actively contribute to standardisation and spectrum allocation activities.

Existing key assets such as infrastructure and vehicles will be utilised and upgraded to test the smooth operation of 5G within a heterogeneous environment that includes other concurrent technologies such as ITS-G5 and C-V2X.
AEOLIX has developed a cloud-based, multi-enterprise ‘many-to-many’ network which captures and streams data in real-time, and automatically translates ‘data format’ from different IT systems giving companies the ability to rapidly respond to issues through a customised dashboard. With a duration of three years, running until August 2019, the project wants to overcome the fragmentation and the lack of connectivity of ICT-based informative systems for logistics decision making. AEOLIX has deployed this network in 12 test labs across the nine Trans-European Transport Network (TEN-T) corridors.

ERTICO invested in complementary knowledge and resources in order to propose three new programmes:

- **Innovation and Deployment programme:** the additional activities concern mainly the Proof of Concept and accompaniment in IPR and patent (co-) creation.
- **Business Development programme:** from Business mentoring and training to market entry accompaniment.
- **Incubation programme:** from Business Modelling to Business Planning and execution, helping any user to start with the best network of knowledge.
ARCADE is an H2020 funded project with the main objective to coordinate consensus-building across stakeholders for a sound and harmonised deployment of Connected, Cooperative and Automated Mobility (CCAM) in Europe and beyond. ARCADE supports the commitment of the European Commission, the Member States and the industry to develop a common approach to development, testing, validation and deployment of CAD.

It builds on the success of the CARTRE project, which ERTICO coordinated and finalised in 2018. CARTRE federated a stakeholder network of more than 80 organisations that jointly developed position papers identifying visions, challenges, gaps and future research needs for 10 thematic areas. Other key achievements of CARTRE include the co-organisation of the EUCAD 2017 conference and 2018 symposium; the contribution to the Strategic Research & Innovation Agenda (STRIA) CART roadmap and the ERTRAC CAD roadmap; and the development of an online CAD knowledgebase, a data exchange and impact assessment frameworks.

Started in October 2018, ARCADE will last three years and will continue building the Joint CAD Network through workshops and the European CAD Conference, where experts exchange best practices and lessons learnt to build synergies. The EUCAD 2019 conference is a great achievement of ARCADE working closely with the European Commission’s DGs (RTD, MOVE, GROW, CONNECT). ARCADE supports the trilateral EU-US-Japan cooperation on ART and will consolidate the online knowledge database on CAD. The project will look at aspects related to regulations, standardisation, freight and deployment. A main objective will remain the contribution to the definition of future research and innovation priorities in Europe.

ARCADE is open to Associated Partnerships for contributions to its activities.
AUTOPILOT is a three-year Horizon 2020 EU funded project, running until December 2019. The project brings automated driving towards a new dimension by harnessing the potential of the Internet of Things (IoT). AUTOPILOT will turn the entire transport ecosystem – vehicles, roadside infrastructure, and pedestrians – into sensors, from which data can be gathered in an IoT network for cooperative, connected and automated mobility, giving attention to safety-critical aspects of automated driving.

AUTOPILOT will work to create a platform of services for automated vehicles. These services will be available for five driving modes – urban driving, automated valet parking, platooning, highway pilot, and real-time car sharing.

AUTOPILOT IoT-enabled autonomous driving services will be trialled in real conditions at six large-scale testing sites in the Netherlands, Italy, France, Finland, Spain and South Korea. In 2018, AUTOPILOT tested automated valet parking and urban driving applications in Tampere, Finland and Livorno, Italy. During 2018, AUTOPILOT focused on three core aspects: sensor set-up, data processing and evaluation.
This three-year project, running until September 2019, creates a collaborative capacity-building community and deployment programme to support public and private stakeholders in the implementation of cooperative and intelligent transport systems (ITS & C-ITS). Using training and educational resources, it raises awareness of the services and benefits available.

The project assists public and private stakeholders in developing their knowledge, skills, and abilities to build technical, business and policy-making proficiency of ITS deployment while furthering their career paths. CAPITAL will build a network of experts and practitioners, identify and assess the challenges faced by professionals in the deployment of ITS, and develop an ITS handbook featuring case studies and business models.

CAPITAL’s open online training platform addresses audiences with beginner, intermediate and advanced levels of understanding of (C)-ITS and helps them develop their knowledge of the technical, business and policy aspects of ITS deployment.

