# Table of Contents

1. **Foreword by the Director General for Data and Knowledge**  
2. **Introduction**  
3. **Information as Trafi’s strategic objective**  
4. **The increasing significance of information and the new operating models**  
   4.1. Who controls my data?  
   4.2. Openness of data as an aim  
   4.3. Means of transport as software systems, traffic as a source of data  
   4.4. Cyber security of transport is a key question  
   4.5. Platform economy creates new opportunities and challenges  
   4.6. Data collection and processing will become crowdsourced  
   4.7. Information is Trafi’s fifth mode of transport  
   4.8. The value of information increases along with its increased utilisation  
   4.9. Key Concepts  
5. **Legislative Framework at a change**  
   5.1. How does the EU’s General Data Protection Regulation affect Trafi’s operations?  
   5.2. Controller’s responsibilities and duties  
   5.3. Rights of Data Subjects  
   5.4. Data protection and competence improvement measures  
6. **Comprehensive management through enterprise architecture approach**  
   6.1. The enterprise architecture method  
   6.2. Current state of Trafi’s enterprise architecture  
   6.3. Information management  
   6.4. Life cycle of information  
   6.5. Information management at Trafi  
7. **Data inventory and key figures**  
   7.1. Trafi’s intellectual capital  
   7.2. Information flows  
      7.2.1. Road  
      7.2.2. Aviation  
      7.2.3. Maritime  
      7.2.4. Rail transport  
      7.2.5. Traffic accidents, incidents, and occurrences  
      7.2.6. Information systems used to manage information flows  
   7.3. Information security at Trafi from the perspective of data protection  
8. **Trafi’s information flows**  
   Appendix 1. Information flows to and from the Vehicular and Driver Data Register  
   Appendix 2. Information flows to and from the Aircraft Register  
   Appendix 3. Information flows to and from the Licence Register  
   Appendix 4. Information flows to and from the Watercraft Register  
   Appendix 5. Information flows to and from the Register of Ships  
   Appendix 6. Information flows to and from the Register of Seafarers  
   Appendix 7. Information flows to and from the Register of Rolling Stock  
   Appendix 8. Information flows to and from the RAHEKE Personnel Register
Foreword by the Director General for Data and Knowledge

Trafi’s second Data Balance Sheet has been completed. The Data Balance Sheet for 2016 confirms the necessity of annually maintaining a continuous situational picture pertaining to data and information. Having compiled this Data Balance Sheet, we believe that we are better equipped to apply the General Data Protection Regulation entering into force on 25 May 2018, even though this Data Balance Sheet has naturally not been prepared solely for the purposes of the Regulation and the obligations it will possibly introduce. Instead, the Data Balance Sheet was prepared so that you, me and every one of us can rely on the fact that good care is taken of Trafi’s data. The Data Balance Sheet strengthens the trust of clients, business and public authorities in Trafi’s data resources. With the help of this Data Balance Sheet, Trafi provides proof of its accountability related to the processing of personal data in compliance with the EU’s General Data Protection Regulation. The Data Balance Sheet also plays a role in establishing Trafi’s societal status as a data processing authority. In addition, the Data Balance Sheet plays a role in creating a positive public image and has also increased the knowledge capital of Trafi’s personnel.

At Trafi, we like to look ahead. We constantly develop data management by taking into account future challenges and changes. The transport system, not unlike the entire society, is undergoing a positive data revolution. Data are already used concretely to produce different services and as support for decision-making. Moreover, 750 million units of Trafi’s data were submitted for utilisation in 2016. There was an increase of as much as 50%, or 250 million units, from the previous year.

Information-based business activities are increasing and more and more data are transferred every day. While the demand for information is increasing, we also need to be able to better summarise and filter information. Raw data and information will no longer suffice; instead, analytics is the key word. Rapid inference is called for and the steps towards artificial intelligence are thus accelerating. The Internet of Things (IoT), robotics, car-to-car communication and other information-based scenarios referring to fast connections and large volumes are gaining ground everywhere.

We must be prepared for constant change. As the significance of data masses and integration of information grows, the future task of the authority may entail being in charge of the big picture and supervision instead of information storage and processing. In this case, it is essential to have knowledge of those involved in the process and their needs as well as to be able to develop management models of the future in collaboration with the public and private sector. This requires a brand new way of thinking, and re-examination of the legislation and entire way of thinking related to maintaining registers. We can only guess whether or not the new data management models with blockchains and My Data will bring on major changes. Regardless of all the possible changes, and especially because of them, the significance of the reliability of information will be emphasised in the future also. This is why we encourage other actors in the field to engage in the process of compiling a Data Balance Sheet.

Director General, Data and Knowledge
Juha Kenraali
2 Introduction

Trafi has been traditionally known as a transport licensing authority and certification provider. Trafi is also known for its role in promoting responsible, safe and sustainable transport. In accordance with its strategy, Trafi also aims to be a pioneer in collecting, analysing and utilising traffic information to meet the needs of society. Trafi’s strategy treats information as the fifth mode of transport alongside traditional modes of transport. While information plays a key role in the operations of these traditional modes of transport, information can also be perceived as a separate entity, a mode of transport in itself. Information moves similarly to other modes of transport and the same elements can be perceived in its processes as with the traditional modes of transport. The Data Balance Sheet highlights these aspects and clarifies why information has been recognised as the fifth mode of transport alongside traditional modes of transport.

Trafi’s data and information are utilised extensively in different contexts and purposes of use. Several established companies in Finland utilise, refine and pass on Trafi’s register data within the framework of the current legislation. In addition to these established actors, new operators are emerging from startup and developer communities to act alongside the companies and communities receiving data through traditional approaches. This Data Balance Sheet includes consideration of the changes related to data use in the future and the requirements emerging from these. The Data Balance Sheet also aims to answer questions related to this theme.

Digitalisation, globalisation and automated transport are transforming people’s perceptions of the possibilities for utilising information as well as their right to decide on the use of their personal data. In 2018, the General Data Protection Regulation of the EU will be introduced. The aim of the Regulation is to create an up-to-date, strong, coherent and comprehensive data protection framework in the Union. The General Data Protection Regulation and the requirements it sets for Trafi’s processing of personal data provides the specific frame adopted in this Data Balance Sheet.

Traffic control systems, the linking of the means of transport to the network, to one another and to the infrastructure as well as the consumer services enabled by the information networks will transform the way people think about the safety of traditional transport. According to a report1 by the Finnish Government investigating cyber security, the traffic and transport sector was globally the fifth most targeted industry when it comes to cyber attacks in 2015. The Data Balance Sheet also includes reflection on the challenges related to cyber security brought on by the increasingly automated transport and information on how Trafi will prepare for these challenges.

A key goal of recognising and rising up to future challenges and requirements is to provide a picture of the current state of data processing and information management. Therefore, the Data Balance Sheet also deals with more traditional information processes, such as information management and the management of data resources and information flows as well as the methods and procedures which contribute to the good information management and data processing practices of the data processing authority.

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1 Internet source, Valtioneuvoston tutkimus- ja selvitystoiminta, Suomen kyberturvallisuuden nykytila, tavoitetila ja tarvittavat toimenpiteet tavoitetilan saavuttamiseksi, s.18
http://tietokayttoon.fi/documents/7063/3866814/30_Suomen+kyberturvallisuuden+nykytila%2C+tavoitetila+ja+tarvittavat+toimenpiteet+tavoitetilan+saavuttamiseksi%3A+s18.pdf/372d1d44-5d11-4991-b62c-c9e66c3b3215?version=1.0 (in Finnish)
3 Information as Trafi’s strategic objective

Trafi’s activities are guided by a vision of responsible transport. Trafi’s mission is to ensure the well-being and competitiveness of Finland’s transport system. Strategic objectives include influencing, customers and services, information, and personnel. Trafi’s values are courage and cooperation.

Trafi works actively to ensure that people, goods, and information can travel safely, sustainably, and smoothly. The importance of information in society and transport continues to grow, and Trafi’s role is to promote the functioning of the transport market and the creation of new business models. The development of the transport system and the provision of transport services are also based on the use of information and, in fact, one of Trafi’s strategic objectives is to be a pioneer in collecting, opening, and using information for societal needs. Trafi also aims to be a pioneer in digital public services. Trafi represents Finland in international data resources cooperation and is responsible for all aspects of transport information management and usability. Trafi also produces information, studies, and impact assessments to support society’s decision-making.

The Group strategy for the Ministry of Transport and Communications’ administrative branch (2016–2020) published in 2016 implements Prime Minister Juha Sipilä’s Government Programme. The group strategy sets strategic targets for the administrative sector beyond the current term of government and determines the focus areas that implement them. Trafi’s role in the implementation of the administrative sector’s focus areas is to promote the development of the transport services market and customer-oriented services by means of lenient regulation, systematic advocacy, and experimentation. Trafi must strive to steer consumer demand by developing services that support the energy reform, make available and use information to create new business opportunities and transport services, and ensure transport and communication links by improving the reliability and safety of transport.

A performance agreement concluded between the Ministry of Transport and Communications and Trafi on 1 March 2016 creates a framework for Trafi’s operations and finances during the 2016–2019 term. The performance agreement supports the administrative sector’s group strategy, the implementation of the Government Programme, and Trafi’s strategy. In accordance with the agreement, Trafi’s role in achieving the goals set for societal influence is determined via the common priority areas of the administrative branch. Among the operative performance targets laid down in the performance agreement are the use of information and business opportunities, as well as trust in digital services. The objectives set for the agreement period are annually specified. The performance agreement signed on 23 February lays the foundation for planning Trafi’s operations for the year 2017.

FIGURE 1. From government programme to strategy map and implementation

- Government programme (5/2015) and its implementation (9/2015)
- MTC: Group strategy 1/2016
- MTC: Strategy map
- MTC: Future report (10/2014)
- Trafi strategy 5/2014
- Trafi performance agreement 1/2017
- Trafi action plans
4 The increasing significance of information and the new operating models

The significance of information has indisputably increased in the world. The utilisation of information in different services is growing exponentially. These services are often new, but they are also replacing or overriding traditional services as the needs for services are changing. This section examines the following, current data phenomena and development trends:

- My Data
- Aim of the openness of data
- Partial transformation of means of transport into software systems
- Traffic as a growing source of data
- Cyber security of transport
- Platform economy
- Crowdsourcing of data collection and processing

For each trend, it is also considered what the phenomenon is going to mean for the operations of the authorities, particularly Trafﬁ.

Examining the significance of the utilisation of information for the role of the transport authority in slowing down climate change would have deserved a section of its own. Climate change is finally beginning to be a commonly accepted phenomenon. Collection and refining of data is also highly significant for taking the steps towards low-emission technologies. Furthermore, it is important for the general public to obtain reliable information that they can use as the basis for making increasingly justified decisions on making personal procurements. We will revisit these challenges in our Data Balance Sheet for the following year.

4.1 WHO CONTROLS MY DATA?

Most of the emerging and stored new information consists of personal data, i.e. data about individuals and their characteristics and living conditions. In order to enable effective, secure and user-oriented utilisation of personal data in business activities and service develop-

With its activities, Trafﬁ promotes making the personal data it manages available for the data subjects in the services and other business activities based on the My Data model.

In practice, Trafﬁ acts as one of the data sources for My Data, among other things.

Trafﬁ’s programming interfaces would allow retrieving the information of data subjects for utilisation in the My Data services and other business activities. For instance, the data subjects could utilise their personal information on their right to drive in the context of renting a vehicle. This could be made concretely visible for the consumer as a single interface where the users can manage their personal information and the right of third parties to access the data. This would also be beneficial for companies providing vehicle rental services, as the interface would open up an opportunity for producing personalised services based on the individual’s information. In implementing these operations, Trafﬁ will enhance the transparency of its activities and the trust in the management of personal data.

In practice, realising the principles of the My Data model is challenging both from the viewpoint of technology as well as that of the business models of traditional organisations. Consumers are also just now developing a genuine interest in managing and utilising their personal data. Therefore, experimentations on the utilisation of personal data in line with the principles of the My Data model should be promoted in any way possible. Trafﬁ is glad to participate in trials related to My Data.
ment, discussions on the My Data model promoting human-oriented processing of personal data and the organisation of this processing have been launched in Finland. The increasing awareness of the potential for utilising personal data underlines the My Data model. On the other hand, My Data is also affected by the challenges and questions related to the implementation of appropriate management of personal data.

In the My Data model, the data subject gains personal control in the ecosystem of the utilisation of personal data. The principles of the My Data model include the right to know which personal data are being processed, the right to gain access to personal data and the right to manage the utilisation of the data. These principles will take the form of concrete demands for the comprehensive and practical availability of personal data as well as the decentralisation of the management of personal data and the interoperability of the entire systems. Indeed, the discussions related to My Data have aimed to change the way people think and encourage them to think about the rights of the data subject as active rights instead of passive ones.

My Data can also be illustrated from the perspective of the data itself. In practice, My Data refers to the kind of personal data obtained by the data subject from the controller in a manner allowing the data subject to actually manage the use of the personal data in question. Being able to manage personal data as part of the My Data is important for the My Data model. However, not all kinds of personal data can be transformed into My Data, and it is also not appropriate for the data subjects to be able to manage their information concerning, e.g., their traffic violations and to determine whether authorities such as law enforcement agencies have the right to obtain their traffic violation information. Nevertheless, the principles of My Data include allowing the data subjects to see how the information on their traffic violations is being processed. Information concerning traffic violations could also be disclosed to the data subject in a machine-readable format, which would allow the data subject to utilise the information for the purposes personally determined by him or her.

