Ministry of Transport and Communications

# Finland's Strategy for Intelligent Transport

Programmes and strategies 6/2009

*Finland's Strategy for Intelligent Transport*
*Rapporteur's Proposal*

Ministry of Transport and Communications
Programmes and strategies 6/2009

ISSN 1457-747X (print)
ISSN 1795-4037 (web)

ISBN 978-952-243-125-7 (print)
ISBN 978-952-243-126-4 (web)

Cover design
Proinno Design Oy

Layout
Workshop Pälviä Oy

Photograph of Mr. Harri Pursiainen
Tero Pajukallio

Photographs of Ms. Anu Vehviläinen and Ms. Suvi Linden
Anna Huovinen

Photographs
Antero Aaltonen, Panu Pälviä,
iStockphoto, Academy of Finland

Printing
Edita Prima, Helsinki 2010

# Table of contents

Preface 4

Covering letter 5

Introduction 6

NATIONAL STRATEGY FOR INTELLIGENT TRANSPORT 8

**1. Vision for intelligent transport** 9

**2. Seven principles of intelligent transport** 10

**3. Objectives for 2020** 12

**4. Strategy** 14
4.1 Intelligent transport leads to new transport policy 15
4.2 Creating permanent co-operation models 16
4.3 Getting the most out of innovations 16
4.4 Stepping actively onto the international stage 17
4.5 Information society policy and regulations create the basis for intelligent transport 17

**5. Emphases of strategy** 18
5.1 Better and more environmentally friendly services 19
5.2 Safer transport 19
5.3 Improved traffic flow 20
5.4 More efficient logistics 20
5.5 Enhanced markets for intelligent transport 21
5.6 Reorganising transport system planning 21

**6. Roles of stakeholders** 22

**7. Action plan** 23

**8. Key projects** 26

**9. Funding the strategy implementation** 30
9.1 Impact on national economy 30
9.2 Impact on municipal finances 30
9.3 Impact on corporate finances 30
9.4 Impact on citizens' finances 30

**10. Commitment of stakeholders** 31

Appendix 1: Summary of national expenditure arising from ITS strategy in 2010–2015 32
Appendix 2: Terms and abbreviations 33
Appendix 3: ITS projects 34
Appendix 4: Appointment letter 36

# Preface

Anu Vehviläinen
Minister of Transport

Suvi Lindén
Minister of
Communications

In the new decade now under way, transport and communications policies are on the threshold of major changes and opportunities. Climate change, globalisation, stringent public finances and requirements for better productivity call for new, flexible and agile ways of thinking and acting. In the field of ICT, society will be focusing increasingly on versatile applications of the technologies rather than developing new innovations.

Our response to the forces of change will include integrating the conventional, physical transport system with the ubiquitous intelligence of the information society. Intelligent transport is user-oriented, and intelligent transport services are part of everyone's daily life. The transport policy of the 2010s will extend far beyond infrastructure and its construction and maintenance. Through intelligent transport services, customer-orientation will be the basis of the transport system.

Publicly available data that is high-quality, open-access and affordable is the raw material for electronic services and will be the key to new, more efficient operating models. The public sector still needs to improve the quality and availability of the data within its sphere.

Finland's Strategy for Intelligent Transport was drafted openly and in cooperation with the public and private sectors. As a result, the vision for intelligent transport presented in the Strategy reflects the views of all concerned.

The new, national, wireless services and solutions are cost-efficient and are often more flexible than the fixed infrastructure services. Finland enjoys better communications networks and a wider variety of electronic data than many other countries, which can give us a competitive edge. The question is whether users, public authorities and businesses will be able to cooperate to take full advantage of this in an open and flexible manner.

This is the right time to start implementing the national Strategy for Intelligent Transport and the action plan set out within it. We feel it is important that a Government Resolution be issued on the Strategy for Intelligent Transport, thus providing impetus for the work and sufficient momentum for its continuation beyond the term of the present Government.

A national advisory board for intelligent transport will monitor and supervise the implementation of the Strategy and assist in preparing national guidelines on the issue. The proposals of the Strategy will be utilised in drafting the operating and financial plan for the Ministry of Transport and Communications' administrative sector and in the guidance for the transport administration agencies. The Strategy will also be an essential element in the preparations for the next government report on transport policy.

The Ministry of Transport and Communications hopes that the Strategy for Intelligent Transport will generate broad-based public debate on transport policy and its future direction.

Helsinki, 25 November 2009

# To the Ministry of Transport and Communications

Harri Pursiainen
Permanent Secretary of the Ministry of Transport and Communications

On March 19, 2009 the Ministry of Transport and Communications asked me to formulate, as rapporteur a proposal for a national strategy for intelligent transport.

In compliance with the remit, this strategy proposal has been prepared openly. A seminar organised by the Ministry of Transport and Communications was held on May 5, 2009 and was open to all stakeholders in the transport sector and other interested parties. A smaller invitational seminar for experts was also organised in the spring of 2009. I personally held meetings with numerous stakeholders in the sector during the spring.

In June 2009 I sent a message to 170 different parties with an interest in intelligent transport systems (ITS), asking them to outline the key points that should be included in the strategy as well as things that should not be included under any circumstances. I also asked them to list suitable key projects for the strategy.

After receiving a large number of responses, an open seminar for transport stakeholders was held on August 18, 2009. Seminar discussions were used as the basis for a strategy outline, which was put on the Ministry's website for possible comments. After being refined on the basis of the feedback and many one-on-one discussions, the strategy was submitted for a new round of comments on October 13, 2009. After further feedback and ongoing discussions, I was able to conclude the preparation of this strategy proposal.

The proposal is formulated in such a way that the national strategy

- creates a vision for intelligent transport in 2020
- defines the principles under which intelligent transport should be developed
- affirms the transport policy objectives that intelligent transport should help to attain in as concrete terms as possible
- defines clear points of emphasis for the strategy
- outlines the key projects in different domains, the realisation of which will be monitored closely
- describes the roles of the various stakeholders and creates co-operation models for the sector
- presents an action plan for intelligent transport, which will allow the strategy's objectives to be reached.

The proposal also includes estimates of the costs and financial responsibilities concerning the strategy's key projects and action plan.

I propose that the Government issue a resolution concerning a national strategy for intelligent transport. As intelligent transport systems (ITS) are a joint agenda of the public and private sectors, I also propose that the public sector and the extensive ITS sector sign a co-operation agreement dedicating themselves to the promotion of intelligent transport.

It is my opinion that in the 2010s it will be possible to implement an entirely new kind of transport policy facilitated by intelligent transport. This change will also be influenced by the transport administration reform carried out in early 2010, which will expand the traditional focus of transport administration from individual transport modes to the transport system as a whole. It is also necessary to adjust the thinking behind transport policy from transport infrastructure maintenance towards customer-oriented transport system operations.

I propose that the next Government's programme should define the Government's intelligent transport objectives and measures, as well as the resources needed to realise them. Complementing this, a transport policy report for 2011 will be compiled in accordance with the new planning system. The report will examine intelligent transport as a central transport policy tool and ensure sufficient resources for intelligent transport.

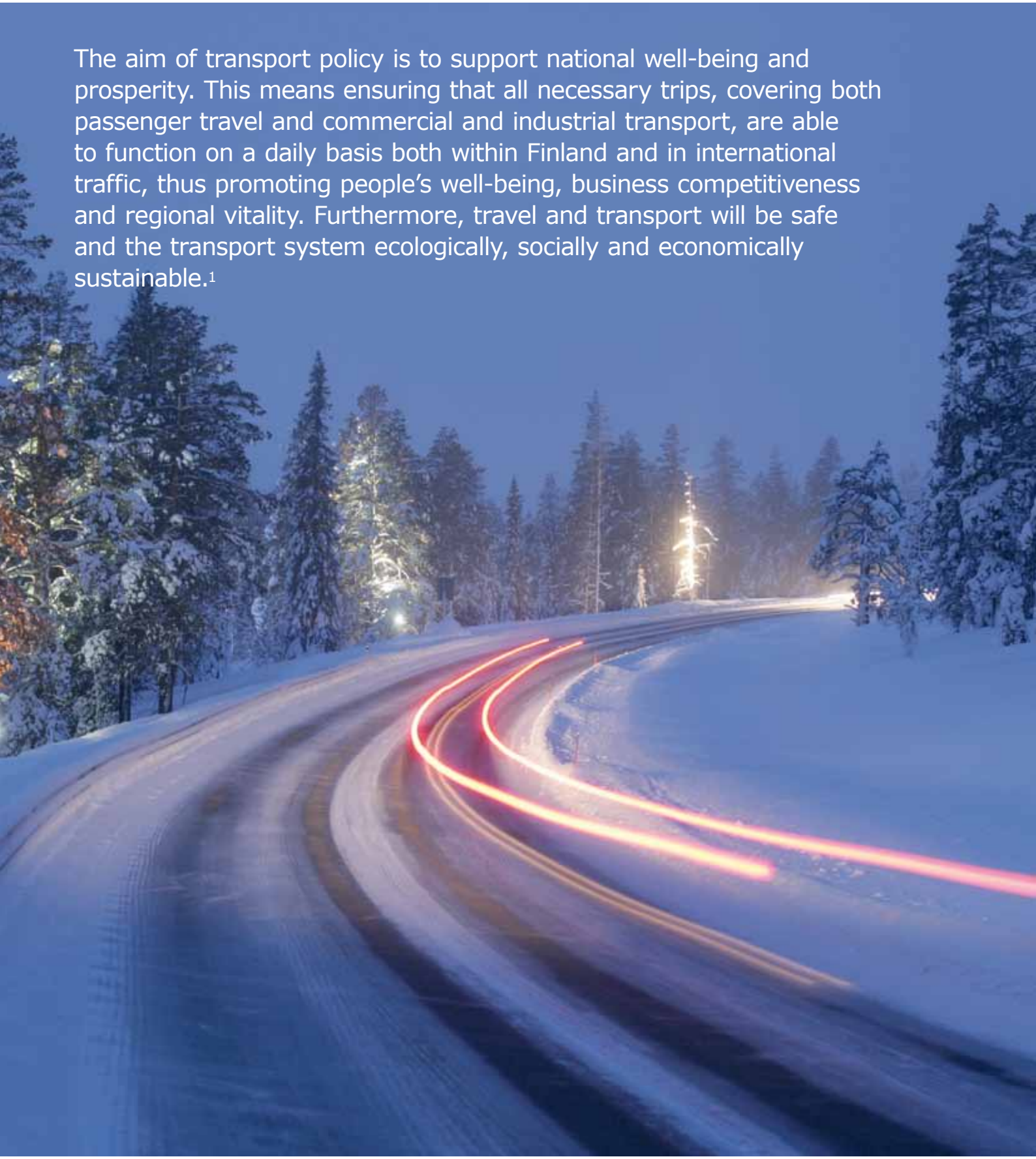
I would like to thank Director *Silja Ruokola*, Senior Adviser *Seppo Öörni* and Programme Co-ordinator *Juuso Kummala* for their useful ideas and their valuable assistance with the writing.

Having completed my work, I hereby respectfully present this document to the Minister of Transport and Communications. ●

Helsinki, 18 November 2009

# Introduction

The aim of transport policy is to support national well-being and prosperity. This means ensuring that all necessary trips, covering both passenger travel and commercial and industrial transport, are able to function on a daily basis both within Finland and in international traffic, thus promoting people's well-being, business competitiveness and regional vitality. Furthermore, travel and transport will be safe and the transport system ecologically, socially and economically sustainable.[1]



The Transport Policy Report of Prime Minister Matti Vanhanen's Second Cabinet states that good transport connections are essential to regional development. Transport connections affect the extent to which companies are willing to set up operations in an area or to remain there. A reduction in passenger transport travel times increases the efficiency of business travel and allows for easier regional and municipal networking with the aim of providing joint services.[2]

Finland's information society policy vision is a knowledge-based, post-industrial society that is internationally attractive, humane and competitive. This will be founded on balanced social and regional development of the different elements of the information society, a uniform, information-secure and freely accessible information society infrastructure, and strong public confidence in the information society's stakeholders and services. The information society should be seen to be flexible and helpful in all kinds of everyday situations.[3]

In the new millennium, significant forces for change are having, and will continue to have, an extensive impact on the entire transport system. The most significant of these forces are climate change, globalisation, a shortage of public funding, and technological development.

