

# *Transport of Dangerous Goods in Finland*

*Strategy 2006–2015*



MINISTRY OF TRANSPORT  
AND COMMUNICATIONS FINLAND

***Transport of Dangerous Goods in Finland  
Strategy 2006–2015***

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## Foreword



This strategy for the transport of dangerous goods is the first comprehensive strategic plan issued by the Ministry of Transport and Communications' for the entire field of transport of dangerous goods (TDG). It covers the period from 2006–2015 and outlines the strategic focus for each transport mode. This strategy describes the current situation of the field, the long term vision and the central activities. It also describes the stakeholders and outlines the main challenges and goals for each transport mode outlined.

The transport of dangerous goods is of considerable importance to the Finnish commercial and industrial sector. A central objective of the TDG strategy is to continuously strive towards a safe and profitable transport sector today and in the future. The strategy is closely linked to the Ministry's *Road Safety Program for 2006–2010*, as approved in Spring 2006, and to the Ministry's Environmental Strategy.



In the preparation of the strategy, the views of the different stakeholders within both the private and public sector have been heard. The objectives defined by the Ministry reflect the objectives set by the different stakeholders. The logistic challenges and the global nature of the transport sector have a large influence on the development of the sector. The geographical positioning of Finland brings severe challenges to the Finnish operators: the national characteristics include cold, icy periods, long distances, a dependency on sea transport as well as a considerable transport flow to and from the east by rail and by road. In order to ensure the sector's future development and profitability, logistical bottlenecks cannot be allowed to develop either during border crossings or whilst transferring goods from one mode of transport to another.

The starting point for this first TDG strategy has been to reflect the foreseen future and its challenges onto today's situation. Safety is the first and foremost concern of all TDG activities and the focus of both the Ministry's legislative work as well as of the sector's enforcement, supervision, training, education and information provision work. As the transport sector has a global nature, internationally harmonised legislation enhances safety and efficiency. The requirements of the wide range of operators within the sector are best served through working towards a common set of rules and regulations and through enhancing information exchange and cooperation over and across administrative borders. Establishing common targets and cooperating in working towards achieving these will be ever more important in the future. This strategy work has therefore in particular emphasis on enhancing cooperation.

One of the main objectives of this TDG strategy has been to outline a framework. In the future, the framework will guide actions towards continual improvement and systematic recognition of joint targets.

*Helsinki, 5 June 2006*

Susanna Huovinen  
Minister of Transport and Communications

Harri Pursiainen  
Permanent secretary



## Summary

This strategy for the transport of dangerous goods is the first comprehensive strategic plan that the Ministry of Transport and Communications has drawn up to deal with the whole field of transport of dangerous goods. It covers the period 2006-2015 and deals with the situation in Finland today, the challenges and trends foreseen, and the main areas in which the Ministry will focus its efforts in the coming years. The goals have been set out in the form of a “prism of results”, in terms of impacts, operational effectiveness, productivity and quality, human resources and well-being.

The Ministry's strategic vision sees Finland as being one of the leading countries in the safe transport of dangerous goods, and making continuous efforts with regards to safety and the proactive prevention of accidents. This strategic plan lays out the main challenges and strategic policies for all modes of transport, based on today's situation and in the light of the major challenges and goals identified by operators and authorities in the field.

**The strategic plan's analysis highlights the Ministry of Transport and Communications' long-term vision, the main activities involved and the different forms of cooperation within the field. Key themes include the following:**

- Safety is the first concern in all activities related to the transport of dangerous goods. The strategic plan puts forward ways and means of enhancing safety, together with the Ministry's vision of ever-improving safety. Particular emphasis is put on proactive prevention, training and education, and carefully focused information. Since the field is naturally international in many respects, safety and efficiency are to be promoted through the Ministry working to achieve an internationally harmonised legal framework.
- The needs of the many different kinds of operators active in the field are best served by focusing on the creation of a common regulatory framework, and by improving the exchange of information and the cooperation between different administrative sectors. The identification and achievement of joint goals will be even more important in the future. The strategy particularly emphasises the importance of working to enhance cooperation.
- With regard to Finland's commercial and industrial policy, it is important that the transport of dangerous goods continues to be a viable business sector. In order to ensure that such transport keeps on being profitable and logistically effective, emphasis is placed on the quality and condition of infrastructure, on transport safety, and on carefully focused supervision and control.

The goals for the Ministry's own work are concentrated in two main areas. The first involves looking after Finland's national interests, preparing legislation and providing information about it to the various groups of people concerned; and the second is the field of promoting cooperation between the different operators, authorities and other parties involved.

The progress made in realising the vision, implementing the strategy, and achieving the results at which the strategy aims will be reported to the Advisory Committee on Transport of Dangerous Goods each year. An overall evaluation of the strategy will be undertaken in a few years time.





## Introduction

The Ministry of Transport and Communications' first comprehensive strategy for the whole field of transport of dangerous goods has been prepared in close cooperation with the parties involved. An essential part of strategy work is continuous refinement, development and prioritisation. The continuum of the strategy work is presented in the schematic model below.

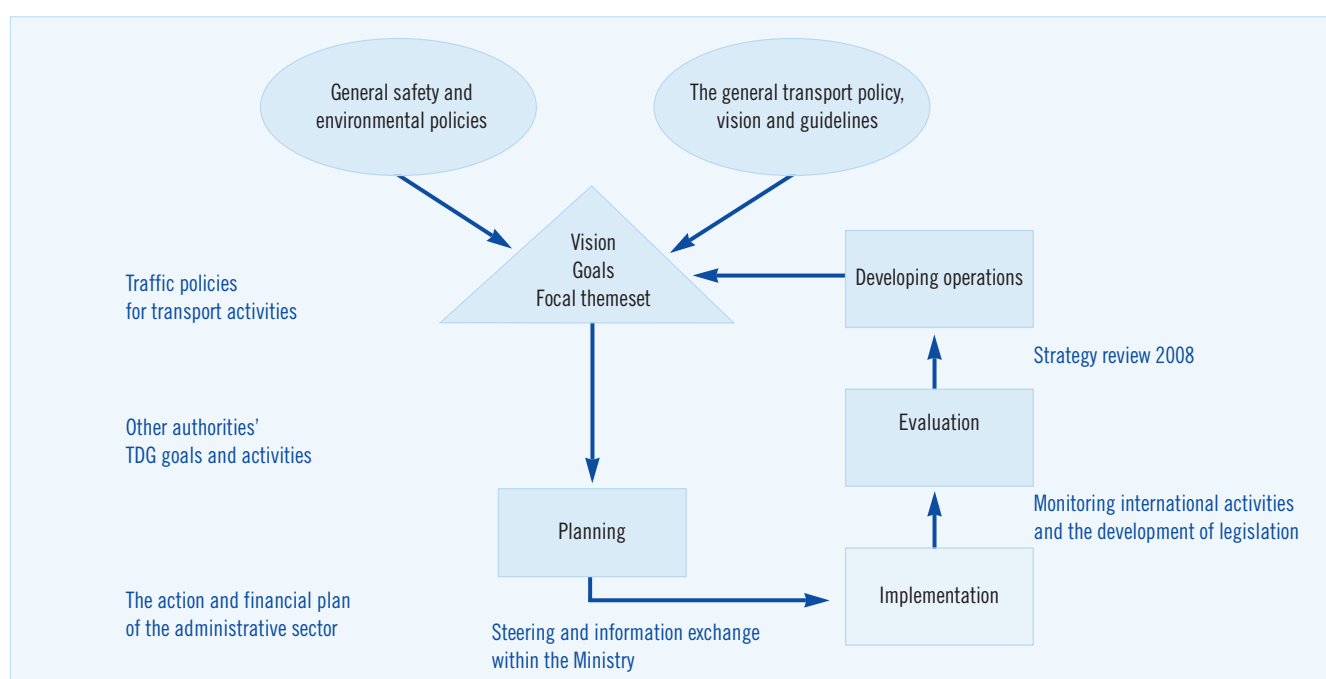
Today, logistically functional and efficient transport of goods forms a corner stone of societal prosperity. The transport of dangerous goods serves industry and consumers daily. In today's society, a functional logistics chain is a basic requirement for profitability for an ever increasing number of industrial sectors. The party responsible for the Finnish Strategy for Transport of Dangerous Goods is the Traffic Safety Unit of the Transport Policy Department in the Ministry of Transport and Communications. The unit is also responsible for preparative legislative work in the field. The ministry cooperates with both other institutions within the administrative sector and other parties involved in the transport of dangerous goods to enhance safety. Focal areas are to enhance and develop surveillance and supervision, education and necessary services. Successful transport of dangerous goods is achieved through policy being based on the operative requirements of the businesses and it requires cooperation across administrative sectors.

The aim of the Ministry of Transport and Communications' dangerous goods transportation activities is to promote societal prosperity and the functionality and competitiveness of logistical chains through ensuring that:

- dangerous goods are handled and transported safely and taking into account environmental considerations,
- transport means, tanks and packaging used in transportation are safe, authorized and labelled according to regulations and the goods are classified correctly,
- each participant or person responsible for TDG is trained and aware of his/her responsibilities,
- the sector's businesses operate within a framework that allows them to be globally competitive,
- the parties within the sector cooperate actively to enhance safety, functionality and productivity.

Transportation is by its nature a very international activity. Experts from the Ministry and institutions within its administrative sector represent Finland in international meetings and actively participate in the UN and the EU cooperation. In addition to cooperation within the EU, interaction with the Nordic countries, with Russia and the Baltic states is particularly frequent. Cooperative work related to railway transport is also done through the international railway associations OCTI and OSJD. The Ministry's most important cooperative partners in Russia are the Ministry of Transport and the Railway Agency.

**Continuous development and redefinition of focal points is an essential part of the strategy work.**





## The global nature of transportation of dangerous goods

International interaction in transportation is increasing and industry and commerce are becoming ever more international. In Finland, import is growing faster than export. Shipping in the Baltic Sea is increasing and the flow of goods is directed through specialised ports, where the importance of terminals is increasing. Finnish roads are increasingly trafficked by international haulage equipment and drivers from abroad. As a consequence, a practical problem affecting surveillance and supervision activities arise, such as finding a common language for communication.