In advanced business operations based on the My Data information, the technological and functional solutions enabling the data subject to manage and use their personal data would be implemented by a number of different operators. Similarly, the practical and technological solutions enabled by the management and use of the My Data would be available for the companies carrying out different business operations, and the data subject would be provided with an opportunity to compare the technological and functional solutions of different service providers. This would also increase competition between the service providers.

4.2 OPENNESS OF DATA AS AN AIM

Open data consist of data resources in a machine-readable form available and reusable for everyone free of charge. Particularly data resources produced with public funds have been actively made available for everyone in Finland. Companies enrich their data sources with open resources, thus bringing additional value to their business activities.

The openness and comprehensiveness of the metadata related to data is emphasised when data are made openly available. Therefore, making data resources available for everyone does not suffice on its own, but the information must also be carefully described at the

Information from open data

Trafi is committed to the government’s shared goal of making its data resources more readily available to promote the reuse of information in society. Disclosing information based on the principles of open data is part of Trafi’s operations as a new kind of an enabling authority. The use of open data plays a part in enabling the services produced by different operators related to transport, traffic safety and means of transport, and the reduction of the harmful environmental impacts of vehicles and aiding the operation of vehicles.
level of individual data types. For the purpose of the usability of information, it is essential that the data user knows how a specific open data resource has been compiled and what information it contains.

In line with the principles of open data, Trafi has made registration information on means of transport available for all modes of transport by the end of 2016. In the coming years, Trafi will also allow open access to anonymous data related to licences and permits for transport. In addition, Trafi aims to publish data collected in publicly-funded studies and the results obtained from them in line with the principles of open data while taking issues relating to data protection into account. The first research data made available by Trafi included the data consisting of the measurement results of the Grip research project in 2016. The material includes friction measurement data, such as information on slip, friction and braking.

4.3 MEANS OF TRANSPORT AS SOFTWARE SYSTEMS, TRAFFIC AS A SOURCE OF DATA

Highly automated solutions have been applied in the piloting of airplanes for a long time. In railway traffic, intelligent automation has been focused on traffic management, i.e. access guidance and control and ensuring the safety of level crossings. In maritime navigation, the navigation of the newest vessels has largely consisted of control room type activities. The automation of road traffic will be a major breakthrough due to its sheer volume. New, partly automated driver support systems are introduced in vehicles, and their functionality can be improved after the date of entry into service with software updates. Gradually, means of transport and the entire transport system will begin functioning more and more like software systems. These systems require information in order to operate efficiently and safely.

In road transport, this development is considered to have major positive influence, particularly on traffic safety; however, the increase in automation and software may also bring along some challenges, for instance in ensuring the roadworthiness of vehicles and accident investigation. In the future, it is necessary to be able to not only monitor the mechanical parts in cars, but also the information systems and their various versions in the vehicles. When an accident occurs, it is crucial to be able to determine how the operations of the software have affected on the course of events and what kinds of data have been moving in the vehicle systems.

FIGURE 2. Modes of transport in open data sets

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles</td>
<td>4.95 million</td>
</tr>
<tr>
<td>Merchant vessels</td>
<td>2,400</td>
</tr>
<tr>
<td>Aircraft</td>
<td>1,500</td>
</tr>
<tr>
<td>Rolling stock</td>
<td>11,600</td>
</tr>
<tr>
<td>Watercraft</td>
<td>203,000</td>
</tr>
</tbody>
</table>
Data are collected increasingly rapidly on the operations of people, means of transport and transport systems via various sensors. The solutions of the Internet of Things will aid in compiling and analysing these diverse data. Sensor and log data will provide an objective situational picture of the transport system, albeit one focused on the technical environment.

In the future, cars will be connected to background systems and other cars via wireless connections. For instance, this enables monitoring traffic congestion comprehensively and in real time, as the cars and the mobile devices within them constantly submit data on their location and speed. In turn, rapid and instantaneous data connections enable the remote operation of cars and also other means of transport.

On the other hand, cars can also operate independently in certain situations, for example steering the car by keeping it within the road markings and braking as an obstacle emerges. At the end of this development arch, somewhere in the future, lie fully automated cars and automated transport. In practice, digital information is a tool enabling the development of automated cars and other automated means of transport and their safe and reliable operations.

**Challenges to the authorities**

The increasing complexity of the technology and software in cars results in pressure for the authorities to develop their competence. There is a need for competence on, for example data analytics, software and cyber security as well as artificial intelligence. Competition is fierce for experts on the digitalising world in the commercial sector, and attracting top specialists might prove to be difficult in governmental organisations.

The emphasis on the significance of software produces a new threat to safety, as errors in the programming code of vehicles might suddenly affect a large number of cars or expose vehicles to cyber attacks. This puts pressure on ensuring the functionality of the software in vehicles, and vehicle manufacturers and their subcontractors play the most significant part in this process.

One interesting issue is related to the possible role of the authorities in safeguarding the ethicalness of decision-making on the software by different manufacturers. The artificial intelligence of a vehicle is programmed to make decisions in traffic situations following some sort of logic. These decisions may lead to a person being injured or dying. Such solutions made under extreme circumstances challenge everyone involved in developing automated vehicles to engage in open, ethical reflection.

**Trafi and other transport authorities are making preliminary preparations for the measures required by the automation of transport.** For road transport, a national action plan and policy programme has been prepared for the years 2016–2020. A roadmap for developing automation and robotics for all modes of transport in the transport sector is being currently prepared for the years 2017-2018.

In Finland, automated cars (SAE levels 0–5) can be tested in general traffic under a test plate certificate granted by Trafi. The testing of automated cars requires a driver either within or outside the vehicle. Trafi wishes to promote the automation of road transport through bold and responsible experimentations.

There are currently little research findings available on the impacts of automated driving, and there is thus need for new experimentations on the topic, on one hand in order to verify the potential benefits, while on the other to recognise and solve the new challenges emerging from the increasing automation. For many drivers, the development of automation is already visible in the form of, for instance, lane watch systems, adapting speed controllers or automated emergency brakes.

Trafi has surveyed the competence requirements for professional drivers in automated transport. The AULA project examined what kind of changes the spread of automation would introduce to the education and professional competence of professional drivers.
The right to drive in its current form is under pressure to change as the automation of vehicles will take care of an increasing amount of the tasks related to driving a vehicle. Adjusting the right to drive based on different levels of automation might be taken under consideration. For fully automated vehicles, such as automated electronic buses, the right to drive could also be extended to the controller controlling the vehicles from a remote monitoring room.

Vehicles and other means of transport that communicate with one another and are automated require the authorities to work with an open-minded attitude to enable the smooth development of technology while also bearing in mind people’s safety.

### 4.4 Cyber Security of Transport Is a Key Question

The increasingly significant role of information systems and interfaces brings along the questions and concerns regarding information security. Cyber security is already a key question in the field of road transport. Some cases, in which hackers have managed to control certain functionalities of cars via internet by exploiting software vulnerabilities, have gained a lot of publicity. The role of the authorities’ instructions and requirements concerning the cyber security of road transport is likely to increase in the future.

Another potential method of improving the information security is to reward voluntary information security gap reporters; a method which has already produced a wide variety of positive experiences. In Finland, this method has already been utilised by the insurance company LähiTapiola, for example. In addition to the chance to voluntary reporting of security gaps, challenges dealing with information security are organised.

Trafi prepares for the future challenges posed by cyber security (and cyber safety). Operations will be developed on the basis of the threat and risk levels, and the related development of regulations and authoritative actions will progress as required by the special characteristics of each transport mode. Trafi actively participates in the international transport mode-specific development and acts nationally as the transport sector expert in the implementation of the Directive on security of network and information systems (NIS).

Trafi also utilises the know-how of developer communities in improving the cyber security of information systems. In 2016, Trafi participated in the Finnish Communications Regulatory Authority’s information security challenge hackathon, in which the objective was to identify information security systems’ vulnerabilities. Trafi’s hacking target was the Self-service portal and its background systems. Observations requiring critical and rapid responses were not made. On the basis of other findings, Trafi is able to develop its systems’ information security to an even higher level than the current one.

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4.5 PLATFORM ECONOMY CREATES NEW OPPORTUNITIES AND CHALLENGES

Platform economy plays a central role in digitalisation. In a platform economy, consumers, communities and companies make various kinds of transactions such as delivering products, trading, buying and selling services or exchanging media and thoughts. The platforms function as trusted and effective mediums. They offer micro-entrepreneurs tools and even a global marketing channel that were previously available to medium-sized or large companies only. Well-known, successful platforms include Facebook, Twitter, AirBnB and Uber.

The many types of as-a-service are one of the manifestations of platform economy. In the Software-as-a-service model, software are no longer bought or licensed as physical copies, but they are enabled as cloud services with a time- or use-based pricing. There are many versions of this type of service such as Data-as-a-Service, in which data are not disclosed as a whole, but the information is provided as refined services in the required extent.

Data transfer and the connected commercial ecosystem take increasingly flexible forms in digital platform economy. One operator may provide different kinds of options depending on the quality and data volumes of the application programming interfaces (API) with different pricing. This so-called API economy changes the nature of business models as commercial operators become capable of creating completely new services by combining their own data resources with the data made public by other companies and public-sector operators.

Along with the digital economy, globalisation causes services based on data and applications to spread across national and continental borders. A start-up may grow into a global operator rapidly and utilise data from several sources. Start-ups often base their business on refining data. The flexible culture of experimentation develops applications and services in a fast pace.

Challenges to the authorities

The as-a-Service and API economies set demands for the authorities to make data easily accessible and to increase the openness of data-related documentation. In the future, users of data will appear in a fast pace and they will disappear just as quickly. Operators of different size will network and the boundaries between them, just like the national borders, will become more obscure. The requirements posed by the traditional operators will remain partially unchanged, but the cultures of the developer community and start-ups will affect operations models. There will be a demand on openness, flexible access to data and services, free trial opportunities as well as on-demand services and different types of as-a-service.

Combining data sources and extending the purpose of use beyond the original increase the value and possible uses of data, but pose a challenge for responsible use and supervision.

Enabling data-based services production is a task of the authorities

Trafi sees the authorities’ role as a facilitator whose objective is to provide register data as extensively and easily as possible while taking account of the legal requirements regarding data processing. Trafi’s data are spreading further than before. The need to utilise data has grown over the years and Trafi has extended its data disclosure solutions aimed particularly at companies. The digitalisation of the society challenges the authorities to find new solutions for providing a growing number of data users with the data they need.

To meet these requirements, Trafi has launched an extensive data disclosure project with the objective to enable the modern, easy and effective use of Trafi’s register data that takes the data protection and information security angles into account. In the project, the register data that can be disclosed by Trafi will be defined and documented as disclosable data products. The data products will be available for both third-party and Trafi’s own users of data.

The commercialisation of data products enables the standardisation and appropriate descriptions of data disclosure services as well as the documentation of the used information. Data products may be utilised with various technical solutions such as message application programming interface or by downloading data products as export files from a file download service. Firstly, Trafi will enable downloading data products in a machine-readable file format from the file download service that will be realised. For the data products, Trafi will also provide a service for change data.

From the platform economy point of view, this will enable the machine-readable utilisation of Trafi’s data, the realisation of different kinds of services based on data utilisation and provide an interesting opportunity for service providers to realise more versatile application programming interfaces for creating a data utilisation ecosystem.
Platform and as-a-service economies require easy to use, effective, functional and documented application programming interfaces for disclosing and receiving data. These interfaces will make data utilisation easier and more effective for the network economy, but the authorities will still need to audit and supervise the further use of personal data as far as restricted-use data are concerned. The responsibility-related issues of data use will become more complicated as a consequence of networking. This will also happen to data in the chained services, particularly because data are refined and re-disclosed.

The network of rapidly growing, or dying, operators related to platform economy poses new challenges for the authorities’ data disclosure and collection. Established operators have the time and resources for long-term collaboration with the authorities. However, new, small operators may miss public information that would benefit their business, if the disclosure methods do not serve the operations models of the developer communities connected to them. The volume and fast pace of data-related operations pose a challenge for the authorities responsible for data disclosure and data protection supervision.

The responsibility chains of platform and service economies are complex. Services are offered and data disclosed among various operators and across national borders. Consumer protection and taxation alone will prove challenging. The complexity or even obscurity of responsibilities and legal questions will pose a challenge for traditional operators and particularly for the authorities. Small, new operators may even test and see how much room the market or legislation gives and sort things out afterwards; they may succeed, or in the worst case, collapse.

4.6 DATA COLLECTION AND PROCESSING WILL BECOME CROWDSOURCED

Along with the growing significance of the data that supports or lays the foundation for business, operators will no longer base their operations only on data available on public registers or from private data operators and statistics. If a sufficient amount of data is not available, the operators will collect it themselves. The road network images of Google Maps make for an extensive example, but even small operators’ applications provide mediums not only for services but for data collection and sharing, as well. Data are collected as part of the business.

Commercial and public operators crowdsource their data collection. Known examples of commercial operators include Flightradar24 (air transport monitoring) and Weather Underground (weather conditions). In these services, the user voluntarily procures a device that collects public data. The collected data are shared with the commercial operator. In return, the voluntary data collector gains free access to a more advanced version of the services.