CAPITAL now offers ten free online courses that students can follow at their own pace and receive a certificate of participation upon completing a course. Project activities also feature regular webinars, as well as a face-to-face pilots training programme taking place in seven European cities in Belgium, Croatia, Finland, Greece, Italy, the Netherlands, and the United Kingdom throughout 2019.
Cloud LSVA was an H2020 project which ended in December 2018. The project developed a software platform to label and exploit large-scale video annotation and to effectively exploit the large amount of labelled data. Cloud LSVA tools have been developed to provide a framework for sharing and combining scene analysis resulting from data fusion.

Cloud LSVA has generated a significant number of outcomes during the lifetime of the project, starting with the possibility of producing annotations in equipped vehicles by using computer vision and AI optimised for embedded platforms. Data and metadata produced in the vehicle can be uploaded and stored to cloud platforms, where it is then processed, managed and made available to be consumed by ADAS (Advanced Driver Assistance Systems) systems (HIL and SIL) and Digital Cartography updated systems. Thanks to Cloud LSVA, the orchestration of containerised applications on cloud platforms to scale up data processing is possible, as well as web applications that can efficiently stream data and metadata to front-ends for manual revision of annotations. Finally, Cloud LSVA enables metadata format to adapt to the dataflow of annotation systems.

Cloud LSVA’s findings will serve as base to explore numerous technologies and open research lines for the creation of large-scale, online and offline pipelines for semi-automatic metadata generation, in the context of ADAS/AD and Digital Cartography. Extension to other use cases is also considered to follow up the technological developments, including semi-automated annotation tools for medical imaging or surveillance applications.
C-MobILE is an H2020 project that is running until November 2020. It is deploying Cooperative Intelligent Transport Systems (C-ITS) services designed to deal with mobility challenges in complex urban areas across Europe. The project will help local authorities deploy the C-ITS services they need and to raise awareness of the benefits for all road users.

C-MobILE is upgrading existing research pilot implementations in Europe to large-scale deployments of sustainable C-ITS services, with the support of local authorities. Based on stakeholder assessment, C-MobILE will provide C-ITS services in the form of open, modular and extendable bundles that create a common C-ITS user environment. A total of eight C-ITS equipped cities and regions are involved in the project: Barcelona, Bilbao, Bordeaux, Copenhagen, Newcastle, the Dutch region of North Brabant, Thessaloniki and Vigo.

In 2018 the project took over the already established C-ITS City Pool, offering a space where participating cities can share real-life experiences, receive feedback and learn about best practices and business opportunities for the deployment of C-ITS. Throughout 2018 C-MobILE defined a C-ITS architecture framework and a C-ITS reference architecture that capture the essence of the C-MobILE vision. C-MobILE conducted a twinning workshop with the US Department of Transport in February 2018, as part of an ongoing EU-US agreement to achieve an improved and harmonised reference architecture that can become the basis for the development of customised yet interoperable intelligent transport service deployments.

A successful on-road demonstration of C-MobILE services was conducted in Copenhagen, introducing several interoperable features including Road Works Warning, Road Hazard Warning, Green Light Priority, and Green Light Optimal Speed Advisory for drivers and cyclists (GLOSA).
The CONCORDA project is running until June 2020 and contributes to the preparation of European motorways for automated driving and high-density truck platooning. The main objective of the project is to assess the performance of hybrid communication systems, combining 802.11p and LTE connectivity, under real traffic situations.

CONCORDA paves the way for solutions based on the combination of connectivity and infrastructure that will help build the vehicle’s environmental perception model. Moreover, the project will improve the accuracy and integrity of localisation services.

As its starting point, the CONCORDA project takes common application specifications that will be updated during the project in an iterative manner and in cooperation with C-ROADS. New standards, or evolutions of existing standards, will be proposed as a result of this process.

CONCORDA has test sites in the Netherlands, Belgium, Germany, France, and Spain. Interoperability and continuity of services will be tested on all test sites, aiming at EU-wide interoperability of services. Vehicles will be equipped with COM boxes and C-V2X chipsets.

Among the main project achievements of the last year, CONCORDA has developed and released hybrid communications specifications that have been submitted to C-ROADS. Moreover, the technological integration and pre-test for all its pilot sites has been implemented.
COREALIS started in May 2018 and is part of the cluster on ports of the future. The project is developing an innovative framework for assisting cargo ports in handling their upcoming and future capacity, traffic, efficiency and environmental challenges.