A particular challenge for transport operators is being prepared for the logistical decisions made by their customers from a global point of view at an ever increasing pace. Terrorism and sabotage are possibilities that must be increasingly taken into account. Adequate efforts and resources must be allocated to Safety Management Systems and surveillance. The Ministry of Transport and Communications invests time and effort into ensuring smooth and functional traffic connections both in Finland and beyond our borders. As the global production structure favours road transport, one of the challenges is to maintain or increase the proportional use of railway and sea transport in accordance with the aims defined in the Ministry's Environmental Programme. A particular focus of this effort is the traffic across Finland's eastern borders – including transit transportation and transport of base raw materials.

The International agreements regarding TDG change every two years for each of the transport modes. These changes are implemented into the national TDG legislation at the same schedule. This poses special challenges for both the implementation of the legislation and the supervision and surveillance work. The required amount of new information to be absorbed, updated and implemented is considerable. Finnish policy regarding TDG is heavily influenced by EU policy and the international agreements for each transport mode. Part of the Ministry's work is to ensure that Finland's national interests are heard and taken in international decision-making. Administrative cooperation with Russia focuses especially on ensuring functional border crossings, traffic safety and the

competitiveness and position of Finnish transport companies.

Within the UN, the GHS, (*Globally Harmonised System on the classification and labelling of chemicals*), sub-committee is responsible for one of the central reforms within the industry: the intention is to harmonize the classification and label systems for the transport and use of chemicals. The reform will abolish the requirement to maintaining two different systems from several dispatchers of goods. Harmonized regulations for classification and labelling will be implemented in the international agreements for each transport mode during this strategy period. Within the EU, harmonizing the relevant legislation for the use of chemicals according to GHS will be implemented through the forthcoming REACH legislation.

Applying rapidly developing telematics to the transport industry improves traffic safety of all transport modes. Traffic telematics can be divided into traffic monitoring and information management and informatics. An excellent example of this is the PortNET system, used for sea transport. The system contains real-time information of all vessels carrying dangerous goods in Finnish territorial waters. Telematic type information can also be used for better incident management: A good example of this is the research work carried out for the Ministry, where an IT-based solution for road and railway transports, currently in its trial stages, has been developed. The so called VAKSU-system addresses environmental safety aspects of route planning as well as containing recommended immediate remedial actions following accidents involving dangerous goods along the transport route. Purely technical innovations on the other hand are mostly developed by the haulage equipment industry. The direction of the development can, however, be influenced by international legislation and standardization. The overall aim is to reach further global harmonization. From Finland's point of view, the most important work is done within the UN European Economic Commission (EEC). By actively participating, Finland can, through its experts, promote the issue and ensure that the country's special traffic conditions are adequately addressed and acknowledged.

## Strategic objectives

### **TDG as part of the Ministry of Transport and Communications' general transport policy**

#### **Vision**

The Ministry of Transport and Communications sees Finland as being one of the leading countries in the safe transport of dangerous goods. Safety is a continuous primary concern, considered at all stages and for all undertakings. Proactive prevention is a guiding principle for all activities.

#### **Values**

The Ministry of Transport and Communications' overall values encompass expert knowledge, coherence of processes and co-operation. Expert knowledge in TDG means that the administrative sector has high-level dangerous goods transportation expertise access. Coherence of processes means that the most essential challenges have been identified, a vision for them has been created and that continuous and systematic identification is continued in the future. Cooperation in TDG issues encompasses collaboration and joint efforts between authorities and private operators at the local, national and international level.

#### **Mission**

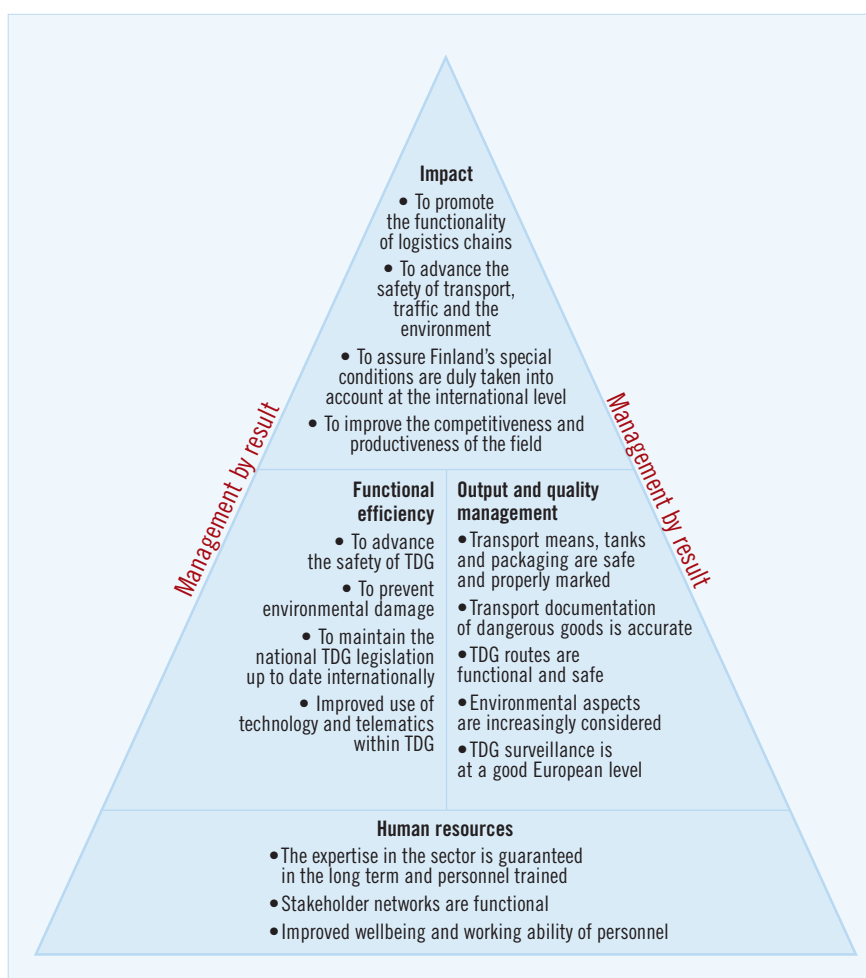
The Ministry of Transport and Communications promotes transport safety and the sector's profitability as well as prevents the occurrence of environmental and health consequences through active cooperation and increased efficiency of its operations.

### **The Ministry's strategic TDG objectives**

The primary strategic aim is to ensure functional and safe logistics chains for goods classified as dangerous goods serving industry, trade and citizens. A primary objective of the Ministry's TDG activities is to ensure that international agreements and EU directives are implemented into Finnish legislation and operators are informed of any changes.

The Ministry's aims and objectives are depicted in detail in the prism of results on the right. When setting the goals, the aims and objectives set by the administrative sector's civil service departments and institutions' have been observed, as have overarching and broader policy objectives and transport policy lines. When setting the objectives, particular attention has been paid to ensuring that operative challenges of the field have been considered. Policy targets are defined to efficiently serve the operators in the sector.

#### **The Ministry's TDG goals**



## The TDG vision



### Vision 2015

*The authorities supervising dangerous goods transports, the private sector's commercial and industrial operators and the cooperation forums have a globally first class knowledge level. The Finnish TDG traffic is functional, profitable and efficiently serves the needs of citizens, trade and industry, whilst respecting the environment and human safety. Finland is a leading country in the safe transport of dangerous goods.*

The Ministry of Transport and Communications' TDG vision encompasses five focal themes: The functionality of the logistics chain, safety, training and information, legislation and human resources. The Ministry has identified, and actively promotes, the following topics within each theme:

### *The functionality of the logistics chain:*

- Logistical chains, including transferral points from one mode of transport to another, form a functional and safe entity.
- The rules and regulations governing each mode of transport are, as far as possible, harmonised.
- The norms for railway transport to the east and to the west have been harmonised. The renewed TDG agreement with Russia enhances the functionality and safety of transports to and from the east.
- For road transports to the east, the ADR agreement is applied and the aim is to solve any practical issues through separate negotiations.





**Continuous safety enhancement:**

- Safety is considered in all activities, including technical improvements of the means of transport, tanks and packaging.
- Technology and telematics is increasingly utilised in TDG.
- Supervision and surveillance will increasingly focus on preventive and holistic safety enhancing work.
- The maintenance and development of transport routes is ensured, with particular attention being paid to main TDG routes.
- Level crossings are removed at an accelerated rate, especially from main TDG routes.
- Operators across the transportation chain each fully comprehend their responsibilities.

**Training and knowledge:**

- All TDG sector operators have been trained to a level required by their responsibilities
- TDG knowledge and general safety attitudes are improved.
- The management level at companies receiving, sending and transporting dangerous goods, know their responsibilities and with their actions aim to improve safety across the transport chain.
- The companies sending, transporting, packing, unpacking and receiving dangerous goods have a properly trained safety adviser, responsible for coordinating the safety of the TDG activities. All other relevant personnel know their duties and responsibilities.
- Road haulage drivers have a valid ADR-certificate and actively update their knowledge.

**Legislation and other norms have been effectively implemented across the field:**

- Legal requirements and obligations are known and comprehended by all operators and authorities engaged in surveillance or supervision across the transport chain.
- In particular consignors and parties indirectly involved in TDG have an improved knowledge of TDG related legal requirements.

**Human resources:**

- The administrative support processes and planning and monitoring systems form a functioning entity.
- The processes are functional and promote safe, economic and profitable operations across the entire TDG sector.
- Personnel well-being and working ability are at a high level.
- The safety management systems in use by operators take into account and support the safety of TDG activities.



## Goals and actions

### Focal themes

The Ministry's TDG policy goal follows the Ministry of Transport and Communications' general transport policy goals to promote functional, effective and safe transport. Transport safety is enhanced through a combination of promoting general traffic safety and improving the safety of the infrastructure as well as through actions and requirements directed at the field's operators. Dangerous goods themselves rarely cause accidents, but can as a consequence of an accident cause extensive damage. Preventive measures, improving knowledge and building an advanced safety culture throughout the transport chain comprise a consistent focal theme for all the Ministry's target areas. Safety can also be enhanced through improving technical devices and protective measures. Accordingly, a focal point of the Ministry focuses in its research work is on developing and utilizing new technology for TDG.

### Critical success factors

In order to achieve the goals and realise the vision, the functional cooperation and open communication between various authorities, administrative sectors, and trade and industry is a critical success factor. When building the strategy, the Ministry has actively sought to take into account the challenges and wishes of the various stakeholders across the field. In addition to cooperation in defining the strategy, cooperation is promoted in the daily work done by various advisory committees and joint working groups as well as through an active dialogue between the operators in the field.

