

The logo features a stylized five-pointed star composed of multiple overlapping, wavy lines in shades of blue and yellow, creating a sense of motion and connectivity.

# ERTICO

ITS EUROPE

## MEMORANDUM



APRIL 2025

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## **1. Introduction**

In an era of rapid urbanisation, increasing congestion, expanding supply chains, and human-made and natural crises, the need for Intelligent Transport Systems (ITS) has never been more critical. ERTICO-ITS Europe (ERTICO), since its inception in 1991, has been spearheading the transformation towards a smart, sustainable, and efficient transport system. Our vision is audacious: a Europe where data-driven services, seamless mobility options, and connected and automated mobility converge to redefine the movement of people and goods. Through collaboration, enduring innovation, and strategic alignment between stakeholders from both the public sector and private industry, we aspire to create a safer, cleaner, seamless, and more resilient transportation landscape across Europe.

ERTICO brings together stakeholders in the transport and mobility domain from across a variety of sectors, including service providers, suppliers, research institutions, public authorities, traffic and transport industries, vehicle manufacturers, and user organisations. By synergising the collective expertise of our Partnership, we aim to tackle the multifaceted mobility challenge relating to road safety, digitalisation, automation, cybersecurity, supply chain disruptions, climate change, air and noise pollution, congestion, infrastructure maintenance and failure, accessibility, equity, inclusiveness, and affordability etc. fostering partnerships is central to our goal to drive real-world implementation of ITS.

We connect, coordinate, and facilitate efforts to turn innovation into scalable solutions. Through our involvement in European co-funded projects, we deliver forward-looking strategies and real-world data that are of immense value to policymakers. ERTICO's ambition is to elevate Europe's competitiveness and position it as a global leader in sustainable mobility through the contribution of strategic industries from SMEs to global frontrunners.

This memorandum aims to raise public awareness about the benefits of ITS in enhancing transportation efficiency, safety, resilience and sustainability. It provides an account of ERTICO's catalysing role in the ITS community to emphasise the importance of collaboration, thought leadership, and policy engagement for delivering the technological, social and economic benefits of smart mobility to all.

## **2. ITS in a nutshell**

**Intelligent Transport Systems (ITS)** refer to the integration of advanced technologies, such as sensors, communication networks, and artificial intelligence, into infrastructure and vehicles to enhance transportation networks.

ITS is designed to optimise traffic flow, reduce congestion, and improve overall accessibility so that the mobility of people and transport of goods can be safer, more efficient and sustainable.

### **A brief view of the historical evolution of ITS**

The development of ITS can be traced back to the early 20th century with the advent of electric traffic signal systems. The concept of using technology to manage transportation systems gained momentum in the latter half of the century.

In the 1960s, early computerised traffic management systems were introduced, allowing for more coordinated traffic flows in cities and reducing congestion.

While the 1970s gave rise to electronic tolling and traffic monitoring, the 1980s saw major breakthroughs in Global Positioning System (GPS) technology, allowing for early navigation systems. Smart vehicle technologies, including collision avoidance systems, were being explored.

The term Intelligent Transport Systems was officially adopted in the 1990s. The European Union and countries like the United States and Japan established national ITS programs. Real-time traffic data collection, smart traffic lights, and electronic vehicle guidance systems were developed.

The 1st ITS World Congress was held in Paris.

The 1st decade of the 21st century ushered in the era of the internet and wireless communication, making possible real-time traffic updates, mobile navigation apps, and connected vehicle technology. The concept of smart cities started to take off.

In the 2010s, Artificial Intelligence (AI), automated vehicles, Internet of Things (IoT), and 5G connectivity revolutionised ITS. Smart cities integrate adaptive traffic control systems and ride-sharing platforms to improve urban mobility.

Today, ITS has grown and is continuing its evolution into a much more integrated system, leveraging big data, AI, digital twins (DTs) and 5G communication to create smart transportation networks. Innovations like automated vehicles, connected cars, and the integration of IoT devices into urban infrastructure are all part of the current landscape.

