ENABLING INTELLIGENT TRANSPORT SYSTEMS FOR PEOPLE AND GOODS

We are on the brink of an extraordinary revolution that will change our world forever. In this new world everyone, everything and everywhere will be connected in real time. We call this the Networked Society, and it will fundamentally change the way we innovate, collaborate, produce, govern and sustain. The transport industry will benefit from this evolution.

SAFETY, EFFICIENCY AND REDUCED ENVIRONMENTAL IMPACT

Intelligent transport systems (ITS) are enhancing the efficiency, safety and environmental credentials of the transport sector across the world. However, truly intelligent transport systems are complex as they require the integration of information and communication technologies (ICT) with existing transport infrastructure, vehicle fleets and the travelers themselves. Mobile communication has a critical role to play in laying the foundation for effective usage and operation of ITS services for:

- Road and rail authorities and operators

- Public transport authorities and operators

- Vehicle manufacturers

- Shipping operators

Our ITS enable road, rail and public transport systems to be connected in a cooperative ecosystem. Intelligent transport is an integrated part of the Networked Society, with leading solutions for safe, efficient and sustainable transportation.

Ericsson builds, integrates and operates ICT infrastructure solutions and ITS services for road, rail and public transport.

ICT INFRASTRUCTURE

Rapidly growing demand for communications and connected services for road, rail and public transport must be met with strong, future-proof ICT infrastructure. Ericsson delivers and operates ICT infrastructure and services for road, rail and public transport based on our leading products and services for telecommunications. Our solutions include:

- Connected road solutions

- Railway telecommunications

- Metro and tunnel coverage

- Onboard connectivity

- Road and rail surveillance

TRAFFIC MANAGEMENT

Road, rail and public transport systems are facing growing safety, efficiency and sustainability challenges. When vehicles, transport infrastructure, travelers and goods are connected, it becomes possible to manage traffic in a safer, more efficient manner. Ericsson's traffic management solutions – based on our leading telecommunications products and services – enable a truly cooperative and intelligent transport system.

Our solutions include:

- Connected traffic management

- Cooperative ITS

- Traffic data cloud management

TRANSPORT TRANSACTIONS

Faced with traffic congestion and environmental problems, road and public transport authorities and operators need to manage the demand for car use by changing travelers' attitudes and behavior. One way of doing this is to offer co-modal transport services including public transport, car pools and commuter parking. Transport transactions is an operations and business support solutions-centric offering that provides tools used to manage an ecosystem of transport service providers. It supports customer management, product bundling and partner management, rating and charging, invoicing and payment, settlement, sales statistics, and more.

Our solutions include:

- Road user charging

- Fare collection for public transport

- Passenger information

INTELLIGENT ARCHITECTURE

Regardless of the method of connectivity, delivery of ITS services requires intelligently designed architecture. Transport providers will benefit from a common service platform that matches communication technology and vehicle product life cycles, and balances the management of applications with consumer needs and usage patterns.

Existing mobile communication systems provide various enablers to simplify and accelerate ITS deployment. Connectivity to commuters' vehicles and traffic infrastructure can be provided, but also specific service enablers such as location, messaging, billing and service creation tools.

THE MOBILE ADVANTAGE

Mobile communication solutions have two key advantages; a large deployed base of existing networks and users and the economies of scale that brings in terms of speed of deployment, and the ecosystem of application and device developers that already exists to serve the mobile market. Mobile networks based on GSM (2G), WCDMA/HSPA (3G) and LTE (4G) are connecting vehicles, transport infrastructure and travelers. Demanding traffic safety services such as crash notification and road hazard warnings can be rolled out very cost effectively using existing mobile networks.

ITS services that are consistent across all users in a transport system are dependent on effective service enablement and content management tools layered on top of connectivity.

SERVICE LAYER COMPLEXITY

It is likely that, over time, the ITS service structure will become as complex as the service layer in the telecoms world – which today enables design, deployment and management of a multitude of applications and services for 5 billion mobile phone users across the globe. In addition, mobile systems could be a fundamental enabler for ITS service providers to charge and get paid for the services they deliver over transport systems for goods as well as people via road, rail, air or sea.