The project benefits from the use of disruptive technologies, including Internet of Things (IoT), data analytics, next generation traffic management and emerging 5G networks to achieve its goal. COREALIS is implementing innovations for future ports that are beyond state of the art and financially viable. These innovations will optimise the port land use, requiring minimum infrastructure upgrades. At the same time, they will respect the circular economy principles and improve urban life quality.

COREALIS is expected to achieve a significant reduction of both CO₂ port emissions and noise. It will also reduce port operational costs (congestion, waiting and idle times) and establish more efficient connections with the hinterland transport network, improving the modal split to rail and inland waterways.
ELVITEN-PROJECT.EU

ELVITEN is an H2020 project that demonstrates how electric light vehicles (ELVs) can be used in urban areas for personal and light commercial use and be integrated into the existing transport network in six European cities: Rome, Genoa, Bari, Trikala, Berlin and Malaga.

The project wants to encourage replicable usage schemes of ELVs such as electric bicycles, tricycles, scooters and micro-cars, particularly to replace car trips and to provide last-mile solutions. Elements such as electric charging facilities, dedicated secure parking and other infrastructure improvements, access to restricted areas and intermodality with public transport, have been identified as solutions to encourage the development of this transport mode.

In 2018, ELVITEN conducted an online questionnaire in the six cities to gather information on public perceptions of ELVs. A high level of interest in ELV sharing schemes was recorded in most of the cities, including interest in using such vehicles as part of multimodal trips. Lack of electric charging infrastructure was noted as a major factor where improvements are needed in order to boost ELV use. The project developed different usage schemes for the city demonstrations (sharing schemes for citizens and tourists, corporate schemes for employees and schemes for urban goods deliveries). As preparation for the year-long demonstration in 2019, development work was carried out for related ICT assets including user apps, fleet management tool, brokering and booking.
Platooning technology has significantly advanced in the last decade; to move ahead towards deployment of truck platooning, an integral multi-brand approach is required. In this framework, the H2020 project, ENSEMBLE, will implement and demonstrate multi-brand truck platooning on European roads, enabling a single truck to platoon with any other truck. ENSEMBLE wants to create pre-standards for interoperability between trucks, platoons and logistics solution providers, to speed up market pick up of system development and implementation and harmonise legal frameworks in the Member States.

During the first year, the consortium concentrated on setting the specifications for the implementation of multi-brand platooning. OEMs and suppliers will follow up for implementation on their own trucks during the second year of the project, while knowledge partners will perform impact assessments. Among the 20 project partners, ENSEMBLE consortium counts six European truck manufacturers: DAF, DAIMLER, IVECO, MAN, SCANIA and VOLVO Group.
SA4.2 is a sub-activity in the EU-EIP project, which specifically looks at the development of automated vehicles from a road operator point of view. The aim is to prepare road authorities and operators for the development of automated driving by automating their own core business. Initial tasks have been focused on the requirements of higher levels of automated driving especially concerning road markings, traffic signs, real-time and predictive traffic information, digital maps, C-ITS infrastructure and other aspects.

In 2018, focus was on the requirements towards the creation of a legal and regulatory framework, especially requirements and regulations to enable experimentation and innovation. A complete inventory was made by the national authorities to promote deployment of autonomous vehicles and to address the standardization strategies and initiatives at a national level and their mirror groups. The presence of ERTICO in the project helps to bridge the gap between public and private discussions on CAD deployment, to compare high public expectations with the real state of industry and technology.
FABRIC is an H2020 project that finished in June 2018 and contributed to ERTICO’s Clean Mobility roadmap to develop ICT solutions for wireless, fast and smart charging of electric vehicles. This project researched and developed solutions for dynamic on-road charging of vehicles. Advanced on-road charging will lead to an increased take-up of electro-mobility by improving the driving range, as well as allowing smaller batteries, reducing the price and weight of vehicles.

While the project considered light and heavy vehicles and different charging technologies, the development and demonstration work concentrated on wireless power transfer by induction for cars. The project successfully demonstrated two prototype wireless charging solutions and different use cases were tested. For example, testing the efficiency of charging at different speeds, charging two vehicles dynamically at the same time, as well as safety aspects related to electro-magnetic fields. ICT solutions (driver interfaces and an energy load management application), infrastructure and grid aspects were integrated in the trial sites in France and Italy. FABRIC also completed an analysis of the impact on users, society and the environment, as well as on the technical feasibility of ‘e-roads’ equipped with wireless charging and deployment scenarios for different use cases (urban, long-distance, cars, buses and freight vehicles).
HEADSTART-PROJECT.EU

HEADSTART is an H2020 project running from January 2019 for three years. The aim of the project is to define testing and validation procedures of Connected and Automated Driving functions including key technologies such as communications, cyber-security and positioning. The tests will take place in simulation and real-world fields to validate safety and security performance according to key users’ needs.

