



SMART AND CLEAN
MOBILITY SOLUTIONS
FROM FINLAND

FINLAND IS AT THE FOREFRONT OF SUSTAINABLE AND SMART TRANSPORT

Finnish companies are helping the world accelerate towards a new era of mobility with smart, safe, efficient and sustainable transport services and solutions.

Climate change, emissions targets and the requirements for sustainable development call for change. Transport is one of the biggest sources of emissions: it accounts for 23% of global carbon dioxide emissions.

We need to take quick actions to limit global warming increasing to 1.5 degree Celsius. Finland aims to transition into a carbon-neutral society by 2035. Sustainable transport solutions play a key role in achieving this goal, and meeting the challenge requires the ability to think and collaborate in new ways.

Finland has the technological skills and expertise needed to develop sustainable transport. Connectivity, automation, shared services and electric mobility are all areas in which Finland excels. With our world-class know-how in 5G, artificial intelligence and hyperautomation, we are a pioneer in modern, sustainable and smart mobility. Most importantly, we know how to combine technological expertise and user-oriented solutions.

We need everyone

on board so we can limit global warming increasing to

1.5

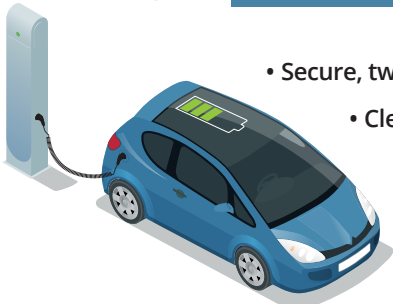

degree Celsius.







Learn about Semel application:
vimeo.com/337495593



Semel EVpay

MAKE EV CHARGING PAYMENT PROCESS EASY AND SECURE WITH A RELIABLE FULL-SCALE SERVICE SYSTEM

- Secure, two-way communication between charging unit and back office
- Clearing of payments and the possibility to review transactions
- Can be integrated to all OCPP charging units

WWW.EVPAY.EU

Semel
POWERED SYSTEMS

SUSTAINABLE TRANSPORT IS BUILT ON TECHNOLOGY AND A USER-ORIENTED APPROACH

Sustainable transport requires clean sources of energy, systemic change and digitalisation across the entire transport system and all modes of transport.

Connectivity enables smart mobility

Vehicles are becoming mobile devices that connect to each other as well as users' other mobile devices. Real-time data, well-functioning positioning systems and reliable data transmission enable services and solutions that help reduce congestion and emissions as well as increase transport system efficiency in both passenger and freight transport.

Finland's digital human capital and digital infrastructure have made it possible to develop pioneering technologies and solutions based on them.

Automation solutions for greater efficiency and safety

An increasing amount of technology is being added to vehicles to improve safety and reduce emissions. Technology and automation offer new opportunities—from driver assistance systems and safety features to improved entertainment systems and autonomous vehicles.

Finland has an impressively broad cluster of excellence that provides technological development as well as development and testing platforms for automated transport.

MaaS offers freedom of mobility

MaaS (Mobility as a Service) offers consumers access to personalised multimodal travel chains and supports the shift from ownership to usership. The technology combines public transport services and shared and private mobility services both in urban and rural areas.

The Finnish MaaS ecosystem is the first of its kind. The exceptional mobility experience is created by utilising open data, APIs and design. MaaS solutions integrate all available modes of transport to provide a single service that combines several forms of mobility.

Electric mobility

Electric mobility plays a major role in the carbon-neutral transport of the future. Finland's know-how covers the concepts of electric powertrain technologies, in-vehicle information, communication technologies and connected infrastructure, which enable the electric propulsion of vehicles and fleets.

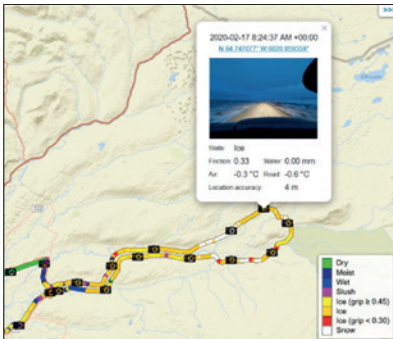
WHY FINLAND?