TRANSPORT OFFERINGS AND CAPABILITIES

CONNECTED VEHICLE

Smartphones changed how consumers interact with the world around them. Powered by the cloud, the connected car promises to extend this interactive dynamic to drivers and passengers on the road.

Ericsson's Connected Vehicle Cloud is a robust platform that enables application developers, government organizations, businesses and automotive manufacturers to reach drivers and passengers with services and information. Access to information transforms the in-car experience for drivers and passengers and enables automotive manufacturers/OEMs to manage the customer experience, improve product quality and pursue new aftermarket opportunities.

Connected Vehicle Cloud – recognized as the Connected Car Platform of the Year in the Compass Intelligence Awards, held during the 2015 Consumer Electronics Show in Las Vegas – is based on the Ericsson Service Enablement Platform. It targets the global automotive industry's existing and future demands for scalability, security and flexibility in the provisioning of connected car services for drivers and passengers.

Connected Vehicle Cloud leverages Ericsson's machine-to-machine (M2M) service enablement capabilities and can be deployed on standard cloud infrastructures. Ericsson can integrate and manage Connected Vehicle Cloud on behalf of customers.

Services offered:

- Connected Vehicle Cloud

- Customer experience management

- Connectivity management

- Connectivity insights

- Remote device management

- Device and application verification services

CONNECTED VESSEL

More than 90 percent of global cargo is transported via the world's oceans and mobile communication could play a key role in enabling the shipping industry to employ new and more efficient means of fleet management. Mobile communication systems can assist shipping companies in managing delivery times, improving interaction with and between vessels, enabling proactive issue resolution, sharing information with customers and improving energy efficiency.

Shipping companies are increasingly investing in machine-to-machine communications. This creates a need for full mobile coverage onboard vessels, as well as cost-efficient, high-bandwidth connectivity over satellite links.

To make the most of this connectivity, shipping companies will need to modernize their ICT environments. The Connected Vessel concept is based on an open and horizontally layered model with solutions for connectivity, connectivity & device management, and service & information management.

This approach allows shipping companies to introduce new applications and services in a cost-efficient and scalable manner. The resulting open environment enables cost-efficient cloud services and real-time data analytics.

Services offered:

- Vessel connectivity

- Crew communication and internet access

- Vessel safety & security

- Service and information management

For more information, visit our [Transport spotlight site](#).

MARITIME ICT CLOUD

Click to watch a video about Maritime ICT Cloud

Despite the fact that ships carried an estimated total of 9.6 billion tons of cargo in 2013, the maritime industry lags behind alternative transport industries in terms of its use of information and communications technology. Ericsson aims to change that with the introduction of Maritime ICT Cloud; an end-to-end offering that combines a managed cloud solution with industry applications, service enablement, connectivity management, and consulting and systems integration services.

At present ships rely on manually updated traffic, cargo, port, weather and safety information that is sent point-to-point rather than made available to all parties simultaneously via a network. This is a time-consuming process and the lack of access to real-time data significantly increases the margin for error.

Ericsson's Maritime ICT Cloud will connect vessels at sea with shore-based operations, maintenance service providers, customer support centers, fleet/transportation partners, port operations and authorities. At the same time, the offering supports services used to manage fleets, monitor engines and fuel consumption, oversee routes and navigation, and ensure the wellbeing of the crew. Ericsson will provide everything from satellite connections to application support in one complete package, and manage operation of the Maritime ICT Cloud on behalf of its customers.