*Climate change* demands that strict goals be set for reducing greenhouse gas emissions. Transport is responsible for almost one fifth of Finnish emissions, and thus the need for emission reductions will force the transport system to adapt to the significant changes occurring. Reducing emissions from private road transport will be especially challenging. Intelligent transport systems (ITS), e.g. transport pricing, will provide powerful tools for reducing these emissions.

*Globalisation* is changing the industrial structure of Finland. Heavy basic industry is being replaced by the services and other products of a post-industrial society. There will be less heavy-vehicle traffic, and the requirements set for transportation will change. Globalisation also affects Finnish transport policy because our logistics costs are higher than those of competing countries due to Finland's geographic location.

*The shortage of public funding* will continue long after the current recession is over. The public sector has to be increasingly cost-effective nowadays, due to the aging of the population and the reduction in the workforce. Public services must be provided much more efficiently, allowing the same or a greater amount of services to be provided on a much lower budget. In the future, more and more public services will be provided in co-operation with the private sector. Transport policy will have to find new ways to meet society's mobility and transport needs.

Rapid technological development will continue. *New products and services* made available by advances in information and communication technology will provide new opportunities for the transport sector and for society as a whole. Productivity can be increased using information and communication technology more than with any other technical innovation. New technology is already in significantly greater use in many other sectors of society than in transport. Moreover, Finland's transport sector is, at best, only average in this regard in comparison with other European countries. The transport sector must become an active participant in the development of the information society, so that it can reap the full benefits of it.

The term 'ubiquitous information society' has been frequently used during the past decade. As technology becomes more advanced and inexpensive, it becomes an integral part of all human activity. Information technology becomes embedded in a great many devices and objects, and a significant amount of data communication takes place without people even being aware of it. The transport sector represents one of the most suitable areas for new applications of ubiquitous information society services.

Intelligent transport systems (ITS) encompass this use of information and communication technology within the transport system. ITS technology allows the transport sector to better face the challenges set by various forces for change, while also facilitating the achievement of many socio-political objectives. It can provide support not only for transport policy, but also for Finland's information society objectives and climate and environmental policies. ITS technology also increases work productivity and helps ensure better, more equitable services for different population groups or regions. ITS products and services can also be developed into significant business and export opportunities, creating new jobs in industry and service provision.

Intelligent transport is not just an information society concept but can become a tangible, everyday presence in people's lives and in industry and commerce. The most significant impact of intelligent transport is that it allows the focus of transport policy to be shifted away from the construction and maintenance of transport networks and towards successful travel and transport, i.e. transport network operations. By utilising ITS services and by optimising passenger travel and goods transport, the existing transport infrastructure and transport services can be exploited fully.

Multimodal, real-time information on the state of the transport system and any services realised on the basis of this by means of wireless terminals, geographic information systems and positioning technology will make people's everyday lives easier and safer, increase work productivity and the efficiency of corporate logistics, and offer new business models for businesses.

The creation of intelligent transport systems will involve various different parties and a variety of measures. It will require co-operation between the public and private sector, and between different authorities.

Social forces for change are constantly shaping the global operating environment of ITS. ITS services are also an efficient promoter of other socio-political aims. ITS developments in the international arena must be followed closely and Finland must participate actively to exert its influence, while simultaneously being prepared to maintain and constantly develop the national strategy.

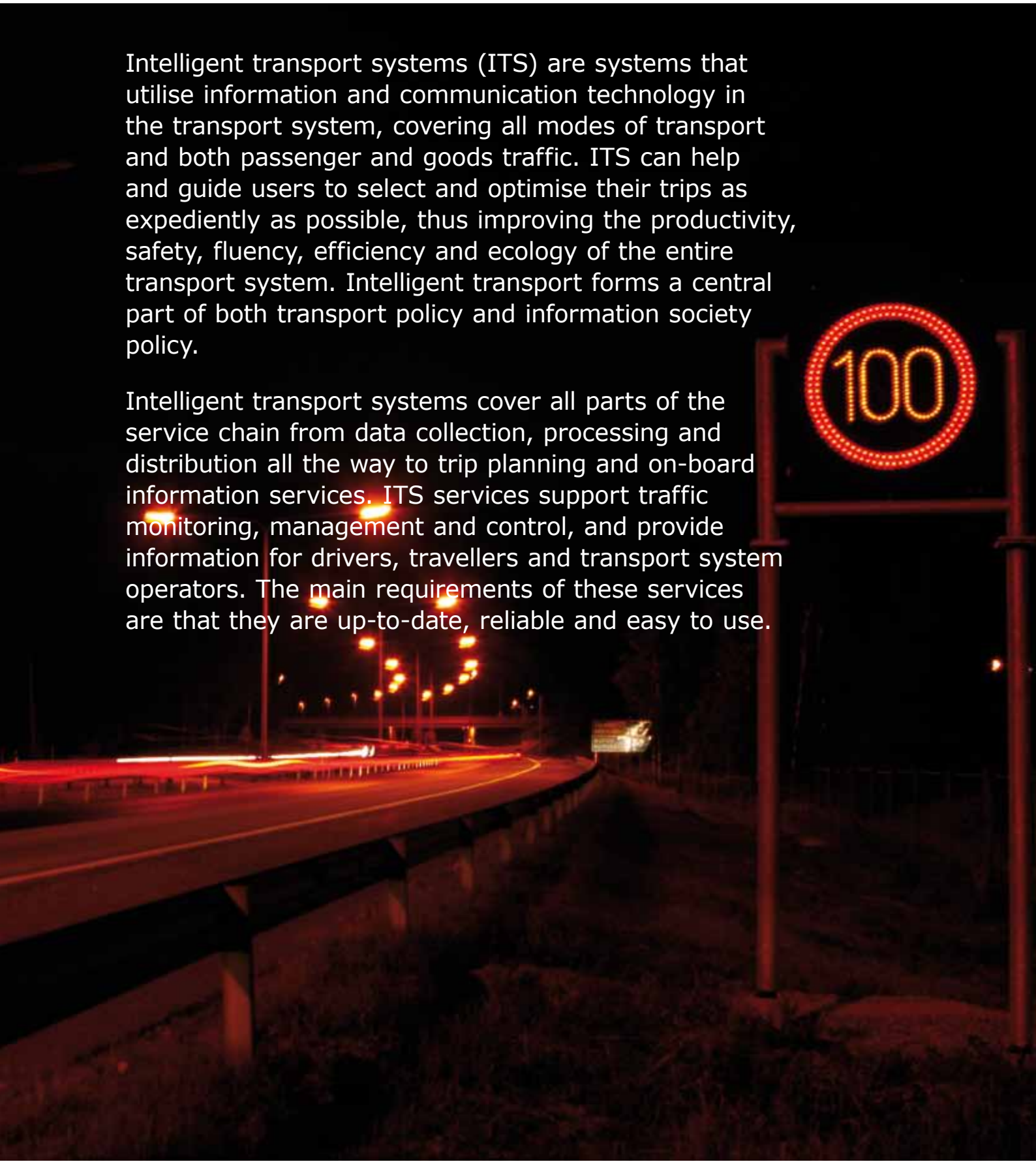
Upon assessing the implementation of the Government Programme midway through its term, the Finnish Government took the decision to draw up an ITS strategy and implementation plan in 2009[4]

1) Transport 2030. Major challenges, new directions. Ministry of Transport and Communications, Programmes and Strategies 2/2007.
2) Government transport policy report to Parliament on March 27, 2008. Publications of the Ministry of Transport and Communications 17/2008. [in Finnish]
3) Government Resolution on the Objectives of the National Information Society Policy for 2007–2011.
4) Prime Minister's Office Publications 14/2009. [in Finnish]

# NATIONAL STRATEGY FOR INTELLIGENT TRANSPORT

Intelligent transport systems (ITS) are systems that utilise information and communication technology in the transport system, covering all modes of transport and both passenger and goods traffic. ITS can help and guide users to select and optimise their trips as expediently as possible, thus improving the productivity, safety, fluency, efficiency and ecology of the entire transport system. Intelligent transport forms a central part of both transport policy and information society policy.

Intelligent transport systems cover all parts of the service chain from data collection, processing and distribution all the way to trip planning and on-board information services. ITS services support traffic monitoring, management and control, and provide information for drivers, travellers and transport system operators. The main requirements of these services are that they are up-to-date, reliable and easy to use.



# 1 Vision for intelligent transport

## Cleaner transport
## Safer vehicles and transport infrastructure
## Predictable transport movements
## Informed travellers

By 2020 the Finnish transport system will be one of the most advanced and efficient in the world.

Traffic will flow more easily and will be more environmentally friendly and safe.

A transport system operated in real time will provide travellers with constant travel and transport information as well as information on any conditions affecting them.

The transport infrastructure and transport services will be used significantly more efficiently than now.

Cost-effective logistics will improve Finland's competitiveness.

Finnish businesses will produce innovations that are further developed into successful ITS exports.

ITS will be part of the ubiquitous information society and the everyday lives of citizens. Intelligent transport networks and services, intelligent vehicles, and travellers who are well informed about transport services will together form an interoperable transport system. Vehicles and travellers will produce real-time data on the status of the transport system. This will provide the information basis for predictions concerning any changes in the transport system status as well as for transport operations. Vehicles will communicate with the transport infrastructure and transport information systems and even with each other. Travellers will be able to access transport system status information easily, anywhere and at any time. An intelligent transport system will suggest alternative routes and transport modes, taking into consideration the traveller's personal needs and preferences as well as environmental sustainability.

With the help of information and communication technology, transport policy will become more customer-oriented, thus significantly improving the nation's competitiveness, increasing productivity, improving transport services and logistics, promoting transport safety, and reducing the carbon footprint of transport and its other negative impacts on the environment.

Finland will develop ITS services and products into successful exports. It will also be a successful and internationally attractive environment for developing intelligent transport systems.

Finland will be one of the world's leading users of intelligent transport services in all modes of transport.

In a market economy, businesses will produce most of the ITS services on the market. The public sector will set regulations, thus ensuring a good operating environment for stakeholders, but the public sector will also play a significant part in the transport system by providing services and real-time data and by maintaining the system's basic infrastructures. The domain of intelligent transport will have a strong network of stakeholders, openly co-operating, competing, and developing services using their individual strengths and know-how. Public authorities and institutes will set aside sufficient personnel resources for intelligent transport tasks and develop their own expertise.

Dynamic information society and communications policy will promote the development and use of intelligent transport. ●

# 2 Seven principles of intelligent transport

Intelligent transport systems will be based on adherence to the following principles (values):

1. Intelligent transport constitutes sustainable development.

This means:
Transport services and products will favour socially, economically and ecologically sustainable solutions, e.g. when selecting technology and materials for service production, when promoting sustainable development in acquisitions or by favouring certain transport modes. Through successful everyday passenger travel and goods transport, intelligent transport systems will provide sustainable well-being and economic growth for Finland.

2. Intelligent transport systems treat all citizens, businesses and regions equally.

This means:
When providing intelligent transport services– which are provided by both private and public sector stakeholders – the special needs of all population groups, including the needs of the elderly and the principle of "accessibility for all", will be taken into consideration.

Citizens have different needs, e.g. as drivers, cyclists, pedestrians or public transport users. The transportation needs of businesses depend on e.g. their location and line of business. Actual service provision may not be the same across the country for commercial reasons, differing environmental conditions or social needs, but even then the justifications must be based on equal consideration. The public sector must ensure that equality is realised.

Different modes of travel and transport will continue to operate, and the public sector will not interfere with healthy market competition. A transport policy that exploits intelligent transport systems treats all transport modes and service providers equally, unless there are significant social reasons to do otherwise. These reasons may include the health, safety and equality of citizens, climate or environmental protection, and sustainable development. Transport policy aims to ensure a high level of service for passenger travel and goods transport, though the measures taken to reach this goal may vary due to regional or other conditions. Transport policy takes the needs of road, rail, waterborne and air traffic – and the special needs of passenger and goods transport and logistics – into consideration equally.