Citizens are active networkers and data producers

One of the most central social factors of information trends is the citizens’ active use of the social media and other networks that cross the traditional organisational and national borders. People also tend to share a lot of information of themselves and their activities through these new channels. This information can be used to influence people, which is a fact noted by many companies and politics.

The authorities are one of the operators in the network economy and they can use the citizens’ activity and networks in many ways. Open source developer com-
Communities make for a good example of the enormous power of networks, which can be used to solve even large problems effectively and primarily with the help of volunteers. Citizens may also act as crowdsourced data producers and refiners, which complements the authorities’ operations very well. The authorities may also aim at utilising active citizenship for improving data quality, for collecting data concerning security deviations or other phenomena and for supervising the use of their own data among other things.

Hackathons are one well-known manifestation of the developer community activity, and Trafi has actively participated in them. These events typically aim at developing demonstrative services or applications within a short period of time, sometimes competitively. Hackathons may be organised by developer communities, companies, public entities or authorities.

4.7 INFORMATION IS TRAFI’S FIFTH MODE OF TRANSPORT

Information has come to be termed the fifth mode of transport alongside the traditional transport modes. But how can information be considered a mode of transport? Trafi has made information a mode of transport in its own right, because the significance of information in traffic as well as related services and phenomena is consistently increasing. Information is present in all aspects of transport and mobility: traffic infrastructure, vehicles, services and in the transport field operators’ activities. This section deals with the role of information in traffic from various points of view.

1) Information is the platform of new transport services

Utilising information supports the effectiveness of the transport system and the development of novel transport services. The development of the transport system and transport services production are based on the utilisation of information even more than before, both now and in the future. This means a digital, machine-readable and structural description of a desired target.

Information is the platform on which we build customer-oriented and cost-effective services that are based on the needs and expectations of customers and interest groups. The future mobility needs will be more versatile and individualised than before. Information as a mode of transport emphasises individual citizens and their needs more strongly than before, as it focuses on mobility especially from the point of view of services.

With the use of information in particular, both private and public services can be offered to users individually but cost-effectively.

Furthermore, information can be used to remarkably improve the energy efficiency and safety of the transport system. Information is also a key factor in promoting the automation of transport.

2) Information is exchanged extensively and openly between the authorities and operators

In order to enable the creation of novel transport services in the best possible way, the public and the private sector must act in unison. The public sector must show the way in providing public information but in addition, it should find means to encourage the private sector to voluntarily open its data resources to the public. When the operators open the data resources of their core business to the public without prejudice, their original business gains benefit and new opportunities are created.

The objective is that in the future, the authorities and the private sector create new forms of information-related collaboration, which generates services that are as functional as possible from the customers’ viewpoint. The boundaries between transport modes lose their meaning as the users of mobility services become the central actors, for whom easy and effective operation as part of the entire transport system is enabled. Therefore, we can say that information is used to increase the mutual understanding between different operators. In order to enable door to door services that combine various modes of transport, jointly agreed principles and standards for opening information to the public are required.

Free and equal availability of public information for everyone must be secured with common rules.
Trafi discloses and refines its data
Trafi’s data, too, is spreading further than before. The need to utilise data has grown over the years and Trafi has extended its data disclosure solutions aimed particularly at companies. Information is disclosed via standardised interface connections, user interfaces and as different kinds of data deliveries. Trafi offers operators over 100 different kinds of information interfaces. The number of non-automated material disclosures is on the increase, as well, as users require customised information packages. Trafi’s data are used widely for both the basic operations of the society (i.a. taxation, operations of the police and customs) and various commercial applications and services. In 2016, Trafi disclosed approximately 750 million data units.

Trafi aims at utilising the data it collects to comprehensively develop the transport system, and to make use of the data gained from other sources than registration, as well. It is possible to discover completely new angles to the examination process by combining different kinds of data. Data mining, milling and analysing are part of the everyday life. Thus, Trafi considers the sharing and refining of data to play the main role. Instead of the actual data, services based on data are valuable. Information as a mode of transport makes openness and fortitude the key words of the operation; the users know best what they need.

3) Transport system information is part of the authorities’ operations just like other modes of transport
Trafi’s public services include regulation, permit and approval services as well as supervising the compliance with regulatory requirements and permission terms. For realising its public services, Trafi maintains registers for recording and processing the required information.

Thus, the transport-related data Trafi manages is originally collected for realising Trafi’s public services, meaning that it is valuable for the public services customer and it is used when making decisions concerning the customer. Through this context, the information has been given value and significance—the data have become information.

For example, when the technical, historical and ownership data of vehicles are recorded in Trafi’s registers and they are classified and combined, a networked database of all of Finland’s vehicles’ characteristics is created. This way the information that was originally needed for checking the vehicle’s permits only, creates valuable intellectual capital that can be used individually for an entirely different purpose than the original data. When the information was created, it contained the characteristics data of the target (the vehicle). After the described transformation, this information became a target of a separate public service, the information services. Just like vehicles, persons or operators are the targets of public services of the traditional transport modes, information is the target of the regulation, permit and approval services and supervision. Figure 3. describes Trafi’s role as an authority regarding different modes of transport.

4) Future transport is networked and information travels within it
Similarly to vehicles, information travels in the future transport system. Vehicles operate as sensors to one another and provide information on the traffic situation, weather conditions and the condition of the road. This kind of information can be transferred directly between vehicles or via background systems. For example, the NordicWay project’s Finnish experiment tests submitting information about traffic disruptions between vehicles in the mobile network.

In the future, the role of vehicles and traffic users as information producers will create an exponential increase of mobility-related information. This information lays the foundation for increasing and developing automation as well as for the creation of new mobility services. Thus, information is both a mode of transport and the basis for the transport services infrastructure in the future.
### FIGURE 3. Trafi as the authority for five modes of transport

<table>
<thead>
<tr>
<th>Mode</th>
<th>Authority and Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Road</strong></td>
<td>Trafi supervises e.g. vehicle inspection stations, alcohol lock system operators, registration, data entered in registers and is responsible for vehicle market surveillance and the organisation of driving tests. (SUPERVISION) Trafi issues permits and licences relating to vehicles and inspection; vehicle registration and taxation; the notification authority. Trafi grants driver’s licence permits, instruction/driving school/instructor permits and tax licences. (PERMITS/LICENSES) UNECE and EU cooperation and negotiating groups, EU information exchange groups, the Council’s working party on technical harmonisation, international organisations include, eReg, Cieca, Cita, Corte, OECD. (INTERNATIONAL)</td>
</tr>
<tr>
<td><strong>Aviation</strong></td>
<td>Trafi oversees aviation facilities, organisations and operators. Trafi carries out aircraft ramp inspections. (SUPERVISION) Trafi oversees aviation licences, approves aeromedical examiners in Finland, registers aircraft, approves organisations relating to airworthiness, aviation operations and training. (PERMITS/LICENSES) International Civil Aviation Organisation ICAO, European Civil Aviation Conference ECAC, European Aviation Safety Agency EASA. (INTERNATIONAL)</td>
</tr>
<tr>
<td><strong>Maritime</strong></td>
<td>Maritime supervision, survey and inspection services, supervision of classification bodies and named inspectors, market surveillance of ship equipment and boats. (SUPERVISION) Trafi issues maritime certificates of competency and eligibility, maritime vessel/operation/safety permits and approvals, maintains the vessel and aircraft register; lien matters. (PERMITS/LICENSES) International Maritime Organization IMO EU: maritime committees and working groups and EMSA. Work under the Paris MoU International, European and regional maritime organisations and working groups. (INTERNATIONAL)</td>
</tr>
<tr>
<td><strong>Rail</strong></td>
<td>Trafi oversees compliance with rail safety and interoperability requirements and traffic safety competency requirements. (SUPERVISION) Trafi issues railway operators’ safety certificates, infrastructure managers’ safety permits, rolling stock and infrastructure permits, and driver’s permits. Trafi is also responsible for approving medical specialists and educational institutions, and for the designation of notified bodies. (PERMITS/LICENSES) EU and the European Agency for Railways (ERA), international rail transport agreement between Finland and Russia, COTIF convention on international carriage by rail. (INTERNATIONAL)</td>
</tr>
<tr>
<td><strong>Information</strong></td>
<td>Trafi oversees the lawful processing of register data (esp. personal data), privacy protection (e.g. compliance with prohibitions of the release of information) and organisations that use register data. Trafi provides guidance and advice on the processing of personal data. (SUPERVISION) As a controller, issues permits to use data held by Trafi and grants user permissions for data systems. Trafi makes decisions on the disclosure of documentary and log data. (PERMITS/LICENSES) Working groups relating to information exchange between authorities within the EU (e.g. EURCS) OECD Big data and open data working group Work under the Finland-Estonia MoU. (INTERNATIONAL)</td>
</tr>
<tr>
<td><strong>Road</strong></td>
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<td><strong>Aviation</strong></td>
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<td><strong>Maritime</strong></td>
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<tr>
<td><strong>Rail</strong></td>
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<tr>
<td><strong>Information</strong></td>
<td></td>
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</tbody>
</table>
4.8 THE VALUE OF INFORMATION INCREASES ALONG WITH ITS INCREASED UTILISATION

When discussing information, we must take into account its various emphases and meanings. Knowledge, data and information are often discussed in parallel and sometimes together without the listener paying any attention to the matter. The term ‘data’ is often used to describe raw information that has not yet been given meaning or has not been used for anything; if it would have been, it would have become knowledge with the use of information. In other words, data can be produced by machines or devices and its value, meaning or utility cannot be defined before new knowledge can be generated through the information produced by this data.

Similarly, an authoritative organisation may collect or produce data for a specific use. The collected or generated data are given value and meaning through its purpose of use; the data become knowledge. On the other hand, when the collected knowledge is offered for other operators of the society, the original meaning of knowledge as part of the public service is lost. This way the authorities’ knowledge becomes data for its user. This usable data are given a new meaning as knowledge when they are used for creating services and in different connections. A remarkable notion about making information open is that when information is offered to other operators, the original knowledge gains new meanings and utilities via new purposes of use. Information is not valuable if it is held back; instead it has to be utilised.

Trafi collects data as part of the public services. Trafi collects, maintains and generates data about the vehicles, vehicle operators, companies and training in the fields of road transport, aviation, maritime transport and rail transport. The data primarily serve Trafi in carrying out Trafi’s work as an authority, which includes, for example, the regulation, permit and approval services of road transport, aviation, maritime and rail transport as well as supervising the compliance with the regulatory requirements and permission terms. Trafi generates data as a result of the public services. For example, when a vehicle is registered, data concerning the vehicle and the persons or organisations connected to it are recorded. The data are received by the operative information systems via the eServices, customer services or interfaces, or by saving it with an operative user interface or as part of case management to the case management system.

Trafi strives for opening the information it collects as part of the public services as usable data, so that it would get new meanings in transport services, for example. For this purpose, Trafi identifies the data it generates through its operations, defines and describes its characteristics, structures and dependencies including its metadata. The most significant information is standardised, which means agreeing on e.g. the content and structure of the information. Simultaneously, Trafi assesses the need for new information and data sources as well as plans and realises technical solutions for securing the availability of data. Consistent metadata make the utilisation of the already collected register data easier and more effective for other authorities’ operations and for other further use as well as secures the maintenance of the data in an understandable format for permanent retention.

The data Trafi manages attract an enormous amount of interest. In order to improve the utilisation of the data, Trafi commercialises it as data products that can be used through various technologies. The data products have data product specifications and/or interface documentation that describe the data that the product includes and what methods and conditions apply for its use. Trafi utilises and refines data products also in its own services.

Trafi’s data products and the information service products refined of them, such as statistics and analyses, are published via various platforms and technologies. Trafi’s data are disclosed via application programming interfaces and data transfer solutions, for example. In addition, information is available on the eServices and on Trafi’s web site among other media.

Trafi’s data affect and are utilised by the society, business and decision-making. Transport and mobility services are based on the utilisation of data. Trafi’s data are utilised as part of the transport system planning and development as well as contingency planning. The business, social effects and decision-making brought about by Trafi’s data affect our ideas and generate new information. This information will return to Trafi in the future as data generated by its operation and can be reused again. This is how the data Trafi collects as part of its public services gain new meanings.
As a transport authority, Trafi’s core mission includes regulation, permit and authorisation services for road, aviation, maritime, waterway and rail transport, and the oversight of statutory requirements and permit conditions. Information produced in its operations is primarily used by Trafi in its official duties.

Trafi collects, maintains and generates data about the vehicles, vehicle operators, companies and training in the fields of aviation, road, maritime, waterway and rail transport.

Trafi specifies and describes the properties, structures and dependencies of data produced by its operations, including metadata. Key data sets are standardised. The need for new data sets and sources is determined. Technical solutions are planned and implemented as necessary to ensure availability of information.
Trafﬁ generates data products in order to enhance the usability of data. This is done with due consideration of legislation, e.g. requirements on data protection. The data products have data product specifications and/or interface documentation that describe the data the product includes and what methods and conditions apply for its use.

Data products such as statistics and analyses, are published via various platforms and technologies. Trafﬁ’s data are disclosed via interfaces and data transfer solutions, for example. In addition, information is available via electronic services and Trafﬁ’s website.

Trafﬁ’s data are utilised in business operations and decision-making. Transport services are based on the utilisation of data. Business and decision-making activities and societal impact brought about as a result of Trafﬁ’s data generate new information that will eventually return to Trafﬁ and become reusable.
In this Data Balance Sheet, ‘register’ refers to a logical data resource compiled and organised for a specific purpose and containing information about specific items and their properties.