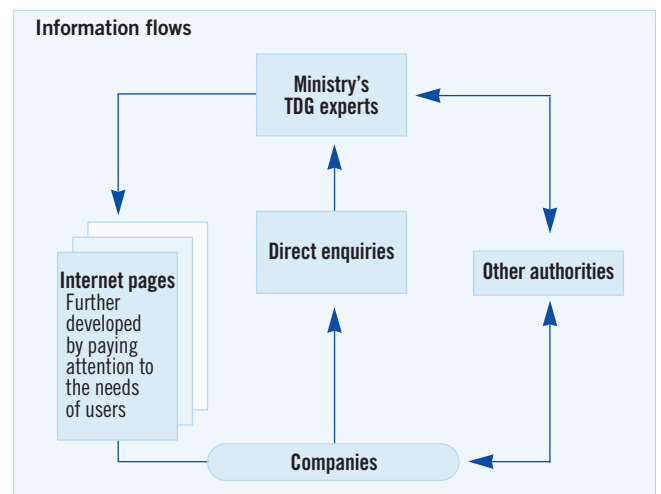
A variety of companies operate within the transport chain of dangerous goods. The knowledge and implemented precautionary measures of individual operators directly impact on the safety and effectiveness of individual consignments. For example, in addition to the actual transport of goods, the logistic chain encompasses monetary and information chains. These may have a different structure from the physical TDG chain. In order to assure safety, the various chains must function without

obstacles. This means that correct documentation accompanies the transported goods and personnel handling the goods are aware of their responsibilities. Individual operators can develop the safety of their operations and thus have a positive impact on the general development of the sector. The safety advisors within the companies have a key role in this.

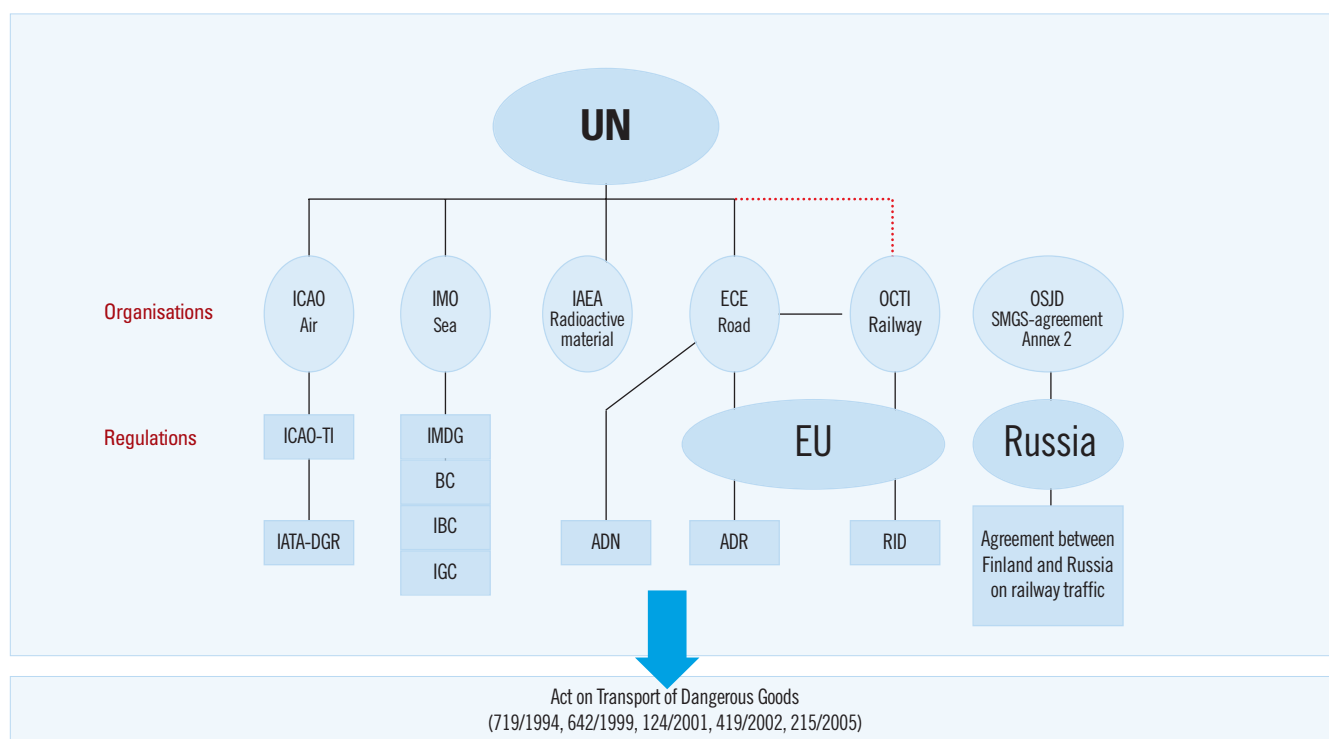
### Actions

The strategic work, initiated through the formulation of this strategy document, will henceforth focus on identifying particular actions and actual measures from the identified focal themes and priority areas.

The strategy work has already raised the issue of the diverseness and frequent updates of legal requirements which can cause problems to such operators, whose core business is not based on TDG. Amongst other issues, the development of information dissemination has been identified as a key area for development. The Ministry will evaluate and potentially intensify informative activities, for example in the area of the transport of piece goods, so that the required information is easily available and delivered in an easily understandable and up to date format.



## The international nature of the legislation is a directive force



### International agreements

Key activity areas of the Ministry include influencing and contributing to international agreements, preparing national legislation as well as ensuring legislation is up to date and legal requirements are effectively disseminated to the target audiences. Due to the global nature of transportation, the national regulations for TDG are to a very large extent based on international regulations and agreements, as depicted above.

Monitoring the development of international legislative trends, advancing Finnish interests as well as outlining, editing and updating the national legal framework form a large part of the Ministry's TDG experts' day to day work.

The TDG regulations are constantly renewed in order to improve transportation safety, take new technical and scientific developments into account and to adequately prepare for new recognised threats. The national TDG regulations is by its nature a framework law and regulates all modes of transport and transport relating activities such as loading, unloading and packing. More detailed transport mode specific regulations and norms are given in decrees and decisions made by administrative authorities specified in the law. The rules and regulations are largely based on international agreements and EU legislation.

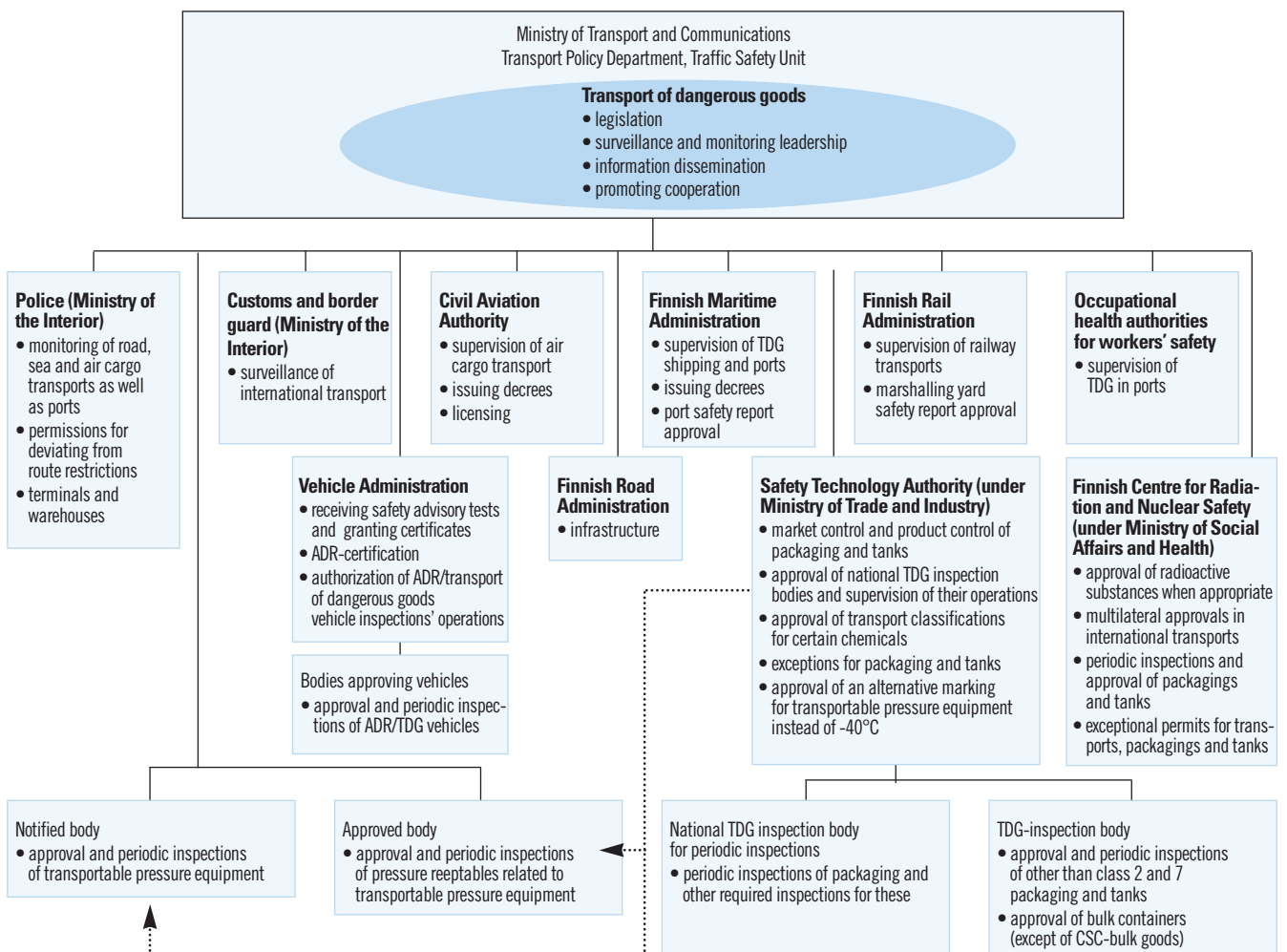


## TDG traffic: Demanding teamwork

### Authorities, distribution of responsibilities and roles

The global nature of the field poses both legal and practical challenges to the transport of dangerous goods. Below, the

authoritative and other organisations performing administrative duties are outlined in accordance with their duties and responsibilities as defined by the Finnish TDG law.