3. Intelligent transport is easy and inexpensive to use.

This means:
Information and communication technology is not an end in itself but a means to achieve concrete benefits. Services will be designed and implemented so as to be customer-friendly, not technology-oriented. Service prices will be kept low by a competitive market supported by a well-planned and well-supervised network of laws and regulations. Intelligent transport services must also be profitable for the national economy. The costs of public systems should be sufficiently low in relation to the benefits of these systems.

## 4. Intelligent transport systems respect the privacy of citizens.

This means:
Intelligent transport service providers will ensure their customers' privacy, and are required to do so by law. The property and safety of citizens and businesses must not be significantly endangered by a lack of data security.

## 5. Intelligent transport systems are founded on solutions familiar to consumers.

This means:
Intelligent transport services should ideally be provided in a way that allows them to be used with the help of existing services and service platforms, such as mobile phones and other nomadic devices, positioning devices or other information systems. The construction of separate systems specifically for the needs of transport is to be avoided whenever possible.

## 6. Intelligent transport services are nationwide and internationally compatible.

This means:
It is in the interests of intelligent transport service users that common services are interoperable nationwide. Due to prevailing conditions and user needs, some services may only be regional in nature or may vary from place to place. International compatibility is essential, especially in the field of logistics, and this will be ensured through international co-operation. Intelligent transport solutions may also provide services exclusively for specific user groups or business sectors.

## 7. Intelligent transport systems are created in a co-operative network consisting of the public and private sectors as well as service users.

This means:
The providers of transport and ICT (information and communication technology) networks and services will commit themselves to act in the interests of the national strategy objectives in co-operation with each other. Intelligent transport system users will be brought into open co-operation with service providers.

# 3 Objectives for 2020

The new transport policy for the 2010s will take a customer-oriented view of the entire transport system. Intelligent transport systems (ITS) will provide essential tools for this new transport policy.

With the help of this new transport policy supported by ITS, the Finnish transport system should achieve the following objectives by 2020 (figures in comparison with 2009):

- The productivity of transport infrastructure management and the transport system itself will have increased by 10 per cent more than the increase in general productivity.
- Intelligent transport systems will help save 50 lives annually in road transport, and no lives will be lost in commercial maritime, air and rail transport.
- Greenhouse gas emissions caused by transport will have been reduced significantly (the precise figures will be defined in 2010, when current studies have been concluded).
- Due to an increase in the efficiency of transport chains and terminal logistics, private sector logistics costs will have been reduced to a level almost on a par with those of our main international competitors.

- Commuter traffic delays caused by congestion will have been reduced by 20 per cent in large urban areas.
- Public transport, cyclists and pedestrians will make up a 20 per cent larger share of all trips than they do now.
- Finland will be one of the five most advanced nations in the world when it comes to the use of intelligent transport services and products.
- Finland will produce and export a significant amount of intelligent transport services and products.
- Customers will be satisfied with the fluency of travel and kept well-informed at all stages of travel (a minimum of 80 per cent satisfied customers).

# 4 Strategy

## 4.1 Intelligent transport leads to new transport policy

The transport system's most important customers are citizens, with their mobility needs, and businesses, with their particular transportation requirements. The needs of these users form the basis for intelligent transport services and the operation of the transport system itself. By including customers in the interactive development of services, the creativity of individuals and communities will be fully utilised and the high quality of services and genuine demand for them will be ensured. A versatile transport system and transport policy, realised with the help of ITS, will guide travellers towards the use of environmentally sustainable, economical and safe modes of transport.

Traditionally, transport policy has been centred around massive construction projects and maintenance of the transport infrastructure. The new transport policy of the 2010s will shift the focus from infrastructure to customers. Transport infrastructure-oriented thinking will be replaced by customer-oriented transport system operations. The transport information infrastructure – such as real-time data, databases, registers, data networks and traffic pricing systems – will therefore grow in significance.

The transport administration reform carried out in early 2010 is essential for the adoption of this new way of thinking. It directs the transport administration to expand its focus from the special requirements of specific transport modes towards the larger issues faced by the transport system as a whole and by its users. Without these measures, the re-form of transport policy for the 2010s would not be possible.

A transport system operated in real time monitors traffic conditions and the transport system status constantly, controls traffic, prevents accidents and other incidents, minimises the effects of traffic incidents and provides constant transport system status information to travellers. It allows the existing transport infrastructure to be exploited to its full extent. It also has significant social consequences, as the need for extensive renovation projects or new investments will either be postponed or eliminated. This will free up resources, which can be earmarked to efficiently benefit the transport system and those using it.

One key element in implementing the new transport policy is to replace the traditional planning model, which emphasises new investments, with the four-step principle[5]. Continued use of and experience with the four-step principle will signify a fundamental change in transport policy, as transport infrastructure construction will be supplemented with, and even replaced by, ITS tools and other small-scale solutions. The four-step principle emphasises and allocates transport policy solutions and resources in a new way, shifting focus from transport network management towards customer-oriented transport network operations.

Many sectors of social policy influence transport demand and transport mode choice (first step). These sectors comprise not only transport policy, but also zoning, vehicle and transport taxation, and traffic pricing. On the macro level, transport demand is influenced by information society and communications policy, e.g. by promoting telecommuting or by offering various tools for influencing the choice of transport mode. One example of the latter is high-quality public transport broadband services. A number of different administrative sectors share responsibility and jurisdiction over the bottom step of the four-step model. A sustainable transport policy should be taken into consideration in the decision-making process of these other social policy sectors. Their decisions should be actively influenced from a transport policy standpoint.

ITS tools are essential for the second step of the four-step principle, increasing the efficiency of transport network utilisation. The Ministry of Transport and Communications encourages its administrations to adopt a new approach to transport policy mainly by setting performance targets for them. The transport administration and municipalities are

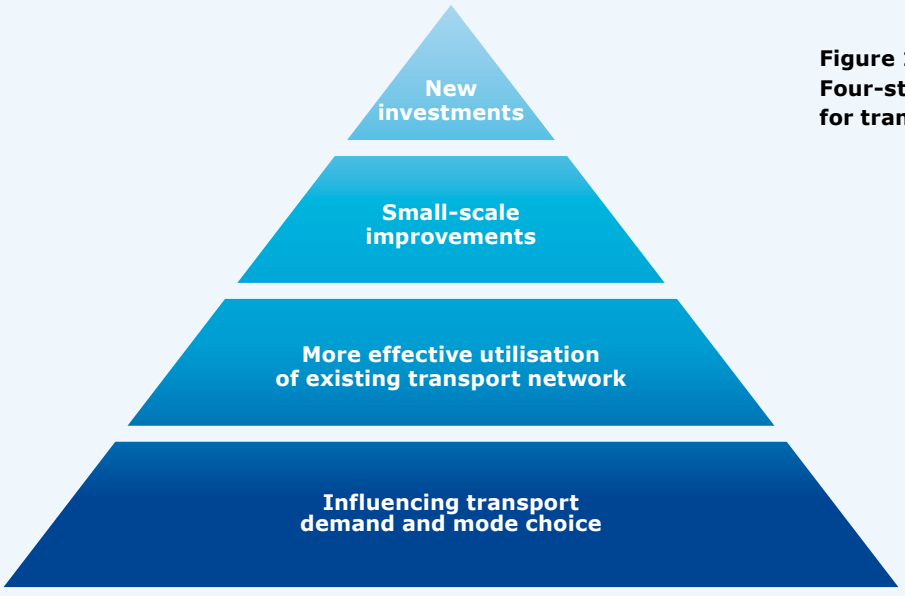



**Figure 1.**
**Four-step principle for transport system**

5) According to the four-step principle, the first step in solving transport problems is to assess whether the problem can be fixed by influencing transport demand. Next, the possibility of increasing the efficiency of the existing transport infrastructure is reviewed. Only when small-scale improvements are found to be insufficient are new transport infrastructure construction projects considered.

encouraged to increase their expertise and to boldly utilise innovative solutions in order to implement transport policy.

The four-step principle does not rule out major traditional transport infrastructure investments (fourth step), which are necessary if only because Finland's economic structure is changing. They are necessary whenever results cannot be reached through smaller-scale improvements (third step). New investment needs have been outlined in the Government's Transport Policy Report. In particular, the throughput of the rail network must be improved to meet the requirements of the mining industry and public transport. Other lines of business, such as tourism, also have new transport connection needs.

In the future, transport system planning should always include a review of possible alternative solutions in accordance with the four-step principle. Before moving up to a higher step, it must be shown why the needs of customers cannot be fulfilled more economically and efficiently by some means that is typical of the lower steps.

Municipalities and other large urban areas play a large role in transport policy. They are partially responsible for realising the four-step principle and promoting intelligent transport. Close stakeholder co-operation within urban areas yields good results on the lower levels of the four-step model. By developing public transport, improving electronic services and increasing the efficiency of public chartered transport, municipalities can influence both transport demand and transport mode selection.

**In summation, it can be stated that Finland will be steered towards a new transport policy for the 2010's by**

- the transport administration reform due to take place on January 1, 2010, which will expand the focus of transport administration from individual transport modes to the transport system as a whole and to the transport information infrastructure
- the establishment of a way of thinking based on the four-step principle, which will shift the focus away from transport infrastructure management and towards customer-oriented transport system operations
- intelligent transport innovations that will provide essential resources for the new transport policy.

## 4.2 Creating permanent co-operation models

In an intelligent transport system, a number of private and public sector stakeholders offer services to their customers. The service provided to a customer is usually the result of a complex chain of events.

The foundation for the entire sector must be co-operation and networking. An intelligent transport advisory council, consisting of key governmental, municipal, research and business stakeholders, is established to manage the national ITS strategy. The advisory council offers stakeholders a genuine opportunity to influence the entire intelligent transport system.

Overseen by the Ministry of Transport and Communications, the advisory council monitors and steers the implementation of the transport policy and plan and, if necessary, ensures that these are updated. The advisory council also acts as the national background network for international ITS forums and bodies, and takes a stand on national policy issues and decisions. The advisory council also aims to increase Finnish expertise in order to create intelligent transport solutions and strengthen the international competitiveness of Finnish intelligent transport products.

The co-operation between the public and private sectors is an open partnership. All procurements follow public procurement procedures. Procurement programmes that are announced early give stakeholders time to prepare and increase the efficiency of procurement processes. The four-step model is efficiently promoted by favouring intelligent transport tools and solutions during procurements and competitive tendering.

Information society operations also take the needs of transport into consideration.

## 4.3 Getting the most out of innovations

The private and public sectors act in close co-operation to develop intelligent transport services and products. Public funds are also allocated for intelligent transport operations. Innovative procurement models encourage the commercial sector and reduce R & D risks. Business models and precompetitive procurement models create resources for service pilots and trials.

The public sector is encouraged to seek out new solutions and favour innovations through their procurement, too. Risk management is an essential part of procurement, and reduces the costs and risks associated with new technology, its implementation timetables and use, and the full service life cycle.

Close, systematic co-operation between intelligent transport operators and various public finance providers increases the visibility and role of transport in programme services. Co-operation with the Finnish Funding Agency for Technology and Innovation (TEKES) and with its research projects is increased, and a role is actively sought for intelligent transport projects in TEKES programmes and Strategic Centres for Science, Technology and Innovation (CSTIs).

The Ministry of Transport and Communications sets the goals for intelligent transport research and development (R & D) in accordance with the strategy's co-operation model. The Finnish Transport Infrastructure Agency and Transport Safety Agency are responsible for practical applications, programme services, and the co-ordination of intelligent transport R & D.

The Ministry and Agencies all develop their resources and expertise. This is ensured in the next Government's frameworks and budget for the next legislative period.

A key objective of R & D is to promote the creation of development environments and test platforms in Finland. Development environments enable pilots and trials, thus allowing both customers and suppliers to openly test and develop applications and to assess their impacts.