CONNECTED TRAFFIC CLOUD
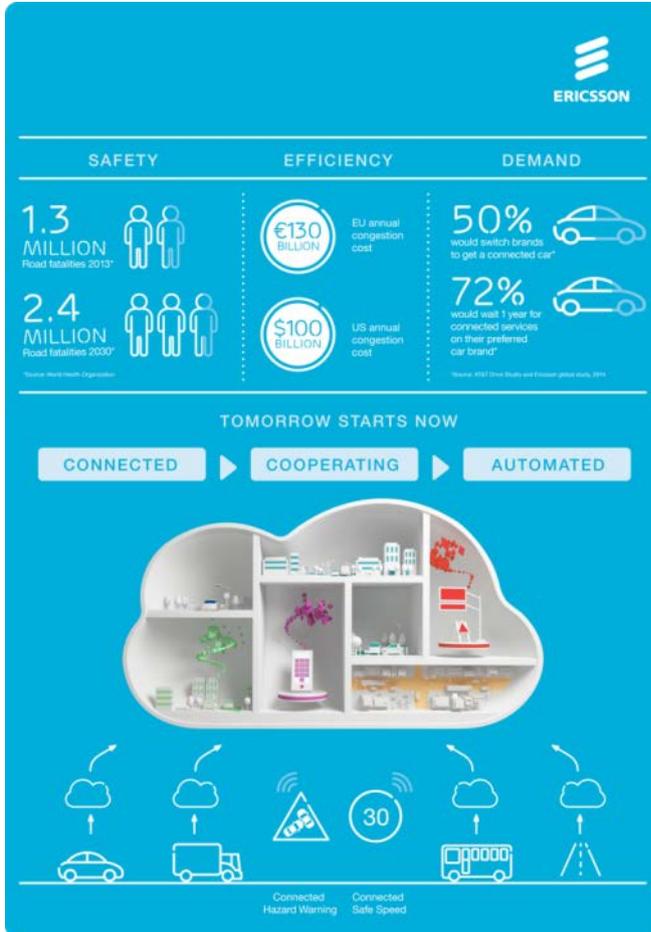
Click for a larger view (PDF)

Despite playing a vital role in facilitating the transportation of people and goods, road vehicles are also responsible for 1.24 million fatalities every year – according to the most recent data from the World Health Organization. And then there's the cost of traffic congestion – calculated by adding up wasted fuel, time that could be spent more productively and higher business costs – which already amounts to well over USD 100 billion a year in the US alone.

To increase road safety and improve traffic flow, Ericsson is introducing Connected Traffic Cloud – a managed cloud platform that enables the sharing of real-time traffic and road condition data between connected vehicles and road traffic authorities. With Connected Traffic Cloud, the road traffic authorities have access to all the data they need – and also a much better means of communicating potentially life-saving traffic advisories to drivers.

Mobile connectivity is increasingly a must-have feature in cars, thanks to both consumer demand for infotainment and a wide range of regulatory initiatives that aim to increase road safety. As a result, vehicles are becoming a major source of data that could be used to improve road traffic authorities' ability to manage traffic and prevent avoidable accidents. Connected Traffic Cloud is the means by which that data could be shared.

Click to watch a video about Connected Traffic Cloud

At launch, Connected Traffic Cloud dramatically improves the ability of road traffic authorities to communicate with drivers. Whereas currently the authorities rely on a combination of broadcast radio and digital roadside signage, Connected Traffic Cloud will facilitate proactive and location-relevant communication with drivers via the screens of connected devices.

In addition, Connected Traffic Cloud has the potential to greatly increase road traffic authorities' ability to aggregate and analyze real real-time data from connected vehicles and devices – if the owners of the data are willing to share it.

From a component point of view, Connected Traffic Cloud combines industry applications, service enablement, connectivity management, and consulting and systems integration services. Each of these individual elements has been proven in other industry-specific managed cloud platforms, such as Connected Vehicle Cloud and Maritime ICT Cloud.

The primary customer for Connected Traffic Cloud is road traffic authorities, who currently rely on a limited set of data provided by a relatively small number of road sensors and traffic cameras. Other potential sources of data include aftermarket, portable GPS devices and smartphone navigation apps.

Traffic authorities use the data they have today to manage traffic flow by, for example, controlling traffic lights. In addition, they use the data they have to provide traffic advisories to drivers that help them avoid potentially dangerous road conditions as a result of, for example, lane closures and road works.

By launching Connected Traffic Cloud, Ericsson hopes to inspire the creation of an open ecosystem in which data from connected vehicles will be shared to ease traffic flow and enhance road safety.

ICT INFRASTRUCTURE FOR ROAD & RAIL

As road and rail traffic increases, so does the need for efficient ICT infrastructure. Traffic management and safety is heavily dependent on connectivity and real-time services. At the same time, commuters demand high-quality personal connectivity.

