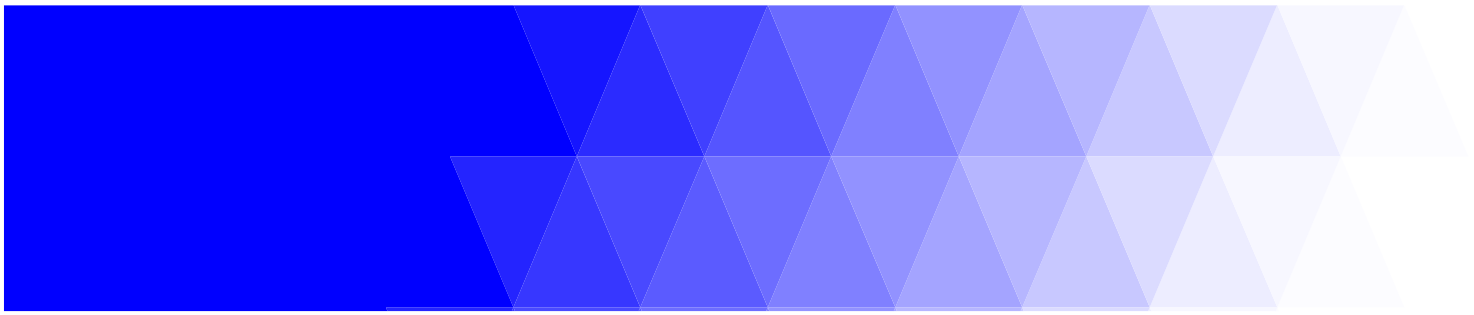
Data-driven Road Safety

Government Resolution on Improving Road Safety



MINISTRY OF TRANSPORT AND COMMUNICATIONS

INTRODUCTION

Parliament set the condition in Spring 2015 that the government draft a new resolution for improving road safety. As part of the key projects of Prime Minister Juha Sipilä's Government Programme, regulations are being streamlined and a growth environment for digital business is being built in Finland. In addition, the Government Programme aims to improve the service level of the judicial system and internal security. Judicial processes are being sped up and courts are better able to focus on their core tasks. Using measures that accord with the Government's key projects, it is possible to respond to the quickly changing challenges of road safety and to cost-effectively improve road safety in response to societal change.

The long-term vision is that no-one would be killed or seriously injured on the road. The resolution makes sure that road safety improves with respect to drivers, vehicle and roads. Additionally, the resolution improves preparedness for safe transport automation.

The resolution consists of seven themes that have an impact on road safety. They include clearer rules of the road, more efficient traffic control, increasing the number of safer vehicles and preparing the ground for automatic transport, securing the safety of the road network, reforming the driving instruction and driving test system as well as reducing drink driving and other factors affecting driving ability.

In order to ensure practical cooperation, the Finnish Transport Safety Agency (Trafi) will gather together a cooperation network in which the resolution's measures can be appropriately fitted together and the implementation of the measures and reaching the associated goals can be monitored using the indicators defined in the resolution.

The memorandum of the resolution explains the background of the resolution. The memorandum starts with description on the current road safety situation. Then the seven central measures of the resolution are described in more details. The memorandum includes short descriptions of the projects presented in the resolution. Finally drafting of the resolution and remarks from the wide consultation round are presented in the memorandum.

The resolution on road safety was approved by the Government on 15 December 2016.

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GOVERNMENT RESOLUTION ON IMPROVING ROAD SAFETY

Parliament set the condition in Spring 2015 that the government draft a new resolution for improving road safety (KAA 3/2014 vp). As part of the key projects of Prime Minister Juha Sipilä's Government Programme, regulations are being streamlined and a growth environment for digital business is being built in Finland. In addition, the Government Programme aims to improve the service level of the judicial system and internal security. Judicial processes are being sped up and courts are better able to focus on their core tasks. Using measures that accord with the Government's key projects, it is possible to respond to the quickly changing challenges of road safety and to cost-effectively improve road safety in response to societal change.

The long-term vision is that no-one would be killed or seriously injured on the road. The resolution makes sure that road safety improves with respect to drivers, vehicle and roads. Additionally, the resolution improves preparedness for safe transport automation.

1. GOALS AND ACTIONS

1.1 MAKING THE RULES OF THE ROAD CLEAR

(How will the Government improve the clarity of, and compliance with, transport regulations?)

The Government will make sure that traffic regulations are clear and up-to-date and that they enable smooth and safe transport for all. Common rules lay the foundation for trust between road users and enable new kinds of automated transport equipment and modes of transport to be integrated with conventional transport. Transport safety bodies will make sure that both traffic regulations and education on compliance with them are active and cover all road users.

- The Government is preparing a proposal for a comprehensive revision of the Driving License Act. The proposal will be circulated for comment in 2017.

1.2 GREATER EFFECTIVENESS OF TRAFFIC REGULATION MONITORING AND SANCTIONS

(How will the Government increase the efficiency of traffic regulation monitoring and raise the risk of being caught?)

The Government is implementing the preconditions for automated transport surveillance and thus raising the general preventative impact of traffic regulations on accident risks. The scope of fining procedures will be expanded in accordance with the Government Programme. The simplification of decisions enables smooth and fast procedures. By making fining procedures more effective, authorities can apply more of their resources to tasks that more efficiently promote road safety, such as traffic surveillance. The imposition of driving

disqualifications and other sanctions mentioned in the Driving License Act will be simplified by transferring executive powers from the courts to the police. Digitalisation is utilised in authorities' decision-making, and this increases the efficiency of police work and frees up resources for other traffic surveillance work.

- The Government is preparing a proposal for bringing into use charges for traffic offences and for lightening sanction procedures. The proposal will be circulated for comment in 2017 (as part of reforms to the Road Traffic Act)
- The scope of fining procedures will be expanded in cases of clear and simple traffic violations. Driving disqualification procedures will be made simpler, more coherent and less burdensome. The report of the Ministry of Justice's working group will be circulated for comment in 2016.
- Under the leadership of the Ministry of the Interior, an internal security strategy is being prepared which will take into account road safety. The strategy will be ready in 2017.

1.3 SAFER VEHICLES ON THE ROAD

(How will the Government promote the expanded use of safety-enhancing technology in vehicles and on the road?)