According to the Personal Data Act (523/1999), ‘personal data file’ means a set of personal data, connected by a common use and processed fully or partially automatically or sorted into a card index, directory, or other manually accessible form so that the data pertaining to a given person can be retrieved easily and at reasonable cost. The term ‘personal data file’ therefore refers to a logical concept, not a physical register. A concept of a logical register means that all the data used for the same purpose are considered to belong to a single personal data file regardless of how and where they are stored.

Trafi’s Vehicular and Driver Data Register is a personal data file, as it contains, among other data, vehicle ownership information relating to natural persons. Data contained in the Vehicular and Driver Data Register are processed in the road transport information system and several sub-systems.

According to the Personal Data Act, ‘data subject’ means the person to whom the personal data pertains.

According to the Personal Data Act, ‘data resource’ as a set of data derived from operational needs and determined for administrative reasons to make the data easier to manage. A data resource consists of a centrally administered set of data that form a logical whole. Responsibility for the management of the information contained in a data resource is organised and assigned to a single operator. The responsibility for the information contained in a data resource and the responsibility for the development and maintenance of the resource need to be clearly defined and documented.

Finland’s national reference architecture for basic data resources defines ‘data resource’ as a set of data used for the same purpose and stored in a logical whole. The term ‘data resource’ therefore refers to a logical concept, not a physical register. A data resource consists of a centrally administered set of data that form a logical whole. Responsibility for the management of the information contained in a data resource is organised and assigned to a single operator. The responsibility for the information contained in a data resource and the responsibility for the development and maintenance of the resource need to be clearly defined and documented.

The ‘management and handling of documentary information’ is a phrase derived from the information model associated with the National Archives Service’s SÄHKE2 electronic archiving regulation, which encompasses actions and related documents. ‘Documentary information’ refers to information accumulated in connection with an organisation’s tasks and operations. The concept of ‘documentary information’ is medium-neutral. Documentary information documents an organisation’s tasks and therefore supports its operative objectives.

‘Data management plan’ refers to a set of guidelines for the processing, registration, and storage of an organisation’s documentary information. A data management plan applies to all the documents and data resources accumulated in an organisation as well as the systems and methods associated with the registration and processing of the information. A data management plan constitutes an archiving plan as defined in Section B of the Archives Act.
5 Legislative framework at a change

The Data Balance Sheet of 2015 described the framework of the legislation within which Trafi processes personal data. The Data Balance Sheet examined the legislative context of the documentary information, as well.

Along with digitalisation, the legislation relating to data, data protection and information security is in a state of change. Changes to the legislation also affect the legislative framework that regulates Trafi’s operations. Trafi actively observes the changes and development of the legal operative environment and prepares its operations to meet the new requirements.

One of the central changes to the legislative framework that regulates Trafi’s personal data processing is the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (later referred to as General Data Protection Regulation, GDPR), and its requirements on personal data processing.

The Ministry of Justice has established a work group for the term 17/2/2016–16/2/2018 to investigate if national legislative actions are needed because of the General Data Protection Regulation. The work group also prepares the changes the GDPR requires to the general national legislation on personal data processing as well as coordinates the legislative drafting necessary for reviewing the specific legislation. The work group is to prepare its report on the proposed amendments in spring 2017.

The European Commission has published its Proposal for a Regulation on Privacy and Electronic Communications on 10 January 2017. The purpose of the Commission’s proposal is to improve the data protection in electronic communication and to create new business in the field. The regulation’s aim is to also complement the GDPR’s objective of creating a genuine and competitive digital internal market and to simultaneously support the member states’ economic growth and competitiveness.

The European Commission’s communication on building a data-driven economy proposes juridical and policy needs-related solutions to improve the European data-driven economy. According to the communication, the Commission plans on engaging member states and interest groups in a constructive discussion concerning the proportionality of data localisation restrictions. In addition, the objective is to collect additional evidence on the nature of these restrictions and their impact on companies, especially on small and medium-sized companies, start-ups and public-sector organisations. Furthermore, the Commission would like to hear opinions on the availability and portability of data as well as on the responsibility-related questions concerning data products and services. With respect to Finland, the working paper on the Commission’s initiative on free movement of knowledge refers to the legislation project concerning the new Act on Transport Services and to My Data project.

The Ministry of Finance has established a work group to investigate the information management of the public administration on 17 November 2016. The objective is to enact a new general law on information...
management. The law on information management would provide for information management, publicity and use as well as archiving. This would further improve the opportunities for enabling common information management, utilisation of data resources, protection of citizens’ rights and digitalisation of public services. The work group has been assigned to prepare a proposal for the information management legislation to be used as a government proposal. The work group’s proposal is to be made during the spring of 2017.

The Ministry of Transport and Communications’ project concerning the new Act on Transport Services was launched in November 2015 and it realises two of Prime Minister Sipilä’s government’s key projects; the projects to build an environment for digital business operations and to make regulation more appropriate. The plan is to realise the Act on Transport Services in three stages because of its extensive content. Compiling the legislative regulation of transport services into a single law, the Act on Transport Services, promotes the examination of the transport system as a whole and makes it easier to coordinate the system’s different fields. The objective of the second stage of the project is to improve the facilities for transport services digitalisation and data utilisation. This will be realised by combining existing regulations and laying down new regulations concerning the use and disclosure of data pertaining to transport services, and regulations concerning transport registers.

5.1 HOW DOES THE EU’S GENERAL DATA PROTECTION REGULATION AFFECT TRAFI’S OPERATIONS?

The previous Data Balance Sheet examined the register controller’s responsibilities, duties and rights from the viewpoint of the effective Personal Data Act and the specific legislation concerning Trafi’s operations. The fulfilment of the controller’s responsibilities and duties as well as the data subjects’ rights in Trafi’s practical operations were observed; i.e. Trafi’s operations were examined and the areas which required improvement were identified.

As technology has developed swiftly, the collection and utilisation of personal data has increased exponentially. Personal data protection faces new challenges because of the development of the information society. Operations including personal data processing are digitalised more and more and their management is divided between several parties. The objective of the General Data Protection Regulation, which will be applied as of 25 May 2018, is to create a modern, firm, unified and extensive data protection framework for the European Union. It will secure unified, high-grade personal data protection throughout the Union. It all boils down to building trust.

Regardless of the fact that the GDPR is already effective, its interpretation is still ambiguous and unestablished.

The effects of the GDPR on national legislation and the amount of flexibility in national legislation preparation were not yet fully known when this Data Balance Sheet was prepared. We will have to wait for the EU’s Data Protection Working Party’s (WP29) instructions on and interpretations of the application of the GDPR during the transition period. Therefore, the viewpoint of this Data Balance Sheet is partially contemplative. The examination is part of Trafi’s preparation for applying the GDPR.
CONTROLLER’S RESPONSIBILITIES AND DUTIES

The previous Data Balance Sheet examined the controller’s responsibilities and duties from the viewpoints of the duty of care, the defined purpose of processing requirement, the exclusivity of purpose requirement, the necessity and accuracy requirements as well as the protection of personal data. It was observed that the development targets should include improving the processes that promote data utilisation, increasing the data protection and information security know-how as well as creating a management model for describing personal data files.

The General Data Protection Regulation emphasises on the controller’s accountability as well as the data protection by design and by default. The following section examines the central elements of the GDPR from the viewpoint of Trafi’s operations. Simultaneously, the section includes reports on the remedial measures commenced on the grounds of the previous Data Balance Sheet’s observed development targets.

Risk-based approach and impact assessment

The GDPR takes a risk-based approach on data protection. This means that the risks pertaining to personal data processing and concerning the data subject’s rights and freedoms must be assessed in advance, prior to starting the processing activity (Privacy Impact Assessment, PIA). The risks may arise from personal data processing which may cause physical, material or immaterial damage to the data subject, especially if the processing activity may lead to discrimination, identity theft, fraud or economic losses. The assessment takes account of the content and extent of the processed personal data. Because of the assessment, excessive measures are not targeted at low risk personal data processing and vice versa. Realising the risk-based approach concretises the controller’s duties.

The General Data Protection Regulation also provides for the Data Protection Impact Assessment (DPIA) and the possible prior consultation of the supervisory authority related to it. The controller must conduct a data protection impact assessment in situations in which a high risk is likely to be connected to personal data processing. An impact assessment must be carried out when data pertaining to specific personal data groups (i.a. health data), criminal convictions or violations are extensively processed, for example. In practice, the impact assessment examines the planned personal data processing measures and the methods with which the personal data protection is secured and risks are minimised. If the risk is high according to the impact assessment and the controller has not taken action to decrease the risk, the controller must consult the supervisory authority prior to commencing the processing activity, because of the risk-based duty to report.

The duties and protective measures laid down in the GDPR will always be tailored by Trafi for the particular personal data processing activity on the basis of the connected and observed risks with the help of the risk-based approach. This risk assessment should always be carried out prior to processing the personal data targeted by the impact assessment. The Data Balance Sheet of 2015 identified creating a management model for describing personal data files as one of the development targets. The common operations model for describing and managing Trafi’s registers will be completed in 2017. In addition to the aforementioned aspects, the information flow and information architecture descriptions of Trafi’s intellectual capital lay the foundation for assessing the risks pertaining to personal data processing.

The realised risk assessments support the fulfilment of the controller’s accountability and help to find out which controller’s duties and data subject’s rights relate to the particular personal data processing operation targeted by the assessment. Trafi realised an experimental PIA on two personal data files in 2016. The PIA was based on the General Data Protection Regulation’s criteria and requirements and was carried out by a third-party service provider. The conducted data protection assessments identified a few targets for development, which had to do with defective specification of retention periods pertaining to a certain kind of personal data and data file descriptions among other things. The conducted assessments helped to clarify what the risk-based approach means from the point of view of a controller. The assessments also help in laying a foundation for both PIA and DPIA.
assessments and the related processes during the General Data Protection Regulation transition period.

**Accountability**

Appropriate processing of personal data and taking the data protection measures are not yet sufficient to fulfil the requirements of the General Data Protection Regulation. The GDPR obligates Trafi to demonstrate and document the personal data processing-related activities and the practical data protection actions that Trafi uses to concretely realise the requirements of the Regulation in personal data processing. This is one of the central changes the GDPR brings to personal data processing in comparison to the current situation. In practice, accountability means that without appropriate documentation, Trafi cannot prove that it operates in compliance with the Regulation and is accountable. Thus, the data protection principles must be concretised on a practical level.

Accountability increases the methodicalness and transparency of the data protection measures and supports the defined purpose of processing personal data required by the effective legislation. Accountability can be demonstrated by, for example, providing a description of the personal data processing activity, by codes of conduct regarding different purposes of use and processing activities as well as by other documentation relating to personal data processing. The descriptions of Trafi’s personal data files and the existing codes of conduct must be updated to meet the GDPR’s requirements. In the future, particular attention should also be paid to documenting the personal data processing activities extensively and understandably throughout the data’s life cycle. This serves both Trafi and the data subjects.

As per the GDPR, organisations have a possibility to demonstrate their compliance with the Regulation with data protection certificates. Trafi will follow with interest whether or not the public administration decides to acquire certificates for demonstrating the appropriateness of personal data processing, and to what extent. When this Data Balance Sheet was prepared, no policies regarding the certificates were yet known.

This Data Balance Sheet, similarly to the previous one, demonstrates Trafi’s accountability concerning personal data processing. The Data Balance Sheets have established Trafi’s social standing as an information authority and increased trust in Trafi’s data processing and information management. They have also increased the know-how of Trafi’s staff.

**Data protection officer**

The General Data Protection Regulation obligates the public-sector operators (excluding courts) to appoint a data protection officer. The duties and status of the data protection officer are laid down in the GDPR. EU’s Data Protection Working Party (WP29) has also provided instructions regarding data protection officers.

The data protection officer’s duties include monitoring the organisation’s practices relating to data processing and ensuring that they comply with the Regulation and the possible specific legislation. The data protection officer also guides and helps the organisation in realising operations that adhere to the data protection principles and requirements. In addition, the data protection officer acts as the contact person for both the supervisory authority and the data subjects. However, the data protection officer is not responsible for the organisation’s conformity to law in matters concerning personal data processing; it is a responsibility of the organisation’s management.

Trafi has appointed a data protection officer in April 2016. The description of the data protection officer’s assignment is still taking shape and is guided by, for example, the aforementioned instructions of the EU’s Data Protection Working Party. Trafi’s data protection officer supports both the staff and the administration.

Trafi commenced a data protection working group coordinated by the data protection officer in the late 2016. The objective of the working group is to identify and specify on a practical level the General Data Protection Regulation’s requirements that concern both Trafi and the parties under Trafi’s commission in the field of personal data processing. As a concrete measure, the data protection working group will prepare a situational picture account describing the current state and the targets of data protection.

Trafi’s Data Balance Sheet 2015 will be used for describing the current state, as it gives an overall
picture of the current state of Trafi's data protection and information security as far as the essential areas are concerned. The target-related situational picture will be based on the requirements of the General Data Protection Regulation. The difference between the current and targeted state will show which of Trafi’s existing procedures need to be improved so that they would meet the requirements laid down in the Regulation.

The data protection working group’s objective is to plan and schedule the development measures that will help Trafi to achieve the targeted state before May 2018. The working group has already identified development needs in the fields of processes related to data security breaches, commission agreements, informing the data subjects as well as the openness and transparency of personal data processing, for example. In addition to the aforementioned tasks, the working group has been assigned to produce material, with which the organisation’s internal know-how will be increased in regard to the future implementation of the GDPR.