HEADSTART develops methodologies, procedures and tools and creates a harmonised European solution for the testing and validation of automated road vehicles.
ICT4CART is an H2020 project that spans over three years. The project will bring together, adapt and improve technological advances from the telecommunication, automotive and IT industries to provide the ICT infrastructure that will enable the transition towards road transport automation.

To achieve its objectives ICT4CART, instead of working on generic solutions with a less powerful impact, builds on four specific high-value use cases, which will be tested under real-life conditions at project sites in Austria, Germany and Italy. Cross-border interoperability will also be tested at the Italian-Austrian border.

ICT4CART wants to identify the functional and technical connectivity requirements posed by the needs of higher levels of automation; to implement and test a standards-based distributed IT environment for data aggregation capable of collecting and managing in an automated and interoperable way all the exchanged data regarding the driver, the vehicle, vulnerable road users and the infrastructure. Among the project’s goals, there is also the implementation of cyber-security and data protection and privacy mechanisms aligned with the EU policy objectives. Moreover, ICT4CART will improve localisation by combining information from different sources, validate and demonstrate the ICT Infrastructure architecture through the project use cases and test sites and create new business models and market services for the innovative use of cross-sector data.
Ended in June 2018, inLane was funded by the European GNSS Agency and had the vision to develop a low-cost, lane-level, precise turn-by-turn navigation application through the fusion of EGNSS and Computer Vision technology. The project’s goal was to improve the capabilities of navigation applications by fusing EGNSS and Computer Vision technology and thus making lane-level navigation a reality. InLane’s complex fusion and hybridisation algorithms for EGNSS, IMU, Map and Computer Visions provided an opportunity to reach five centimetres accuracy related to absolute and in-lane location.

The main results of inLane are a set of software components, which achieve detailed and accurate lane-level positioning, accurate turn-by-turn navigation systems, real-time update of maps with detailed information and traffic sign recognition thanks to the use of an innovative fusion of sensor data and computer vision technology. These are base components which support the evolution of today’s cars and trucks towards the automated transport systems of tomorrow.
**INTERCOR-PROJECT.EU**

InterCor is a three-year project running until August 2019. It will enable vehicles and the related road infrastructure to communicate data through short range Wi-Fi (ITS-G5), cellular (4G) or their (hybrid) combination, on network corridors through the Netherlands, Belgium, France and United Kingdom.

The objective is to achieve cross-border interoperability of cooperative systems and services for a safer, more efficient and more convenient mobility of people and goods. InterCor mainly focuses on Road Works Warning, Green Light Optimal Speed Advisory, In-Vehicle Signage and Probe Vehicle Data, but it will also test other services such as Multimodal Cargo Optimisation, Truck Parking and Tunnel Logistics.

To contribute to the realisation of the common specifications, InterCor has already conducted three TESTFEST™ events and a so-called ‘pre-TESTFEST™’. These events focused on ITS-G5 (July 2017, Dordrecht), on PKI (April 2018, Reims), on GLOSA over hybrid communication (June 2018, Helmond), and on full hybrid communications (October 2018, Kent) - whereas a final TESTFEST™ on cross-border interoperability of C-ITS services is scheduled for March 2019 in Antwerp to confirm and consolidate earlier findings. Based on harmonised specifications, procurement actions have gradually been carried out and operations started in several pilots. Specifications are being regularly aligned with the C-ROADS Platform to achieve harmonisation at the European level.
This three-year project running until September 2019 is making electromobility more attractive by deploying a ‘Hyper-Network’ of services to address some of the issues that currently slow down the shift from petrol and diesel to electric vehicles. Incompatibilities between charging system hardware, service providers, standards and protocols, and payment systems all contribute to limiting the driving range and ease of use of electric vehicles and stand in the way of convenient electric vehicle roaming in Europe.

The NeMo Hyper-Network has been developed as a distributed environment with an open architecture based on standardised interfaces. It will provide a basis for all relevant actors (such as charge point operators, users, and electricity distribution system operators) and physical objects (like charge points, vehicles, and the grid) to interact and share data.