The Government is seeking to reduce the average age of the vehicle fleet so that driver-assisting safety equipment would come into wider use. Various options will be assessed in relation to possible new financing models for the transport network, including whether reforms to transport financing and taxation could promote renewal of the vehicle fleet. Vehicle inspection requirements will be changed so as to focus inspection activities on vehicles that pose the greatest risk to road safety. The safety and smooth operation of heavy-duty traffic will be improved by reforming vehicle winter tyre requirements.

- In accordance with the assignment received from the government discussions on spending limits, the Ministry of Transport and Communications is preparing a report on the development of the transport network and reforms to its financing so that political decisions on the matter can be made at the beginning of 2017.
- The Government is preparing a proposal for reforms to vehicle inspection legislation. The proposal has been circulated for comment in 2016.
- The Government prepared in Autumn 2016 a Government Decree detailing the requirements that apply to winter tyres for heavy-duty vehicles.

1.4 TRUST IN TRANSPORT AUTOMATION

(How will the Government improve the safety and data security of automated vehicles?)

The Government is laying the foundation for the development of safe and trustworthy automated transport. Sharing of smart transport safety information will be developed in such a way that each person would have the best of opportunities to manage the use and utilisation of data relating to him or her to promote road safety. The impact of data security on road safety will be taken into account in the requirements for the safety and risk management of transport services and systems.

- In 2016, the Ministry of Transport and Communications will draw up a roadmap of central measures for this government term which will promote smart and safe transport automation.• For the purpose of improving transport safety, authorities and communities

will map out together methods for networked acquisition, sharing and utilisation of data produced by automated transport.
- Finland will participate actively at the EU level in cooperation for the development of networked and automated driving.
- The Government will carry out the measures specified in its Information Security Strategy and will prepare a proposal for improving transport systems' data security in order to implement the EU's directive on network and data security. The proposal will be circulated for comment in 2017.

1.5 DRIVERS TO HAVE UP-TO-DATE SKILLS AND ABILITIES

(How will the Government effectively guarantee that citizens have up-to-date skills for moving around safely?)

By reforming the driving training system, better opportunities will be created for individual learning through, for example, the utilisation of virtual training in driving licence teaching or when conducting driving tests. Instead of regulating the training to be received for a driving licence, regulations will focus on the driving test and the competencies required for it. The new teaching and learning practices will improve citizens' abilities to move around safely.

- The Government is preparing a proposal for reforms to the Driving License Act and for bringing driver training and the driving test system up to date. The proposal will be circulated for comment in 2017.

1.6 ROADWORTHY PEOPLE DO THE DRIVING AND OTHERS TRAVEL AS PASSENGERS

(How will the Government persuade those whose driving ability has weakened to become transport service users? How will the Government tackle cases of driving while intoxicated and accident risks resulting from health problems?)

The Government will reduce the risk of accidents resulting from impaired driving abilities. By developing the accessibility, price and customer-orientation of transport services, the Government will raise the attractiveness and use of services that offer an alternative to personal car use. Effective methods of intervention will be sought for preventing driving under the influence of drugs and alcohol. The Government will be seeking to have an impact at the EU level, for example by pushing for alcolocks to be fitted by law into all new vehicles. Bodies working for road safety will communicate and actively educate people on the road safety risks caused by use of intoxicants and by impaired driving abilities.

- In the third stage, the Government will carry through the legislative reforms of the Transport Code project. The reforms will promote the generation of new service models and an increase in use of transport services.
- One objective of the new alcolock legislation, which comes into force on 30 December 2016, is to increase the number of locks in use and decrease the price of alcolock programmes. During 2017 and 2018, the Government will assess the goals set for the legislation and the impact of the legislation on road safety.

- At the EU level, the Government will push for the addition of alcolocks to the list of mandatory vehicle accessories.

1.7 TRANSPORT ROUTES TO BE KEPT IN A SAFE CONDITION

(What kind of measures are required to keep transport routes in a safe condition?)

The Government will secure the necessary funding for halting the increase of the maintenance backlog and then starting to decrease it. The Government will also require monitoring of changes in the condition of transport routes.

- The implementation and effectiveness of maintenance backlog measures will be monitored.
- In accordance with the assignment received from the government discussions on spending limits, the Ministry of Transport and Communications is preparing a report on the development of the transport network and reforms to its financing so that political decisions on the matter can be made at the beginning of 2017.

2. IMPLEMENTATION AND MONITORING

The implementation of the resolution will be followed by monitoring the projects' progress. The impacts of the resolution will be monitored using the measuring instruments set out in the resolution. The Finnish Transport Safety Agency will call together a cooperative network for the purpose of monitoring the resolution's indicators and projects. This cooperative network will report to the Government. The measures and legislative amendments proposed in the resolution demand determined, long-term information dissemination so that the road safety benefits achieved would be as large as possible.

2.1 Project Monitoring (Traffic Light Indicators for Project Progress)

2.2 Indicators of Traffic Conditions

- transport performances,
- availability and use of transport services,
- age of vehicle fleet,
- quantity of devices and services for assisting drivers and their bearing on accident risks,
- traffic accident figures listed according to cause and consequence of accident,
- transport performances for automated vehicles and the number of accidents caused by them (incl. experiments),
- economic losses resulting from traffic accidents and their unit costs,
- figures for traffic offences and sanctions incurred,
- condition of road network

THE MEMORANDUM OF THE RESOLUTION

15 December 2016

THE MEMORANDUM OF THE RESOLUTION

Parliament set the condition in Spring 2015 that the government draft a new resolution for improving road safety (KAA 3/2014 vp). As part of the key projects of Prime Minister Juha Sipilä's Government Programme, regulations are being streamlined and a growth environment for digital business is being built in Finland. In addition, the Government Programme aims to improve the service level of the judicial system and internal security. Judicial processes are being sped up and courts are better able to focus on their core tasks.

This resolution follows on from the resolutions of 1993, 1997, 2001, 2006 and 2012. In its 2001 resolution, the Government approved a long-term road safety vision for Finland according to which the transport system is to be designed in such a way that no-one need die or be seriously injured in road accidents. The current resolution is also aiming towards this same 'zero-vision'.