**Data protection by design and by default**

Data protection by design and by default means that the data protection principles of the General Data Protection Regulation must be taken into account already when planning the personal data processing activity. The necessary security measures must be included as part of the personal data processing activity. In this context, the newest technology and its realisation costs as well as the nature, extent, context and purposes of personal data processing must be considered. Furthermore, the risks of varying probability and severity that concern the rights and freedoms of a natural person must be taken into account. By default, only the personal data that are necessary for the particular processing activity must be processed. This obligation concerns the volume of collected data, the extent of processing, the retention period of data and their availability.

Trafi realises the data protection by design and by default through internal instruction and practices, for example. Trafi implements a development life cycle model, which requires initiatives, projects and development proposals to include a data protection and information security statement. In practice, this means that for example the processed personal data pertaining to each developed target must be taken into account at the project’s preliminary report stage, and the personal data life cycle must be planned and defined. This also enables and secures cost-effectiveness as no afterwards changes to the information systems have to be made as far as personal data processing requirements are concerned.

Data protection by design and by default cannot be realised by isolated measures alone; for example, by implementing traceability entries in the information system, in which the personal data are processed. In addition to taking concrete action, it is essential to understand what data protection by design and by default means in reality, and that this requirement concerns the entire life cycle of data. Attention must be paid on what data protection by design and by default encompasses for the data subject. In practice, the data subject must be able to rely on the fact that Trafi has taken care of fulfilling the data protection requirements of personal data processing on its own initiative. Thus, it is essential to implement the data protection principles as part of the organisation’s operations. In practice, the interpretation of data protection by design and by default is similar to the defined purpose of processing and duty of care laid down in the Personal Data Act.

**Reporting data security breaches**

The General Data Protection Regulation adds new elements to the register controller’s responsibilities. One of the new elements is reporting data security breaches. In practice, the controller is now obliged to report security breaches to both the data subject and the supervisory authority. The controller’s duties also include documenting all personal data security breaches. The Regulation defines the precise contents of both the report and the documentation.

A data security breach refers to a personal data security breach that causes an accidental or unlawful destruction or loss of the recorded or otherwise processed personal data.
data, or a change to it, or unauthorised disclosure of or access to this data. A data security breach and the related duty to report particularly concerns a breach targeted at personal data.

The Regulation lays down a time frame for making the reports. A report must be delivered to the supervisory authority without undue delay and, where feasible, not later than 72 hours after having become aware of the breach. Under certain criteria, the report may be unnecessary. In practice, this refers to situations in which the breach is not likely to cause a high risk for the rights and freedoms of the natural person. The report must be delivered without undue delay. Under certain prerequisites, the report may be unnecessary; this includes situations in which the personal data targeted by the data security breach are encrypted and the required encryption keys have not been compromised.

In addition, an effective and sufficiently extensive crisis and disruption communication must be organised. Furthermore, a specified reporting process and operational instructions for reporting and breach documentation must be prepared. Trafi must also define the criteria and foundation for situations, in which no risk or no high risk is considered to be caused for the rights and freedoms of a natural person. All of this requires staff training.

Trafi has already started the data security breach management work. One of the ways to demonstrate the organisation’s accountability is to organise a well-documented and up-to-date process description and to prepare the related instructions. This builds and strengthens the trust in the controller’s ability to meet the requirements concerning data security breaches.

**Processor**

The General Data Protection Regulation names a new operator in relation to the personal data processing: the processor. The processor is a natural or a juridical person, authority, office or other body that processes personal data on behalf of the controller. The GDPR also obligates the controller to conclude an agreement on personal data processing between the controller and the processor. The processor is responsible for adhering to the GDPR’s requirements with respect to the processing activities. Trafi has made contracts concerning data processing on behalf of Trafi with several parties. These parties include, for example, organisations that practice contractual registration activities. The contracts concerning personal data processing will be re-evaluated and complemented with respect to the GDPR.

**5.3 RIGHTS OF DATA SUBJECTS**

In the previous Data Balance Sheet, the rights of data subjects were reviewed from the point of view of the right to inspect records, the right to be informed, and the right to prohibit processing and restrict the release of personal data. The right of data subjects to request corrections to their personal data was also addressed. As a result of the General Data Protection Regulation (GDPR), the role of data subjects’ rights in data controllers’ duties is now more important than ever. From Trafi’s point of view, it means that processes and information systems must be reviewed and modified as necessary in line with the changes required by the GDPR, also with regard to the rights of data subjects. During the transition period of the GDPR, a review is needed to determine which categories of personal data the data subjects themselves consider the most important and would like to have control over – for example, by prohibiting the use of personal data for direct marketing purposes.
In principle, the rights of data subjects provided by the GDPR correspond to the rights set out in the current legislation. Further, the rights of data subjects are aimed at increasing the inclusion of data subjects in the processing of their data, improving controllers’ transparency with regard to their processing activities, and enable data subjects to decide how their data can be processed. However, the GDPR contains more detailed provisions on the rights of data subjects than existing legislation, including some new rights and changes to the processes that are in place to safeguard rights. For example, it introduces certain changes with regard to provisions on data subjects’ right to receive information about the processing of their personal data.

In addition, the GDPR defines the rights of data subjects according to the legal basis of data processing. In practice, data subjects’ rights vary depending on the legal basis upon which the processing of personal data is based. In Trafi’s case, for example, data subjects are generally not able to exercise the right to have their data transferred between systems, because the primary legal basis of the processing of personal data processed by Trafi is not a consent or an agreement.

In this context, it is necessary to review what types of data subjects’ rights Trafi’s operations as a data controller involve, and how Trafi currently fulfils, or in the future will fulfil, these rights. The review is based on the assumption that the legal basis of the processing of personal data by Trafi is either the performance of public duty or the exercising of public authority, or done in order to comply with the controller’s statutory duty.

**Right to receive transparent information about the processing of personal data**

The starting point of the fulfilment of data subjects’ rights is the provision of information to data subjects about their rights. The GDPR sets a precedent with regard to openness in the processing of personal data and requires, for example, that Trafi provide concise, transparent and clear information about how it processes personal data. Another requirement is that information must be readily available.

The information obligation and the data subjects’ right to information about the processing of personal data are also provided for in the Personal Data Act. The GDPR also further defines and expands some of the provisions of the Personal Data Act. Trafi already has in place personal data file descriptions that are compliant with the Personal Data Act. It was already determined in the previous year’s Data Balance Sheet that some of the descriptions are out of date and do not fully reflect the ways in which personal data are processed. One clear objective for the transitional period of the GDPR is to bring the details on the processing of personal data, and the associated information, up to date and bring them into compliance with the GDPR.

Since Trafi processes high volumes of personal data, the practical implementation of information provision should also be given consideration. Is presenting the information in conjunction with electronic services the clearest way to provide information? Or would it be better to provide information on Trafi’s website? For example, when someone who does not use the Internet takes their car to a vehicle inspection station, how do they receive the necessary information? In the spirit of the GDPR, it would be ideal if the best practices on the transparency of data processing could be defined by data subjects themselves. In practice, the right to receive information probably means that there is no one single right way to provide information; instead, the practice should consist of various solutions and approaches. In this respect, Trafi will continue to focus on producing written as well as visual information resources. Visual resources would likely improve the accessibility of information and better support the fulfilment of data subjects’ rights.

**Right of access**

The GDPR improves the right of data subjects to access their own information. In practice, the right itself has not been amended, but the GDPR does not specify how the request should be submitted. In future, requests no longer have to be made in writing or signed. However, in order to ensure that the right is fulfilled without infringing on the rights or freedoms of other parties, Trafi has the obligation to verify the identity of a person requesting to exercise their right to access personal information. Trafi is still entitled to request additional information in order to verify the data subject’s identity.

In a digital world, one important point is that if a data subject submits the request electronically, Trafi has the
obligation to provide the information in a commonly used electronic format. Data subjects can also request information to be provided in other forms. This is unlikely to create a conflict with the fact that until now, data subjects have been able to view their personal data, for example, as part of digital service processes such as when registering a vehicle.

It is probable that Trafi will continue to provide data subjects access to their personal data primarily in conjunction with digital services. This would make sense also because it provides data subjects a comprehensive view of what type of registration data are recorded in conjunction with a given digital process, such as a permit application. Trafi must be prepared to provide access to personal data in other ways as well, if required by data subjects. According to the GDPR, Trafi must respond to data subjects’ requests within one month.

Right to have data transferred between systems
Data subjects have the right to access their personal data held on file and have their data transferred to the system of another controller. The data must be provided in an organised, commonly used, machine-readable form. Data subjects have the right to have their data transferred directly from one controller to another, if it is technically possible. In practice, the right to transfer data between systems can be fulfilled only if the legal basis of the processing of personal data is based on consent or agreement. Another prerequisite is that the data are processed automatically. Further, the exercise of the right must not have a detrimental effect on the rights or freedoms of other parties.

From the point of view of Trafi and its data subjects, the right to have data transferred between systems does not apply. However, this right can be reviewed in connection with continuing digital developments and increased possibilities of data use. In this case, one question is whether Trafi could provide data subjects access to their personal data via interfaces. This way, data subjects could also use their personal data held on file by Trafi in other services based on the so-called My Data principle. This would help to support data subjects’ rights and confidence in the processing of personal data by authorities and improve transparency. These developments will also be monitored by other authorities.

Right to object
The GDPR contains the data subjects’ right to object to their data being processed for certain purposes based on personal preference. In existing legislation, this right is part of the Personal Data Act (right to restrict) and special provisions governing the processing of personal data. In practice, the Personal Data Act has provided data subjects the right to prohibit a data controller from processing their personal data for direct marketing, distance selling and other marketing purposes, market research and survey purposes, or public records or genealogical research purposes. With regard to Trafi, the right to prohibit has been expanded by special laws that apply to specific modes of transport. In practice, the Watercraft Register Act, the Vehicular and Driver Data Register Act and the Aviation Act enable data subjects to prohibit these registers from sharing their address details, which has prevented Trafi from processing the address details of data subjects within the scope of the prohibition.

Firstly, the GDPR contains the right to object to the processing of personal data based on the performance of public duty or the exercising of the controller’s public authority, or the fulfilment of the controller’s or a third party’s legitimate interest. Secondly, the right to object as provided by the GDPR applies to the processing of personal data for direct marketing purposes in the same way as existing legislation does. Further, data subjects have the right to object to the processing of their personal data for scientific or historical research purposes or statistical purposes, unless it is necessary in order to perform a public duty. There is currently no known interpretation of a situation in which it is deemed necessary to process personal data in order to perform a public duty, or whether national flexibility is possible in this regard.

From the point of view of Trafi, the GDPR reinforces practices that are already in place. Data subjects will continue to be able to object to the use of their personal data for direct marketing purposes insofar as the law

The application and interpretation of the rights of data subjects as provided by the GDPR will be further defined on the basis of the guidance issued by the Data Protection Working Party of the European Union and, in the future, based on case law.
allows Trafi to process personal data for such purposes. Similarly, data subjects must be informed about their right to object, for example, in conjunction with direct marketing activities carried out by Trafi’s information services. The GDPR provides more detailed definition with regard to the requirement that data subjects must be provided clear information regarding their right to object to the processing of their personal data, and that it must be provided separately from other information. Trafi’s information systems already offer the possibility to record a data subject’s objection to the use of his or her personal data. This also ensures that information about the right to object can be transferred to agents who handle such data as part of their duties. In addition, the provision which enables data subjects to exercise their right to object by technical means is pertinent to Trafi. In Trafi’s case, it means that data subjects will be able to object via electronic services. These services are already in development and likely to be implemented by the end of 2017. In practice, data subjects can exercise their right to object by specifying their preference when accessing their data as registered users.

**Right to request correction and right to be forgotten**

According to the GDPR, data subjects have the right, equivalent to the one provided by the Personal Data Act or associated special provisions, to demand that the controller rectify incorrect or incomplete personal data held on file. The right to request correction or addition would be implemented under an existing procedure. The GDPR does not specify how the procedure is to be implemented. It does, however, specify the period within which the controller must process the data subject’s request. This also applies to Trafi. Trafi must notify the data subject of the measures taken as a result of the request within one month of the date of the request. In any case, the request must be processed without undue delay. The deadline can be extended in special cases.

In addition to the right to request rectification of incorrect or incomplete personal data, a data subject also has the right to request that a controller remove his or her personal data file. In practice, this means that data subjects have the right to be forgotten in certain cases. This right is already included in the current Personal Data Act, but the provision does not apply to Trafi’s operations. The exclusion, in practice, of authorities from the scope of the provision is justified on the grounds that authorities process personal data for the purpose of exercising public authority. Authorities would not be able to perform their public duty if data subjects were able to demand that their personal data files be deleted and forgotten. For example, authorities process data on individuals’ traffic violations, and it would not be reasonable to have such data removed upon the request of the data subject.

**Right to restrict the processing of personal data**

The GDPR gives data subjects the right to restrict the ways in which their personal data are processed. In practice, the right has been fulfilled by existing legislation through the prohibition authority of the Data Protection Board. The Data Protection Board has been able to prohibit the processing of personal data in certain circumstances. The right to restrict the processing of personal data, as provided by the GDPR, means that in a dispute, data subjects will be able to, at least temporarily, prohibit the controller from processing their personal data. For example, this may be permitted in cases where the data subject disputes the accuracy of their personal data held on file.