The NeMo Hyper-Network was built in 2018, based on blockchain technology, with different partners each operating a ‘NeMo node’. Testing and validation began at sites in Austria, France, Germany, Italy and Spain. Following a test drive through three countries with an electric car in 2017 to collect baseline (pre-Hyper-Network) data on charging needs and interoperability, a final test drive across eight countries will take place during May and June 2019 to evaluate the impact of the Hyper-Network. The project is open to stakeholders providing or consuming electro-mobility services to join as an Associated Partner, in order to create a NeMo node and use the Hyper-Network.
This three-year project running until August 2019 brings together the most advanced technologies from powertrain control and ITS to improve fuel efficiency in heavy-duty road haulage. OptiTruck works towards the creation of a global optimiser consisting of a set of dynamic, intelligent control and prediction components for effective powertrain management.

Based on a predictive control system, the optiTruck global optimiser is expected to deliver a reduction in fuel consumption of up to 20% on a typical road transport mission for a 40t truck, while achieving Euro VI emission standards.

For developing the optimiser, optiTruck uses Big Data analytics, cloud computing, data security, predictive algorithms, electronic systems, embedded software systems, engine and after-treatment systems modelling, and vehicle modelling. The system develops a strategy for the best route and generates the velocity profile, using the information provided by new generation navigation systems and big data analytics in the cloud including predictive traffic and weather information, road topography and road network, and information about the transport mission.

Trucks equipped with multiple sensors and data sources connected to the powertrain control unit will be put to the test in simulations and in real life during the project. In 2019, a test vehicle and a baseline truck will drive through Turkey, Greece and Italy for a typical long-haul delivery mission.
SAFE STRIP is a three-year H2020 project running until May 2020. Its goal is to introduce a disruptive technology, which will embed C-ITS applications into existing road infrastructure through low-cost, integrated strip markers on the road. The project is being evaluated in one testbed in Spain, one in France and two closed test tracks in Italy. It will also be tested in real life conditions on Greek and Italian highways, on cars and powered two-wheelers.

Halfway into the project, the test infrastructure of the project has been defined and the first impact assessment framework has been established. The Spanish and Greek test sites have started testing the first version of the On-Road Unit and the first miniaturised road platform is available for user trials.
The two-year SPICE project was finalised in August 2018. The project assisted public procurers with their procurement practices to seek out innovative and sustainable mobility solutions. SPICE focused on mobility services, including Mobility as a Service, alternatively fuelled vehicles, and intelligent transport services. SPICE gave public authorities an invaluable opportunity to share their experiences and learn from each other.

The project facilitated the sharing of experiences, disseminated knowledge and raised awareness of the innovation procurement tools provided in the procurement directives. Best practices were collected and disseminated through case descriptions on the SPICE website. The largest and most comprehensive of the SPICE deliverables (D3, SPICE Analysis and Recommendations), produced a set of recommendations on policy, technical and especially legal aspects of procurement of innovation and serves thus as a practical handbook on procurement of mobility-related innovations. The SPICE project also gathered insights into opportunities and challenges related to joint procurements.

SPICE teamed up with another ERTICO project, CAPITAL, to create an e-learning course for current and future procurers.
TN-ITS GO is a H2020 project working on the implementation and facilitation of seamless spatial data exchange, which is essential for the deployment of ITS applications. TN-ITS GO supports Member States and paves the way to a broader adoption of the TN-ITS open interface with its main action focused on developing a dynamic European TN-ITS expert community.

The project supports road and transport agencies in EU Member States in planning and implementing carefully the new ITS spatial data supply chain strategies of nine Member States right from the source all the way to the existing TN-ITS interface and into the map database of the end user. The project will implement extensions of the TN-ITS existing services in six Member States, with different outcomes depending on the operational readiness of their TN-ITS services; and evaluating TN-ITS services including the integration of data into commercial databases as well as feedback loops.

The project will result in the benefits from frequent map updates, safer and seamless driving from origin to destination, the availability of excellent ITS services, an authoritative data feed and effective machine-to-machine data interface.

During 2018, TN-ITS pilot services implementation plans were set up for nine Member States, as well as consolidation and extension of services in six Member States.
VI-DAS is an H2020 project running until 2019. It looks to improve road safety by developing and deploying ADAS (Advanced Driver Assistance Systems) that leverage recent advances in low cost sensors. The navigation system works in a more personalised manner, based on a reliable understanding of the overall traffic scene and the driver’s overall situation.