The European Union's objective is to continually improve road safety. In 2010, the EU-level goal was set to half the number of deaths on the road by 2020. In addition to such fatalities, serious injuries are also a cause of human suffering. As well as human loss, traffic accidents also cause significant economic damage. Using measures that accord with the Government Programme, it is possible to respond to the quickly changing challenges of road safety and to cost-effectively improve road safety in response to societal change.

Over the long term, road safety has improved in Finland and Europe. The resolution secures both the safety of vehicles, drivers and the road network as well as readiness for safety-enhancing automation in the future. Improving safety requires, after all, a broad range of measures and good cooperation between different actors.

Human error is a part of almost every traffic accident, but it is believed that the automation of road traffic will significantly improve safety in the future. In the future, road safety work must respond to those changes in accident risk factors which are brought about by changes such as the development of vehicle technology, rapid shifts in the market and transport automation.

The resolution presents the Government's central measures for improving road safety. These include:

- clarifying and updating traffic regulations,
- boosting monitoring of and compliance with transport regulations,
- safer vehicles and increased use of driver-assisting devices,
- guaranteeing investment and funding for a safe road infrastructure,
- developing the safety and communications security of automated transport,
- developing the driving license issued to road users and the learning methods connected with it,
- increasing the appeal of transport services and
- reducing risks from driving while intoxicated and factors that affect drivers' fitness to drive.

In order to ensure practical cooperation, the Finnish road safety Agency (Trafi) will gather together a cooperation network in which the resolution's measures can be appropriately fitted together and the realisation of the measures and the associated goals can be monitored using the indicators defined in the resolution..

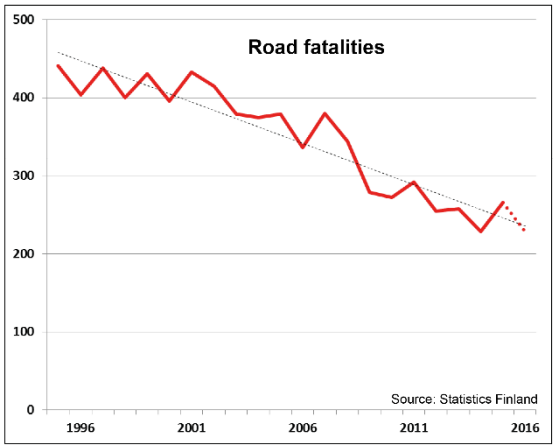
The current road safety situation

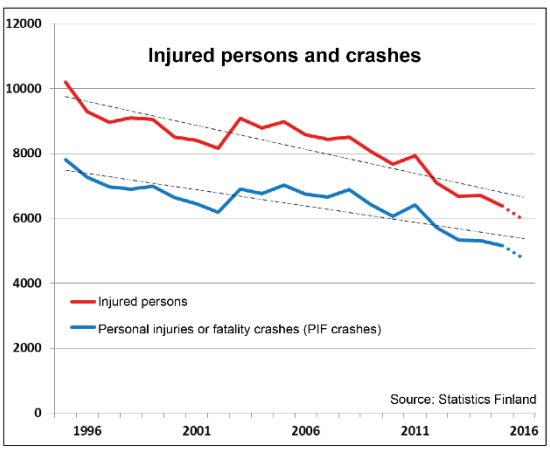
Within Finnish borders, Finns' total transport performance is 74 billion passenger-kilometres per year. Around 90% of this total is covered on highways, streets and private roads. The share of public transport is around one fifth. The percentage of work trips conducted on public transport is around 15%. Total transport performance for Finnish highways, streets and private roads has increased over the course of a decade (2005–2014) by around 3%. Transport performance on highways was 36,925 million car-kilometres in 2014 and the corresponding figure for streets and private roads was 17,655 million car-kilometres. Highways accounted for 67.5% of total road transport performance. Transport performance on highways has grown by nearly 4% in one decade. Total performance for highways grew by 1.4% between 2014 and 2015. Passenger car traffic on highways increased over one decade (2005–2014) by over 4%.

The share of trucks and vans in highway transport performance is around 14%. The performance of trucks on highways has grown only slightly over the decade, by around one percent. Growth in the transport performance of vans, at only 2.3%, has also remained small over the same period. Cycling is a significant mode of transport in Finland. According to one passenger transport study from 2010–11, around 8% of journeys are carried out by bicycle. Cycling's share of total journeys has nevertheless decreased, as the figure was still as high as 11% at the end of the 1990s. The use of mopeds and microcars has reduced walking and bicycle use among 15–17-year-olds. Cycling has decreased among children, youth, young adults and the elderly. Cycling among 35–54-year-olds, however, has remained at the same level.

The number of traffic accidents and the number of deaths and serious injuries caused by them has been decreasing for a number of decades already. According to preliminary data, 266 people died in road accidents in Finland in 2015, which was over 30 more deaths than in 2014. The number of road deaths thus rose back to the level for 2012–2013. The preliminary data for 2016 indicates, however, that the number of road deaths is once again on the decrease. Annual figures show significant variations. For example, in 2014 Finland was ranked among the best EU countries in terms of the percentage decrease in road deaths over the previous year. In 2015, however, it was ranked second to last. What's important is to follow long-term developments in different member countries.

In 2015, around 6400 injuries were recorded. The annual number of recorded injuries has decreased by around 2000 over the last decade despite the fact that the amount of traffic has increase by 6% over the same period. From 2014, statistics have been made more precise by compiling separate figures for cases of serious injury. A large proportion of road injuries are not reported to the police and so are not included in official statistics.





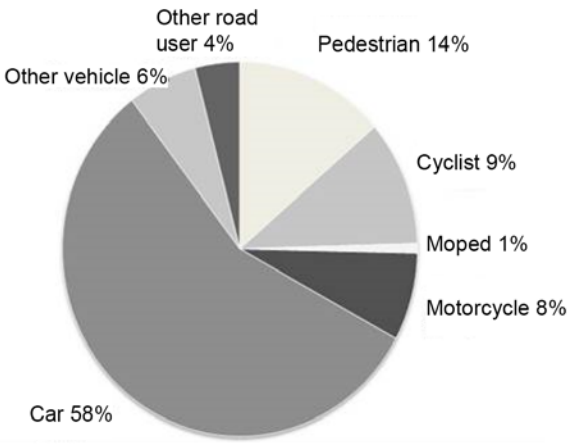
In 2015, fatalities in Finland equated to 48 people per 1 million inhabitants. The average for the EU is 52. When calculated thus in terms of total population, Finland ranks 10th in Europe, close to the average. In 2015, the safest countries were Norway, Malta, Sweden, the UK and Denmark. If instead the calculation is made in terms of transport performance, then around five people die in road accidents in Finland per one million kilometres driven. This is the fifth lowest figure in the EU. This transport performance data is, however, missing for a number of member states.