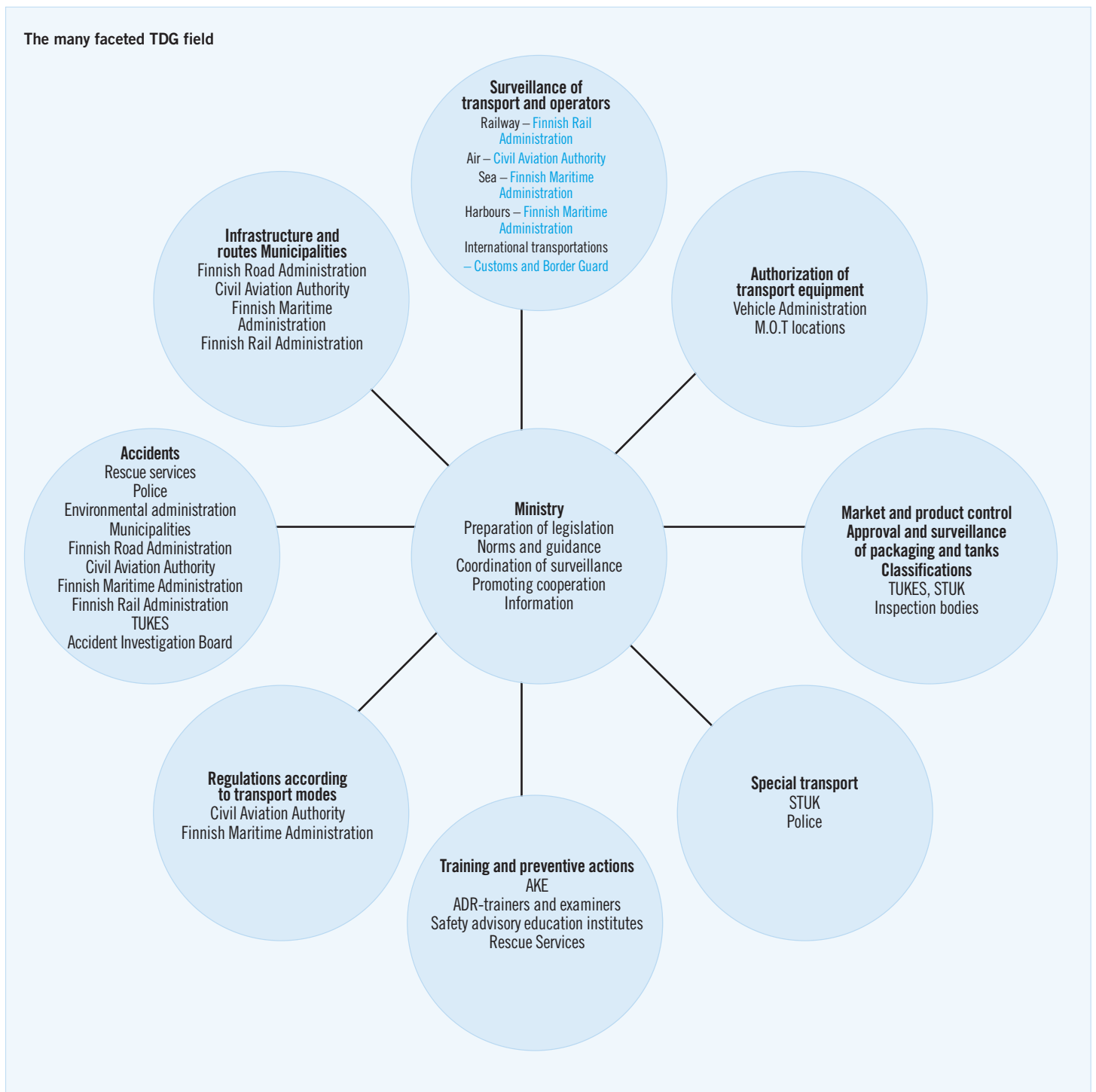




### Safe and profitable transport through cooperation

Enhancing the functionality and profitability of the logistics chain is a central aim of the Ministry. Achieving this is particularly challenging due to the diversity and internationality of the sector and presence of different modes of transport.

Several authorities have surveillance and supervision duties for this diverse field. Smooth and cooperative works by the different authorities promote both profitability and safety. The various actors of the TDG field according to the various areas of responsibility are depicted below.





## A many faceted field with common goals

There are numerous freight and haulage companies and a large group of authorities active within the TDG field. In the rapidly changing modern society, increasing demands on the logistics are made by trade and industry in the name of cost-effectiveness. Stock levels are diminishing and increasingly kept on wheels rather than in warehouses. Both stock management, transports and logistic management are increasingly outsourced.

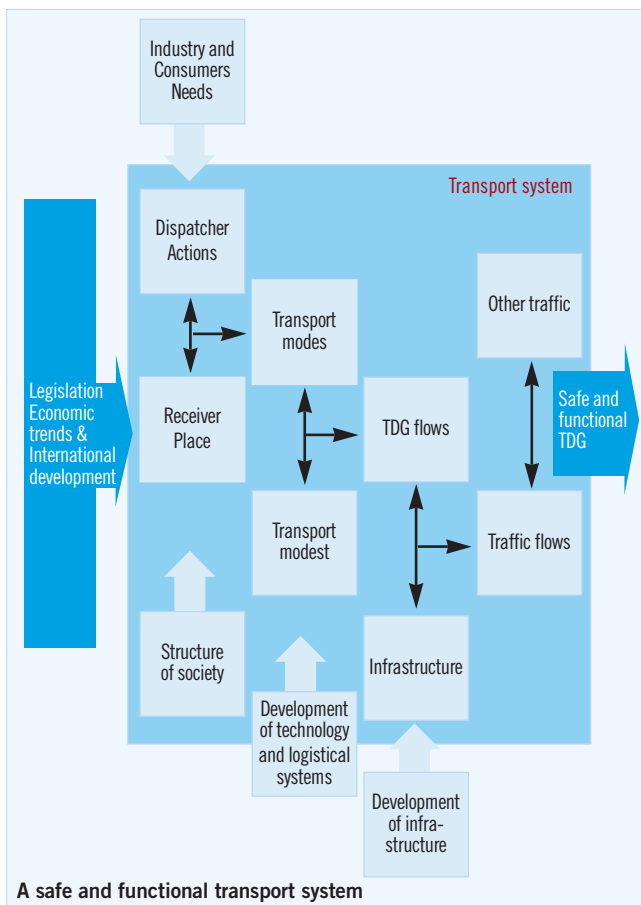
It is in the interest of both the operators and the authorities to ensure a safe and functioning transportation chain. However, the features of the sector pose great challenges to achieving

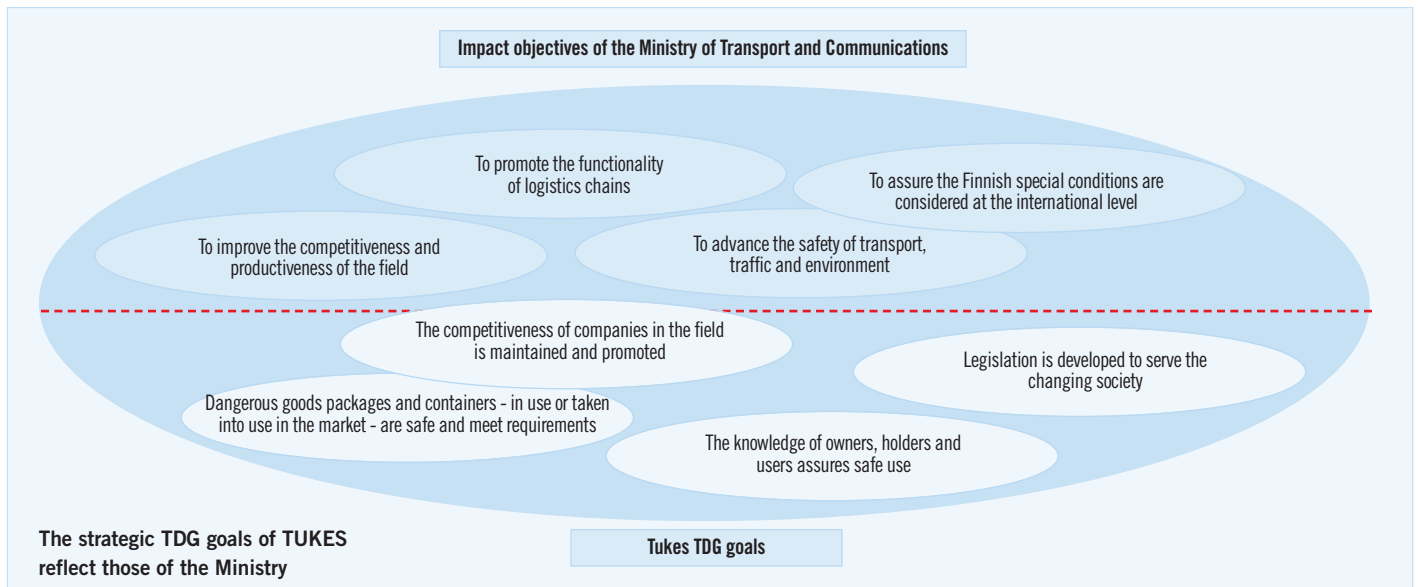
these goals. This is particularly pertinent for the transport of piece goods, as the various participants in the transport chain do not necessarily engage in TDG activities on a daily basis. The challenge is particularly large related to road transport. However, it also emerges in the other modes of transport, particularly as issues related to insufficient documentation and problems with securing the load during transport. One of the main goals of the Ministry is to advance training and strengthen the level of knowledge concerning the central requirements of TDG. For example, the usability of the Ministry's internet pages as a viable source of information and the format of how the information is distributed to the authorities will receive particular attention.

### Actions across administrative sectors – the authorities

Four different administrative sectors regulate dangerous goods: Act on Transport of Dangerous Goods (Ministry of Transport and Communications), Act on the Safe Handling of Dangerous Chemicals and Explosives (Ministry of Trade and Industry) and the Chemicals Act (Ministry of Social Affairs and Health and Ministry of the Environment). In addition, several acts and norms define the boundary conditions of the field, including the special regulations concerning radioactivity (Ministry of Social Affairs and Health), which apply to the manufacturers, senders, transporters and receivers of radioactive materials.