With road traffic facing challenges such as congestion, accidents and maintenance costs, there is a need to invest in increased capacity and efficiency while ensuring safety and sustainability. These challenges can only be met in a cost-efficient and sustainable way with ITS.

In the near future, vehicles will cooperate in real time with one another and traffic management systems to ensure safety and efficiency. There is also a strong drive toward electrification and automated vehicles that will place new requirements on ICT and ITS.

The rail sector already invests heavily in solutions for train signaling and traffic control, but there is also a growing need for onboard connectivity if trains are to remain an attractive means of transporting passengers and goods. With an intelligent approach, private and public communication can be combined, encompassing a unified backbone network, radio access and service enablement.

The rapidly growing demand for communication and connected services for both road and rail requires a strong, future-proof ICT infrastructure. Ericsson delivers and operates ICT infrastructure and services for road and rail based on offerings established for telecommunication.

Combining Ericsson's ICT Infrastructure and Service Enablement Platform makes it possible to implement an open environment where ITS can be deployed and managed in a multi-stakeholder ecosystem. In the near future, traffic authorities and other actors will also be able to extend their reach into individual vehicles by applying features from Ericsson's Connected Vehicle Cloud.

Services offered:

- IP and transmission networks

- In-building solutions for metro coverage

- Onboard coverage for trains

- Connectivity management

NOTABLE TRANSPORT ENGAGEMENTS

Click to visit the U-Ming Marine website

U-Ming Marine

In November 2015, Ericsson was selected by U-Ming Marine Transport Corporation (U-Ming), a marine transportation company headquartered in Taipei, Taiwan, to deliver end-to-end connected vessel and voyage optimization solutions.

Ericsson's Maritime ICT Cloud will enable U-Ming to collect near-real-time data on vessel location and movement, and to monitor vessel speeds against manually set planned speeds, allowing the company to optimize fuel consumption. By facilitating real-time information flows, the solution will improve visibility from ship to shore and support process automation, which will reduce U-Ming's costs and deliver efficiencies both internally and for clients and partners.

In addition, Ericsson will deliver its Connected Vessel offering, which will support high-quality ship-to-shore VoIP and email communications for personnel on board vessels.

Inmarsat

Also in November 2015, Inmarsat – the leading provider of global mobile satellite communications services – and Ericsson signed a strategic maritime agreement. The two companies will facilitate the sharing of cargo, logistics and vessel operational data to help streamline the entire maritime supply chain.

Inmarsat and Ericsson will jointly develop services, solutions and applications to drive industry standards for satellite connectivity and application integration in the maritime industry.

As a first step, Ericsson has signed a distribution contract to offer XpressLink, Inmarsat's combined L-band and Ku-band VSAT network for the maritime market. XpressLink offers an easy upgrade path to Inmarsat's Fleet Xpress service, powered by the new Global Xpress constellation, when it becomes available in the coming months. It is intended that the distribution agreement with Ericsson will be extended to Fleet Xpress at that time.

Volvo Bus Latin America

In 2015, Volvo Bus Latin America and Ericsson signed a partnership agreement for localization and customization of Volvo's ITS4Mobility intelligent transport system in order to address the needs of the Latin American market. The real-time traffic management and passenger information system increases the efficiency of urban transportation systems, thereby contributing to enhanced mobility.

AT&T

In 2014, Ericsson signed an agreement with AT&T to improve connectivity for products and applications that are powered by the Ericsson Connected Vehicle Cloud. The agreement creates a better consumer experience and helps advance the automotive cloud ecosystem by making it easier to connect in-vehicle technology and provide a path for the next generation consumer experience. In addition, this agreement advances the connected automotive cloud ecosystem and makes it easier for consumers to connect in –vehicle products and applications.

Volvo Car Group

Click to watch Volvo demonstrate Sensus Connect at CES 2014

As part of an agreement reached in 2012, Volvo Car Group uses Ericsson's Connected Vehicle Cloud to allow drivers, passengers and cars to connect to cloud services. Drivers and passengers are able to access applications for information, navigation and entertainment using a touch screen in the car. Volvo Car Group will allow partners such as internet radio providers, road authorities and local governments access to the Connected Vehicle Cloud so that they can provide services. The solution is available in the majority of Volvo Car Group markets and is branded Sensus Connect.