Two reasons why Finland's per-inhabitant figure is higher than in the countries with the best road safety are that road transport, and especially transport in personal vehicles, accounts for a larger portion of total transport and that the average age of the vehicle fleet is higher. Young people, aged between 15 and 20, die on the road in Finland nearly twice as often as in the safer European countries. According to an international comparative survey, long distances and attitude problems among drivers affect the situation.

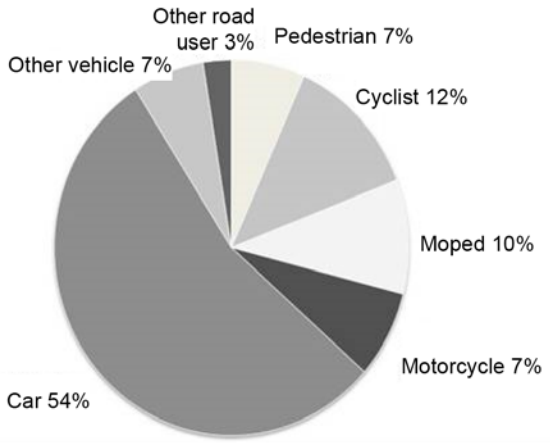
60% of road deaths in Finland are of those travelling in cars. Around 33 pedestrians die per year and around 26 cyclists. Deaths of motorcyclists and moped drivers have decreased in recent years. The preliminary data for 2015 puts the figures at one moped driver and 20 motorcyclists. A truck or coach was involved in around 30% of fatal accidents. The proportion of fatalities that were drivers or passengers of trucks or coaches was, however, only 2%. Of the road injuries reported to the police, around 54% were in cars, 12% were on bicycle, 10% were riding a moped and 7% were on foot.

Driving speeds have a significant impact on road safety. Driving speed affects both the possibilities for preventing collisions and also the human consequences of such collisions. According to the Southwest Finland Centre for Economic Development, Transport and the Environment, 75–125 lives per year could be saved if speed limits were kept. The Centre's data shows, however, that half of all drivers exceed the speed limit and one fifth exceed the limit by over 10 km/h.

Road fatalities, years 2014-2015



Injured persons, years 2014-2015



1. GOALS AND ACTIONS

1.1 Making the rules of the road clear

1.1.1 Comprehensive revision of the Road Traffic Act

The current Road Traffic Act dates from 1981. The Ministry of Transport and Communications is carrying out a comprehensive revision of the Road Traffic Act which will be circulated for comment after this resolution has been issued.

The regulations of the Act will be revised to fit with a new way of thinking. The goal of the legislative project is to remove burdensome regulative ambiguities and deficiencies and to make the legislation a more cohesive whole. The project also seeks to take into account the future needs of automated transport and the need to make use of available data. Consideration of the 2000 Constitution has taken central place in the drafting of the proposal.

The new Road Traffic Act seeks to promote road safety, smooth transport operations and the equality of road users and also have a positive environmental impact. By furthering deregulation, bureaucracy is reduced and road users become more responsible for their own road safety and environment. It is important that road users understand and internalise the importance of traffic regulations and their impact for the smooth operation and safety of road travel.

1.2 Greater effectiveness of traffic regulation monitoring and sanctions

Road users must be able to trust that traffic regulations will be obeyed on a wide scale. Through surveillance, it is possible to prevent in individual cases the kind of actions which violate traffic regulations and seriously compromise road safety. In addition, through surveillance and sanctions imposed for non-compliance, it is possible to realise the general preventative impact of traffic regulations. In other words, the risk of being caught is kept high and motivation to obey the rules of the road is thus increased.

1.2.1 Administrative charges as sanctions for traffic offences

The judicial system revision programme for the period 2013–2025 is one of the cornerstone projects of the Government’s Action Programme. According to the programme, Finland's system of sanctions is broadly based on the use of criminal sanctions. Currently, all traffic offences are processed within the criminal justice system.

The revision programme presents the need to make clear the requirements for expanding the scope of application of administrative sanctions. Administrative sanctions typically refer to certain sanctions applied to punishable activities or offences which are not considered criminal sanctions. These sanctions are imposed by administrative officials. When imposing administrative sanctions, criminal procedure is not followed. The matter is, nevertheless, still one of a sanctioned act for which the resulting fine can be of varying severity based on different criteria. Changes could be made, for example, so that acts for which there is no

complainant are transferred from the current criminal sphere to the sphere of administrative sanctions.

The fine-based system had been developed and simplified in many ways. In forming the fixed fine system, attempts were made to make road surveillance more efficient by lightening the use of official resources. The fixed penalty procedure for automated road surveillance, known as the conditional fixed penalty procedure, has increased the efficiency of the imposition of sanctions.

European Union legislation creates pressure to develop more forms of sanction that are more flexible than criminal penalties, such as different kinds of administrative financial sanctions. Administrative sanctions increase the efficiency of traffic surveillance. Officials are able to impose the fine on the road user or, based on the vehicle's registered information, on the vehicle owner, holder or temporary user. It would be possible to expand camera surveillance to cover, for example, compliance at the municipal level with red traffic lights and pedestrian crossing regulations.

If the imposition of sanctions was administrative and only the registration plate was recorded, foreigners and two-wheeled motor vehicles would also be fully included in the surveillance system. Another significant result would be that the number of criminal acts in Finland would be cut in half. The goal of criminal policy is that minor offences would not be a burden to the criminal justice system.

1.2.2 Expanding of scope of application of fine procedures

The imposition of driving disqualifications and other sanctions mentioned in the Driving License Act will be simplified. This will enable the use of digitalisation in decision-making, increase the efficiency of police work and free up resources. The increased efficiency of traffic surveillance and increase in automated surveillance will increase the risk of being caught.

The Government Programme calls for the expansion of the scope of application of fine procedures and the transfer of driving disqualification decisions from courts to the police. The simplification of decisions on the right to drive will enable smooth and fast procedures that speed up processing times and free up resources for other purposes such as traffic surveillance.