Finland might be the best kept secret among global superpowers in ICT and digitalisation. Our innovations enable companies and individuals around the world to enjoy experiences and solutions like never before. Finland is also a safe and stable country where legislation supports a culture of experimentation and enables the utilisation of open data.

Finland wants to attract companies that want to experiment, develop and scale their innovations. This is why we offer a well-functioning, user-oriented experimental and cooperative environment that includes various testing platforms. Our progressive attitude promotes experimentation and service development also in terms of legislation.

Our technological know-how is world class, and we are one of the top countries when it comes to technology and competence around cyber security. Our transport policy supports the development of sustainable transport: Finland aims to have fossil-free transport by 2045.

Finns are also open to experimentation and have a willingness to try new solutions. Finland's business culture welcomes user-oriented innovation and development in networks, and our environment supports the development of start-ups. In addition, our high-quality education and research ensure the continuous improvement of our know-how.



Mobile and stationary road weather measurements

Cost-efficient and compact systems

Teconer





A white Phantom 4 Advanced drone is shown in flight, hovering over a dense, green forest. The drone's four propellers are blurred, indicating motion. It has a camera mounted underneath. The background is a thick canopy of trees.

Finland is an excellent
operating environment.
We have everything a
**pioneer in mobility
and transport**
needs.

THE FINNISH SMART MOBILITY ECOSYSTEM

A comprehensive ecosystemic change is taking place in sustainable transport and logistics, which requires cooperation across various industries.

Finland's top-level know-how in technologies and service solutions support Arctic conditions and the requirements they set are our speciality, and we have high-quality weather data services—if it works here, it works everywhere!

The transport revolution is only possible through the utilisation of data. Our data toolbox includes the collection and utilisation of transport data, which combines from different sources as well as progressive MyData and open data policies.

We believe in cooperation and open ecosystemic development. Seamless cooperation and data-sharing between public and private operators make new services and technologies possible.



Read more:

futuremobilityfinland.fi/future-mobility-ecosystem

Creating security by developing an international electronic motor liability insurance system

The Finnish Motor Insurers' Centre.

Safely in traffic.

lvk.fi

Motor
Insurers'
centre

TESTBEDS GENERATE NEW BUSINESS OPPORTUNITIES

Finland is an ideal testbed for all that's new in mobility. Many groundbreaking solutions and services, such as MaaS and multiple automated transport solutions, have been developed in Finland.

Testbeds and piloting platforms offer Finnish and international operators an opportunity to develop their innovations, whether they are a start-up or an established operator in the sector. Diverse weather conditions guarantee a challenging test environment.

Numerous testbeds can be found in cities and sparsely populated areas alike. They offer an environment for testing all modes of transport from land to sea, not forgetting drone development.

Our testing and piloting cultures are second to none—therefore, new solutions come to life in Finland.

Learn more about Finnish testbeds and pilots:



[futuremobilityfinland.fi/why-finland/
finland-as-a-test-bed](https://futuremobilityfinland.fi/why-finland/finland-as-a-test-bed)



[futuremobilityfinland.fi/why-finland/
bold-experiments](https://futuremobilityfinland.fi/why-finland/bold-experiments)





Enabling digital transparency and sustainability in logistics

Emissions



Emission Transparency
CO2 Monitoring
CO2 Migration

Logistics



Supply Chain Transparency
Data Sharing
Cargo Tracking

Roadside Data



Connected Devices
V2X Connectivity
IoT

Vedia Caas Services

Corridor as a Service :

Transforms supply chains to
age of data sharing and sustainability

www.vedia.fi





HSL Helsinki Region Transport – efficient and sustainable public transport in the Helsinki region

Helsinki Region Transport (HSL) is a public transport authority in charge of organizing the public transport in the Helsinki metropolitan region. HSL provides easy, affordable and efficient mobility in the region by train, bus, tram, metro and ferry – all accessible with one ticket. We cater for 67 % of all public transport boardings in Finland and promote sustainable mobility.

Customer needs and preferences evolve continuously. New kinds of mobility services emerge. While striving to provide excellent physical and digital services to customers, we also support the creation of new innovative services through our open data policy.