On November 27, 2014, Ericsson received the Volvo Cars Quality Excellence Award in recognition of its commitment to deliver and maintain Volvo Cars' high standards and requirements on quality.

Maersk Line
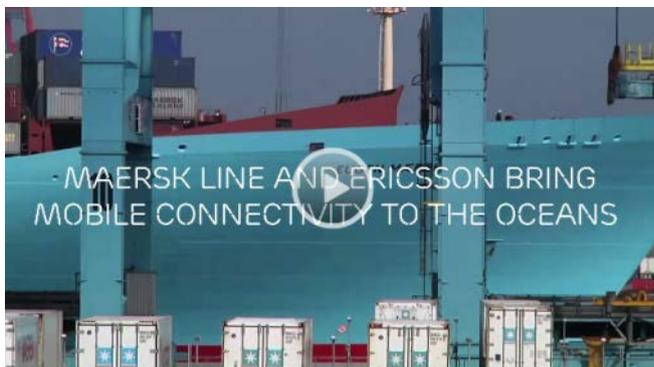
Click to watch a video about this project

In 2012, Ericsson was selected as prime integrator by Maersk Line to help bring mobile connectivity to the oceans. Ericsson has equipped the entire fleet of Maersk Line's 400 container vessels with satellite antennas and GSM base stations in combination with satellite communication services. The solution is managed by Ericsson 24/7 with support from a large number of ports across all regions. The solution enables M2M communication with refrigerated containers, crew and vessel communication, as well as route management.

Converge

Funded by Germany's Federal Ministry of Education and Research (BMBF) and Federal Ministry of Economics and Technology (BMWi), the Converge project aims to connect motor vehicles to cellular networks so that they can communicate time-critical information on traffic conditions to each other. Launched on September 1, 2012, Converge is another example of how existing cellular networks can be used to connect devices other than mobile phones – in this case, vehicles – to facilitate sharing of transport system data in new, open business models.

ELVIIS

Electric Vehicle Intelligent InfraStructure (ELVIIS) is a project that began in late 2008 when Viktoria Swedish ICT, a research and development institute and Swedish energy supplier Göteborg Energi, Ericsson and Volvo Cars joined forces to prototype a user-friendly recharging system for electric vehicles. The project was funded initially by the partners, and subsequently by Region Västra Götaland (the council for a county on the western coast of Sweden) and Göteborg Energi Research Foundation. The vision of the project was to encourage ownership of electric vehicles through the application of ICT and its scope has expanded far beyond the development of a user-friendly vehicle recharging system. ELVIIS partners now believe that this vision can be achieved by developing a platform that enables communication between the vehicle, the car owner/driver and the electricity network operator, as well as third parties such as service developers, operators and transport authorities.

CoCar/CoCarX

Beginning in 2007 and concluding in 2011, the Cooperative Cars (CoCar) project and its successor, Cooperative Cars Extended (CoCarX), were initiated by a German government research initiative (Adaptive and Cooperative Technologies for Intelligent Traffic (Aktiv).

As part of the CoCar project, Ericsson partnered with German automakers, a multinational mobile network operator and local universities in a major research study in Munich, Germany, which showed that pile-up crashes can to a large degree be prevented, and related traffic flow disturbances can be avoided, if vehicles can communicate with one another over the existing 3G (HSPA) and 4G (LTE) mobile networks.

TELECOM COMPETENCE

Ericsson brings innovative thinking and unrivalled experience in understanding different mobile users and designing, deploying and managing services to the transport sector. We have the expertise required to design and manage end-to-end solutions ranging from mobile broadband modules built into vehicles to mobile access networks and operations support systems, service deployment platforms and business support systems. We have a track record of building intelligent architectures that can be adapted to new types of applications and business models.

Increasingly we are using our experience in telecommunications and providing managed services for networks that serve more than 1 billion subscribers worldwide to assist partners and customers in the utilities sector to adopt new types of applications and enable new business models. Our 66,000 services professionals are based in 180 countries and speak more than 100 languages. Around 17,000 of these employees are consultants and systems integrators who deliver more than 1,500 projects in multivendor and multi-technology environments every year.