VI-DAS monitors not only the exterior of the vehicle, but also the interior i.e. the driver. Beyond 720° ADAS, an innovative approach has been taken to deal with both the interior and exterior situations so that they are considered in tandem. Inside the vehicle, VI-DAS uses non-invasive technologies to provide information in real-time about the drivers’ state and behaviour. Driver state monitoring, together with appropriate feedback on the driving situation and interaction with the car are key in ensuring that the driver is in the loop during mode transitions in semi-automated driving.

VI-DAS will progress in the design of next-generation 720° connected ADAS (scene analysis, driver status). Advances in sensors, data fusion, machine learning and user feedback have provided the capability to better understand driver, vehicle and scene context, facilitating a significant step along the road towards truly semi-autonomous vehicles. On this path there is a need to design vehicle automation that can gracefully hand control back to the driver. VI-DAS leverages advances in computer vision and machine learning to introduce non-invasive, vision-based sensing capabilities to vehicles and enable contextual driver behaviour modelling. The technologies will be based on inexpensive and ubiquitous sensors, primarily cameras. Predictions on outcomes in a scene will be analysed to determine the best reaction to feed to a personalised HMI component that proposes optimal behaviour for safety, efficiency and comfort.
Platforms
Development, innovation and demonstration projects culminate with deployment efforts. When a gap in the deployment process is identified, ERTICO creates Innovation Platforms to bridge this gap and assist with the uptake of smart mobility solutions.

The Innovation Platforms are open to both ERTICO and non-ERTICO Partners. They ensure successful development, deployment and maintenance of core smart mobility services through long-term commitment and continuity of activities. The ERTICO Innovation Platforms combine a strong focus on business cases and strategic leadership in their field.

Currently, ERTICO manages eight Innovation Platforms that work on a range of deployment services, from traffic management, spatial data, electromobility to traveller information, Mobility as a Service, truck platooning and cloud-based vehicle sensor data.
With more than 50 members, ADASIS is a group of major players from the global vehicle industry and suppliers who have joined forces to define an appropriate interface to exchange information between in-vehicle map database, ADAS (Advance Driver-Assistance Systems) and automated driving applications. The resulting standardised interface enables ADAS applications to access the ADAS horizon, which defines a standardised data model that represents map data and other geo-referenced data ahead of the vehicle.

Since the release of the ADAS v2.0 specification as a de-facto industrial standard, applications like Predictive Powertrain Control enabled by ADAS were launched on the market in 2012 by truck companies, resulting in a yearly 5% reduction of fuel consumption. Since then, ADASIS finalised and released the ADASIS s3 specification to support Automated Driving and made it available to its members. For 2019, ADASIS will continue the update of the v3 specification at different levels.
Launched in 2013, the eMI³ platform is an open group of stakeholders from the global EV market who have joined forces to harmonise ICT definitions, formats, interfaces and exchange mechanisms. This is done in order to enable interoperability of EV charging and services with a common language amongst all ICT systems.

eMI³ has released a proposal for ‘unlocking interoperability in the European EV market’ that sets out challenges regarding electro-mobility. eMI³ also launched its first standard specification in November 2015 that included terms and definitions, use and business objectives for EV interoperability. This was updated to include smart charging in 2017. eMI³ has developed use cases of smart charging and electricity roaming, released in 2018. eMI³ finalised and publicly released the eMI³ v1.1 specification with included new definitions and use cases on smart charging.
The ETPC is committed to promoting the use of truck platoons on European highways. Its mission is to bring together all relevant stakeholders by providing a platform for cross-stakeholder dialogue defining the necessary technical, regulatory and organisational framework, and ensuring a way forward after the Amsterdam Declaration of 2016.

ETPC is now linked to a series of national initiatives that are ongoing in Sweden, Germany, Netherlands, Belgium and the UK. The platform supports the ENSEMBLE project that works on multi-brand truck platooning together with six European commercial truck manufacturers.

Before truck platoons can freely circulate on European roads, there are still a few barriers that the network needs to address in the short term at European level: the definition of a minimum set of safety verification tests, the mutual recognition of exemption for testing platoons, and the harmonisation of traffic regulations across borders. Other challenges such as enabling business models and V2V messaging need to be addressed.
MAAS-ALLIANCE.EU

The Mobility as a Service (MaaS) Alliance, hosted by ERTICO, is a public-private partnership, laying the foundations for an open market of new mobility services, centred on users’ needs. Mobility as a Service combines multiple transport services into a single mobility service accessible on demand, for both travellers and goods.