The promotion of innovations will create new businesses and jobs in Finland.

## 4.4 Stepping actively onto the international stage

The common goal of the entire intelligent transport sector will be to make Finland one of the leading nations in intelligent transport. Internationally known and renowned research, expertise and export-ready services will help make Finland a desired co-operation partner in the field of intelligent transport.

Whenever possible, intelligent transport services should be compatible with European services. The aim is to always ensure cross-border service accessibility. Finland should take the initiative and support EU policy in order to ensure the implementation of pan-European solutions and open interfaces.

Active, anticipatory work by the Finnish authorities during the drawing up of EU directives, standardisation efforts, and other co-operative efforts will ensure that EU directives are conducive to intelligent transport and make it easier to implement transport solutions that are in line with the national ITS strategy. This will also establish the conditions necessary for Finnish products, services and operating models to be successful on the international market.

The European Union's ITS Action Plan creates guidelines for the national development of intelligent transport systems. The Action Plan and the currently formulated ITS implementation directive define the key measures that should spearhead the implementation of intelligent transport systems.

The national intelligent transport advisory council monitors and tries to influence the operations of the European Union's ITS Action Plan. If necessary, the advisory council will propose national guidelines and measures that the Action Plan calls for. We can increase our efficiency and avoid unprofitable solutions by maintaining our expertise, keeping updated on international developments and learning from other nation's solutions.

## 4.5 Information society policy and regulations create the basis for intelligent transport

Information society policy improves the availability of everyday services, increases productivity and competitiveness, and promotes regional and social equality. Information and communications technology (ICT) helps raise the level of travel and transport service. Intelligent transport is also a central part of information society policy.

The critical factors for intelligent transport service production are how easily and economically it can exploit real-time transport data, information about other transport service users or, for instance, weather information.

Information society policy is also interested in public information. The public sector collects a lot of information, which – if utilised in an egalitarian and economical way – would help create new, data-refining businesses. The public sector should always hand over useful real-time transport information to service producers.

Different users, or travel and transport needs, are taken into consideration when developing intelligent transport services. Citizens' right to privacy and data security must always be considered when using applications based on monitoring or positioning systems, although the right to privacy and data security must be weighed against the other basic rights of citizens.

Intelligent transport services must be easy to use and must function in a variety of different terminals. The services should be reasonably priced, and their production costs and profits should be such that service production is economically viable. Even transport applications should fully exploit ICT expertise.

As an increasing quantity of information society services is being developed through user communities, open co-operation should be supported. It is essential to ensure that service-producing communities have access to all the necessary information through clearly defined interfaces with public information. The opening up of information and open interfaces assist small, innovative businesses in particular. Service users can give feedback to transport service developers by utilising geographical, map or weather information, for example. The feedback may concern the types of information needed on road and rail maintenance works, or on traffic incidents. Users can also create new services by analysing travel or transport systems and can share useful information with other travellers.

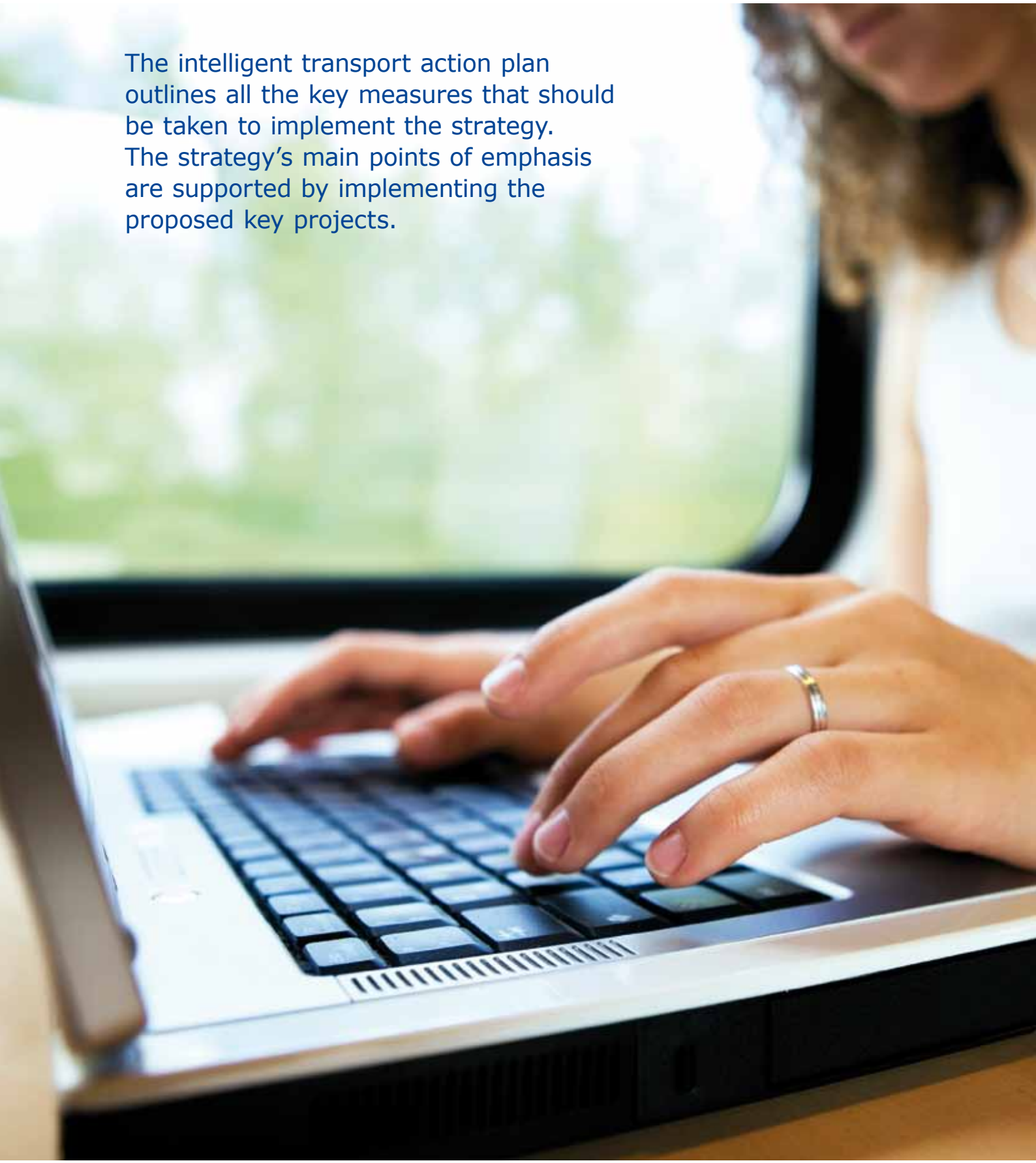
Transport services are vital public services, and should therefore be included in all significant development projects. Versatile mobility services should be taken into consideration in inter-administrative, integrated services that are prioritised in accordance with the Electronic Services and Democracy Development Programme.

Applicable technologies already exist for intelligent transport services. It is not so much an issue of developing new technology, but of applying existing technology. The challenge is to create good operating models and practices in order to generate new business. Clear definitions are made of the roles the private and public sectors may play on the intelligent transport market and in the development of service concepts promoting mobility, for example.

The common communications policy objectives state that the needs of intelligent transport must be taken into consideration in order to ensure the quality of infrastructure and services. Communications policy must consider intelligent transport when developing export market legislation, promoting infrastructure, or making radio frequency and licensing decisions. ●

# 5 Emphases of strategy

The intelligent transport action plan outlines all the key measures that should be taken to implement the strategy. The strategy's main points of emphasis are supported by implementing the proposed key projects.



## 5.1 Better and more environmentally-friendly services

Whatever the transport mode, all intelligent transport services are based on real-time information concerning time and place, transport systems, transport network status and incidents. In road transport, this information is used to draw up traffic flow predictions, give priorities to different types of vehicles, or distribute weather and road surface condition information or information on better route alternatives. Real-time public transport information helps travellers choose the best transport mode to ensure they reach their destination at the desired time quickly and easily. Intelligent public transport systems ensure that public transport vehicles stay on schedule, and electronic payment systems speed up travel and free up driver resources for actual driving.

One of the main challenges facing transport policy in the 2010's will be the need to radically reduce the amount of greenhouse gas emissions caused by transport. In addition to using renewable energy and new vehicle technology, intelligent transport can also be used to control traffic efficiently and to encourage citizens to use more sustainable modes of travel and make more responsible choices. The aim is to challenge passenger cars as the mode of choice for everyday travel in large urban areas by increasing and improving the service level of public transport, cycling and walking and the associated services.

Mobility management influences travellers' moving habits to get them to favour sustainable transport modes. It utilises 'soft' measures, that do not usually limit or prevent an individual's actions, but aim to promote a change in attitudes and behaviour. All possible steps to reduce people's travel needs must also be taken. These steps include a variety of measures, from the supplementary planning of regional and urban structures to promoting telecommuting. Intelligent transport system databases help in urban planning and in reconciling transport and land-use measures. Intelligent transport information already affects land use. For example, services and jobs are located in places that have optimal traffic or transport connections.

Under the Ministry of Transport and Communications' administrative sector's Climate Policy Programme[6], traffic levels and transport mode distributions should be influenced through direct financial incentives, if the emission reduction goals cannot be met otherwise. Financial incentives include fuel taxation and road user charges. A decision on the introduction of financial incentives must be made by 2012. The new objectives to be set in the global climate protocol that should be signed in Copenhagen in December 2009 will be considered when making this decision. In practice, this timetable means that the 2011 Government Programme is likely to outline guidelines on this matter.

The key projects for better, more environmentally-friendly services are:

1. Public transport services
2. Traffic management and control

## 5.2 Safer transport

The transport system should be planned in such a way that no-one is killed or seriously injured in traffic accidents. The aim is to constantly develop the transport network until, by 2025, there are no more than 100 road traffic mortalities annually, and traffic mortality rates in other modes of transport are nonexistent. This objective cannot be reached without intelligent transport systems.

The most effective systems are in-vehicle safety devices, and systems and devices that control driving speeds or prevent individuals from driving when incapacitated. Systems supporting and controlling driver behaviour prevent accidents and reduce the injuries caused by them. The eCall emergency message system improves traffic safety and aids the marketing of value-added services and aftermarket in-vehicle devices that are based on the eCall system.

As communication between vehicles and the transport infrastructure increases, travellers can exchange information efficiently with each other, and information can be efficiently provided to warn drivers or encourage them to make the right decisions. One example of this is when a navigation device in a vehicle approaching a level crossing warns the driver that a train is approaching. In time, wireless technology will allow traffic control and information services to move from roadside information displays and road signs to in-vehicle devices.

Automated traffic monitoring with cameras efficiently improves transport safety. It can be utilised not only in spot speed enforcement, but also in monitoring journey speeds and driving behaviour. An example of new traffic control technology is intelligent traffic lights.

The increased amount of traffic in the Baltic Sea and changes in the operating environment are the biggest challenges facing maritime safety. Intelligent maritime transport can be promoted by investigating future changes in the operating environment and by producing information on the shipping lane network status to seafarers, for example. Maritime transport and safety equipment monitoring and control systems detect risks and prevent accidents. In the future, intelligent maritime transport and maritime safety will be improved by mandatory navigation devices.

The safety and efficiency of air and rail traffic will also be improved by developing monitoring and control systems.

Monitoring systems for hazardous goods transport are being developed. The aim is to provide emergency services with real-time location and cargo information on any transport vehicle involved in an accident whenever necessary.

The key projects for safer transport are:

3. Automated road traffic monitoring
4. Vehicle safety systems

6) Ministry of Transport and Communications' Programmes and strategies 2/2009. [Finnish]

## 5.3 Improved traffic flow

Transport management tools are utilised at critical spots and problem environments within the transport network. Real-time information services improve transport safety and comfort and make travel times more predictable.

Passengers are provided with sufficient information on public transport routes and timetables. Car drivers can access real-time congestion, road surface condition and weather information online and in their vehicles.