The responsible authorities for each transport mode and also the important roles of the environmental authorities, the rescue services, and the authorities carrying out surveillance and reactive supervision (police, customs and border guards) and their relations to TDG are presented elsewhere in this publication. Two other authorities with main responsibilities and roles in relation to TDG can be recognised: The Radiation and Nuclear Safety Authority (STUK), and the Finnish Safety Technology Authority (TUKES) have significant responsibilities relating to the safety of TDG. Their responsibilities and roles are described on the left.





**STUK** acts as the radiation safety authority, research institute and expert. It monitors the production, trade, import and export of radioactive materials and is within this area also responsible for transport surveillance and supervision. This includes approval of packaging, controlling operations at the sending and receiving end as well as issuing permits for transports requiring special arrangements. The majority of the transported radioactive goods are used by the health care sector. Overall, some 20 000 packages of radioactive materials are transported annually. With the increasing threat of terrorism, sabotage and smuggling, STUK is focusing and actively investing in preventive actions as well as in pre-emptive and comprehensive information dissemination. STUK also operates a 24-hour emergency call-out system.

STUK's vision is that the radiation and nuclear safety in Finland is of a high standard and acts as a progressive pathfinder within an international context. The highly international nature of the operations and the global trademark of TDG do not differ from STUK's other responsibilities: on the contrary, the highly international face of the sector enables active exchange of information with leading international experts and thus fosters safer operations. The focal theme of cooperation across administrative borders advocated by the Ministry of Transport and Communications is fully endorsed by STUK. In particular, STUK focuses on further developing its cooperation with the police, customs, rescue services and the border control.

**TUKES** is an authority operating under the Ministry of Trade and Industry. Within the field of TDG, the focus of TUKES is related to ensuring transport tanks and packaging meet the required norms. TUKES also acts as the authoriser and controlling body for TDG inspection bodies. The Finnish TDG legislation specifies the required minimum standards relating to dangerous goods transport, including the requirements relating to design, approval, production, taking into use, actual use, regular inspections, servicing, repair and registration.

TUKES is also the responsible authority for process safety for the industry sectors that produces, uses or stores large amounts of chemicals. The strategic targets identified and set by TUKES closely reflect those of the Ministry of Transport and Communications, as the above figure shows.

### **Actions across administrative sectors – advisory committees**

The role of advisory committees in joint or cooperative actions is central. In addition to the Advisory Committee on the Transport of Dangerous Goods, the Advisory Committee on Safety Technology (TENK) and the Advisory Committee on Chemicals (KENK) consider TDG issues. Various other joint advisory committees with members from across administrative borders, further advance the exchange of information and setting of common goals.

**The Advisory Committee on the Transport of Dangerous Goods** acts in a supporting role to the Ministry of Transport and Communications in matters concerning the transport of dangerous goods. It monitors the national and international development and trends related to TDG legislation and norms, initiates safety enhancements and issues statements to both the Ministry of Transport and Communications and other authorities. The Advisory Committee has representatives from the Ministry of Transport and Communications, the Rescue Department of the Ministry of the Interior, the Ministry of Trade and Industry, the Finnish Environment Institute, the industrial safety department of the Ministry of Social Affairs and Health, the Armed Forces, TUKES, STUK, the Finnish Maritime Authority, the Civil Aviation Administration, the Finnish rail operator VR, The Chemical Industry federation of Finland, Finnish Oil and Gas Federation, Finnish transport and Logistics, Transport Workers' Union AKT r.a., representatives from the merchant fleet as well as from the Finnish Freight Forwarders association

**The Advisory Committee on Safety Technology (TENK)** acts under the Ministry of Trade and Industry. The main authority for technical safety in Finland is the Safety Technology Authority, TUKES. TENK deals with matters related to the use and storage of chemicals. This includes matters touched upon in the TDG legislation, such as the loading and unloading from storage tanks. The focus of TENK is, in particular, on the development of preventive actions.

**The Advisory Committee on Chemicals (KENK)** is appointed by the Finnish government and acts under the Ministry of Social Affairs and Health. KENK is the main cooperative body dealing with the classification of chemicals. Representatives on KENK encompass the main authorities concerned with chemical control together with representatives for trade, industry and the main employees' central organisations.

## TDG traffic – A part of a functional modern society

### The TDG sector: A logistically challenging field

Within transport contexts, dangerous goods are considered to be such goods that can cause harm to people, the environment or property due through being explosive, flammable, radioactive, toxic, oxidative, corrosive or some other such chemical specific property. The legislation governing TDG extends to cover the entire transport chain from the sender and hauler to the receiver.

Dangerous goods are transported mainly by specialised companies using special equipment: Tank vehicles, tank wagons or chemical bulk carrier ships. Dangerous goods are also transported as piece goods in all transport modes. Such piece goods consignments are often shipped as part of general freight. Although the relative volume of piece goods is small, the actual consignment number and the number of involved operators is large. In addition, piece goods are often transported through densely populated areas, creating specific challenges to the carriers, senders, receivers and responsible authorities.

The below picture shows examples of some typical road freight chains of piece goods. From a national economy point of view, it is vital that the entire TDG transport chain – regardless of transport mode or the complexity of the logistics chain – is designed so that the assignments reach their destination on time, safely and efficiently whilst creating profit for the distributors. A particular challenge of the logistic chain is the starting point: especially in small companies the sender is not always fully aware of TDG requirements. As the chain is often international and utilises various transport modes, responsible, correct actions undertaken by the sender have a key role in overall safety and success of the transport.

### Functioning transport of dangerous goods is an integral part of our economy

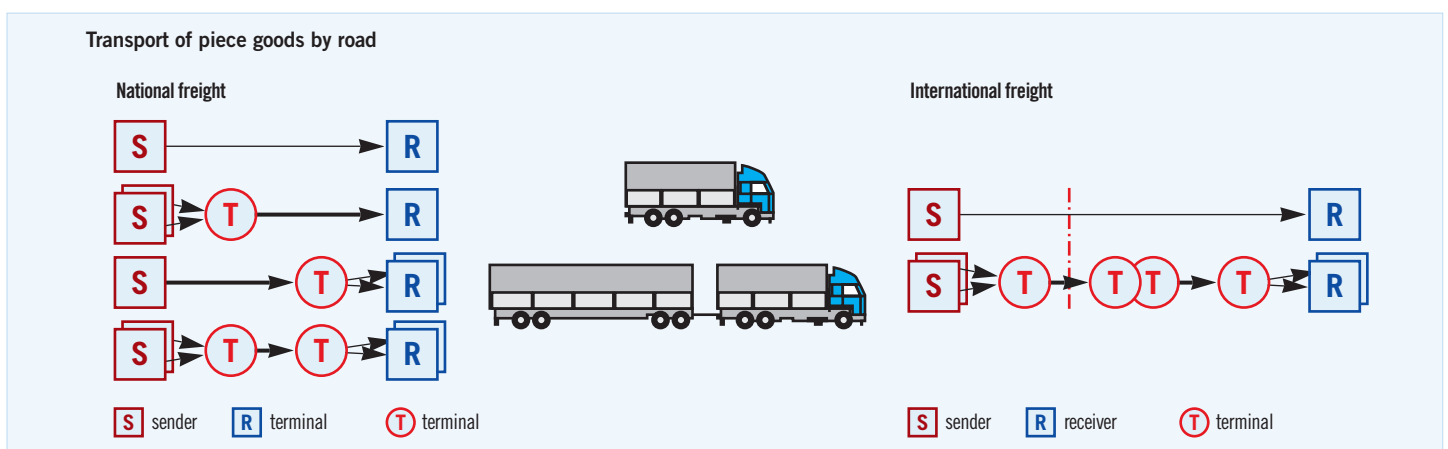
The Finnish economy is highly dependent on chemicals. The chemical industry is, by gross production value the third largest industrial sector

in Finland. Materials classified as dangerous goods are needed in, amongst others, the following industrial sectors: Electronics, fertilizer, forest machinery, medical, metal paint, plastic and rubber. Explosives and radioactive materials are also classified as dangerous goods when transported, as are pesticides and similar products for agriculture and forestry. Some ordinary consumer goods also fall within the remits of dangerous goods, including paints, aerosols and some detergents and cosmetic products.

Most dangerous goods are, at some point, transported, for example from the site of production to the site of use, both in Finland and internationally. In 2004, the value of the actual chemical industry's export was 6.2 billion euros and the import value 6.6 billion euros. The imported goods are mainly different raw materials, including crude oil. A quarter of the imports are so called base chemicals. Other main imports are medicines and oil and plastic products – without these, our society would not function. The continuous availability of dangerous goods to meet the needs of both the industry and private consumers is a vital for the Finnish economy.

Due to societal changes and an ever increasingly competitive market, the stocks of both raw materials and products kept by industry and trade are minimised. Hence the smooth functioning of our society is increasingly dependent on successful and punctual transport of products and raw materials. Thus, it is vitally important from a national economy point of view to ensure the logistical chain is functioning and efficient.

TDG takes place on roads, railways, sea and in the air. The logistical chain is often international. The transport often requires the use of multiple transport modes, intermediate storing or crossing of national borders. In order to ensure that the complex chain is functional, the Ministry's work aims, where possible, to harmonise and bridge the differences between national laws and those governing the different transport modes.





## ***Safety is the corner stone of all actions***

### ***Traffic safety***

The safety of TDG is most efficiently improved by improving the general safety on the roads, railways, seas and in the air. Traffic safety is considered as one of the most important quality criteria of our transport system and an integral part of citizens' overall safety.

#### **The goals set by the Ministry of Transport and Communications for the whole administrative sector are as follows:**

- The weakening traffic discipline and the increasing attitude of indifference relating to road traffic must be reacted upon.
- The use of safety enhancing innovations and renewal of the car fleet is to be promoted.
- The level of preparedness to respond to various different extreme weather conditions and the dangers caused by them and the robustness of the infrastructure must be increased to enhance safer traffic conditions.
- The control of safety associated with the rapidly increasing volumes of sea transports must be developed in the fields of trans-authority collaboration, traffic guidance and ship quality requirements.
- The transitional traffic and the traffic between Finland and Russia should be mapped. Rail transport should be utilised more.

The vision presented in the *Safety Program for Road Traffic 2006–2010* is based on the principle, that people both tend to make errors and have a poor ability to accept the consequences of accidents. The same principle applies to other forms of transport. TDG transport – in all modes of transport – has to be developed according to human needs and abilities in such a manner that errors do not lead to serious consequences. This means investing in preventive actions and safe routing, broader use of technical aids, ensuring the used packaging and tanks fully meet legal requirements. It also entails increasing the current level of knowledge and understanding, for example in relation to standards for securing the cargo.