The future of ITS points towards even greater automation, the widespread use of electric and autonomous vehicles, further advances in traffic control systems that can dynamically respond to real-time conditions, and integrated multimodal systems ensuring more efficient, safer, and greener transportation for society.

### **Benefits of ITS**

The implementation of ITS makes transport and mobility safer, more efficient, resilient and sustainable. The value of ITS is attested by the technological transformation in transportation and the concomitant environmental, social and economic benefits.

Some of the key components of ITS include traffic management systems, which use real-time data from sensors and cameras to adjust traffic signals dynamically, and connected vehicle technology, which allows vehicles to communicate with infrastructure and each other to prevent accidents. Other ITS applications include automated toll collection, smart parking systems, predictive traffic analytics, and public transportation enhancements like real-time arrival information for buses and trains.

**Environmental benefits:** Optimised traffic flow through smart traffic signals and real-time traffic monitoring, and smart parking solutions reduce vehicle idling and circling, which in turn lowers fuel consumption and emissions. Integration of smart charging infrastructure supports the wider adoption of Electric Vehicles (EVs). By helping design eco-friendly transportation networks, ITS contributes to sustainable urban planning.

**Societal benefits:** Road safety has been greatly enhanced thanks to collision and hazard detection and speed monitoring systems. Reduced congestion and real-time navigation improve efficiency and lead to better and less stressful travel experiences. ITS also makes seamless multimodal transport feasible by facilitating integrated travel options. Smart transit solutions, including more reliable public transport and dynamic ridesharing, improve accessibility, which can be a real boon to vulnerable groups and those facing transport poverty. Quicker emergency response is another benefit of ITS facilitated by real-time accident detection.

**Economic benefits:** Faster, more reliable transport benefits businesses and commuters. Improved efficiency and less fuel waste and congestion result in lowered transportation costs, and potentially increased productivity for economic activity. Predictive road monitoring reduces expensive repairs and lowers overall infrastructure maintenance costs. ITS has greatly boosted logistics and freight through optimised routes and automated processes. Integration of advanced technologies such as AI, DT, automation, etc. also boosts innovation and job creation in ITS.

### **3. Connecting the Dots through ERTICO**

ERTICO's mission is to connect stakeholders, leverage innovation and knowledge, promote deployment of an integrated and user-centric transport system while fostering digitalisation, competitiveness, leadership and growth in alignment with European values. ERTICO's commitment to driving innovation in ITS and efforts to bridge the gap between concept and implementation are manifested through partnership activities, projects, thought leadership insights, and in the organisation of the ITS European and World Congresses.

ERTICO plays a central role in **connecting the ITS community**, linking diverse stakeholders and fostering collaboration across various sectors. The ERTICO Partnership brings together eight sectors from the mobility ecosystem, including public authorities, the research sector, the traffic and transport industry, service providers, suppliers, vehicle manufacturers, the connectivity industry, and users, and facilitate knowledge exchange, the sharing of best practices and ideas, and networking among them. Each sector brings its distinctive expertise - be it technological innovation, regulatory insight, or user-centric solution - that, when combined, drives comprehensive advancements.

ERTICO's unique ability to unite a broad spectrum of stakeholders from the public, private, and research sectors, emulating the triple helix, gives it a competitive edge in transforming innovation into deployable, scalable solutions. Our collaborative model breaks down silos and ensures that innovations in smart mobility are not only cutting-edge but also practical, deployable, and aligned with real-world needs.

Our strength in **coordinating cross-sector collaboration** is evidenced in our hands-on involvement in European co-funded projects, innovation platforms, and global advocacy. The impact we deliver in driving tangible results by going beyond traditional partnerships sets us apart in the smart mobility landscape.

ERTICO cooperates closely with ITS America, ITS Asia-Pacific and the Network of ITS Nationals, fostering a global partnership that enhances the development and deployment of ITS worldwide. Our collaboration and organisation of the ITS World Congresses is key in **facilitating a comprehensive approach** to addressing transportation challenges. This global dialogue not only enriches the technological and strategic capabilities of each region but also contributes to the creation of a cohesive and efficient transportation network, benefiting stakeholders and users around the world.