1.2.3 Strategic work on internal security and projects for the development of automated traffic surveillance

The strategic work on internal security is a continuation of the internal security report prepared in May. The strategy, which contains concrete measures, is a roadmap aimed at making Finland the safest country in the world, in line with the Government Programme. The strategic policies and the action programme based on them will be ready by the end of April 2017. Road safety is a part of internal security. According to the work-sharing arrangement between the Ministries, the tasks of the Ministry of Transport and Communications include road safety issues, and so the road safety matters related to the strategy will for this reason be drafted using a collaborative process. The intention is the strategy will guide the whole of Finnish society to act in a safer way. Acting together is the core of the Internal Security Strategy and of the preparation and implementation of the action programme.

The police will boost traffic surveillance by bringing into use more cameras for automated surveillance and by initiating a tendering process for the next generation of camera surveillance systems. They will also make surveillance more efficient by increasing the use of electronic forms in surveillance operations and by developing more links for data exchange between the police and stakeholder groups so that it would be possible to send information directly from the police car to the stakeholder groups' own systems. The expansion of the number plate identification system will also play its part in increasing the effectiveness of surveillance.

1.3 Safer vehicles on the road

The vehicle stock in Finland is among the oldest in the European Union. In 2015, the average age of a car registered in mainland Finland was 14 years and the average age of cars in use on the road was 12 years (Statistics Finland). The lowest average car age, at 12 years, was in the district of Uusimaa, and the highest, at 16 years, was in North Karelia. The average age of the vehicle fleet has grown continually, almost every year, over the last ten years. In 2015, the average age of vans on the road was 13 years, for trucks it was also 13 years and for coaches 12 years (Finnish Information Centre of Automobile Sector). Over the course of a decade (2006–2015), the average age of cars on the road (excluding antique cars) has risen by seven percent and, in the last five years, by almost five percent. By speeding up the renewal of the vehicle fleet, road safety would also be promoted because new vehicles are safer than older ones. In domestic and international studies, it has been estimated that the probability of death or injury in the newest car models is 10–40% lower than in cars that are ten years old. The renewal of the vehicle fleet is also of central importance for the achievement of the climate objectives that Finland has committed to.

1.3.1 New financing models for the transport network

In accordance with the assignment received from the government discussions on spending limits, the Ministry of Transport and Communications will prepare a report on the development of the transport network and reforms to its financing. The report will also access whether reforms to transport financing and taxation could promote renewal of the vehicle fleet.

1.3.2 Reforms to the vehicle inspection act

The vehicle inspection act project involves the implementation of regulations included in the EU's roadworthiness package and the examination of the requirements of national legislation in relation to the aforementioned EU directive. The change to national legislation would affect the act on vehicle inspection activities and the Vehicles Act.

The project will involve the examination of the following areas: motorcycle inspection, tractor inspection, inspection procedures and elements to be inspected, requirements for inspectors, inspection locations and equipment, frequency of periodic inspections, setting of inspection dates, expanding roadside inspections, and possibilities for suspending and cancelling registration.

Inspection activities have a central impact on road safety. Periodic vehicle inspections aim to ensure that vehicles on the road are roadworthy. At the moment, motorcycles and tractors are not inspected at all in Finland, but the new directive requires examination of the

inspection obligation for them. The EU directive gives the possibility for inspections to take place less frequently than is currently the case in Finland, so this project will therefore include consideration of whether to shift to the EU minimum requirements in this area. Less frequent inspections would significantly decrease expenses for Finnish citizens. It would probably, however, increase to some extent the number of faulty vehicles on the road, which would have an impact on road safety. An expansion of roadside inspections will be considered as an alternative measure for promoting vehicle roadworthiness. This would create an incentive to keep one's vehicle roadworthy all year round.

1.3.3 Winter tyre regulations for heavy-duty vehicles

The proposal is to make changes to the tyre tread requirements for December, January and February for trucks, coaches and tractors whose design speed exceeds 60 kilometres per hour. The new requirements would be that the driving axle of the vehicle or tractor has winter tyres with a tyre tread groove depth of at least 5mm. Other axles, as well as all the axles of any trailer, would require tyres with a main groove depth of at least 3mm. These winter tyre requirements apply to both domestic heavy-duty vehicles as well as those coming from other countries. The winter tyre requirement will be assessed again in the comprehensive revision of the Road Traffic Act that is currently under way. This will involve assessing as a whole the tyre requirements for all vehicles.

By tightening the groove depth requirements, the result will be a reduction in the number of vehicles on the road with low groove depths, which have been shown to be a road safety risk. When examining the accidents studied by the investigative committee, it was observed that if the tyre groove depth at the moment of the accident had been at least 5mm, it would possibly have had an impact on three fatal accidents involving light trucks that took place between 2000 and 2010. Using winter-patterned tyres, it is possible to improve the start-up and manoeuvring capacity of heavy-duty vehicles. Currently, a fifth of the tyres on the driving axles of heavy-duty vehicles are not winter-patterned.

1.4 Trust and initial preparations for transport automation

In nearly all fatal traffic accidents, human error is a contributing factor. According to research, human error is a factor in as many as 90% of traffic accidents. It is believed that vehicle automation could help to reduce these human errors. The driving system made possible by automation also reduces fuel consumption, exhaust gas emissions and traffic congestion. Key to ensuring the safety of smart transport systems and self-guiding means of transport is obtaining the diverse information needed for transport-related automated activities in sufficient quantities and with sufficient reliability and security of data transfer.

Self-driving vehicles are part of the implementation of smart transport systems. In smart transport systems, self-driving vehicles use their own generated data for driving. This data is collected from the surrounding environment by the vehicle's sensors, radars and cameras. In addition, they also use the wide-ranging data which is communicated via the network to the vehicles from other transport environments, vehicles, road environments, transport navigation systems and commercial services. One significant improvement to road safety provided by smart technology is the requirement to use the eCall automatic alarm system in all cars and vans from 2018 onwards.

As part of the reforms currently under way to the ITS directive (2010/40/EU), the European Commission carried out a public consultation in 2016. Following this, the Commission

published on 30 November 2016 a Communication detailing a development programme for networked and automated driving – the Cooperative Intelligent Transport Systems (C-ITS) strategy.