### ***Requirements for infrastructure and route planning***

The roads, railways, routes, channels and other infrastructure should be in good condition. Those authorities and operators of the infrastructure that are responsible for the upkeep have a key role to play. Route planning is increasingly emerging as having an important role to play in relation to traffic and environmental safety. Any route restrictions for transport of dangerous goods are under the jurisdiction of the municipalities and the Ministry (road) and the Finnish Rail Administration (rail).

### ***Transport safety***

TDG safety is based on the assumption that the general rules concerning traffic safety are followed. For example, strict abidance of the regulations concerning driving and rest periods is considered essential. Cooperation and joint responsibility acceptance between all partners in the transport chain is needed, as is further collaboration between the various operators and authorities.

### ***Preventive actions and preparations for accidents***

The actual transported chemical or material classified as dangerous goods is very seldom the actual cause of an accident. However, the consequences of accidents where dangerous goods are part of the cargo may be significant due to uncontrolled escape of the chemical. Both relating to prevention of accidents and mitigation of consequences, the cooperation of the various actors plays a key role.

In order to increase TDG safety, the Ministry emphasises measures aiming at increasing the general safety of heavy vehicle traffic, preventive actions and guidance. The cornerstones of functioning and safe transport of dangerous goods are a sufficient level of knowledge and a positive safety culture – this is equally true for all parties participating in



operative actions. Another central issue relating to preventive actions is the proactive consideration of traffic and weather reports when planning daily operations.

As well as being a central theme for the Ministry and the authorities for the different transport modes, the focus of the Rescue Services is more and more on preventing accidents and providing training. The core function of the Rescue Services is of course the organisation and implementation of rescue operations. This requires accurate and proper preparedness. The Rescue Services have since 2005 been the responsible authority for the safety relating to small scale production and storage of chemicals. At the same time, the interaction between the operator and the Rescue Services has increased and guidance has become an increasingly important tool for advancing safety. In their work, the Rescue Services are equally prepared to deal with accidents involving dangerous goods occurring in transport or in the process industry.

### ***VAKSU – from a research project to a practical tool***

*When an accident happens it is important that the initial mitigative actions are as efficient as possible. This must take into account both the properties of the chemical and the receiving environment. In its research work, the Ministry of Transport and Communications invested in the development of a tool for planning the transport of dangerous goods – the VAKSU-system. Using the soft ware tool, transport routes and rest or refill sites can be planned so that environmental vulnerability and ground water areas are taken into account. The tool is also intended to be used to guide the choice of primary mitigative actions immediately following an accident so that environmental impacts are minimised. The Ministry of Transport and Communications, the Ministry of Social Affairs and Health and the Ministry of Environment are currently negotiating on taking the tool into use and possibilities to use the tool more widely. The goal is to bring the system into use on a national level as a practical tool for planning and mitigation, to be used by the Rescue Services, the environmental authorities and the transport operators alike.*

### ***Daily control and surveillance of transport of dangerous goods***

Daily control of the road transport of dangerous goods is based on the Council directive on uniform procedures for checks on the TDG by road and is carried out using a specific form. The results are reported annually to the EU commission. The police, customs and border control are jointly responsible for the monitoring of dangerous goods transported across our borders. The work is made challenging due to the differences in the educational background and language abilities of the drivers for international haulage companies. Differences in the regulations governing the securing of cargo and the significant increase in the volume of piece goods transported by sea add their own challenges to the surveillance work.

In relation to the TDG sector, the focus of the police is, in addition to border crossing activities, largely on the surveillance of vehicles as part of the overall surveillance of heavy vehicle traffic. More violations are uncovered relating to the transport of piece goods than in tank vehicle transport. The current trend is towards more targeted surveillance of recognised problem areas. The securing of the cargo according to the regulations is clearly still a problematic area, in which frequent violations are unearthed in inspections both at the roadside and in ports. The cargo has to be both bound securely and supported at the point of origin, as this has a key role to play in the overall safety of the freight consignment. This is, and will continue to be, a main focal area of surveillance and control. An overall aim is to support the increase of places that are suitable for heavy vehicle traffic surveillance, especially in the vicinity of major towns. The relevant responsible authorities and the occupational safety authority carry out the control of TDG for other transport modes.

### ***Environmental safety – an essential part of all operations***

The environmental policy of the Ministry of Transport and Communications is a part of the general transport policy of the Ministry and it is based on the principles of sustainable development. Continuous promotion of environmental safety is the common goal of all administrative sectors. Environmental problems and questions of the 21st century are often global and complex. In order to solve these, effective integration of environmental issues, both into operational activities as well as into many sectors of society, is required. Close cooperation between various administrative sectors and operators is a base requirement. Environmental safety is advanced and enhanced through technical development as well as through increasing knowledge and know-how. Primarily, the various authorities work within their own sectors to encourage and support preventive actions and in case of accidents minimise the damages efficiently. Supporting cooperative efforts and joint actions is also an important goal for the Rescue Services, the environmental administration and other relevant authorities.

The TDG legislation has a significant positive impact on environmental safety. It focuses on preventive risk management; including putting into use more demanding preventive measures and standards. Risk identification and utilisation of pre-emptive risk management measures are promoted and advanced through increasingly detailed requirements for the Safety Plans for marshalling yards, ports and haulage companies.

A main objective of the environmental administration in relation to TDG is to protect the safety of ground water areas. A central goal of the Ministry of Transport and Communications concerning environmental issues is to prevent the contamination of air, waters and soil. Active cooperation takes place between the Ministry of Transport and Communications, the environmental administration and other actors responsible for protection of ground water. An example of this is a recent agreement on collaboration and exchange of information between The Road Administration and the Finnish Environment Institute. The vision is that the protection of ground water areas against accidental release of chemicals is achieved through protective barriers on vulnerable road stretches, and that these are installed and maintained and their functionality monitored. The main reason for using these protective barriers is to prevent the road salt used during the winter from leaching into the ground water. At the same time, these structures act as barriers for potential chemicals entering the ground water reservoirs as a consequence of possible TDG accidents. Currently, there are approximately 250 km of these barriers installed. For example, of the 28 km of public roads over ground water supply areas, 25 km is protected. In the future, the Road Administration will increase the protective construction network primarily into such areas of ground water that have been identified as most urgently requiring protection.

**The environmental administration has set the following actions as their goals concerning TDG. These reflect the goals set by the Ministry of Transport and Communications:**

- The transport routes for dangerous goods are planned in such a manner as to avoid the most significant ground water areas and water supply stations.
- The speed limits set in high risk areas reflect the focus of preventing accidents.
- Ground water areas are marked next to roads and railways and the transport companies are informed of this.
- There are no unsupervised level crossings in ground water areas.

**The current good state of TDG is portrayed by the statement by the Finnish Environment Institute concerning safety in the field: “Considering the volumes of transport of dangerous goods, so far this has not caused any significant damage to the environment.”**

### **Safety enhancing TDG goals**

The vision of traffic and transport safety is that dangerous goods are transported safely, properly secured and accurately labelled and marked. The whole transport chain has to be designed in such a way that the cargo arrives safely in its final destination.

**The realisation of the vision is supported by the following goals, which need active cooperation of the whole field in order to be achieved:**

- The safety advisor system comprehensively extends to the dispatching parties and the safety regulations and anti-terrorist actions required have been implemented by operators.
- Corporate quality and operational systems extend to incorporate TDG safety.
- Everybody participating in TDG operations has received adequate training and special attention is paid to the continuous improvement of the safety culture.
- The use of innovative technical aids, processes and systems is enhanced both through the research programs of the Ministry of Transport and Communications and through cooperation with operators in the field.
- Development and application of global and European standards (ISO/CEN) is done in close collaboration with industry.
- The VAKSU-system is taken into use by the Rescue Services, the environmental centres and transport companies.

## Review of the different transport modes

### Road transport



#### Current status

Finland is a country of long distances and the proportion of road transport of all transports is high. In 2002, TDG by road was 12.3 million tons, which is 4% of the whole volume of all goods transported by road. Road transport is on the increase and most transported dangerous goods are liquid fuels or other class 3 flammable liquids (63%).

In 2002, about 1.7 billion ton kilometres of road transport of dangerous goods took place. The average transport distance was 137 km. On roads most of the dangerous goods are transported by tank vehicles (88%). Transport of dangerous goods is supervised by the police as a part of general monitoring of heavy traffic. Surveillance and control duties are also carried out by the customs and border guards. In 2005, a significant part of the recorded offences related to issues with securing the cargo and with special equipments, such as fire extinguishers.

All heavy vehicles are inspected annually. Currently 25% are rejected, which is an indication of the ruthless efficiency of the inspections. In addition, annual TDG inspections are required for vehicles transporting explosive materials and tank vehicles. The tanks used for transport are inspected regularly by authorised inspection bodies in accordance with the type of tank, a typical inspection period being every three years.

Safe and professional road transport is promoted through training all persons engaged in TDG in accordance with the requirements of their duties. Specific competence requirements are in force for both drivers and the safety advisers responsible for documents and safe operations. Every person driving a TDG cargo

over the limited quantity has to have an ADR-certificate. Both the ADR-certificate and the Safety Advisor Competence are renewed every five years. In Finland, there are about 30,000 persons registered with a current ADR-certificate, and the number of approved Safety Advisors is at the time of writing 1,118.

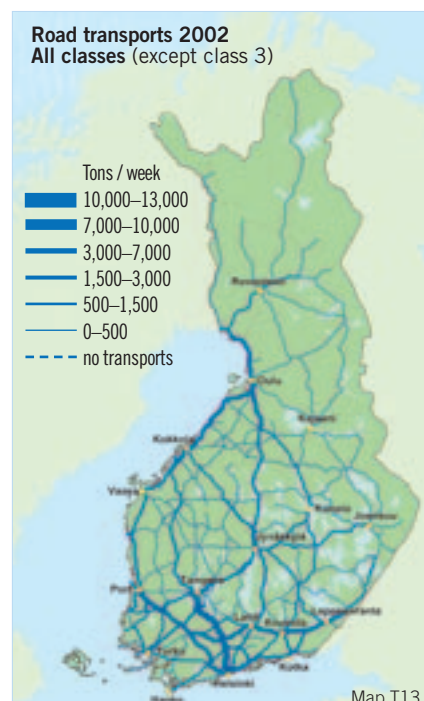
#### Challenges and future trends

The haulage sector is highly competitive and professional drivers are hard to find. The interest in working in road transport is decreasing and, according to the entrepreneurs, the margins are small due to tightening transport agreements and terms of delivery. Typical offences and unhealthy practices in the transport sector include the violation of the driving and rest period requirements, overloading, unrealistically tight time schedules and

speeding. The incomplete understanding of the consignee relating to their responsibilities sets challenges, for example for the safe delivery of heating oil. Increase of traffic volume is in itself already a threat to safety. Ever tighter schedules of TDG piece goods assignments is a specific challenge due to the large group of sending, receiving and transporting operators. A shortage of rest and stop sites and traffic control points suitable for checking TDG vehicles is a problem, particularly near the larger towns.