Efficient incident management reduces the harmful consequences of traffic incidents and improves the reliability of the logistics chain. Efficient co-operation between the authorities and the real-time exchange of information help end incident situations more quickly and lay the foundation for reliable commercial navigation, information and guidance services.

Different traffic pricing systems can efficiently promote transport policy objectives. As traffic volumes decrease, there is less congestion, shorter travel times, improved transport safety and a reduction in transport emissions. The same multipurpose systems can also carry out other transport and payment operations, such as insurance payments, driver's logs, monitoring of driving styles, travel expense reports, and even a new type of vehicle taxation.

The key projects for improved traffic flow are:

5. Operating models for accidents and incidents
6. Payment system trials

## 5.4 More efficient logistics

A smooth-flowing, incident-free multimodal transport network makes predictable transport and efficient logistics possible. Smooth terminal operations and the avoidance of traffic congestion reduce the need for an extensive vehicle fleet or workforce. The energy consumption and negative environmental impacts of goods transport are also reduced.

Exact, tightly scheduled goods transport requires real-time traffic information and forecasts. Logistics nodes collect traffic and transport network status information that aids transport. They then pass on information bulletins to drivers and different participants in the logistics chain, including customers. Electronic shipping documents and automated identification of pallets and consignments in both national and international transport increase the speed and efficiency of port and terminal operations.

Terminal, port and border station operations are improved by developing the electronic processing of shipping and customs clearance documents, as well as the automated identification of both cargo and transport vehicles. Electronic advance information speeds up business transactions and reduces the need for resources. Electronic information on transport needs and services helps combine transport, which in turn improves volumetric efficiency and reduces the vehicle mileage and need for resources. Real-time transport monitoring systems help predict delays and their impacts throughout the logistics chain.

By actively participating in European programmes (such as eMaritime and eFreight) one can promote common European information and communications systems and co-operation models, while also gaining time to prepare for future changes.

New operating models, information and communications technology, and the combining of the short-distance logistics-related transport needs of several sectors into larger units reduce transportation costs and develop new business solutions based on public customer services.

The logistics strategy being prepared should be closely tied to the development of intelligent transport. This will ensure active interaction between customer needs and service producers. At the same time, the possibilities offered by new technology can be exploited to increase the efficiency of processes across the entire logistics chain.

Goods transport and logistics play key roles in the implementation of intelligent transport systems. Heavy transport vehicles are at the forefront of using intelligent, real-time information and dynamic information exchange systems. As heavy transport entrepreneurs and heavy vehicles are a limited and active group, they play a key role in successful service trials and service introduction.

The key project for more efficient logistics is:

7. Electronic operating models for goods transport

## 5.5 Enhanced markets for intelligent transport

Intelligent transport systems are not only an important transport policy tool, but can also be a significant line of business in themselves. It has been estimated that intelligent transport services and applications will be one of the most attractive markets of the 2010's, even on a global scale. The utilisation, combination and processing of digital information create new operating models for services, which in turn produce new business opportunities.

By promoting the development and growth of the Finnish intelligent transport business sector, we can improve the sector's level of service in Finland and create export products for the international market.

By providing open and timely information on public sector plans and future procurements, commercial stakeholders are given time to prepare for the future, and the risks inherent in product and service development are reduced.

Many types of information are needed to produce intelligent transport services. This information is produced by the Finnish Meteorological Institute and a number of transport administration stakeholders. Public databases should be accessible for free or for a moderate fee in order to promote business in the sector and create a viable market for intelligent transport products and services. This in turn will create new jobs in Finland.

Innovative procurements, the private-public sector partnership and precompetitive trials produce services that correspond to the objectives outlined in the ITS strategy.

The public sector supports the creation of markets by implementing open solutions and by promoting service availability across the administrative borders of transport networks.

The key project for enhanced intelligent transport markets is:

8. Use of public information

## 5.6 Reorganising transport system planning

The needs of different customer groups and social operations are assessed during transport system planning. These needs are reconciled with funding, as well as with environmental and other possible demands, in order to determine a sufficient service level.

It will be increasingly important to raise profitability in the 2010's as the Government attempts to balance the national budget. The current economic volume of transport comes to a little over EUR 30 billion. There is huge potential for savings for the national economy.

The operation and quality of the transport system are influenced by many stakeholders. The main influence is the public sector, which every year allocates significant funding to measures that help maintain and improve the transport system and infrastructure.

A major challenge for the long-term development of the transport system is the continuous improvement of service quality and profitability. There are significantly more development targets than there are resources. Therefore the limited resources must be used as efficiently as possible, especially by exploiting new technology and innovations. The transport system must be developed both in the long term and by reacting quickly to changes in the environment.

The transport administration's investment- and construction-centric approach to transport policy is reorganised by replacing it with the principles of the four-step model (cf. section 4.1) and by increasing expertise in the four-step model and in intelligent transport within the transport administration. The Ministry of Transport and Communications emphasises the importance of the four-step principle as it steers the Finnish Transport Infrastructure Agency and Transport Safety Agency. The four-step model will also be taken into consideration in the Ministry's and the entire administrative sector's operational and financial planning, development of expertise, and personnel recruitment. This will increase the administrative sector's flexibility and susceptibility to change.

Renovating the planning and realisation of the transport system will not result in any significant direct expenses. ●

# 6 Roles of stakeholders

**The Ministry of Transport and Communications** is in charge of implementing the strategy and is responsible for allocating sufficient resources within the transport administration sector. In accordance with the strategy's operating model, it partners with the private sector, other authorities, intelligent transport users and other stakeholders. The Ministry is also responsible for establishing intelligent transport as a central transport policy tool, and for creating a good operating environment for intelligent transport by developing suitable regulations.

**Other Ministries** do their part to support implementation of the intelligent transport strategy in their respective sectors, participate in co-operation on all administrative levels, and draw up regulations that help develop a viable operating environment for intelligent transport.

**The national intelligent transport advisory** council assists the Ministry of Transport and Communications in steering implementation of the strategy and in preparing national guidelines for the European Union, for example.

Under the guidance of the Ministry of Transport and Communications, **the Finnish Transport Infrastructure Agency** is responsible for implementing the intelligent transport strategy in its sector and for guiding the Centres for Economic Development, Transport and the Environment (ELY Centres) in implementing the strategy. The Agency is also in charge of ensuring the cross-town and cross-border availability of services and is responsible for the overall intelligent transport architecture.

**The ÄLLI Programme**, co-ordinated by the Finnish Transport Infrastructure Agency, forms part of the implementation plan of the national strategy for intelligent transport. The Programme acts as a forum for co-operation in intelligent transport R & D, and as a fulfiller of the strategy's R & D needs, especially in the transport administration sector.

Under the guidance of the Ministry of Transport and Communications, **the Finnish Transport Safety Agency** is responsible for implementing the intelligent transport strategy in its sector.

Under the guidance of the Ministry of Transport and Communications, **Centres for Economic Development, Transport and the Environment** are responsible for implementing the intelligent transport strategy in their respective administrative sectors, while co-operating with other regional stakeholders.

**ITS Finland** acts as an advisory community of experts, which represents its members in implementing the strategy, and – in co-operation with other stakeholders – monitors international developments and keeps its sector well-informed on these developments.

**The Finnish Funding Agency for Technology and Innovation (TEKES)** acts as a strategic partner in all R & D associated with the development of products and services. It also ensures that the needs of intelligent transport are taken into consideration in all of TEKES's own programmes and in the Strategic Centres for Science, Technology and Innovation (CSTIs).

**The business sector** produces commercial intelligent transport services and products, which it also actively utilises in its own business activities.

**The municipal sector** is in charge of the realisation and municipal-level development of the intelligent transport strategy, and ensures the cross-border continuity of services.

# 7 Action plan

The action plan outlines all public and private sector measures whose implementation allows the objectives of the strategy to be reached. It focuses on the creation of an intelligent transport systems market and on public sector measures that aim to provide positive conditions for service provision. During the next decade, the intelligent transport market will slowly supplant the administrative sector as the party responsible for the development of intelligent transport.

The key projects are essential for implementation of the strategy. These are the most important projects from all the previously outlined areas of emphasis that are to be carried out between 2010 and 2015. All the key projects are wide-ranging and include a variety of legislative, administrative and economic tasks.

As the intelligent transport market is formed, there will be much more additional activity in the field of intelligent transport. While this proposal was being drawn up, several actions and projects were suggested for the action plan. The most important of these will be implemented under the proposed key projects. However, other interesting and important projects were also suggested.

I propose that the action plan should be supplemented with a detailed list of actions to be drawn up by the intelligent transport advisory council by the end of May 2010. •

# Table 1.
# Action plan for intelligent transport 2010–2015

| | ACTION | TARGET LEVEL |
|---|---|---|
| 1. | Issue a Government resolution on the national ITS strategy. | An openly drafted resolution issued. |
| 2. | Co-operation agreement signed with public and private sector stakeholders, committing stakeholders to act in accordance with the strategy. | Co-operation agreement signed. |
| 3. | Agreements reached on the realisation of the key projects. | Agreements reached. |
| 4. | Key projects realised. | All key projects being carried out or already realised. |
| 5. | Closer co-operation with TEKES and between TEKES projects; space and role actively sought for ITS projects in TEKES programmes. | TEKES gives significant funding for intelligent transport R&D through its programmes and CSTIs. |
| 6 | Allocate EUR 12 mill. in 2010 and EUR 20 mill. in 2011 of the transport administration budget to ITS research, studies and investment. | EUR 32 mill. allocated and used on strategy measures. |
| 7. | ITS established as a central tool of transport policy in next Government's Government Programme and the 2011 Transport Policy Report. | ITS declared a central transport policy tool in Government Programme and Transport Policy Report, and the allocated resources are sufficient to implement the strategy. |
| 8. | Reform transport authority management to focus on whole transport system and favour ITS solutions. Develop ITS expertise. | ITS stakeholders have fully comprehended the significance and demands of data security. High level of data security for personal and location data ensured in all ITS processes. |
| 9. | Assess need for new legislation and need to change privacy protection legislation, especially the Data Security Act on electronic communications, and make the necessary legislative reforms. | ITS stakeholders have fully comprehended the significance and demands of data security. High level of data security for personal and location data ensured in all ITS processes. |
| 10. | National intelligent transport advisory council founded. | Advisory council brings together key stakeholders from the state, municipalities, research institutes, universities and the commercial sector. It regularly reports to the MinTC concerning strategy implementation and the progress made in the key projects. |
| 11. | Draw up a detailed ITS action plan with set responsibilities and timetables for 2010−2015 overseen by the intelligent transport advisory council. | Action plan drawn up. |
| 12. | Create evaluation criteria for the impacts of ITS. | Suitable evaluation criteria for the Finnish operating environment created in co-operation with international development projects. |
| 13. | Update communications and other legislation to keep it favourable to ITS solutions. | ITS solutions made possible. |
| 14. | Ensure that a high-quality, extensive and inexpensive common communications infrastructure is available for ITS services. | High-speed broadband backbone networks cover the entire country, and wireless networks and functional satellite connections are widely available. All connections are reasonably priced. |
| 15. | Ensure the necessary ITS expertise is developed and the ITS sector is marketed well. | Advanced personnel training, special attention paid during personnel recruitment. |

| TIMETABLE | EVALUATION CRITERIA | COST | PARTY RESPONSIBLE |
|---|---|---|---|
| March 15, 2010 | Resolution issued on schedule. | — | Ministry of Transport and Communications (MinTC) |
| April 30, 2010 | Agreement signed on schedule. | — | MinTC, other ministries, authorities, municipalities, businesses, research institutes |
| May 31, 2010 | Agreements reached on schedule. | — | MinTC, parties responsible for key projects |
| December 31, 2015 | Projects realised on schedule. | — | Parties responsible for key projects |
| Continuous | Assessment of intelligent transport advisory councils. | — | Finnish Funding Agency for Technology and Innovation (TEKES) |
| December 31, 2011 | MinTC assessment based on reports from transport authorities. | — | MinTC, Finnish Transport Infrastructure Agency, Finnish Transport Safety Agency, Centres for Economic Development, Transport and the Environment (ELY Centres) |
| June 30, 2011 (Government Programme) December 31, 2011 (Report) | MinTC assessment. | — | MinTC |
| 2010–2011 | MinTC assessment based on performance target negotiations. | — | MinTC, Finnish Transport Infrastructure Agency, Finnish Transport Safety Agency |
| 2009 (assessment) 2010 (reforms) | Possible legislative reforms are in force by June 1, 2011. | — | MinTC, Ministry of Justice |
| January 31, 2010 | Advisory council founded on schedule. | — | MinTC, ITS Finland |
| May 31, 2010 | MinTC assessment. | — | Intelligent transport advisory council |
| December 31, 2011 | Evaluation criteria created on schedule. | — | MinTC, Finnish Transport Infrastructure Agency, Finnish Transport Safety Agency, Statistics Finland |
| Continuous | Legislation does not prevent or limit ITS services without just cause. | — | MinTC, Finnish Communications Regulatory Authority (FICORA), other ministries |
| Continuous | MinTC and intelligent transport advisory council assessments. | — | MinTC, FICORA |
| Continuous | | — | Colleges and universities, MinTC, Finnish Transport Infrastructure Agency, Finnish Transport Safety Agency, ITS Finland |

# 8 Key projects

## 1) Public transport services

### a)National public transport payment system

**Target level:** Mobile payment and identification in wide use in public transport and in parking and mobility services.