## **4. Innovation and Deployment**

An advocate for European competitiveness, ERTICO is dedicated to strengthening key industries and leveraging strategic opportunities in EU and national policies. We position ITS at the heart of these ambitions and engage actively to secure the necessary resource allocation for innovation calls in the Multiannual Financial Framework (MFF). We advocate for strong funding commitments, simplified processes to enhance transparency, accessibility and execution, and greater public-private collaboration to drive innovation.

Every year, ERTICO works on over 30 EU-funded projects on a broad range of topics related to ITS innovation and deployment. The focus of these projects, many coordinated by ERTICO or one of our Partners, is on aspects of CCAM, clean and urban mobility, and transport and logistics. ERTICO has been involved in the launch and coordination of a number of innovation platforms that unite stakeholders around one or more key components or concepts of ITS:

### **ADASIS AISBL** (Advanced Driver Assistance Systems Interface Specification)

*Advancing map-enhanced driver assistance systems leading to Automated Driving*

The ADASIS association is developing the worldwide de facto industry standard interface to enable Advanced Driver Assistance Systems (ADAS) to access map and geo-referenced data ahead of the vehicle position. This concept is known as ADAS Horizon and adapts as the vehicle advances on its route. ADASIS specifications have enabled the market introduction of new vehicle systems such as Predictive Powertrain Control, reducing fuel consumption and, therefore, CO2 emissions by up to 8%. The ADAS Horizon is the standardised interface enabling ADAS and automated driving applications to access the in-vehicle map database.

### **SENSORIS ASBL** (SENSOR Interface Specification - Association Sans But Lucratif)

*A global standardised interface to exchange data between in-vehicle sensors and the cloud*

The SENSORIS standard enables access, delivery and processing of vehicle sensor data to be used by location-based services and allows an easy exchange of vehicle sensor data. It brings together key players from the global vehicle industry, map and data providers, sensor manufacturers and telecom operators.

SENSORIS defines a global standardised data interface between vehicle and cloud that will result in new services and increased business opportunities, using in-vehicle sensor data as probe data. After becoming an official non-profit association under Belgian law in November 2023, SENSORIS will liaise with CEN and ISO in order to have the SENSORIS specification adopted as a CEN and ISO standard, and plan to develop SENSORIS v2.0.

## **Data for Road Safety (DFRS)**

### *Public-private cooperation for a Safety-Related Traffic Information (SRTI) Ecosystem*

Data for Road Safety (DFRS) is an ERTICO platform, and a pioneering initiative for enhancing road safety based on public-private collaboration. The platform has created a Safety-Related Traffic Information (SRTI) ecosystem, enabling data sharing among its members to create safety warnings under the principle of reciprocity. Public authorities, including road authorities and operators, vehicle manufacturers and suppliers, and service providers, work together for the large-scale use of safety-relevant data on a mutual basis. This frames into the delegated Regulation 886/2013 of the European Commission on safety-related traffic information.

DFRS has expanded its network by welcoming additional members and forging new partnerships, including the cooperation with NAPCORE, TISA, Car2Car Communication Consortium, Datex-II, C-ROADS and Euro NCAP.

## **Enhanced Automated Valet Parking (EAVP)**

### *A collaborative stakeholder ecosystem to bring parking to the next level*

The EAVP platform gathers stakeholders to coordinate the seamless dissemination and deployment of Automated Valet Parking (AVP). It promotes collaboration at a hands-on working level, facilitating partnerships. EAVP also supports the implementation of priority actions for AVP deployment in Europe, fostering relevant standards and aligning with deployment roadmaps and legislation. By creating and guiding an active European AVP ecosystem, EAVP aims to lead the consistent and stepwise deployment of AVP functionality for successful market entry in 2025.

The EAVP platform's current priority is the Lighthouse project, focusing on deploying AVP in real-life scenarios. Unlike demonstrators or prototypes, Lighthouse entails large-scale AVP deployment in live settings, where targeted user groups use AVP cars daily alongside designated garages. Crucially, the project aims for a clear path to commercialisation, ensuring a mutually beneficial outcome for all stakeholders involved. The Lighthouse project is supported by the platform's user journey deliverable on the merger of both the APDS parking and the ISO AVP standards. A consistent communications plan is set up for further dissemination of AVP awareness in Europe.