The MaaS Alliance and its members work towards achieving a truly seamless and effortless ecosystem for advanced user-oriented mobility services. The MaaS Alliance is the leading international MaaS community and brings together all the players in the transport ecosystem – public authorities, start-ups, system integrators and service providers, both established and market-newcomers. In the MaaS Alliance, its members cooperate in order to create the enablers needed for successful deployment of MaaS in Europe and beyond. The Alliance supports the roaming and scalability of MaaS services, with a view towards establishing a borderless MaaS system.

2018 has seen the MaaS Alliance continue its pioneering work in supporting wide deployment of Mobility as a Service by gathering the leading companies and the most progressive public authorities in the field to establish the foundation needed for MaaS ecosystem and to solve the urgent questions related to technical interoperability of services, governance and business models, and regulatory questions. In July 2018, the MaaS Alliance was recognised as the best organisation in the field of MaaS by BMaaS. The MaaS Alliance also penned a partnership with ITS America. Both parties agreed to share global best practices in MaaS and to work together in order to avoid duplication of work, when supporting the broad implementation of Mobility as a Service and Mobility on Demand.

In September 2018 at ITS World Congress in Copenhagen, ERTICO launched its MaaS Vision for 2030. The role of ERTICO Partnership in the MaaS ecosystem is based on its unique strengths: robust knowledge, presence of the whole value chain, public-private-partnership and strong international network. ERTICO’s thought leadership in MaaS has been widely recognised especially in the policymaking context, and ERTICO’s expertise was provided to guide the sector’s developments, for instance when the House of Commons of the UK drafted its recommendation report on MaaS.
Automated vehicles need to be connected, have access to and share data with other vehicles and infrastructure. SENSORIS is a group of like-minded players from the global vehicle industry, map and data providers, sensors manufacturers and telecom operators. These players have joined forces to define and specify an appropriate interface for exchanging information between in-vehicle sensors and dedicated cloud, as well as between other clouds. The specification will enable broad access, delivery and processing of vehicle sensor data, easy exchange of vehicle sensors data between all players and enriched location-based services and automated driving.

In 2018, SENSORIS finalised and released internally the SENSORIS v1.0 specification and harmonised its work with world standardisation bodies and associations (ISO, SAE, TISA, NDS, ADASIS).

SENSORIS plans to publicly release v1.0 of its specifications in 2019 and to update them with the introduction of a Request Channel to collect specific data.
TISA.ORG

TISA (Traveller Information Services Association) is an ERTICO platform that brings together traffic and traveller information services, content providers, public authorities, vehicle manufacturers, product industry, broadcasters and transmission operators. They work together to develop and implement traffic and travel information services and products based on global standards, RDS-TMC and TPEG technologies.

TISA envisions a world where open traffic and traveller information standards increase traffic safety and efficiency, offering travellers an easier and more environment-friendly journey. Through activities such as certification and standardisation support and lifecycle management, TISA enhances the benefits for end users, such as drivers and multimodal travellers.

TISA is developing its TPEG specification called TPEG-PTS (Public Transport Information Service), an application intended to cover all modes of public, inter-urban and intra-urban transport, allowing the efficient and language independent delivery of public transport information directly from service providers to end-users. TISA is exploring synergies for cooperation with Mobility as a Service, promoting the development of a new TPEG application for timely distribution of Emergency Alerts and Warnings for the dissemination of public disaster alerts and exploring the next TPEG generation to support Automated Driving vehicles.
The TM 2.0 Innovation Platform was launched in 2014 under the ERTICO umbrella of activities, focusing on new solutions for advanced interactive traffic management.

The objective of TM 2.0 is to provide a discussion forum on interactive traffic management for stakeholders in the entire Traffic Management Procedure value chain. The platform is looking at common interfaces, principles and business models for facilitating data and information exchange between road vehicles and Traffic Management and Control Centres. This is expected to improve the value chain for consistent traffic management and mobility services.

Now in Phase 3, TM 2.0’s focus is shifting from innovation to deployment. A TM 2.0 Masterplan has been developed for a short (2020), medium (2025) and long-term (2030) vision. As an immediate result, two new task forces were launched. One taskforce is developing smart mobility solutions between traffic management and MaaS and extending a ‘proof of concept’ towards multi-modal services. The second taskforce is defining trust, the requirements for establishing this trust, and will sketch how TM2.0 collaborative schemes can be identified and/or marked as part of the ‘TM2.0 trusted network’.
TN-ITS is an international platform facilitating and fostering exchange of ITS-related spatial data throughout Europe between public road authorities, as data providers, and map makers and other parties, as data users. It is the reference interface for road data updates. It maintains and enhances a common exchange framework, supports policy and implementation, defines and maintains specifications and standardisations.