#### Strategic guidelines

In addition to the previously mentioned strategic TDG goals, the Ministry of Transport and Communications considers transport of piece goods a special challenge and has focused on this. The Ministry will continue to invest more into providing and more efficiently target dissemination of information to those operators most needing it. In accordance with the Ministry's Traffic Safety Program, the heavy vehicle traffic control performances are monitored in conjunction with surveillance data from the police, customs and border guards. In order to achieve the Ministry's vision, the decrease in number and minimisation of consequences of accidents involving professional transport parties will receive special attention. The Ministry will in particular enhance cargo securing through lobbying for the harmonisation of regulations across the EU area. The Ministry will also evaluate the potential benefits and costs (implementation and maintenance) to be gained from implementing various registers such as a Safety Advisor register.





Review of the different transport modes

Railway transport



Current state

In 2002, TDG by rail was 6.1 million tons, most of which was done using tanker wagons. The number of tanker wagon journeys in Finland is annually over 110,000. The busiest railway sections are those from Vainikkala via Kouvola to Kotka, Hamina and Kilpilahti. The proportion of dangerous goods of the whole rail cargo transport was 15% during 2002. The total transport in 2002 was 1.6 billion tonne kilometres and the average transport distance was 307 km. Most of the cargo, 69%, consisted of liquid fuels or other flammable liquids (class 3), corrosive materials (class 8) represented 15% and gases (class 2) about 11%. Overall TDG volumes in the eastern transit traffic was 4.6 million tonnes in 2002, of which about 3.5 million tons (76%) were carried by rail.

Railway transport is, both on common railways and privately owned industrial and port area tracks, currently controlled by the Finnish Rail Administration. At set intervals, Inspection bodies check and approve the packaging and tanks used in transport. Currently the Finnish Rail Administration specifically focuses on the prevention of accidents, amongst others through the design and implementation of safety management systems. So-called chemical marshalling yards are required to have Safety Plans approved by the Finnish Rail Administration. In addition, the Finnish Rail Administration inspects

these yards every three years. In the future, these responsibilities will be transferred to the Finnish Railway Agency.

Challenges and future trends

The safety has improved significantly, particularly in the eastern transit traffic, during recent years. Influencing factors include the improved condition of equipment and rolling stock together with more efficient and technically advanced monitoring and inspection. For example, monitoring the fill level of tank wagons and radiation safety has intensified and investments into inspection bridges and banded areas have been made.

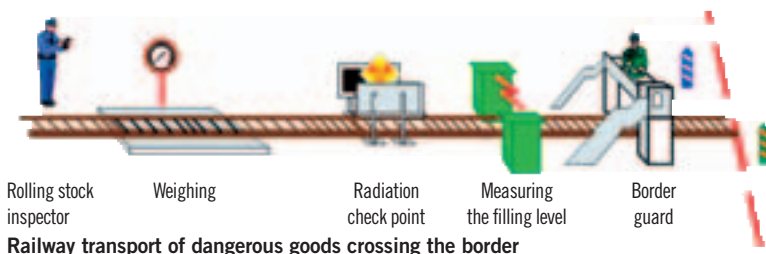
TDG by rail is currently slightly on the decrease. The Russian ports are being developed and the Russian target is to concentrate transport through their own ports. This is highly likely to have an influence on Finnish traffic levels, especially concerning the amounts of transit transport.

The new Finnish Railway Agency, starts its work in September 2006, and will be located in Helsinki. It will have responsibility for the safety and administration of the railway traffic. Most of the duties of the new Agency, such as monitoring TDG and the marshalling yards and approval of the Safety Plans, will be transferred from the Finnish Rail Administration, which will continue to act as the holder and maintainer of the public railway network.

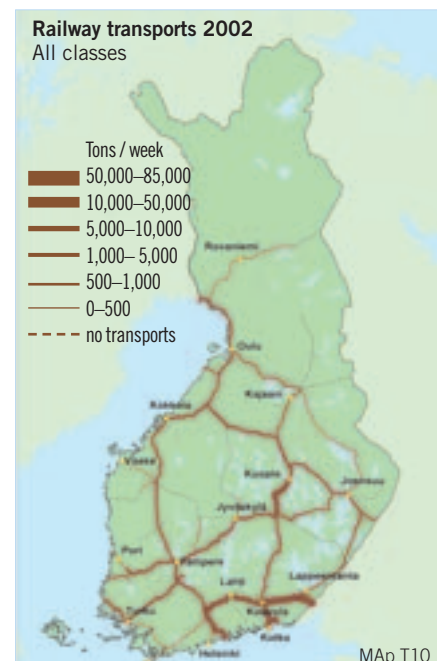
Currently, there is only one railway transport operator. The railway transport is, however, being opened up for competition and in the future it is likely other operators will enter the field.

Strategic guidelines

In addition to the previously described strategic TDG goals of the Ministry, specific railway goals include the harmonisation of the agreement with Russia concerning cross-border transport of dangerous goods in accordance with the RID regulations. As the competition opens up important selection criteria for new operators will include the risk management methods and safety management systems. In accordance with the Ministry's environmental policy, the competitiveness of environmentally favourable transport modes is a development focus. Hence it is seen as vital to develop the use of railways as a financially viable, competitive and safe means of transport for dangerous goods cargo.



Railway transport of dangerous goods crossing the border



MAp T10

Review of the different transport modes

Transport by sea



Current status

Transport by sea is primarily governed through international codes, conventions and agreements. During 2002, the TDG by sea was 39.2 million tons of which transport within Finland was about 4 million tons. The busiest ports in Finland are Kilpilahti, Naantali, Kotka, Helsinki, Pori, Rautaruukki and Hamina. Transport on inland waters took place only through three ports (Varkaus, Savonlinna and Lappeenranta). Most of the TDG by sea is transport of bulk cargo, especially crude oil and oil products (66% of the total volume). The share of TDG piece cargo is currently about 0.7 million tons, or 2% of TDG by sea. The Finnish Maritime Administration is the relevant authority. It participates in daily surveillance and monitoring, including spot checks relating to the safety of ships, competence of the crew and issues related to the handling and stowage of the cargo. The customs, police, border guards and the industrial safety authorities also have important duties relating to the safety affecting sea transport within the port areas. The Finnish Maritime

Administration together with the Ministry represents Finland in international shipping forums.

Challenges and future trends

TDG by sea increased during 1997–2002 by 15%. Notably, the volume of piece goods shipments increased significantly during the same period (+61%). This sector is also predicted to continue growing in the future.

Environmental safety has been a specific focal point for development both within IMO and the EU. The renewed code for environmental protection at sea, the MARPOL Convention Appendix II and the application of the accordingly changed International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) will be implemented from January 1st 2007. In the future, the changes are considered likely to lead to improvements to safety on seas, more efficient preventive protection against environmental hazards and also to minimal restrictions relating to shipping.

As an example of the increasing role of technology in the areas of safety and

communication is the information management system for port movements, PortNet, administered by the Finnish Maritime Administration and maintained by the PortNet community, consisting of the 20 largest Finnish ports, the customs and the Finnish Maritime Administration. The system collates, amongst other information, data concerning port visits, and notifications of dangerous cargo 24 hours prior to arrival in port. This enables the authorities to find out what type of cargo is transported where and when. In the future, the role of technology and telematics is likely to increase.

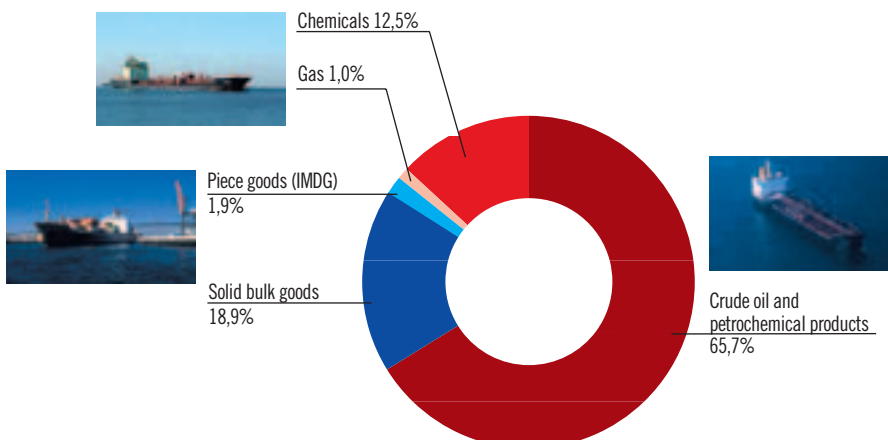
The new decree by the Finnish government concerning transport of dangerous goods and their temporary storage in ports requires a safety report from certain ports. This is approved and monitored by the Finnish Maritime Administration. The first safety reports have to be filed with the Finnish Maritime Administration by January 1, 2007. After the implementation of the act the safety of the packed dangerous goods and internal transferrals is considered to continue to improve.

Strategic guidelines

The previously mentioned strategic targets concerning TDG are implemented jointly with the Finnish Maritime Administration. In accordance with the vision of the Finnish Maritime Administration, the ports will improve their safety management systems in order to ensure their competitiveness. The environmental safety is improved through preventive measures. The safety aspects of shipping and ports are considered in the ISPS requirements and they also cover the transport of dangerous goods.