## **TN-ITS**

### *Transport Network ITS Spatial Data Deployment*

TN-ITS is an ERTICO multi-stakeholder innovation platform that governs a data chain mechanism for trusted, authoritative spatial road data changes between road authorities and map makers and service providers. The platform enhances road safety, transport efficiency, automation and applications such as MaaS, Smart Parking or Cycling. TN-ITS maintains and develops a CEN Technical Specification for the exchange of static road attributes. This standard is now the basis for static data exchange within the revised Delegated Regulation RTTI DR 2022/670. Additionally, TN-ITS encompasses the National Access Point Coordination Organisation for Europe (NAPCORE).

In 2023, TN-ITS signed the Declaration of Lisbon with DATEX II, which establishes a unified language for road data distribution throughout Europe. This cooperation, conducted under the umbrella of NAPCORE, simplifies data formats for data providers and enables automation for data users, facilitating the exchange of road data.

**TM 2.0***Enabling vehicle interaction with traffic management*

The TM 2.0 Innovation Platform brings together public and private sector organisations to focus on solutions for advanced interactive traffic management, with a governance model based on the core principles of co-opetition and trust among traffic stakeholders. TM 2.0 aims to improve the entire value chain for consistent traffic management and mobility services by enabling vehicle interaction with traffic management, achieving the convergence of mobility services and traffic management. With advanced traffic management also playing a critical role, ERTICO's TM2.0 platform was deployed at a pan-European scale in FENIX. This included integrated systems linked to TEN-T corridors for logistics, connecting infrastructure components (traffic lights, road sensors, cameras, digital signage) to a central control centre. It also brought forward opportunities to optimise traffic flows, reduce congestion, and improve road safety, with dynamic strategies such as adaptive signal control and incident detection.

**IDI (ITS-Driven Innovative aerial services)**

The IDI Platform is an innovative initiative designed to integrate aerial services with multi-modal traffic and next-generation city operations. It focuses on harmonising drones and other emerging aerial technologies with existing transportation and operational frameworks, fostering collaboration between public and private sectors, academia, and civil society. By setting standards, addressing regulatory challenges, and promoting cross-sectoral initiatives, the platform ensures safety, security, and sustainability.

Through its think-and-act forum, workshops, and webinars, the IDI Platform explores key innovations in intelligent transport systems and intelligent aerial services (IAS), shaping multilevel frameworks for responsible deployment. It aims to revolutionise urban and regional mobility, creating a faster, more flexible, secure, resilient, and sustainable urban environment.

**Maas Alliance (Mobilit-as-a-Service Alliance)**

MaaS is another aspect of delivering efficient and integrated multimodal mobility, focused on user needs. ERTICO inceptioned the MaaS Alliance and gained autonomy afterwards. ERTICO continues to contribute to the public-private ecosystem with active participation by ERTICO's CEO as Vice President, and involvement in the working groups on Business Models and Governance, User Needs and Acceptance, and Technology and Standards.

Efforts to bring together the MaaS market include exploring the potential of emerging services, including mobility credits or mobility wallets. The MaaS Alliance has developed several technical and policy position papers pleading for open APIs and "mobility roaming".

**TISA (Traveller Information Services Association)**

The market & membership-driven association that connects all stakeholders to develop and maintain the standards. This platform was initiated by ERTICO and has gained autonomy in the travel management ecosystem. It aims to maintain standards (including RDS-TMC and TPEG technologies), software and tooling in traffic & travel information and data quality accreditation.

TISA is an international association that leads the development of trusted traffic & travel standards and harmonised services for our members to ensure that travel is safe, efficient, and sustainable for everyone, everywhere. TISA's vision is a world where traffic and travel information is 100% correct, 100% of the time, on all roads. Their members include vehicle manufacturers, navigation service providers, solution providers, user device manufacturers and public sector stakeholders.