Highly up-to-date maps are crucial for advanced applications in ADAS, C-ITS, and multi-modal domains. TN-ITS updates can be directly incorporated into ITS digital maps as they come from a highly reliable trusted source. They constitute a single data and they enable low-latency updated map information in users’ devices. Resulting benefits include frequent map updates, safer and more efficient driving, the availability of ITS services, an authoritative data feed and an effective M2M data interface. Through ERTICO’s Innovation Platform TN-ITS and the TN-ITS GO project, 15 EU Member States and Norway will be providing up to date road maps to users.

Relevant for the project in 2018 has been the publication of the TN-ITS Specifications: CEN/TS 17268:2018.
Partnership is at the very heart of ERTICO and powers its drive and ambition to revolutionise the future of mobility. ERTICO provides the necessary link and cooperation opportunities to back Partners in their ambition to drive forward the innovation and deployment of smart mobility solutions and a platform for networking, information sharing and relationship building. ERTICO works closely together with Partners on innovative solutions in common projects to overcome the barriers for deployment and interoperability towards the market place. Partners benefit from engagement in a wider network of experts across a range of different sectors and the resulting insights allow them to innovate in their area of activity. ERTICO offers Partners a real opportunity to be heard by policy makers as a voice of change.

Come join our Partnership!
Partnership

JOIN THE ERTICO PARTNERSHIP

AS AN ERTICO PARTNER, YOUR ORGANISATION CAN:

- Initiate, develop and implement project proposals as well as join consortia of leading multi-sector players — with the support and coordination of ERTICO’s in-house expertise
- Participate and voice views in ERTICO Partners-only Annual Think Tank events and Focus On workshops
- Network with other key players and win over new clients and business partners through the ERTICO network of contacts
- Maintain direct links and opportunities for discussion with European Institutions
- Establish contacts with technical specialists, business executives and decision-makers
- Stay ahead of new developments and anticipate key market trends
- Participate in overseas visits and strengthen international contacts
- Actively participate in ERTICO-organised European and worldwide events to promote your business interests
- Second staff to our office in Brussels, providing an even stronger link to our hub of smart mobility activities
ERTICO Partners can take the opportunity to be active in our governing bodies, ensuring that their vision is reflected in our activities.

ERTICO’s Supervisory Board comprises Partners from each of the eight sectors. They are elected by the General Assembly for a three-year term.

Here is the current composition of ERTICO’s Supervisory Board:

**Mobile Network Operators:**
Ericsson; T-Systems International GmbH

**Public Authorities:**
City of Glasgow; Rijkswaterstaat/Dutch Ministry of Infrastructure and the Environment; Westdeutscher Rundfunk (WDR)

**Research:**
CTAG; Institute of Communication and Computer Systems; Satellite Applications Catapult

**Service Providers:**
Technolution; TomTom

**Suppliers:**
Continental; DENSO

**Traffic & Transport Industry:**
Dynniq; Siemens ITS; SWARCO

**Users:**
FIA; RACC

**Vehicle Manufacturers:**
ACEA; Renault; Volvo Group
### MOBILE NETWORK OPERATORS

| T | ERICSSON | TIM |

### PUBLIC AUTHORITIES

#### NATIONAL

| Ministry of Transport, Construction and Regional Development of the Slovak Republic |
| FOREIGN MINISTRY OF TURKEY |
| Ministry of Transport and Infrastructure of Turkey |
| Ministry of Transport of the Slovak Republic |
| Ministry of Transport of the Czech Republic |
| Ministry of Transport of Switzerland |
| Ministry of Transport of Switzerland |
| Ministry of Transport of Switzerland |
| Swiss Federal Roads Authority FEDRO |
| The Ministry of Informatization and Communication of the Republic of Tatarstan |

#### REGIONAL

| Flanders State of the Art |
| Flanders State of the Art |

#### CITY

| CITY OF COPENHAGEN |
| CITY OF LONDON |
| CITY OF TAMPERE |
| THE CITY OF LONDON |

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SUPPLIERS

TRAFFIC AND TRANSPORT INDUSTRY

USERS

VEHICLE MANUFACTURERS

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