**Timetable:** 2010–2015

**Responsibility and funding:** travel card forum, transport operators, Matkahuolto, municipalities, Ministry of Transport and Communications (MinTC)

**Evaluation criteria:** 100 million mobile-paid trips made annually by 2015.

**Cost:** Investment costs come to EUR 10–20 million in 2010–2012. Operating costs come to approx. EUR 0.6 million annually.

### b) Wireless broadband for all trunk network passenger trains and buses

**Target level:** Public transport passengers can get online or telecommute at all times. Passenger interfaces continuously display real-time passenger information.

In-vehicle bus data connections are installed to allow broadband connections, but also enable public transport signal priorities. Technology also provides passengers with real-time public transport information on stops along main public transport quality corridors and in large urban areas.

**Timetable:** 2010–2015

**Responsibility and funding:** Transport operators, businesses, Finnish Transport Infrastructure Agency, TEKES, EU

**Evaluation criteria:** By 2012, wireless broadband will be in use on all trunk rail networks and rail terminals, long-distance bus routes and urban areas that receive state aid for public transport.

The necessary stop and terminal systems have been created along public transport quality corridors and in large urban areas. 100 stop systems have been realised by 2013, rising to 300 by 2015.

**Cost:** Investment costs come to approx. EUR 1 million in 2010–2011. Operating costs come to approx. EUR 0.48 million annually.

### c) Public transport signal priorities in large urban areas

**Target level:** Local and long-distance public transport has a uniform signal priority in large urban areas across the country.1,500 signal-controlled intersections are retrofitted to provide signal priorities for public transport.

**Timetable:** 2010–2015

**Responsibility and funding:** Finnish Transport Infrastructure Agency, municipalities, transport operators

**Evaluation criteria:** Good public transport flow and reduced travel times.

**Cost:** Investment costs come to approx. EUR 12 million annually in 2010–2015 (1,500 signal-controlled intersections). Operating costs come to approx. EUR 0.25 million annually.

### d) Open joint database for public transport

**Target level:** Public transport passengers have access to reliable, easy-to-use, real-time passenger information services throughout the trip chain. These services are founded on a joint database.

Commercial services distribute timetable and real-time public transport status information to passengers' mobile phones, other nomadic devices and terminals at least in urban areas and along trunk public transport networks.

Services also steer users by suggesting route alternatives on the basis of their ecological impacts.

**Timetable:** 2010–2012

**Responsibility and funding:** Finnish Transport Infrastructure Agency, transport operators, municipalities

**Evaluation criteria:** An open and public joint database is complete by 2012.

The database acts as the basis for 20 services by 2013, rising to 50 services by 2015.

**Cost:** Investment and operating costs total approx. EUR 3.8 million annually in 2010–2015. The Finnish Transport Infrastructure Agency provides the funding.

## 2) Traffic management and control

**Target level:** The traffic control and management systems at control centres for all transport modes have been renovated.

Transport management is active and anticipatory. Traffic control systems form a seamless unit in accordance with the four-step principle. They exploit real-time information and predictions allowing traffic accidents and incident situations to be predicted as well as possible.

Maritime transport monitoring and control systems (VTS and GOFREP) efficiently reduce the risks associated with increasing traffic volumes on the Baltic Sea.

Rail traffic control systems increase the efficiency of rail network capacity allocation and real-time passenger information systems.

Rail traffic and network management integrates transport planning, traffic control and transport infrastructure maintenance production control systems.

Road traffic control systems and critical road sections, such as tunnels, call for more efficient and intelligent data compilation systems and user interfaces.

The Single European Sky ATM Research (SESAR) project improves air traffic safety and reduces emission levels.

Multi-modal real-time transport system status information ensures that traffic control centres take the correct actions in different situations and forms the basis for reliable transport information services.

Traffic management plans are drawn up and maintained in order to ensure the efficient operating of traffic control centres in all foreseeable situations. The plans outline in detail and in time order what traffic control centre staff and outside co-operating parties should do in each situation.

**Timetable:** 2010–2020

**Responsibility and funding:** Finnish Transport Infrastructure Agency, municipalities, Finnish Transport Safety Agency, Finavia

**Evaluation criteria:** The traffic control systems of all transport modes have been renovated.

**Cost:** Total investment costs for renovating all Gulf of Finland maritime transport management, control and information systems come to approx. EUR 9 million in 2010–2015. Operating and maintenance costs come to approx. EUR 9.6 million annually.

Investment costs for rail traffic control systems and the rail network management system total approx. EUR 60 million in 2010–2015.

Investment costs for renovating road traffic control systems come to approx. EUR 110 million in 2010–2015. Operating costs come to approx. EUR 6.4 million annually.

## 3) Automated road traffic monitoring

**Target level:** Automated road traffic monitoring has been increased. It is utilised not only in traditional driving speed monitoring, but also in monitoring intersections, mean speeds, driving behaviour and the use of public transport lanes.

**Timetable:** 2010–2015

**Responsibility and funding:** Ministry of the Interior, Finnish Transport Infrastructure Agency, municipalities

**Evaluation criteria:** By 2015, automated monitoring systems will cover 4,000 km of roads (current coverage is 3,000 km) and include 30 mobile camera monitoring units (current number is 15).

**Cost:** Investment costs for increasing the coverage of automated road traffic monitoring systems total approx. EUR 3.7 million in 2010–2015. Operating costs come to approx. EUR 0.3 million annually.

## 4) Vehicle safety systems

**Target level:** Legislation and other incentives have promoted the use of efficient safety systems in road vehicles and significantly increased their use.

### a) Emergency message system (eCall)

**Timetable:** 2010–2015

**Responsibility and funding:** Ministry of the Interior, MinTC, Finnish Transport Safety Agency, Finnish Transport Infrastructure Agency, vehicle owners

**Evaluation criteria:** System pilot in 2010–2011. Technological solutions completed and administrative decisions made by June 30, 2011.

**Cost:** Costs total approx. EUR 38 million in 2010–2015, most of which come from vehicle devices. The authorities are responsible for approx. EUR 7.6 million.

### b) Alcolock

**Target level:** The alcolock is a mandatory fixture on all chartered school and kindergarten transport.

Examine the introduction and impacts of the system in publicly funded transport services, bus traffic and professional goods transport.

Continue international co-operation to make the alcolock standard equipment in all new vehicles.

**Timetable:** Legislation on school and kindergarten transport is in force by the beginning of the school year in August 2011.

Studies on expanding the use of alcolocks are completed by 2011, and the alcolock is made mandatory by 2014 at the latest.

The alcolock is standard equipment in all new vehicles by 2020 at the latest.

**Evaluation criteria:** Legislation for school and kindergarten transport passed in 2010.

**Cost:** Investment costs for school and kindergarten transport total approx. EUR 10 million in 2010–2011.

**Responsibility and funding:** Transport operators, businesses, municipalities, MinTC, Finnish Transport Safety Agency

### c) Warning system at level crossings

**Target level:** Drivers who often travel near unguarded level crossings commonly use the warning system that alerts drivers at level crossings when a train approaches.

**Timetable:** Pilot in 2010, retrofitting of service available for professional users' in-vehicle terminals, smart phones and navigation devices by 2012.

**Responsibility and funding:** Finnish Transport Safety Agency, Finnish Transport Infrastructure Agency, MinTC, Finnish Railways (VR Ltd.)

**Evaluation criteria:** Service is available and is fitted into 1,000 vehicles by 2012, rising to 10,000 vehicles by 2015.

**Cost:** Investment costs for the system come to approx. EUR 1.7 million, not counting in-vehicle terminals. Annual operating costs for the system come to approx. EUR 0.3 million.

## 5) Operating models for accidents and incidents

**Target level:** Authority co-operation exploits ITS-based efficient operating models to handle accident and incident situations involving a variety of transport modes.

Transport management plans are followed in problem situations.

The proper functioning of incident situation operating models is ensured through training and regular drilling.

Efficient operating models exist for incident management in the fields of public transport and logistics.

**Timetable:** 2010–2011

**Responsibility and funding:** Ministry of the Interior, Finnish Transport Infrastructure Agency, MinTC, municipalities, transport operators

**Evaluation criteria:** Joint assessment by the Ministry of the Interior and the Ministry of Transport and Communications.

**Cost:** The formulation and implementation of operating models and practices involves no significant costs.

## 6) Payment system trials

**Target level:** A number of different payment applications have been tested, as have the associated operating models. The systems can be used to collect road user charges and insurance payments and to monitor driving styles, for example, or in driver's logs and applications that monitor route and driving history.

**Timetable:** Prepare for a GPS-based road charging system – compatible with the Government's Transport Policy Report – by preparing the necessary regulatory and other reforms so that the system can be introduced when wanted. This work should be complete by 2012.

**Evaluation criteria:** Trials begin in 2010 and studies are complete by 2011.

**Cost:** Investment costs for payment system trials come to approx. EUR 5–15 million in 2010–2013.

The drafting of the regulatory changes involves no significant costs.

**Responsibility and funding:** Service providers, MinTC, Ministry of Finance, municipalities, Ministry of Justice, Finnish Transport Safety Agency, Finnish Transport Infrastructure Agency

## 7) Electronic operating models for goods transport

**Target level:** All barriers to the use of electronic transport orders have been surveyed and removed using intelligent solutions. Inexpensive, easy-to-use services suitable for electronic ordering are available on the market.

**Timetable:** 2010–2015

**Responsibility and funding:** Logistics companies, Finnish Transport and Logistics (SKAL), Association of Logistic Enterprises in Finland, Finnish Freight Forwarders' Association, Finnish Information Society Development Centre (TIEKE), MinTC

**Evaluation criteria:** The share of electronic transport orders increases to a level similar to that of competing nations (the current share in Finland is less than 40 %, while the share in Sweden is over 90 %).

**Cost:** Small and medium-sized transport companies will have to incur some investment costs, because they must procure a suitable information system and train their personnel to use it. Companies should co-ordinate their purchases so that system providers will bring out suitable, cost-effective services for small and medium-sized companies (cf. accounting services). Compared to the savings attained by the reductions in processing costs and errors, these investment costs are minimal.

An estimated 10 million relevant waybills are processed annually. The goal is to have 50 % of these, i.e. 5 million, be electronic. If the processing cost of one waybill were EUR 2, this would create annual savings of approx. EUR 10 million. The major benefits and savings would be attained in actual transport operations, e.g. through reductions in mistakes made and work duplicated.

## 8) Use of public information

**Target level:** The 'transport data warehouse' is a joint service of businesses and authorities, which provides businesses with static and real-time basic transport information (e.g. traffic and weather information) produced by the authorities.

Regulations and the supplying of data producers with sufficient resources ensure that intelligent transport service production has a favourable operating environment. The necessary public information is easily available to all for free or for a low price.