## 5. Collaboration for Innovation

In an effort to drive up the potential for innovation in intelligent transport systems by enhancing collaboration, ERTICO has established several Memoranda of Understanding (MoUs) with key ITS organisations and other bodies. These strategic partnerships extend across continents, enabling knowledge exchange, technology transfer, and joint initiatives that advance smart mobility.

We have signed MoUs with the **International Road Federation Geneva** (IRF), the **Traveller Information Services Association** (TISA) and the **Institute of Electrical and Electronics Engineers** (IEEE), and a Memorandum of Intent with the **European Space Agency** (ESA) to strengthen cooperation to leverage cutting-edge technology to solve mobility challenges, and advocate for innovation and systemic change.

Exploring new avenues for cross-border collaboration, we have bilateral MoUs with **ITS Korea** and **ITS China**. ERTICO also has an engagement plan with the **Transport Technology Forum** (TTF) in the UK and with the **Transportation Research Board** (TRB) in the US to share knowledge in areas of mutual interest. These strategic agreements play an important role in driving a unified approach to global ITS deployment, ensuring that the latest innovations are scalable, interoperable, and adaptable to regional needs.

The broad geographic reach of ERTICO's collaborative platforms allows us to foster international partnerships, share best practices, and promote the deployment of ITS globally, cementing our position as a frontrunner in shaping the future of smart mobility within and beyond European borders.

## 6. Thought Leadership in ITS

ERTICO promotes a forward-looking approach to mobility challenges and provides timely insights on emerging trends and technologies. We monitor the EU policy agenda and deliver position papers and advisory briefs related to ITS innovation and deployment to policymakers. Our position as an innovation leader is due in part to strategic guidance and thought leadership.

The **ITS Market Radar Reports** 2024 and 2025, a yearly ERTICO initiative, offer a comprehensive analysis of advancements in ITS and their impact on ERTICO Partners across different ERTICO sectors. These reports also highlight significant opportunities for different sectors to enhance sustainability, safety, and efficiency within transport networks, aligning with broader goals such as climate neutrality and the European Green Deal. Overall, the reports oversee the potential of different ERTICO sectors to cultivate sustainable, innovative mobility solutions across Europe.

The **City Moonshot** is one of ERTICO's innovative initiatives, designed to accelerate the adoption of smart mobility solutions in cities worldwide. By engaging with over 300 cities across the globe, the City Moonshot gathers insights on urban mobility challenges, sustainability goals, and the role of emerging technologies. The initiative promotes direct dialogue with city leaders, enabling ERTICO to tailor intelligent transport solutions that address local needs. This project is unique in its scope, as it not only aims to foster innovation but also to deliver actionable insights that help cities transition to greener, more efficient, and connected mobility systems. The City Moonshot empowers cities to make informed decisions, drive sustainable change, and become pioneers in the future of urban transport.

The **ERTICO Academy** offers specialised training and educational programs designed to enhance the skills and knowledge of professionals in the ITS sector. Through workshops, webinars, and certification courses, the Academy provides valuable learning opportunities that keep participants abreast of the latest developments and best practices in intelligent transport systems.

ERTICO's thought leadership also finds a channel through the various events, workshops and Congresses that ERTICO organises. The ERTICO Think Tank, Annual Forum and Focus-On events facilitate capacity building and thought leadership by spotlighting specific topics to discuss the current developments, opportunities and existing gaps.

The **ITS World** and **European Congresses** serve as distinctive forums to display the transformative role of ITS in shaping the future of mobility. At the Congress, high-level plenary sessions invite industry leaders and policymakers to share their vision and strategies for the smart and sustainable mobility transition. The Smart Mobility Summit of Cities and Regions is a signature feature of the ITS European Congress, where influential public authority representatives come together to share smart mobility-related best practices, successes, and existing and emerging gaps, and to discuss potential solutions with their peers.

The ITS Congresses also have a strong technical programme, which is complemented by exhibition and demonstration areas that feature the latest innovations for Congress delegates to witness and experience. The ERTICO ITS Congresses bring together experts from research, industries, governments, and innovators to discuss the intersection of technological, environmental, societal and policy-related challenges and opportunities for ITS. The Congresses also present prime opportunities to network and form productive alliances to deliver impact.