HSL OpenMaaS ticket sales interface is open for all parties interested in integrating HSL mobile tickets into their services. The API is being continuously developed with new technical features, ticket types and payment options.



Check out the solutions made by our partners





CITIES AS INNOVATION PLATFORMS

We want to offer a dynamic operating environment for transport sector start-ups and an active application platform for new technologies, such as blockchain, machine learning, artificial intelligence, automation and big data.

Cities act as active innovation partners to businesses and facilitate the integration and scaling of new technology into people's daily lives.

Digital infrastructure and open data support the creation of business-driven innovations in Finland. Businesses promote e.g. smart traffic management solutions, explore the potential of 5G and utilise artificial intelligence and machine vision.

The need for an entirely new ecosystem and services is constantly growing due to the electrification of transport. Well-functioning public transport is connected to mobility services. Finnish legislation enables the development of new service concepts, and cities serve as platforms for testing automated feeder transit and drones.

Learn more about Finnish cities and companies' case stories:



futuremobilityfinland.fi/why-finland/cities-as-platforms



futuremobilityfinland.fi/casestories

NETWORK FOR FUTURE MOBILITY

ITS Finland, Intelligent Transportation Society of Finland, is a collaborative forum for smart mobility that brings together representatives from various areas of government, research, education and business.

Our mission is to work towards wider deployment of smart traffic solutions, the digitalisation of transportation and services as part of transportation system in order to make it safer, smoother and more efficient and sustainable.

We aim to connect people, technologies, authorities and research to create new innovations, companies, jobs and business opportunities in the transportation sector, both locally and internationally.

Connect with us and we connect you within the most innovative smart mobility network in Finland!



Read more about the Network of National ITS Associations: www.itsnetwork.org



TRAFFIC TRANSFORMATION THROUGH INTELLIGENT SERVICES

Want to get on board? Let's build the world's safest, smoothest and most environmentally friendly traffic to Finland with open data.

At Fintraffic our mission is to provide traffic information and services that help companies to create new traffic and smart mobility solutions for people and goods, promoting sustainable development.

A data platform to develop the traffic ecosystem of the future

Our open data solution Digitraffic provides data for parties interested in developing innovative traffic services. Interested in becoming our partner and creating world-class traffic markets in Finland?

Read more: fintraffic.fi/en/fintraffic/becoming-partner



PAYIQ INTELLIGENCE IN carbon footprint recording

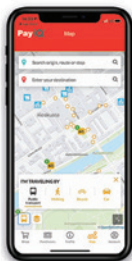
PayiQ is a strong innovator in how people travel and access their tickets on any given mode of transport. We enable combinations of multimodal transport to be accessible from a smartphone application. At PayiQ we support collaborative transport utilization, footprint recording and taking these resources to corporate record for compensation. Such an effort hasn't been implemented on a smart multimodal ticketing application before, but PayiQ wants to be a leader on this field.

Several modern cities aim to reducing their carbon footprint but it's a challenge to ensure that people make lifestyle changes. For years industries and all forms of

transport have been given objectives, compensations, and benefits to bring carbon recordings to practice. PayiQ can provide the carbon footprint recording ecosystem within its application and derive the necessary reports and data points. These daily mobility points are real-time mileage recordings and encourage end-users to make such contributions. The application notification window can reproduce target results on a daily and monthly basis and provide a dashboard to be proud of. From an industry perspective this is a disruptive impact and can have far-reaching positive effects.

PayiQ Domestic Transit Smart Ticketing - Solutions and Services

Application front end
& back end



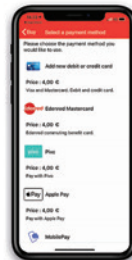
- Trip planning
- Fleet information
- Routes and services
- Carbon footprint recording

Branded for city



- Branded app
- Language for local needs
- Operator names
- Notifications and dashboard

Payment flexibility



- Wide range of payment methods
- Full admin control
- Full transaction control

Multimodal



- Single ticket multimodal
- Intra-city and roaming function
- Corporate collaborations

www.payiq.net

PayiQ®



Intelligent Transportation Society of Finland – ITS Finland

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www.its-finland.fi | www.futuremobilityfinland.fi



ITS **FACTORY**
INNOVATIVE
TAMPERE SITE