Despite the high volume of data subjects, Trafi receives only a handful of correction requests per year. In addition, Trafi has a right under special legislation (Vehicles Act, 1090/2002) to rectify incorrect or incomplete data. With regard to the interpretation of the GDPR, it remains to be determined whether rectification of incorrect
data by the authority is deemed a situation where Trafi would have to refrain from processing the data until the rectification request has been processed. Or are authorities and the personal data files controlled by them excluded from this provision? Are authorities entitled to process personal data regardless of any active requests by the data subject that the data be rectified?

### 5.4 DATA PROTECTION AND COMPETENCE IMPROVEMENT MEASURES

The GDPR introduces a raft of new obligations and rights. It also contains provisions on administrative sanctions. However, during the preparatory work it should be emphasised that the GDPR should not be examined from the point of view of administrative sanctions. In the implementation of the GDPR, it is important to identify, define and document the organisation’s data processing activities and learn from them. As stated in the first Data Balance Sheet, data protection and data security should be considered as part of the operational activities and as an integral part of the personnel’s know-how.

In addition, know-how could be increased through guidance, opinions and decisions issued by supervisory authorities as well as through case law. Tangible examples of this include Trafi’s operations and guidelines with regard to the processing of log data requests made by the public. Trafi aims to create a smooth processing procedure that helps to ensure the appropriateness and efficient handling of log data requests. The Supreme Administrative Court has given a ruling (69/2014) on a case concerning the publicity of data subjects in police authorities’ log data. Based on the ruling, Trafi has drawn up internal guidelines on the processing of log data requests. Trafi has subsequently refused a number of log data requests in accordance with the guidelines. Two such decisions have been appealed to the administrative court. The Administrative Court of Northern Finland dismissed one appeal in its ruling on 15 November 2016 (16/0369/1). The ruling reinforces and supports Trafi’s interpretation of the processing of log data requests made by members of the public and of the definition of a party as referred to in the Act on the Openness of Government Activities. The other appeal has not yet been decided.

In 2016, Trafi received three information requests from the Data Protection Ombudsman concerning data held in the Vehicular and Driver Data Register. Based on the information provided, the Ombudsman did not find fault in Trafi’s practice, and no changes were made to the way Trafi processes personal data as a result of the information requests. In addition, the Ombudsman has issued guidance with regard to the processing of personal identity numbers in connection with identity verification. The Ombudsman also reminded officials that in remote service situations, individuals cannot be reliably identified based on the name and personal identity number alone. The Parliamentary Ombudsman has also requested a report from Trafi regarding the processing of personal identity numbers in email communications. The Ombudsman has not yet issued its decision on the matter. Trafi has produced internal guidelines on the processing of personal identity numbers since receiving the Ombudsman’s request. The guidelines also cover issues highlighted in the guidance.

**FIGURE 5. Current state of knowledge competencies among Trafi personnel, 2016 averages**

Assessment scale of 1-5 (where 5 is the best possible score).

- Y40 – Information management
- Y41 – Production and use of information
- Y42 – Reliability of information
received from the Data Protection Ombudsman.

In order to increase and manage its competence capital, Trafi has introduced a competence management model. The model also covers approaches used to identify, describe, measure and develop competencies and competence gaps in line with Trafi’s strategic objectives. Competence management ensures that Trafi and its personnel have the necessary competencies now and in the future.

Trafi introduced the Sympa competence management information system in 2013 in order to document competence management measures. Sympa provides a comprehensive view of the current state of Trafi’s competencies, the current objectives and competence development needs. Sympa is also used in annual competence performance reviews, in which a personal development plan is drawn up for each employee and reviewed each year. Currently identified core competencies include information management, the production and utilisation of information, and the reliability of information. The minimum level which each official should achieve has been determined for each competence area. For example, with regard to the reliability of information, the base-level target is that each official should be familiar with at least the basic elements of the reliability of information and have an overall understanding of the duties of his or her competence area. The Sympa system facilitates the review of the current state and the monitoring of the development of each competence area.

**FIGURE 6. The basic levels of knowledge competence among Trafi personnel**

<table>
<thead>
<tr>
<th>INFORMATION MANAGEMENT</th>
<th>The individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>- understands and has a good command of information related to Trafi’s operations.</td>
<td></td>
</tr>
<tr>
<td>- is able to utilise information as an asset of the organisation and use it to innovate new, more efficient processes, services and approaches.</td>
<td></td>
</tr>
<tr>
<td>- is familiar with the concepts and methods of information management.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRODUCTION AND USE OF INFORMATION</th>
<th>The individual is able to</th>
</tr>
</thead>
<tbody>
<tr>
<td>- source and produce relevant and useful information, research and impact assessments to support the organisation’s activities as well as public decision-making and the functioning of society.</td>
<td></td>
</tr>
<tr>
<td>- consolidate information from different sources in new ways to support both existing and new usage needs and services.</td>
<td></td>
</tr>
<tr>
<td>- identify the systems, processes, partners and services involved in information sharing.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RELIABILITY OF INFORMATION</th>
<th>The individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>- understands the role of data protection and data security requirements of different parties in the context of the processing and reliability of information from the point of view of Trafi’s operations and reputation (e.g. the processing of confidential personal information, various security plans and confidential documents).</td>
<td></td>
</tr>
<tr>
<td>- takes into account statutory requirements concerning the processing of such information in their personal tasks and is able to protect the information as appropriate.</td>
<td></td>
</tr>
<tr>
<td>- understands the requirements of data protection and data security with regard to operational continuity, personnel security and the operating facilities.</td>
<td></td>
</tr>
</tbody>
</table>
6 Comprehensive management through enterprise architecture approach

The world is becoming increasingly complex as a result of digitalisation, networking, crowdsourcing and technological development. Issues and problems also become more complex, and it is no longer possible to comprehensively identify all interconnections at play. In this multidimensional and constantly evolving world, organisations must be able to identify important changes, flexibly adapt to them and, in some cases, drive the change. To this end, organisations must have a sufficiently comprehensive overview of their operating environment and their internal structures. In short, the rapidly changing world requires organisations to understand wholes and utilise business intelligence.

6.1 THE ENTERPRISE ARCHITECTURE METHOD

In recent years, the government has promoted a more holistic approach to public governance. There are various holistic review methods and tools available, but the recommended method is enterprise architecture; under the information management act of 2011, it is now the required tool at least in central government agencies. The enterprise architecture method for public governance is described in the Public Administration Recommendation (JHS 179 Kokonaisarkkitehtuurin suunnittelu ja kehittäminen). The method described in the recommendation is compliant with the enterprise architecture method described in the international TOGAF standard, which is maintained and developed by the global OpenGroup consortium. The method provides a systematic and standardised model for analyses on the organisation and its operating environment as well as change management and development.

The enterprise architecture method is based on a specific framework of reference i.e. approach. In the framework of reference and the associated method, the subject is described and analysed from four points of view, at four different levels, and from two temporal perspectives. The four points of view are business, data, applications and technology. The four levels are the principle level (guidance), the conceptual level (what), the logic level (what) and physical level (how). The temporal perspective is linear: the current state and the target state. The existing structure is described by the current state, and the target state describes the desired structure that is sought through the development measures. If necessary, several consecutive target states can be described with detailed transitional phases.

4 http://www.jhs-suositukset.fi/suomi/jhs179 (in Finnish)
A holistic review brings together elements from different viewpoints or levels. The review is based on a case-specific needs assessment.

For example, it can describe
• the services of a specific area of business
• the customers for whom services are produced
• the processes used to produce the services
• information used or produced by the process
• applications used to produce the processes
• technologies used to build the applications.

The descriptions of the architecture's viewpoints and the management of the elements of each viewpoint can be developed in parallel with one another provided that the interoperability and compatibility of the viewpoints is taken into account. Trafi is currently simultaneously developing its business architecture (creation of a service portfolio, synchronisation of service and process descriptions), data architecture (description of a conceptual model, creation of a data management model) and the system and application architecture (description and comparison of the current and target states of ICT architectures, reduction of technical debt).
FIGURE 8. Example of the description of the current state of the enterprise architecture of a specific business area; combines elements from different architecture viewpoints and their interdependencies.
6.2 CURRENT STATE OF TRAFI’S ENTERPRISE ARCHITECTURE

The first version of the enterprise architecture (EA) description was drafted in 2016 using the enterprise architecture method for public governance. The version only covered the current state of the EA. The architecture domains addressed in the first draft were business, data and applications; work on the description of the current state of technology is only just starting. The current state description includes e.g. the service map, process map, data resource map and systems map. In addition to agency-level descriptions, more detailed descriptions were produced for specific business areas (aviation organisation permits and vehicle taxation). Trafi uses the EA descriptions as management tools i.e. for development and decision-making purposes.

The structure of the current state of Trafi’s EA consists of the following elements:

- principle-level guiding information (strategy, performance agreement, legislation, etc.)
- Trafi’s organisation structure
- Trafi’s external and internal services
- Processes used to produce the services
- Stakeholders (in the broader sense; includes customers)
- Data resources which are utilised in the processes and for which data are produced by the processes
- Applications used to support the implementation of processes.

The strategy and the performance agreement steer development and the content and quality of service production. Legislation sets the conditions and requirements on services, processes and data resources. The stakeholders steer, use or produce services.
Structural elements were identified from Trafii’s EA structure and described in conjunction with the work on the description of the current state as follows:

- the operational delivery of development and service production is carried out by Trafii’s 10 departments, 34 units and 6 teams.
- 121 external services, 57 internal services
- 6 core business processes, 3 upper-level guiding processes and approx. 10 support processes.
- approx. 170 legislative elements (key international treaties, international and national statutes such as acts and regulations)
- more than 100 stakeholder groups
- Approx. 80 (primary) information systems
- 23 data resources
- 3 sectors, 5 transport mode directors and matrices, the functions under the director general.

The current state descriptions must be reviewed before detailed analyses can be produced. However, based on the description and analysis work done so far, it is probably safe to say that Trafii’s competence area and operating environment are heavily regulated (so far only the most important regulations have been described, and there are already more than 100 elements) and involve numerous stakeholder groups. This makes Trafii’s operating environment fairly complex and challenging.

In addition to analysis purposes, the current-state descriptions can be used, for example, to describe various information flows (between services, processes and applications) when identifying functions, data resources or applications in which personal data are processed. The intention is to continue work on data architecture descriptions as part of the overall EA description process. The purpose of the work is to support the use of the data management model, ensure the quality of data (master data management) and possibly support the implementation of the GDPR’s requirements in the agency’s operations.

### 6.3 INFORMATION MANAGEMENT

Information management refers to procedures, methods, and practices that enable data to be located, processed, and used throughout their life cycle. Information management consists of several areas, such as master data management, case management, open data management, and metadata management, as well as data management. Format is not relevant; information management covers all forms of information.

Information can be classified in different ways. In this Data Balance Sheet, we have decided to divide the Trafii’s information resources into two categories: explicit knowledge and tacit knowledge.

**Explicit knowledge** is often in a written format that makes it easy to store and transmit. Explicit knowledge can be articulated via media such as different languages and mathematical expressions. Explicit knowledge tends to be more scientific, documented, and stored. It can be expressed by words and numbers. Examples of explicit knowledge include documents, reports, and notes.

**Tacit knowledge** is knowledge accumulated by experience, some of which is conscious and some of which is unconscious. Tacit knowledge could be described as intuition and ability. Tacit knowledge can be difficult to verbalise, which is why it is challenging to transfer from one person to another.

In the context of information management, it is also important to discuss the concepts of knowledge management, business intelligence, and database management. Knowledge management can be seen as an umbrella term that encompasses both database management and business intelligence. Database management, in this Data Balance Sheet, refers to the procedures used to manage information. Business intelligence is more closely related to general management and the use of information in business.
Information is an intangible asset that relates to how tasks are performed and managed in an organisation. These days, many organisations recognise information as one of the factors that contribute to their success, which is why the production and use of information need to be managed as an integral part of an organisation’s business. As information comes in so many different forms, there are various different perspectives to consider. Good and efficient information management enables all of an organisation’s information to be put to effective and safe use. This increases the value of information as an asset for the organisation.

The importance of information management continues to grow as technological development and digitalisation progress and new forms of information emerge. Data resources are growing fast, and more and more attention needs to be given to the overall management of all aspects of information. New technologies enable more efficient processing and sharing of information, which also creates challenges for the comprehensive management of information. The methods and channels of publishing information have become more diverse, and a lot of information is also produced by social media.

6.4 LIFE CYCLE OF INFORMATION

Information needs to be managed throughout its life cycle. The life cycle of information begins when the information is created or received and ends after various stages of processing either at the removal of the information after its agreed retention period or at its permanent archiving. Information management requires agreeing on procedures for collecting and storing, processing and removing, and archiving information at the various stages of its life cycle. The aim is to ensure the integrity and availability of the information so that it can be used as efficiently as possible.

FIGURE 10. Stages in the life cycle of information
Integrity and availability are key concepts of information management. Integrity refers to ensuring that information does not change uncontrollably but remains flawless and in its intended form. Integrity has been preserved if the information is in its original intended form and nothing (human, machine, or software) has altered it contrary to plans. Availability refers to ensuring that information can be accessed easily and at the right time. Availability is extremely important for the usability of information.

6.5 INFORMATION MANAGEMENT AT TRAFI

Trafi’s operations involve collecting, producing, and maintaining vast amounts of different kinds of information that is vital for society. Trafi recognises the importance of information and treats information as another mode of transport alongside traditional modes of transport. Information is also one of Trafi’s strategic objectives. Good information management is vital for Trafi to be able to use information as one of the key factors contributing to its success.