Finland stated in its response to the public consultation that the interoperability of smart transport systems and services is of key importance for enabling new services and multimodel travel chains. In addition, it was considered worthwhile to draw up an EU common strategy for directing and speeding up the development and implementation of smart transport services and systems. Also worthy of support are the goals to achieve a European-side service market for the smart transport sector and measures to increase cooperation at the EU level. It is necessary to promote the openness of data produced by traffic and other movements and its utilisation in the provision of transport services, as well as creating rules for data accessibility. As much as possible, the service user should have the right to decide on the use of data relating to themselves.

Regarding development activities, it is considered necessary to direct activities and financing especially towards projects that increase the interoperability of smart transport services, make activities more environmentally friendly and increase safety, as well as projects that support the development of automation. The need for regulation of smart and interoperable transport systems should always be accessed carefully.

In addition, it is also important to examine what kinds of measures relating to communication networks and radio frequencies would be required for the safe and smooth future operation of smart transport. New smart transport applications use wireless communication networks, and so these networks' functionality and interoperability with users of other radio frequencies should be taken into account already in the planning stage of future transport solutions. This calls for cooperation between transport and communication authorities.

The Finnish Communications Regulatory Authority (FICORA), as part of the Finnish information security strategy, established in September 2016 an information security standardisation network in cooperation with the Finnish Standards Association (SFS). The objective of the network is to increase the opportunities for Finnish component manufacturers and service providers to have an affect on European and international information security standards. One of the topics dealt with in the network is standardisation that promotes the interoperability of smart transport.

1.4.1 Roadmap for transport automation

The government's key project for creating a digital business operations growth environment includes the measure to increase the development and utilisation of robotics and automation in Finland. The automation of road transport leads particularly to positive safety and environmental impacts. The Ministry of Transport and Communications will draw up a roadmap of measures for the development of smart and safe transport automation. These measures are to be promoted during this government term.

Transport automation will be developed in Finland by forming experimental ecosystems and networks and ensuring that there is legislation which favours transport automation. Additionally, the goal is to take into account and make use of transport automation developments in the development of transport and communication services and infrastructure and also to increase research into automation and to raise its general level of acceptance. The automation of road transport proceeds in stages towards the goal of complete automation. The estimates of the time required to achieve widespread use of

completely automated traffic range from around 15 to 50 years. In general, it is estimated that the first entirely automated cars will be in use in around 10 years. The goals associated with the promotion of automated driving include the following:

- Further development of communication systems operating between cars and also between cars and road infrastructure.
- Ensure the security of the data required for and gathered by automated driving systems and the protection of citizens' privacy.
- Develop and test road infrastructure smart sensors and positioning devices for facilitating the safe navigation of automated transport.
- Make sure that Finland has the word's best regulatory and permit environment for automated driving tests and implementation. Any required corrective action is to be taken without delay.
- Disseminate widely, both in Finland and abroad, information about the opportunities offered by current regulation and attract vehicle testing activities to Finland.
- In connection with the overall reform of the Road Traffic Act, ensure that no legislative obstacles remain to automated driving.
- Monitor the development of vehicle technology and especially automated applications that promote road safety.

1.4.2 Report on the sharing of safety data for automated transport

The digital information produced by automated transport can be used to improve road safety in a much more effective way than at present. It is important that the data produced by automation which relates to accidents, dangerous situations and other problems would be shared more widely than at present with other systems and activities aimed at improving road safety.

Using this information, vehicle and device manufacturers, as well as various service developers, could develop safer products and services and offer entirely new services which would make use of safety data. By using the data, consumers could promote safety in their own activities and choices. Insurance companies also have a need to obtain, with the approval of the vehicle owner or holder, extensive information about the vehicle's movements and use so that they can utilise this information for developing their insurance activities and provision of compensation.

A network could be formed between authorities, businesses and citizens. The different members of this network would have an interest in sharing security-enhancing information with each other. A key premise for realising this network is to secure mutual benefit and trust in the sharing of information. The operational prerequisites and practices for this network will begin to be worked out under the leadership of the Ministry of Transport and Communications as a cooperative undertaking involving both public authorities and private groups.

1.4.3 Finland's Information Security Strategy and the Network and Information Security Directive

As a central measure for the Government's key project to create a digital business activity growth environment, the Minister of Transport and Communications approved in March 2016 the Finnish Information Security Strategy. The goal of the strategy is to increase trust in the internet and in digital operating methods. The strategy aims to bring about a situation where

there is a wide range of products and services on the market which have security and data protection as a built-in component, meaning that these factors are taken into account in all stages of the life cycle: design, production and maintenance. The strategy also aims to have an impact on factors that undermine trust such as breaches of data security and wide-ranging online privacy violations.

As part of the implementation of the Information Security Strategy, the EU Network and Information Security Directive will be made part of national legislation. The aim of the directive is to secure a high level of security for network systems and data systems in the European Union. The directive requires all member states to set risk management and reporting obligations for certain key service providers. The road transport sector also partly falls within the directive's scope of application (road transport authorities and administrators of smart transport systems).

With regards to mainstreaming transport automation, it is especially important that citizens can trust the new technology. Data security must be taken into account in the design, development and administration of the transport systems and transport services. This is important for ensuring that the software for controlling road transport is high-quality and able to withstand both intentional and unintentional interference to data security.

1.5 Drivers to have up-to-date skills and abilities

The development of road user training is one of the emphases of EU road safety promotion measures. It is important to start developing in people the necessary road skills starting with the education provided to children and youth. The skills for reading traffic situations cannot be obtained all in one go, so continual learning is required as children grow up and as attitudes, skills and the traffic environment change and develop. Among other actors, the Finnish National Board of Education is promoting road safety for children and young people in cooperation with the Central Organisation for Traffic Safety in Finland (Likenneturva). The National Board of Education is also reforming and developing driver training and training for providing traffic instruction in cooperation with other actors in the field.