Precompetitive public sector procurement models allow a variety of different services and business opportunities. Intelligent transport applications and systems are open and compatible. They are based on international standards, and function independent of administrative or geographical boundaries.

The maintenance and user support services of the national ITS architecture have been ensured and architecture descriptions of essential intelligent transport domains have been drawn up.

**Timetable:** Proposals for regulatory changes are submitted by September 30, 2010. Funds are allocated from the national budget by December 31, 2010. Laws are in effect by June 1, 2011.

New purchasing procedures are in use by 2012.

The monitoring of and participation in international ITS standardisation efforts have been agreed upon and the national information distribution procedures have been compiled by 2011.

**Evaluation criteria:** All measures are carried out on schedule.

**Cost:** Free or inexpensive provision of public information and the transport data warehouse require a total of approx. EUR 23 million in 2010–2011 in investment costs. Operating costs come to approx. EUR 0.5 million annually.

**Responsibility and funding:** MinTC, other Ministries, authorities and service providers

# 9 Funding the strategy implementation

## 9.1 Impact on national economy

The table outlining the national budgetary expenses caused by implementation of the ITS strategy can be found in Appendix 1.

These expenses total EUR 12 million in 2010 and EUR 20 million in 2011. The expenses consist of funds allocated to transport administration in the national budget that are then earmarked for ITS strategy implementation.

In 2012–2015, the strategy implementation will create additional expenses to the state of approx. EUR 292.8 million, which are already earmarked for this use in the preliminary budgetary frameworks. Some of this budgetary allocation will reduce the need for state funding for transport infrastructure maintenance. In the 2012–2015 budgets, the strategy implementation funds are allocated to the Finnish Transport Infrastructure Agency and Transport Safety Agency.

The total costs for the state come to EUR 324.8 million in 2010–2015, most of which are part of the main division of the Ministry of Transport and Communications' expenses. Thus, state funding for implementation of the ITS strategy comes to just 3.8 per cent of all funds allocated to transport infrastructure maintenance in this period, provided infrastructure funding stays at the 2010 level.

The state (through TEKES) also significantly participates in and provides financing for intelligent transport R & D and business development through TEKES programmes and Strategic Centres for Science, Technology and Innovation (CSTIs).

However, intelligent transport provides the state with productivity and other benefits, which are significant but difficult to assess completely.

Intelligent transport increases the efficiency of state transport infrastructure utilisation. It postpones transport investments or even makes them redundant. The production of intelligent transport services and hardware improves employment levels. The financial benefits of improved transport safety total approx. EUR 100 million. The new service and hardware markets created increase economic activity and state tax revenues.

Thanks to the introduction of the ITS strategy, the profitability of transport infrastructure management and network operation has been estimated to increase by 10 per cent more than the general economic growth.

**The investment and operating costs of all the key projects total approx. EUR 400 million in 2010–2015 and are covered by the different parties as follows:**

| | |
|---|---|
| State | EUR 325 million |
| Municipalities | EUR 20 million |
| Businesses | EUR 20 million |
| Users | EUR 35 million |
| Total | EUR 400 million |

## 9.2 Impact on municipal finances

Municipalities spend around EUR 1.4 billion on transport infrastructure management and services every year. Around EUR 950 million of this is spent on transport infrastructure management. In 2007, more than half of all municipal spending on transport infrastructure was used for investments in new or improved infrastructure.

Municipal ITS spending varies, as each municipality decides independently on how much they allocate to intelligent transport systems. Like the Government, municipalities can earmark previously allocated transport funding to intelligent transport. In the case of joint state-municipality projects, the division of financial responsibility is agreed upon on a case-by-case basis.

Municipalities are expected to provide EUR 20 million to implement the strategy's key projects.

Intelligent transport increases the efficiency of municipal transport infrastructure utilisation. As public transport's market share increases, necessary transport investments can be postponed or cancelled completely. Increasing activity on the service and hardware markets also has a positive impact on the municipal economy. Improvements in transport safety provide additional savings.

## 9.3 Impact on corporate finances

Business stakeholders have estimated that implementation of the national ITS strategy will expand the sector's annual market from EUR 100 million to EUR 300 million. The strategy promotes market growth, which in turn diversifies and strengthens business operations. Joint public-private sector pilots build the business environment and also create export opportunities. ITS will provide significant, but hard to assess, export potential.

ICT companies benefit from the increased product and service demand provided by intelligent transport systems. Strategy implementation is not thought to have a significant impact on the economic development of the earthworks sector.

Strategy implementation will have a positive impact on the corporate economy of businesses that use logistics services. The difference in logistics costs between Finland and competitive nations costs Finnish companies an estimated EUR 4 billion annually. Any reduction in this difference has a direct impact on the costs and competitiveness of the Finnish business sector and especially of export industry.

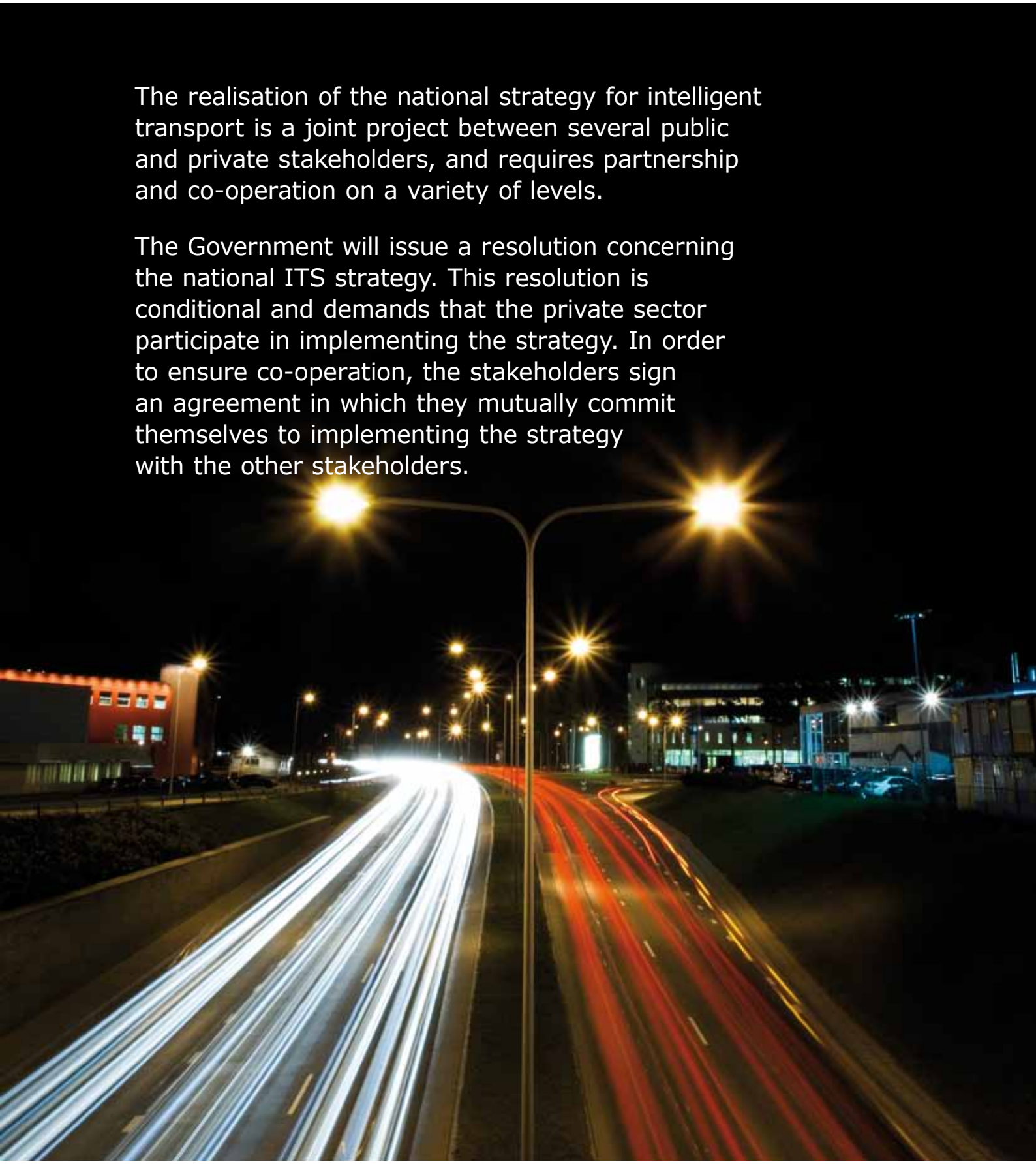
## 9.4 Impact on citizens' finances

The users of transport networks and services participate in funding intelligent transport systems by buying hardware and paying for services. ITS services are inexpensive and easy-to-use, because they are realised by adding onto existing hardware (smart phone, navigator) and available services (payment services, GPS). New services improve service levels, save time and increase journey predictability. ●

# 10 Commitment of stakeholders

The realisation of the national strategy for intelligent transport is a joint project between several public and private stakeholders, and requires partnership and co-operation on a variety of levels.

The Government will issue a resolution concerning the national ITS strategy. This resolution is conditional and demands that the private sector participate in implementing the strategy. In order to ensure co-operation, the stakeholders sign an agreement in which they mutually commit themselves to implementing the strategy with the other stakeholders.



Appendix 1:
Summary of national expenditure arising from ITS strategy in 2010–2015

| KEY PROJECT | SUMMARY OF NATIONAL EXPENDITURE ARISING FROM ITS STRATEGY IN 2010–2015 (EUR MILL.) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | TOTAL |
| **1. Public transport services** | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | **9** |
| **2. Traffic management & control** | | | | | | | |
| ● Rail traffic | – | – | 20 | 30 | 40 | 30 | **270,3** |
| ● Road traffic | 3,7 | 10 | 20 | 30 | 40 | 28 | |
| ● Maritime transport | 2,6 | 3,1 | 4,1 | 3,6 | 2,6 | 2,6 | |
| **3. Automated road traffic monitoring** MinTC/Transport Infrastructure Agency Ministry of the Interior | 1.0 | 1.2 | 1.2 | 0.1 | 0.1 | 0.1 | **3.7** |
| **4. Vehicle safety systems** | 0.7 | 1.0 | 1.5 | 2.0 | 1.3 | 1.1 | **7.6** |
| **5. Operating models for accidents and incidents** | 0.1 | – | 0.1 | – | – | – | **0.2** |
| **6. Payment system trials** | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 3.0 | **10** |
| **7. Electronic operating models for goods transport** | – | – | – | – | – | – | **0** |
| **8. Use of public information** | 1.9 | 2.7 | 5.8 | 5.2 | 4.2 | 4.2 | **24** |
| **Total** | 12 | 20 | 54.7 | 74.9 | 92.2 | 71 | **324.8** |

The costs for 2010 and 2011 are purely investment costs.
The costs between 2012 and 2015 include both investment and operating costs.

## Appendix 2: Terms and abbreviations

**AIS**
Automatic Ship Identification System; a positioning and identification system for maritime transport, and transmission of the associated data between VTS centres and ships.

**Alcolock**
Aftermarket in-vehicle device that prevents the vehicle from starting if the driver is intoxicated due to alcohol. Drunkenness is determined with a breathalyser.

**Centres for Economic Development, Transport and the Environment (ELY Centres)**
New regional administration bureaus that bring together a variety of the state's regional administration operations. The Centres commence their operation on January 1, 2010.

**Co-operative traffic**
Transport system in which vehicles are wirelessly connected and communicate with each other and with transport infrastructure devices.

**eCall**
System where, in the case of a serious accident, an in-vehicle eCall device makes an automatic emergency call and transmits the location of the vehicle to the nearest Emergency Response Centre.

**eFreight**
Term refers to an electronic data flow that connects the physical flow of logistics and goods to the paperless data flow produced by information and communications technology.

**eMaritime**
General term for maritime transport's electronic operating environment.

**Finnish Transport Infrastructure Agency**
New agency established on January 1, 2010 as a combination of the Finnish Road Administration, Finnish Rail Administration and the infrastructure management functions of the Finnish Maritime Administration.