Information management promotes the availability and usability of information. In order to be able to use its data resources effectively, Trafi needs an operating model for information management. Tangible information management includes, for example, agreed administrative procedures, coordinators, and keeping certain descriptions up to date. Trafi recognises the need for these tangible elements, and some of them have already been successfully adopted.

In 2016, Trafi produced a first version of the information management process, which describes the life cycle stages of information management. In 2017, the intention is to draw up best practices for information management based on the process.

The information management life cycle is divided into eight stages, and each stage is described through best practices. The stages are specified in Figure 11.

Trafi processes high volumes of information in various business processes. Now the intention is to further develop information management by making it part of the business processes. This will help identify information produced by the business processes and ensure their consistency, agility and profitability. In essence, the information management process is aimed at improving data quality management. All information is processed in the same way regardless of the process, which means that it is available for all processes as needed.

When information management is an integral part of the organisation’s operations, confidence in the agency’s service increases. The information management process will facilitate the interoperability of applications, which provides many benefits. Interoperable applications support the digitalisation of the business operation and the use of common indicators for all information.
Data management at Trafi

Data management is part of information management. In this Data Balance Sheet, data management refers to information systems or procedures that are used to control information by means of preconfigured metadata. Data management supports the systematic control, formulation, management, and storage of the information produced in the course of the agency’s operations. At Trafi, data management currently focuses on documentary information. Trafi manages its documentary information electronically via a centralised data management system. Data management is coordinated via a case management system, to which operative systems can be linked via case management interfaces.

A data management plan was drawn up for Trafi at the time of the agency’s creation. It sets out Trafi’s tasks, the associated processes and document outputs. Cases are opened under tasks which are part of the data management plan. The plan was updated in 2016 as part of the Data Management project. Based on the update, Trafi has submitted a proposal on documents to be retained indefinitely in the National Archives.

Documentary information is managed with the help of SÄHKE1 metadata. Trafi’s case management system is SÄHKE1-certified as of 2013 (fixed-term certification), which means that documentary information produced in the course of electronic data management can be stored electronically. In 2016 as part of the Data Management project, the processes for the processing of document-based data were described in accordance with the Sähke2 specification, and the case management system received Sähke2-level digital storage certification. The certification applies retrospectively to document-based data of the case management system since 2010.

Trafi is currently implementing the Document Management Development project which extends the scope of data management to include document management as applicable. Electronic data management and its development are aimed at making the processes automated and more efficient. For example, in 2016 an interface in which processes are automated with the help of Sähke2 metadata was implemented for the case management system as part of the case management development project.

The use of common national SÄHKE2 metadata also enables the further development of sharing documentary information between different organisations.

Master data management at Trafi

Master data management is an element of information management. Master data are data that an organisation always needs in the same format in its operations. Master data are needed and used in different processes across the organisation. One of the characteristics of master data is that from the perspective of an organisation’s operations, master data are static data that are not constantly changing. Another characteristic is that master data have an agreed-upon view that is shared across the entire organisation.

From the perspective of public administration, master data include, for example, the records of natural persons held and maintained by the Population Register Centre. Trafi’s vehicle and licence and permit records are also master data. Master data held by other agencies include records on businesses, organisations, properties, transport, weather, etc.

Figure 12 shows Trafi’s data broken down to three different levels. Trafi-level data are master data that are used across the entire organisation.

Trafi’s master data include, among others, details of natural persons and legal persons, which we get from the Population Register Centre. We may enrich these records by other information collected through our business processes, such as individuals’ email addresses or telephone numbers. The aforementioned basic personal data are used in connection with all modes of transport, for permit, registration, and inspection processes, for example.

Mode of transport data are divided into information categories specific to each mode of transport. Examples include the volume data of hot-air balloons in aviation and depth data relating to boats in the maritime sector. In addition to these data, Trafi has system-level data, which are used in specific systems. These data include, for example, internal data relating to the functioning of each system.
Trafi’s master data management has been developed by various methods over several years. The latest feasibility study was launched in 2015. The situation analysis conducted in connection with the study revealed areas of master data management where progress has already been made but that still require further work. Observations made in connection with the feasibility study included the following:

- Lack of a data management model
- Progress made with regard to the information architecture
- Progress made with regard to master data management
- Progress made with regard to identifying master data
- Need for the integration of master data recognised but still challenging
- Business process development together with master data management still insufficient

FIGURE 12. Data levels

1. **Trafi-level data**
   Data used across the entire organisation

2. **Mode of transport data**
   Data specific to each mode of transport

3. **System-level data**
   Data used in a single system

- Boats and ships
- Licences/permits
- Vehicles
- Road
- Maritime
- Licences/permits
- Aviation
- Licences/permits
- Aircraft
- Rail
- Engines and carriages
- Licences/permits
- Carriages
7 Data inventory and key figures

The objective of the data inventory carried out for the Data Balance Sheet is to identify Trafi’s intellectual capital, what information Trafi’s most important personal data files contain, and in which information systems the data are processed. The section on information flows describes the information flows related to receiving and disclosing information. Information flow descriptions are illustrated by more detailed descriptions relating to the registration of vehicles and aircraft.

7.1 TRAFI’S INTELLECTUAL CAPITAL

Trafi’s intellectual capital consists of vast data resources concerning transport and mobility. In this context, a ‘data resource’ is a set of data derived from operational needs and determined for administrative reasons to make the data easier to manage. Conceptually speaking, a data resource covers a centrally administered set of data that form a logical whole. The majority of Trafi’s current data resources relate to registration and permit information, which the agency needs to perform its duties. Quantitatively, most of the information relates to road transport.

**FIGURE 13. Data resources**

- **Road**
  - Vehicle information
  - Tachograph card information
  - Driving examination information
  - Vehicle tax information
  - Driving licence information

- **Aviation**
  - Aircraft information
  - Aviation control information
  - Aviation occurrence information
  - Personnel qualification information

- **Maritime**
  - Watercraft information
  - Pilot licence information
  - Ice class information
  - Maritime incident information
  - Ship inspection information

- **Rail**
  - Personnel qualification information
  - Rail incident information
  - Rolling stock information
The more detailed contents of the data resources are described below.

**Common data resources:**
- Common data resources are used for several modes of transport, subject to the law.
- The photographs contained in the data resources are used in driving licences, for example.

**Personal data:**
- Information about individuals, businesses, and organisations, as well as photographs and signatures

**Road data resources**
- Road data resources consist of the contents of the Vehicular and Driver Data Register.

**Vehicle information:**
- Details of vehicles

**Vehicle tax information:**
- Tax information relating to vehicles

**Tachograph card information:**
- Information relating to professional competencies and tachograph cards

**Driving examination information:**
- Information about the examinations of vehicle drivers

**Driving licence information:**
- Information relating to driving licences and permits
Aviation data resources
- Aviation data resources consist of information about aircraft, personnel qualifications, and aviation control.

Aircraft information:
- Information about aircraft, owners, users, holders, and representatives
- Information about liens on aircraft

Personnel qualification information:
- Information about applicants and holders of licences, competence certificates, ratings, and approvals
- Theory knowledge examination information
- Information about individuals’ health

Aviation control information:
- Information relating to the permits, audits, and supervision of aviation operators

Maritime data resources
Maritime data resources consist of information about ships and watercraft, as well as data on seafarers, pilot licences, ice classes, and the VTS system, and ship inspection information.

Ship information:
- Information about Finnish ships used for merchant shipping
- Information about foreign ships that deal with Trafi
- Shipbuilders
- Rights of ownership
- Liens on ships

Watercraft information:
- Information about watercraft and engines, as well as owners and holders of watercraft

Seafarer information:
- Information about Finnish seafarers and seafarers working on board Finnish ships
- Seagoing service, training, and competence information

Pilot licence information:
- Information about pilots’ licences
- Information about pilot exemption certificates and exemption certificates, as well as the associated individuals, routes, and ships

Ice class information:
- Information about ice class certificates granted to ships that call in Finnish ports

VTS system information:
- Information about the competencies of VTS operators

Ship inspection information:
- Information about ships’ inspections for specific trading areas
Rail data resources
Rail data resources consist of information about personnel qualifications and rolling stock.

Rolling stock information:
• Information about rolling stock on the railways, such as the owners and holders of items of rolling stock that have been authorised to be placed into service and the units responsible for maintenance
• Information about restrictions on the use of rolling stock
• References to the authorisations for placing items of rolling stock into service

Personnel qualification information:
• Information about licences issued to individuals in railway safety roles, further diplomas, and competence certificates, as well as exemption decisions

In addition to the aforementioned data resources, there are separate data resources on aviation occurrences and rail and maritime incidents. The contents of incident and occurrence records are described in more detail in Section 7.2.5.

7.2 INFORMATION FLOWS

Trafi collects and discloses information for several different purposes. The following sections describe Trafi’s most important personal data files, and key figures and information flows associated with registers. The information flow descriptions cover the following:
• Information producers
• Information users
• The data resources involved
• The purposes for which the information is used

7.2.1 Road
Trafi acts as the type approval and registration authority for vehicles in Finland. Trafi’s basic technical vehicle information consists of type approval information received from various EU authorities and details of individual vehicles received from vehicle manufacturers or manufacturers’ representatives. Vehicles are entered into the register on the basis of advance notifications, registration inspections, or individual vehicle registration, at which time information about the owner, holder, and the intended use, among other details, is also entered in addition to the aforementioned technical information. Trafi strives to ensure the accuracy of vehicle registration information and the regulatory compliance of vehicles.

The national Vehicular and Driver Data Register is kept to allow Trafi to attend to the aforementioned tasks and other duties. Provisions on the keeping of the register are laid down in the Vehicular and Driver Data
Register Act (541/2003). The objective of keeping the register is to improve traffic safety, to lower the harmful environmental impacts of road transport, and to attend to road transport tax duties and manage liens on cars.

In practice, the Vehicular and Driver Data Register is a register of vehicles and the associated taxes and liens, operators of vehicles, safety advisers for road transport, tachograph cards, examinations for transport operators that require a licence, and issued certificates.

FIGURE 14. Key figures relating to the Vehicular and Driver Data Register in 2016
**FIGURE 15. Information flows relating to road transport**

**AUTHORITIES**
- Police
- Defence Forces
- Customs
- Population Register Centre
- Judicial administration
- National Board of Patents and Registration; Tax Administration
- Competent ELV Centres

**PRIVATE SECTOR OPERATORS**
- Vehicle manufacturers and importers
- Motor Insurers’ Centre and transport insurance providers
- Recipients of driver qualifications
- Handlers of cards used in road traffic monitoring equipment
- Vehicle inspectors and registration partners
- Service providers of road transport permits (individuals), vocational training providers and examiners
- Driving licence and permit manufacturer

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**ROAD TRAFFIC**

### Public information provision
- Motor Insurers’ Centre, insurance companies and the State Treasury
- Traffic accident investigation committees
- Vehicle inspectors and registration partners
- Vocational qualification service providers
- Recipients of driver qualifications
- Registration authorities in Åland and EEA member states
- Handlers of cards used in road traffic monitoring equipment
- Authorities in EEA member states, the European Commission, authorities under international conventions
- Traffic Accident Board
- Service providers of road transport permits (individuals)
- Card and permit manufacturers

### Individual disclosure of public information
- Based on the personal identity number, the scope, validity and start date of the driver’s licence in different classes, the validity and scope of vocational qualification, the ADR licence, taxi licence, and date of issuance
- Based on the vehicle registration number or VIN, the vehicles recorded in the register and their taxation, liens, the name of the vehicle owner, keeper and insurance policy holder, and address and contact information

### Provision of information for other purposes
- Opinion and market surveys
- Direct marketing
- Other address and information services
- Customer database updates

### Disclosure of confidential information
- The Finnish Border Guard
- Police and other authorities in other EEA member states
- Emergency services
- Card and permit manufacturers
- Customs
- Service providers of road transport permits (individuals)
- Handlers of cards used in road traffic monitoring equipment

### Transfer of data outside of the EU or EEA
- On special grounds, data from the Vehicular and Driver Data Register can be disclosed on a case-by-case basis to authorities for the performance of regulatory duties outside the European Union or the European Economic Area.
Customers can register their vehicles in two ways: through customer services or via a self-service portal. Registration deals with one or more of the following data sets: events, vehicles, insurances, use and ownership data, commissioning/decommissioning data, and certification data.

Registration events include, among others, first registration, change of use, change of ownership, change to insurance information, commissioning for road use, and deregistration.

**FIGURE 16. Example of information and services associated with vehicle registration**

- **Events:**
  - First registrations
  - Change of ownership/keeper
  - Insurance information
  - On Road/ Off Road Notifications
  - Release note
  - Certificate creation (only in self-service)
  - Certificates (vehicle inspection stations and self-service only)
  - Other changes (not in self-service, incl. e.g. change of use)

- **Data sets:**
  - Events
  - Vehicle information
  - Insurance information
  - Certificate
  - Ownership information (owner/keeper)
  - On Road/ Off Road Notifications
Electronic vehicle insurance and registration services

A new operating model was adopted for vehicle registration in November 2015, when motor vehicle liability insurance and registration were amalgamated into a single electronic service. The electronic registration service was adopted very rapidly in 2016. In December 2016, 47% of registrations were submitted via the electronic services of Trafi and insurance providers, compared with 36% the year before.