1.5.1 Reforms to the Driving License Act and updates to driving training

The Government is preparing a proposal for changes to the Driving License Act. The goal of reforms to driver training is to bring driving licence training up to date and reduce the amount of regulation that exceeds EU requirements. Instead of fixed-form, curricula-based teaching, the trainee driver would be able to freely choose the training they need and driving schools could offer different kinds of training packages. The changes would mean that individual differences could be taken into account and there would be increased opportunities to benefit from previous learning. The change would also increase the diversity of teaching and learning methods in contrast to, for example, participation in conventional classroom teaching. In response to the changes in the training process, the driving test would be made more demanding so that, taking into account the demands of road safety, if would be possible to make sure that the person taking the test is sufficiently competent. As part of the drafting process, assessment will be made of, among other things, the level of teaching regulation needed for maintaining road safety and the preconditions both for ending multi-stage testing for a category B driving licence and for increasing early driving practice in the training process in order to decrease the higher accident risk for new drivers. There can be no compromise on safety in driving license requirements.

1.6 Roadworthy people do the driving and others travel as passengers

Over the course of a decade, total transport performance has grown in the way described above by around 6%. This high level of transport performance is one reason why Finland is not among the best in Europe in terms of road safety. The amount of traffic is to a large extent connected with the current economic situation, which then in turn is reflected in road safety developments. The amount of traffic can be affected by, for example, ensuring that citizens and businesses have access to attractive transport services. In this way, it is also possible to get drivers that belong to high-risk groups to change from being drivers to being passengers.

In addition to providing alternatives to private car use, intervention to combat impaired driver health and fitness to drive can be made by means of sufficient cooperation and information exchange with social and health care bodies. This would mean, for example, that doctors making decisions about the right to drive would have sufficient information about the individual's state of health and possible high-risk drivers. Cooperation and information exchange is also needed between different branches of government. Prevention of the damage caused by intoxicating substances will be implemented in accordance with the act on substance abuse prevention work, which came into force on 1 December 2015.

According to the Finnish Transport Safety Agency (Trafi), the number of alcohol-related cases of driving while intoxicated has decreased. Nevertheless, figures from Trafi, the Police and the National Institute for Health and Welfare (THL) indicate that driving under the influence of drugs and intoxicating medicines has risen significantly. Figures for 2015 from THL and the Police show that around a third of those suspected of driving while intoxicated were suspected to have used drugs or medicines (approx. 5500 cases for 2015). According to THL, there are dozens of chemical compounds that weaken driving ability and this makes it hard to develop reliable quick testing procedures. Traffic surveillance must nevertheless be effective enough for those driving under the influence of alcohol or drugs to be effectively identified and for proof of driving while intoxicated to be reliably obtained by law enforcers. The development measures required for traffic surveillance can be examined, for example, as part of the drafting of the internal security strategy.

1.6.1 Transport Code promotes transport services

The Transport Code project furthers the implementation of two of the key projects within Sipilä's Government Programme: the project to build a digital business environment and the project to streamline regulations. The Transport Code brings together the regulations related to transport markets and services, including matters such as information to be given about transport services, service interoperability and access to professional transport markets. In the Transport Code project, the transport system is examined as a single entity that covers all modes of transport. The project will be implemented in three stages. The government proposal on road transport regulation, part of the first stage, was presented to parliament on 22 September 2016. In the second stage, the corresponding regulations for other modes of transport and for professional qualifications for passenger operations will be gathered for inclusion in the Transport Code. The intention is to present to parliament the government proposal related to this second stage in Summer 2017. Additionally, reliability questions for the transport system will be examined. In the third and final stage, additions will be made to the Transport Code in those areas where such additions were not possible to make in the earlier stages.

The project's road safety impacts are connected, for example, with the promotion of public transport, requirements placed on businesses and drivers and information-related regulations. Lowering market entry barriers, lightening regulation of operators and improving transport services can increase professional transport's share of total road traffic. Regarding professional drivers, work will be done to clarify the process of transferring from a training-based system to a competence-based (qualification-focused) system. Increasing the digitalisation of information will improve opportunities for monitoring and surveillance.

1.6.2 Use of alcolocks to be promoted

In recent years, nearly one fifth of fatal accidents have involved an intoxicated driver. A growing problem is also that of driving under the influence of intoxicating substances other than alcohol. This problem is not possible to prevent with alcolocks. Attempts are being made to reduce intoxicant-related accidents through traffic surveillance in particular, but also through education and campaigns. It is foreseen that the role of technology in surveillance will increase in the future. Alcolocks have been shown to be an effective technology for preventing drunken driving, and their use is increasing across Europe.

The goal of the new alcolock legislation is to increase the use of alcolocks on the road. Alcolocks should be generally defined as a vehicle safety device, not simply as a device for those convicted of drunken driving. As the technology develops, it may be possible to prevent the use of intoxicants other than alcohol.

The Government holds that the alcolock is an important tool for preventing drunken driving. The Government remains committed to actively pushing for the European Union to make alcolocks a compulsory part of new vehicles.

The new alcolock act on and changes to the relevant parts of the Driving License Act will come into effect on 30 December 2016. The impacts of the new law will be assessed.

1.7 Transport routes to be kept in safe condition

1.7.1 Maintenance work to improve the safety of the transport network

During this government term, resources will be invested into halting the growth of the maintenance backlog and then reducing it. Work carried out with maintenance backlog funding has been seen to also have an effect on road safety. By combining new technology and information available on the state of the transport network, greater efficiency for the daily management and maintenance of the transport network can be obtained through precise measures and management activities. This greater efficiency then manifests as increased road safety. Examples of this include basic road repair sites and the updates to transport infrastructure equipment and devices such as lighting, traffic signs and traffic barriers. With regards to the road surface, a road that is in good condition is also easier to keep up to the required standard in winter.

1.7.2 New financing models for the transport network

In accordance with the assignment received from the government discussions on spending limits, the Ministry of Transport and Communications will prepare a report on the

development of the transport network and reforms to its financing. The report will access whether the maintenance and development of the transport network could be managed by a state-owned company. The aim is to create a financially sustainable operating model which provides means for the long-term maintenance and development of the transport network. The administration of state-owned transport infrastructure by a state-owned company would make the use of assets tied up in them more effective as well as ensuring extensive development investments and better transport services for clients. The state-owned transport network company would finance its operations primarily through customer payments tied to use of the network. These payments would replace some of the current transport taxes and charges. The report will also access whether reforms to transport financing and taxation could promote renewal of the vehicle fleet.

2. IMPLEMENTATION AND MONITORING OF THE RESOLUTION

The implementation of the resolution will be followed by monitoring the projects' progress. The impacts of the resolution will be monitored using the measuring instruments set out in the resolution. The Finnish Transport Safety Agency will call together a cooperative network tor the purpose of monitoring the resolution's indicators and projects. This cooperative network will report to the Government.