TDG by ship 2002

Source: Transport of dangerous goods in 2002, five-year report (Ministry of Transport and Communications)



Review of the different transport modes

Transport by air



**Current status**

TDG shipped as air freight during 2002 reached 1,225 tons, which is some 1.3% of cargo carried by air. The amount is minute compared to other modes of transport and only a few carriers accept dangerous goods classified cargo. Air freight is strictly regulated from an aviation safety perspective. Most types of dangerous goods are, however, permitted to be carried as air freight, presuming the ICAO-TI norms are observed. Carriage of certain dangerous goods as air freight requires special permits. The permit has to be obtained from all the countries through which the flight takes place, as well as from the carrier's home country. Certain types of dangerous goods are not permitted to be transported under any circumstances. TDG by airmail is forbidden. The only exceptions are certain infectious agents, dry ice and certain materials with low radioactivity. Dangerous goods, with some exceptions, are not allowed to be carried as luggage.

In Finland, the TDG by air is under the jurisdiction of the Civil Aviation Authority. Operational day to day surveillance and supervision is carried out by the customs, police and border guards. From an

aviation stand point, the single most important international agreement is the Chicago Convention (1944). Under the mandate of this convention, the International Civil Aviation Organization, ICAO, was formed as a UN organisation. Overall, the convention defines cargo limitations, including those applicable to dangerous goods. It obligates all member states to issue the relevant legislation, rules and regulations that concern aviation and to act, as a registration state, as the enforcers of the legitimacy of air carriers and licences. The standardisations within the field are based on ICAO standards and guidance documents. Of these, the Annex 18 and the associated ICAO-TI, which can be compared with the ADR agreement concerning road haulage or the IMDG-code of shipping, concerns the transport of dangerous goods as air freight.

Most of the cooperation based on the international standards and requirements are voluntary. The Joint Aviation Authority (JAA) is the voluntary collaborative organisation of the European aviation authorities. The regulations concerning various fields of aviation published by JAA are based on the norms of the ICAO and intended to be implemented at the

national level by the JAA member states. The Dangerous Goods Steering Group (JAA DGSG) is the forum of the European aviation authorities and organisations, which issues statements to the JAA concerning issues relating to the transport of dangerous goods by air. The new European Aviation Safety Agency (EASA) is an EU body that currently is handling type-certification.

**Challenges and future trends**

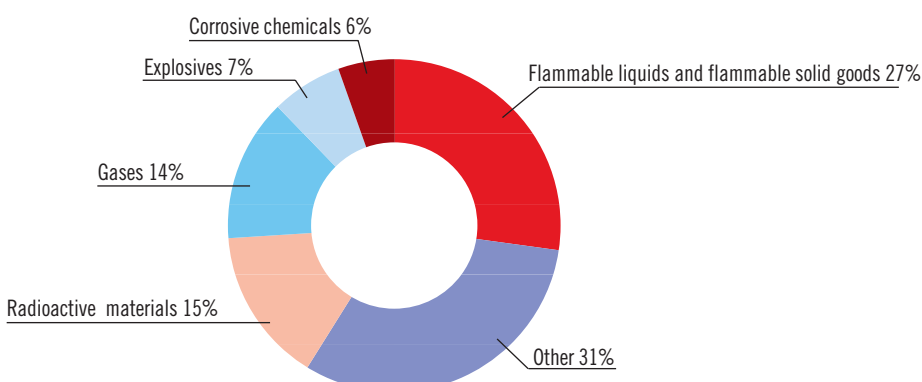
In the future, the jurisdiction of EASA is considered likely to be extended to include operational issues. Regulations concerning TDG are currently under preparation to become an appendix to the EU regulations. Initially, the EU regulations will apparently only cover the carriers. The dispatcher and other operators of the logistic chain are regulated by national rules and regulations.

Even if air traffic is predicted to increase, TDG by air decreased by 14% during 1997–2002. The regulative framework is strongly safety focused and TDG is no exception. There is no reason to expect that even increasing competition would change the situation, as TDG in Finland both requires a permit and is carried out on a small scale. A cost conscious operator would be more likely to refuse to carry dangerous goods and thus decrease competition in the field.

**Strategic guidelines**

The previously mentioned strategic challenges concerning transport of dangerous goods are implemented in cooperation with the Civil Aviation Authority. The development of air traffic and the international air traffic regulations concerning TDG as well as safety and business outlook of the sector will be monitored.

**TDG by air**







## Strategy implementation and evaluation of the strategic impact

The Ministry of Transport and Communications' specific objectives for the TDG work are primarily focused on ensuring Finnish interests are heard and promoted internationally, preparation of legislation disseminating the relevant information regarding this to the target audience. Another goal is advancing cooperation and cooperative actions between different parties in the field. The Ministry is responsible for ensuring Finnish interests are advanced in international fora and that the national special conditions are sufficiently taken into account in international agreements. Within our borders, the work to ensure national legislation is up to date and unambiguous and that information relating to it is efficiently disseminated is a daily challenge, which receives continuous and dedicated efforts.

As well as being linked to the long term work in the legislative field aimed at realising the strategic vision, a clear focus of the near future is on working towards achieving harmonisation of the

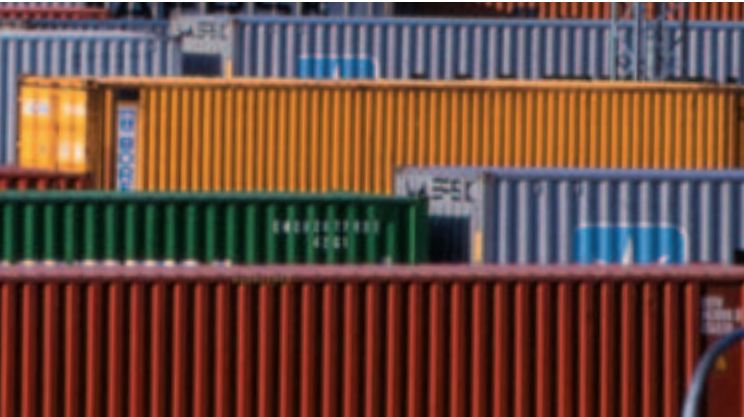
legislation covering TDG by rail across our eastern border with other international agreements. Another focus area relevant in the near future is the global harmonisation of the classification and labelling requirements of chemicals. This will affect both the legislative field and information dissemination. The overall challenge for the administration sector is to implement this TDG strategy in cooperation with operators in the field.

### **Monitoring the implementation of the strategy**

The strategy builds on the three levels of the so called 'prism of results'. The levels are to be used as criteria in the monitoring. Since this strategy is the first strategic entity concerning TDG in Finland, relevant indicators are yet to be specified. The aim will be to set functional and practical indicators for measuring achievements as part of the work done during this first strategic period. This will be done in cooperation with the stakeholders

### **The following areas form specific focal themes for the future work of the Ministry and the whole TDG sector:**

- The goods are transported in a safe form, securely bound and correctly labelled.
- The safety advisor system is extended to cover the dispatching organizations widely.
- Everyone, whose work includes TDG activities, has appropriate training for the tasks.
- TDG safety appears as a specific topic in the operation, safety and quality systems of companies.
- Innovative technical tools, methods, and systems are promoted both in the research projects of the Ministry of Transport and Communications and in cooperation with the operators in the field.
- The safety regulations and anti-terror actions are implemented efficiently and extensively in companies.
- The global and European ISO/CEN standards are developed and implemented in cooperation with the industry.
- The joint classification and labelling system of chemicals (GHS system) is implemented.
- Surveillance and enforcement of TDG focuses on areas with most recognised offences.



within the sector. The implementation of the strategic vision and the achievement of objectives will be reported annually to the Advisory Committee of Transport of Dangerous Goods.

### ***Assessing the strategic impact of actions***

The breadth of the TDG sector forms a special legislative challenge, but is also a challenge towards the safe and profitable implementation of legal requirements across the wide field of operators. During the strategy period, both the advancement of the strategic work and the set objectives as well as the general development trends of the sector will be evaluated. An intermediate evaluation is preliminarily planned to be implemented after 2–3 years. According to the results, the strategy will be reworked and targeted on key focus areas.

- Information and training focus on influencing attitudes and emphasize the importance of TDG safety.
- The maintenance and development of critical infrastructure, especially the main routes for TDG are prioritised.
- The elimination of level crossings, especially on the main TDG routes, is accelerated.
- The preparedness to react rapidly to disturbances is maintained, such as ensuring the safe transport of dead birds and samples for investigation and elimination in the case of a bird flue epidemic.

## Abbreviation list

### **ADN**

Prescriptions européennes relatives au transport international des marchandises dangereuses par voie de navigation intérieure – European Provisions for the International Carriage of Dangerous Goods by Inland Waterway

### **ADR**

Accord européen relatif au transport des marchandises dangereuses par route – European Agreement concerning the international carriage of Dangerous goods by Road

### **BC-Code**

Code of Safe Practice for Bulk Cargoes

### **CEN**

European Committee for Standardization

### **EASA**

European Aviation Safety Agency

### **ECE**

United Nations Economic Commission for Europe

### **EU**

European Union

### **GHS System**

Globally harmonized System on the classification and labelling of chemicals

### **IAEA**

International Atomic Energy Agency

### **IATA**

International Air Transport Association

### **IATA DGR**

IATA Dangerous Goods Regulations

### **IBC Code**

International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk

### **ICAO**

International Civil Aviation Organization

### **ICAO-TI**

Technical Instructions for the Safe Transport of Dangerous Goods by Air

### **IGC**

International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk

### **IMDG**

International Maritime Dangerous Goods Code

### **IMO**

International Maritime Organisation

### **ISO**

International Standards Organization

### **ISPS**

International Ship & Port Security Code

### **JAA**

Joint Aviation Authorities

### **JAA DGSG**

Dangerous Goods Steering Group of the JAA

### **KENK**

Advisory Committee on Chemicals

### **MARPOL**

International Convention for the Prevention of Pollution from Ships

### **OCTI**

Central Office for International Railway Transport

### **OSJD**

Organizatsija Sodrudnichestva Jeleznhv Dorog – Organization for Cooperation of Railways between East European and Asian countries

### **REACH**

Registration, Evaluation and Authorisation of Chemicals

### **RHK**

The Finnish Rail Administration

### **RID**

Réglement concernant le transport international ferroviaire des marchandises dangereuses – Regulations concerning the International Carriage of Dangerous Goods by Rail

### **SMGS**

The Agreement on International Goods Transport by Rail

### **STUK**

Radiation and Nuclear Safety Authority of Finland

### **TENK**

Turvallisuustekniikan neuvottelukunta – The Advisory Committee on Safety Technology

### **TDG**

Transport of Dangerous Goods

### **TUKES**

Safety Technology Authority

### **VAKSU**

A tool for planning transport of dangerous goods

### **UN**

United Nations



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