**Finnish Transport Safety Agency**
New agency established on January 1, 2010 as a combination of the Finnish Vehicle Administration, Finnish Civil Aviation Authority, Finnish Rail Agency and the maritime safety functions of the Finnish Maritime Administration.

**Four-step principle**
According to the four-step principle, the first step in solving transport problems is to assess whether the problem can be fixed by influencing transport demand. Next, the possibility of increasing the efficiency of the existing transport infrastructure is reviewed. Only when small-scale improvements are found to be insufficient are new infrastructure investments considered.

**Galileo**
European satellite positioning system; an ongoing joint project of the European Union and the European Space Agency (ESA).

**GOFREP**
Gulf of Finland Reporting System; a mandatory ship reporting system that covers the entire Gulf of Finland international sea area and is jointly run by Finnish, Russian and Estonian authorities.

**GPS**
Global Positioning System; a satellite positioning system developed and financed by the U.S. Department of Defence. It is the most commonly used positioning system in current applications.

**ICT-SHOK**
Information and communications technology sector's Strategic Centre for Science, Technology and Innovation, which is financed by the Finnish Funding Agency for Technology and Innovation (TEKES), businesses and other stakeholders.

**Information infrastructure**
Basic structure for data collection, relaying, processing and storage. Required by information-based services, which can be built onto it by public or private stakeholders.

The information infrastructure includes e.g. the common telecommunications network, radio frequencies, information about the transport system and its status, databases and their interfaces, regulations concerning data availability and pricing, and system architecture descriptions and standards.

**Intelligent transport systems (ITS)**
Term that covers all transport ICT applications.

**ITS Action Plan**
Communication from the Commission [COM(2008)886] concerning an Action Plan for the deployment of intelligent transport systems in Europe.

**ITS Finland**
Co-operative forum that brings together administrative, research and corporate stakeholders to realise intelligent transport services.

**PortNet**
Maritime transport information system that covers all central support functions, port functions, ship traffic control, monitoring and pilotage functions and services. Ship schedules are the most important items of data included in the system. The system also includes data on ship cargoes and especially any hazardous goods being transported.

**SESAR**
Single European Sky ATM Research; a research and development project on the management and control of European air traffic.

**VTS**
Vessel Traffic Service; a maritime ship guidance and support service, and transmission of the associated data between VTS centres and ships.

**ÄLLI Programme**
Joint intelligent transport R&D programme of the MinTC administrative sector and municipalities, co-ordinated by the Finnish Transport Infrastructure Agency.

## Appendix 3:
## ITS projects

(actions are to be more clearly defined by May 31, 2010 under the direction of the intelligent transport advisory council)

| ACTION | TARGET LEVEL |
|---|---|
| 16.<br>Promote mobility management and the realisation of the operating models and systems this calls for. | Mobility management is the promotion of sustainable mobility through conscious guidance and marketing, and by developing services that ease the use and combining of multiple transport modes. This includes various campaigns to promote public transport, cycling and walking, car sharing, route guides, mobility centres etc. |
| 17.<br>Together with commercial stakeholders, develop road condition and transport information services to be independent of the road operator. Exploit possibilities provided by new technology in data collection and distribution. | |
| 18.<br>Improve the prerequisites for demand-responsive public transport operations especially in remote areas. | |
| 19.<br>Together with end users, realise extensive ITS trials and development environments based on the public-private partnership (PPP) model. | |
| 20.<br>Concentrate road transport management services and control systems on entry and ring roads at major metropolitan areas, identified problem sites along the road network, and safety-critical road sections, such as tunnels. | Variable speed limits improve traffic safety and reduce the risk of personal injury accidents by approx. 6–10%. |
| 21.<br>Study communication between vehicles and the transport infrastructure, and prepare for its European development and possible impacts in Finland. | |
| 22.<br>Warnings to vehicles approaching a level crossing that a train is approaching. | Warning reduces number of accidents at level crossings. |
| 23.<br>Develop indoor positioning systems at passenger and goods terminals. | |
| 24.<br>Develop air traffic customer services to provide air passengers with real-time information concerning flight departure and arrival times as well as transport connections with and between other transport modes. | |
| 25.<br>Efficiently exploit the GALILEO positioning system in intelligent transport services. | Prepare for the introduction of the GALILEO system into various tasks in society. Carry out a separate study on the system’s potential for utilisation. |

| ACTION | TARGET LEVEL |
|---|---|
| 26.<br>Improve availability of information concerning the transport status and parking facilities along roads leading to airports. | |
| 27.<br>Reorganise the transport infrastructure management planning system to follow the four-step principle. | Planning system carries out a comprehensive four-step model-based assessment before infrastructure planning begins. |
| 28.<br>Promote a continuous, real-time freight tracking system that covers the entire transport chain and a hazardous goods transport tracking system. | |
| 29.<br>Support operating models and technology that help reduce travel needs, such as telecommuting and video conferencing. | To spearhead this development, the administrative sector's internal co-operation meetings are primarily carried out via video conferencing. |
| 30.<br>Ensure the development of the necessary ITS expertise, and the marketing to and informing of decision-makers about the sector. | ITS Europe conference held in Finland in 2014. |
| 31.<br>Ensure the availability of radio frequencies for ITS services. | Frequencies are constantly available on demand. |
| 32.<br>Improve prerequisites for park-and-ride services in urban areas, and create real-time information services to improve the usability of park-and-ride facilities. | |
| 33.<br>Participate in the development of the eMaritime/ eNavigation concepts for maritime transport, and develop the utilisation of Maritime Cluster data. | Identify and reduce the number of complicated logistics chain processes, and provide cost-effective customer services. |
| 34.<br>In maritime transport, assess developments in traffic, transport conditions, equipment, regulations and transport infrastructure in Finland and its neighbouring areas at least until 2015. | Have the ability to respond to future changes in the operating environment.<br>Have the ability to affect and predict favourable changes in standards (e.g. ECDIS and its information content) and to make presentations on the EU and international levels. |
| 35.<br>Assess the need for new legislation or changes in privacy protection legislation, especially the Data Security Act on electronic communications, and carry out the necessary legislative reforms. | High level of personal and positioning data security is ensured during all intelligent transport processes. |
| 36.<br>Develop and test new operating models for short-distance logistics' transport services. | |

## Appendix 4:
## Appointment letter

**Ministry of Transport and Communications**
APPOINTMENT DECISION

LVM029:00/2009
March 18, 2009

**National strategy for intelligent transport and a plan for its implementation for 2010–2015**

**Appointment**

The Ministry of Transport and Communications has on this day appointed Permanent Secretary Harri Pursiainen, acting as rapporteur, to draw up a proposal for a national strategy for intelligent transport and a plan for its implementation for 2010–2015.

**Term of office**

March 20, 2009–October 31, 2009

**Background**

Information and communications technology and intelligent transport services provide efficient solutions to many transport problems.

According to the Government Programme of Prime Minister Matti Vanhanen's Second Cabinet, transport policy and intelligent transport services will support climate policy, sustainable development and safe mobility. The Government will promote the use of services that exploit information technology in transport. According to the Government Programme, the Baltic Sea can be made safer by further developing e.g. transport monitoring systems and safe navigation arrangements. Logistics, transport safety work and the prevention of environmental damage are all areas that will exploit the possibilities provided by information and communications technology.

In accordance with the Government Programme, the Government issued a Transport Policy Report to Parliament in 2008. The Report calls for full exploitation of the transport infrastructure's capacity to use intelligent transport systems. Intelligent transport is a tool for improving transport safety, especially through automated traffic monitoring and safety systems. ITS can also be used to increase the efficiency of transport network capacity utilisation and to manage transport demand through positioning-based road user charging. Telematic traffic control and information services can be used to increase the efficiency of goods transport and logistics. In their committee report responding to the Transport Policy Report, the Parliamentary Communications Committee emphasised the opportunities provided by intelligent transport systems e.g. when beginning intelligent road user charging trials.

Having been appointed by the Ministry of Transport and Communications to examine the introduction of intelligent transport systems, Research Professor Risto Kulmala submitted a report entitled Towards Intelligent Transport (MinTC Publications 58/2008) to the Ministry of Transport and Communications on November 11, 2008. Finland is an advanced information society, but the report estimates that in the application of intelligent transport services, Finland is merely average for a European country. The report states that Finland is lagging more and more behind Western Europe, Japan and the United States. The report also proposes e.g. the drawing up of a national vision programme and strategy for intelligent transport.

The European Union is also becoming more active in the field of intelligent transport systems. On December 16, 2008, the European Commission proposed a European Parliament and Council of Europe directive on a framework for the deployment of intelligent transport systems in the field of road transport and for interfaces with other transport modes. Should the directive be introduced, Member States would have to draw up five-year intelligent transport strategies. The Finnish Government views the proposal favourably.

Finland can succeed in the new intelligent transport market by exploiting its business expertise and the country's strengths as an information society. This calls for determined co-operation between the public, business and research sectors.

**Objectives**

The aim is to

- define and outline a national target level for intelligent transport systems
- outline the actions that must be taken to reach this target level by 2015
- create a model for organising the distribution of duties and responsibilities among the administration, the business sector and other stakeholders
- organise stakeholder interaction and co-operation

**Assignment**

To draw up a proposal for a national strategy for intelligent transport and a plan for its implementation for 2010–2015, while taking into consideration the demands set on the national strategy by the directive being drafted by the European Union.

**Organisation**

The strategy and implementation plan have to be drafted openly and by hearing the view of a large variety of transport businesses, the business sector, the transport administration, transport service users and other stakeholders, ICT service providers, transport research institutes and other stakeholders of significance to the strategy being drawn up.

**Costs and funding**

The Ministry of Transport and Communications will provide the resources needed to draw up the strategy and implementation plan.

Anu Vehviläinen
Minister of Transport
and Communications

Juhani Tervala
Director-General

**DISTRIBUTION**

Permanent Secretary Pursiainen

**CC**

Minister of Transport Vehviläinen
Minister of Communications Linden
Administration Department
Transport Policy Department
Communications Policy Department
Ministry's Press and Information Unit
Finavia
Finnish Civil Aviation Authority
Finnish Communications Regulatory Authority
Finnish Maritime Administration
Finnish Meteorological Institute
Finnish Rail Administration
Finnish Rail Agency
Finnish Road Administration
Finnish Vehicle Administration
Finstaship
Finnish State Pilotage Enterprise
Ministry of Education
Ministry of Employment and the Economy
Ministry of the Environment
Ministry of Finance
Ministry of the Interior
Ministry of Justice
Association of Finnish Local and Regional Authorities
Regional councils
Cities of Helsinki, Espoo, Vantaa, Tampere, Turku, Oulu and Lahti
Helsinki Metropolitan Area Council (YTV)
Technical colleges and universities

Aplicom Ltd
Car importers
Confederation of Finnish Industries
Corenet Ltd
Data Protection Ombudsman
Destia Ltd
Digita Ltd
DNA Ltd
Elektrobit Ltd (EB)
Elisa Plc
Federation of the Finnish Media Industry (Finnmedia)
Finnair Plc
Finnet Association
Finnish Broadcasting Company (YLE)
Finnish Bus and Coach Association
Finnish Central Organisation for Motor Trades and Repairs
Finnish Federation for Communications and Teleinformatics
Finnish Funding Agency for Technology and Innovation
Finnish Port Association
Finnish Shipowners' Association
Finnish Taxi Owners Federation
Finnish Transport and Logistics
Hewlett-Packard
Itella Plc
ITS Finland
LM Ericsson Finland
Logica Finland
Matkahuolto
Microsoft Finland
Moottoriliikenteen Keskusjärjestö
Motiva Ltd
MTV3
Nokia Plc
Ramboll Finland
Sanoma Entertainment Ltd
TDC Song
Technical Research Centre of Finland (VTT)
TeliaSonera Finland Plc
Traficon Ltd
Vaisala Plc
VR-Group Ltd

Ministry of Transport and Communications

Ministry of Transport and Communications
PO Box 31, FI-00023 Government
tel. +358 9 160 02
fax +358 9 160 28596
www.mintc.fi