TRANSPORT AND AUTOMOTIVE MILESTONES – PRESS RELEASE HIGHLIGHTS

Ericsson and AT&T head straight into the future of the Wi-Fi enabled connected car

January 5, 2016

Ericsson joins AT&T Smart Cities Alliance

January 5, 2016, Press release

Ericsson and Inmarsat sign a strategic agreement that will transform the future of the connected ship

November 19, 2015

Ericsson transforms maritime fleet management for Taiwan's U-Ming

November 18, 2015

AT&T Drive Studio and Ericsson release global study on connected car buyers

October 13, 2015

Ericsson demonstrates Automated Networked Transport at ITS World Congress

September 30, 2015

Ericsson Connected Vehicle Cloud wins 2015 LTE Award

July 24, 2015

Ericsson and Volvo Cars win 2015 GTB Innovation Award

June 10, 2015

Ericsson unveils connected bus stop and other public transport innovations at UITP Milan

June 4, 2015

Volvo Bus Latin America and Ericsson sign partnership to foster urban mobility

May 20, 2015

Ericsson supports Solar Team Eindhoven in World Solar Challenge

April 16, 2015

Ericsson joins forces with Scania and Royal Institute of Technology in transport lab for future infrastructure

April 13, 2015

Ericsson Connected Vehicle Cloud wins 2015 global mobile award

March 17, 2015

Connected Traffic Cloud facilitates traffic management to increase road safety

March 2, 2015

Ericsson wins big at 2015 Compass Intelligence Awards

January 8, 2015

Maritime ICT Cloud enables ships to join the Networked Society

January 6, 2015

Ericsson receives Volvo Cars Quality Excellence award

December 1, 2014

AT&T Drive Studio and Ericsson release global study on Connected Car buyer

September 10, 2014

Ericsson Connected Vehicle Cloud wins 2014 Mobile Innovation Award

August 4, 2014

Ericsson acquires MetraTech to accelerate cloud and enterprise billing capabilities

July 29, 2014

Ericsson Connected Vehicle Cloud wins at 2014 Telematics Update Awards

June 12, 2014

Volvo launches new cloud-based infotainment system for its connected car

January 8, 2014

AT&T and Ericsson announce agreement for the connected car

January 6, 2014

Ericsson announces key collaborations to improve city life

November 19, 2013

Flexible charging solution puts electric cars in the fast lane

February 23, 2013

Connected Car services come to market with Volvo Car Group and Ericsson

December 17, 2012

Smart charging for electric vehicles

November 5, 2012

Maersk Line and Ericsson bring mobile connectivity to the oceans

January 11, 2012

Smart Transport in Brazil highlighted at COP 17

December 13, 2011

FURTHER INFORMATION

Media Kit - Electric Car Charging Project

Media Kit - Connected Vehicle - An Industry in Transformation

EXTERNAL WEBSITES FOR COOPERATIVE TRANSPORT PROJECTS

eCall
HeERO
CoCar
CoCarX (German)
ELVIIS
Converge

ERICSSON

NOTES TO EDITORS

For media kits, backgrounders and high-resolution photos, please visit
www.ericsson.com/press

Ericsson is the driving force behind the Networked Society – a world leader in communications technology and services. Our long-term relationships with every major telecom operator in the world allow people, business and society to fulfill their potential and create a more sustainable future.

Our services, software and infrastructure – especially in mobility, broadband and the cloud – are enabling the telecom industry and other sectors to do better business, increase efficiency, improve the user experience and capture new opportunities.

With approximately 115,000 professionals and customers in 180 countries, we combine global scale with technology and services leadership. We support networks that connect more than 2.5 billion subscribers. Forty percent of the world's mobile traffic is carried over Ericsson networks. And our investments in research and development ensure that our solutions – and our customers – stay in front.

Founded in 1876, Ericsson has its headquarters in Stockholm, Sweden. Net sales in 2015 were SEK 246.9 billion (USD 29.4 billion). Ericsson is listed on NASDAQ OMX stock exchange in Stockholm and the NASDAQ in New York.

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