2.1 Project Monitoring (Traffic Light Indicators for Project Progress)

2.2 Indicators of Traffic Conditions

- transport performances,
- availability and use of transport services,
- age of vehicle fleet,
- quantity of devices and services for assisting drivers,
- traffic accident figures listed according to cause and consequence of accident,
- transport performances for automated vehicles and the number of accidents caused by them (incl. experiments),
- economic losses resulting from traffic accidents and their unit costs,
- figures for traffic offences and sanctions incurred.

3. DRAFTING OF THE RESOLUTION AND CONSULTATION ROUND

The resolution has been prepared over the course of 2016 in cooperation with various ministries. To support the drafting process, various cooperative meetings have been held in which efforts were made in particular to obtain information on what can be done by the administrative branches of different ministries to increase road safety.

The final draft of the resolution has been circulated widely for comment. The following bodies have provided statements on the draft: The Ministry of Justice, the Ministry of Education and Culture, the Ministry of the Interior, the Ministry of Social Affairs and Health, the Ministry of Economic Affairs and Employment, the National Board of Education, the National Police Board, the Finnish Transport Agency, the Finnish Transport Safety Agency (Trafi), the Finnish Communications Regulatory Authority (FICORA), the Border Guard, the Finnish Central Organisation for Motor Trades and Repairs, Autokoululiitto, the Automobile and Touring Club of Finland, the Association of the Finnish Automobile Importers, the Federation of Finnish Financial Services, the City of Helsinki, the University of Helsinki, the Finnish Association of People with Physical Disabilities, Liikenneoikeusyhdistys ry, the Central Organisation for Traffic Safety in Finland, the Motor Insurers' Centre, Linja-autoliitto, Paikallisliikenneliitto, Pyöräliitto ry, Finnish Transport and Logistics (SKAL), the Association of Finnish Local and Regional Authorities, Suomen Motoristit ry, the Finnish Psychological Association, the Finnish Taxi Owners Federation, the City of Tampere, Tampere University of Technology, the National Institute for Health and Welfare (THL), the Centres for Economic Development, Transport and the Environment (ELY Centres), the National Council on Disability (VANE) and Marko Santala.

The statements drew attention to the importance of the resolution and the need for it. Many of the resolution’s objectives and measures were considered important and good.

The policies outlined for reforms to the Road Traffic Act and the implementation of road traffic fines received broad support in the statements received. The Association of Finnish Local and Regional Authorities, the University of Helsinki, Tampere University of Technology and the Cities of Helsinki and Tampere considered it important that automated traffic surveillance could be developed in municipal areas for purposes other than monitoring speed limits (e.g. for monitoring compliance at traffic lights and pedestrian crossings). The Automobile and Touring Club of Finland, Suomen Motoristit ry (the association of Finnish motorists) and Liikenneoikeusyhdistys (the traffic law association) emphasised the importance of ensuring legal protection when introducing reforms to the sanctions regime. The University of Helsinki considered it important that the administrative fine would be focused on light vehicles and other forms of transport.

Also, the promotion of automation was broadly seen as an important development for road safety. The statements drew attention to the different stages in the development of increased automation and their safety effects. Developing sharing of automated transport safety data was broadly seen to be a good and important policy position. The Automobile and Touring Club of Finland, as well as some others, considered it important that the person whom the data concerns has the right to decide how the information is used. The Federation of Finnish Financial Services and Tampere University of Technology considered it important that data could be used for developing insurance services.

A number of statements, including those from the Ministry of the Interior, the National Institute for Health and Welfare (THL) and the University of Helsinki, raised the issue of the growth in cases of driving under the influence of drugs and medicines and the need to develop police surveillance operations to deal with this. In its statement, the National Police Board gave more detail on automated traffic surveillance development projects which are currently under way. The Ministry of the Interior and the National Police Board proposed in their statements the development of drug and medicine quick testing procedures for traffic surveillance. THL mentioned in its statement that the development of quick testing procedures is made more difficult by the broad range of chemical combinations currently in use. Efforts to develop the surveillance of driving under the influence of drugs and medicines could continue, for example, as part of the current work on developing an internal security strategy.

Finnish Transport and Logistics (SKAL) and the University of Helsinki considered it important that reforms to the Driving License Act would ensure the possibility of virtual teaching, the use of simulators and the utilization of other new learning methods. In addition, SKAL considered it important to continue to include compulsory teaching as part of the requirements for heavy-duty vehicle driving licences. Also, Autokoululiitto (the association of Finnish driving schools) and the Finnish Psychological Association emphasised the importance of compulsory driving training as a requirement for obtaining a driving license.

The Finnish Transport Agency's statement proposed the general lowering of speed limits. The ELY Centres' statement considered it important from a road safety perspective to ensure sufficient investment in the transport route network and sufficient resources for police work and traffic safety education. Pyöräliitto (the Finnish cycling association) proposed decreases in speed limits, the implementation of a cycling licence for children, and regulations to make compulsory various kinds of vehicle equipment. The cycling association considered it important that there be sufficient funding for improving road infrastructure and for new planning instructions for, among other things, safe traffic arrangements in roadwork areas.

In the statements provided by the National Council on Disability and the Finnish Association of People with Physical Disabilities, attention was drawn to matters such as parking permits, the size of parking fines, driver health requirements and consideration of special equipment in reforms to vehicle inspection legislation. The Finnish Taxi Owners Federation considered it important that the health of professional drivers is monitored.

SKAL wished for greater clarification of the terms used in the regulation of heavy-duty vehicle tyres intended for winter use. SKAL also considered justified the mandating of alcolocks as compulsory equipment for new vehicles at the EU level. The Association of the Finnish Automobile Importers, however, was of the opinion that alcolocks should not be made compulsory.

Based on the results of the consultation round, a number of clarifications and corrections were made to the resolution and the accompanying explanatory memorandum. A number of the issues brought up in the statements were by nature such that they can be assessed in more detail as part of the projects outlined in the resolution. Some of the issues raised in the statements are among those that can be decided on in the normal operations of authorities and other groups and organisations and do not therefore require special measures to be taken by the Government.

The final draft was also discussed in the Permanent Secretaries' meeting on 28 November 2016.