Through our partnerships, projects, congresses, advocacy and thought leadership, ERTICO acts as a catalyst for progress in ITS. We unite the ITS community and foster an environment where ideas can flourish and be translated into tangible improvements in the transport and mobility ecosystem. We aim to enable the seamless integration of new technologies and help shape a future where intelligent transportation solutions are the game changer that make our transport and mobility networks safer, more efficient, resilient and sustainable for society at large.

## **7. European focus points**

ERTICO's deep understanding of ITS, coupled with over three decades of experience in cross-sector collaboration, makes us ideally placed to provide policymakers with vital observations and insights. Our distinct blend of technical expertise, stakeholder coordination, and hands-on project experience enables us to offer solutions tailored to Europe's unique mobility landscape.

The **Competitiveness Compass for the EU**, published by the European Commission in January 2025, is premised on Europe and its R&I activities being at the cornerstone of the technological (r)evolution. 10th Research Framework Programme (FP10), with a dedicated and ringfenced budget focused on sustainable and smart transport and mobility, should enable the innovation cycle, starting from fundamental research to pilots, moving to collaborative and pre-competitive research, and resulting in industrial implementation. Ensuring that FP10 supports impactful research and innovation is key to strengthening Europe's position as a leader in sustainable and intelligent transport.

Strengthening synergies between FP10, national R&I programmes, and local initiatives will be essential in scaling up ITS deployment while ensuring all regions benefit from investments in transport innovation.

For its 2024-2029 mandate, the European Commission has set out six strategic priorities to guide the EU toward a green, digital, safe, and resilient future. These include:

1. The European Green Deal
2. A Europe Fit for the Digital Age
3. An Economy that Works for People
4. A Stronger Europe in the World
5. Promoting the European Way of Life
6. A New Push for European Democracy

Among these, the **European Green Deal** and **A Europe Fit for the Digital Age** are particularly relevant for the future of transport and mobility. Transport is one of the key target areas of the Green Deal. ITS offers digital and data-driven solutions combined with cutting-edge technologies to reduce emissions, optimise mobility, and enhance connectivity across Europe. ERTICO urges a strong, coordinated effort to harness ITS and maximise its impact under these two priorities.

#### **European Green Deal – ERTICO’s call to action through ITS**

- Accelerate the deployment of sustainable solutions for moving people and goods
- Support the transition to zero-emission transport with smart integration of EV charging infrastructure and clean vehicle technologies.
- Promote eco-driving and efficient traffic management using real-time and cooperative data sharing services.
- Encourage multimodal, active, and shared transport through digital tools that promote behavioural change.
- Implement ITS-enabled low-emission zones and congestion management to reduce urban air pollution.
- Leverage ITS data analytics to guide climate-conscious policy and infrastructure planning.
- Enhance public-private collaboration to scale ITS innovations that contribute to emission reduction.
- Ensure standardisation and interoperability to ensure green ITS solutions are scalable across Europe.
- Facilitate the digitalisation of freight transport to cut emissions and improve efficiency.
- Advocate for green incentives linked to ITS-enabled transport behaviours.

#### **A Europe Fit for the Digital Age – ERTICO’s call to action through ITS**

- Scale up deployment of Cooperative ITS (C-ITS) and connected vehicle services. Advance automated mobility through physical and digital infrastructure. Create cross-border digital transport corridors for seamless and intelligent mobility in Europe.
- Foster single ticketing/booking/payment and multimodal digital mobility services that integrate public and private transport under a single digital interface.
- Promote open mobility data, interoperability and shared digital standards for innovation.
- Ensure robust cybersecurity and data governance for safe, trusted in ITS deployment.
- Harness AI and big data to enable predictive mobility management and personalised mobility.
- Support smart road infrastructure with IoT sensors and digital twins.
- Build digital skills and R&D capacity in the transport ecosystem and empower cities and regions with digital tools and platforms to manage mobility dynamically.
- Engage stakeholders in pilot projects and public-private partnerships to accelerate ITS innovation and adoption.

# INNOVATION FOR TOMORROW'S JOURNEY.



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