Registration events are distributed between Trafi, insurance companies, vehicle inspection stations, car dealerships and finance companies. Although the use of electronic services has increased, customers can still register in person by visiting one of the service points of Trafi’s partners.
Printed registration certificates were abolished in November 2015 with the exception of heavy-duty vehicles and their trailers. The change resulted in an increase in customer requests for printed registration certificates.

Nevertheless, the number of printed certificates fell considerably in 2016 due to the fact that in 2015 registration certificates (Parts I and II) had been printed automatically in conjunction with all registration events. There were approximately 3.5 million registration events in 2015.
7.2.2 Aviation
Traf is Finland’s aviation authority and responsible for ensuring that air traffic is safe and as environmentally friendly as possible and for administering the logistics and flow of air traffic. Traf approaches aviation-related questions from the perspective of airline passengers, airlines, recreational aviators, and airport operators.

In order to attend to its tasks, Traf keeps an Aircraft Register and a Licence Register, which are used to store information needed for issuing and supervising pilot licences and for registering aircraft. Traf also has the right to store information about natural persons’ medical examinations and health for decision-making and supervisory purposes. Provisions on keeping the Aircraft Register and the Licence Register are included in the Aviation Act (864/2014).

Aviation location information
Location information is essential to safe aviation. The aviation information service and aviation manual provide flight maps, navigation and obstacle information free of charge. The aviation manual (AIP) is published by Finavia.

With regard to aviation location information, Traf’s role as a civil aviation authority is to ensure that it is organised according to the law. Traf aims to promote the interoperability of organisations that produce and use information published in the aviation information service and to remove duplicate information. Traf oversees the legal compliance of procedures through its supervisory and audit processes.

Traf published a management model for aviation location information in December 2016. The model describes the roles and responsibilities of different actors involved in the production and publication of Finland’s aviation data and information (AIS) and transport networks data (INSPIRE). The model was drawn up in close cooperation with Finavia, the National Land Survey of Finland and the Finnish Defence Forces. The model is underpinned by international legislation, namely the ADQ Regulation (EU) 73/2010, Annex 15 of the ICAO Convention on Civil Aviation, and the INSPIRE Directive.
The obligations set out in international legislation will take effect in stages over a period of several years. The management model document already describes both the current state and the target state of aviation location information management.

The document is available on Trafi’s website at trafi.fi > Tietopalvelut > Julkaisut > julkaisut 2016 (in Finnish).

### FIGURE 20. Key figures relating to the Aircraft Register and the Licence Register in 2016

<table>
<thead>
<tr>
<th>Category</th>
<th>Total No. of Registrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals (Individuals)</td>
<td>5,450</td>
</tr>
<tr>
<td>Enterprises and corporations</td>
<td>3,340</td>
</tr>
<tr>
<td>Aircraft</td>
<td>1,480</td>
</tr>
<tr>
<td>Personal licences (pilots)</td>
<td>6,670</td>
</tr>
</tbody>
</table>

### Events data 2016

<table>
<thead>
<tr>
<th>Category</th>
<th>Total No. of Registrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>New registered persons</td>
<td>60</td>
</tr>
<tr>
<td>New registered enterprises and corporations</td>
<td>290</td>
</tr>
<tr>
<td>New registered aircraft</td>
<td>40</td>
</tr>
<tr>
<td>New personal licences (pilot’s licence)</td>
<td>380</td>
</tr>
</tbody>
</table>

### Key users

- Finavia
- Defence Forces
- FICORA
FIGURE 21. Information flows relating to aviation

Public information provision
- Authorities
- Safety Investigation Authority
- Authorities of EEA member states
- EU Commission
- Authorities under international conventions

Individual disclosure of public information
- From the Aircraft Register, based on the aircraft registration number, aircraft information and the name, address and other contact information of the craft owner, keeper, operator and agent, inspection information, and airworthiness information. Information about previous owners or keepers can be disclosed with certain limitations.
- From the Licence Register, based on personal identity number, information on licences.

Provision of information for other purposes
- Finance and insurance services
- Inspection services
- Aftermarket sales and maintenance
- Determination of aviation fees and similar

Disclosure of sensitive data and personal identity numbers
- Finnish authorities
- Aviation and safety investigation authorities of other countries

Transfer of data outside of the EU or EEA
- On special grounds, data from the Aircraft Register can be disclosed on a case-by-case basis to authorities for the performance of regulatory duties outside the European Union or the European Economic Area.
- On special grounds, data from the Licence Register can be disclosed on a case-by-case basis to authorities for the performance of regulatory duties outside the European Union or the European Economic Area.

Symbols
- = Aircraft Register and Licence Register
- = Aircraft Register
- = Licence Register
Customers can register through customer services. Registrations relate to one or more of the following: events, aircraft and ownership information, information about liens, and deregistration.

Registration events include first registration, temporary registration, change of ownership, user notifications, liens and the removal of liens, and deregistration.

### FIGURE 22. Example of information and services associated with aircraft registration

Events:
- First registrations
- Temporary registrations
- Change of ownership
- User notifications
- Liens
- Removal of liens
- Deregistrations

Data sets:
- Aircraft information
- Use information
- Events
- Ownership information
- Liens
- Deregistrations

### 7.2.3 Maritime

Trafﬁ is Finland’s maritime safety authority and responsible, among other tasks, for ensuring seafarers’ professional competence and ship safety by means of inspections and controls. The maritime sector is heavily regulated on an international level, and Trafﬁ also contributes actively to international cooperation. Trafﬁ also maintains a Register of Ships, a Watercraft Register, and a Register of Seafarers.

**Watercraft Register**

Trafﬁ is responsible for the administration of the Watercraft Register. The register contains information about registered watercraft and their properties. Provisions on the keeping of the register are laid down in the Watercraft Register Act (424/2014).

The objective of the Watercraft Register is to improve the safety of maritime transport, to prevent harmful impacts on nature or the environment, the general recreational use of nature, or other public or private interests resulting from the use of watercraft, to support supervision and rescue services, and to contribute to the planning and contingency planning of the use of waters. Maritime safety encompasses, among other things, promoting the technical requirements of watercraft, keeping register data up to date, and enabling the supervision of maritime transport.

**Register of Ships**

The Register of Ships is a database of Finnish ships of at least 15 metres of length that are used for merchant shipping. Provisions on the keeping of the register are laid down in the Register of Ships Act (512/1993). In the context of the act, ships also include floating platforms and structures and other floating devices.

The Register of Ships is controlled by Trafﬁ and the State Department of Åland. The State Department of Åland is responsible for the administration of the Register of Ships with regard to ships registered in the Åland Islands, and Trafﬁ for ships registered elsewhere in Finland. These two authorities are also responsible for processing liens on ships. The Register of Ships is linked to a Shipbuilding Register and a Historical Register.

The public-law objective of registration is to confirm officially that a ship is Finnish. The nationality of a ship is what determines the safety, crew, working hours, tax, social security, and pension regulations that apply to the ship. The competent authorities are responsible for ensuring that ships satisfy the relevant requirements. The private-law objective of registering ships relates to ownership and liens. The register contains information about ships and associated ownership arrangements. Registration is also a condition for putting liens on ships.
FIGURE 23. Information flows relating to maritime transport

PUBLIC INFORMATION PROVISION
- Authorities
- Safety Investigation Authority
- EU Commission
- Insurance companies
- Registration certificate providers
- Registration service providers
- Registration authorities in Åland
- Authorities of other EU and EEA member states
- International Maritime Organisation (IMO)
- Trafi (authorised) inspectors
- Licence card manufacturers
- Seafarers’ Pension Fund
- Parties to STCW Convention
- Insurance companies

INDIVIDUAL DISCLOSURE OF PUBLIC INFORMATION
- Based on the watercraft registration number, watercraft information and the name, address and other contact information of the craft owner or keeper, inspection information.
- Based on temporary watercraft registration numbers, information on the commercial operator, address and other contact information, business ID.

PROVISION OF INFORMATION FOR OTHER PURPOSES
- Opinion and market surveys
- Direct marketing
- Other address and information services
- Inspection services
- Finance and insurance services
- Aftermarket sales and maintenance
- Notification of bans, orders, hazards concerning watercraft, other comparable activities.

TRANSFER OF DATA OUTSIDE OF THE EU OR EEA
- On special grounds, data from the Watercraft Register can be disclosed on a case-by-case basis to authorities for the performance of regulatory duties outside the European Union or the European Economic Area.
- As a rule, no personal data disclosed from the Ship Register outside the EU or the EEA.
- Trafi has an obligation to provide information on certificates of competency, seaworthiness certificates and special authorisations to the parties of the STCW Convention and to ship managers for the purpose of the verification and validation of Trafi-issued certificates of competency.

Symbols
● = Seafarers Register
■ = Ship and Watercraft Register
▲ = Watercraft Register
○ = Ship Register
□ = Ship and Seafarers Register
△ = Watercraft and Seafarers Register
★ = Ship, Watercraft and Seafarers Register
Register of Seafarers
Trafic is responsible for keeping a Register of Seafarers, which contains information about seafarers’ seagoing services, training, and competencies. The register includes seafarers’ personal data, seagoing service information (names of ships, start and end dates of periods of service, length of services, roles, and trading areas), and professional seafarer training and competencies (issued and renewed certificates, additional competence certificates, endorsements, competence exemptions, and health-based exemptions). Provisions on the keeping of the Register of Seafarers are laid down in the Act on Registering of Ship’s Crew (1360/2006).

The seagoing service data entered into the register come directly from shipping companies, either electronically or on notification forms. Shipowners have a duty to declare all seagoing services performed by crews of Finnish merchant ships. At the moment, training certificate information is submitted as documents appended to applications and competencies are entered into the register as and when granted by Trafic.

FIGURE 24. Key figures relating to the Watercraft Register, the Register of Ships, and the Register of Seafarers in 2016

* Merchant fleet registered under Finnish flag consisted of 1,241 vessels at the end of 2015. Of the registered merchant fleet, 702 vessels were classified as merchant ships (length >= 15 m).
7.2.4 Rail transport
Trafﬁ’s rail-related duties include supervising and improving railway safety and the interoperability of railways, as well as drawing up regulations. Trafﬁ issues safety certificates to railway undertakings, authorises the placing into service of the railway network’s subsystems, and issues safety authorisations to infrastructure managers. Trafﬁ maintains a Register of Rolling Stock in order to promote the safety of the railway system and to identify individual items of rolling stock. Provisions on the keeping of the register are laid down in the Railway Act (304/2011).

Trafﬁ also keeps a register of personnel qualiﬁcations (RAHEKE Personnel Register) under the Railway Safety Roles Act (1664/2009). The RAHEKE Personnel Register is kept to allow Trafﬁ to supervise rail transport, to manage permit and competence information, to make decisions on and to supervise permits, to ensure the continuity of rail transport, to meet Finland’s international obligations, and to perform other duties.

In rail transport, Trafﬁ’s new task is the development and supervision of the safety of urban rail transport (1412/2015). Trafﬁ took over the supervision of the underground rail system on 1 March 2016. The tram network will also move under Trafﬁ’s supervision authority from 1 January 2018. Trafﬁ does not issue safety certificates or permits for urban rail transport; it only manages the notification procedure. Trafﬁ is only responsible for maintaining a register of operators of urban rail transport. Fleet and compliance registers are administered by the operators.

FIGURE 25. Key ﬁgures relating to the Register of Rolling Stock and the RAHEKE Personnel Register in 2016

<table>
<thead>
<tr>
<th>Personnel</th>
<th>Enterprises and corporations</th>
<th>Rolling stock</th>
<th>Personal permits and licences (certificates of competency + driver’s licences)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8,700</td>
<td>370</td>
<td>11,615</td>
<td>1,750</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total no. of registrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>New registered persons</td>
</tr>
<tr>
<td>250</td>
</tr>
<tr>
<td>New registered enterprises and corporations</td>
</tr>
<tr>
<td>45</td>
</tr>
<tr>
<td>New registered rolling stock</td>
</tr>
<tr>
<td>60</td>
</tr>
<tr>
<td>New personal permits and licences (certificates of competency + driver’s licences)</td>
</tr>
<tr>
<td>650</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key users</th>
</tr>
</thead>
<tbody>
<tr>
<td>VR</td>
</tr>
<tr>
<td>European Union Agency for Railways</td>
</tr>
<tr>
<td>Infrastructure managers</td>
</tr>
</tbody>
</table>
FIGURE 26. Information flows relating to rail transport

Symbols
● = Rolling Stock Register
■ = Register of rail safety personnel
▲ = Register of rolling stock and rail safety personnel

Public information provision
▲ Authorities
▲ European Union Agency for Railways
● Safety Investigation Authority
● Authorities of EEA member states
● EU Commission
● Authorities under international conventions
● Rail operators
● Infrastructure managers
● Individuals or enterprises who register rolling stock units or are identified in the rolling stock register
■ Railway and safety investigation authorities of other member states
■ Operators
■ Licence and certificate manufacturers

Transfer of data outside of the EU or EEA
- Data on rolling stock are disclosed in accordance with the Decision 756/2007/EC of the Commission, as amended by Decision (2012/757/EU) (operation and traffic management ITS OPE).
- Personal data are not disclosed.
7.2.5 Traffic accidents, incidents, and occurrences

Accident, incident, and occurrence data encompass information about traffic accidents and incidents, as well as occurrences that have endangered – or that could, if repeated, endanger – transport safety. Trafi has a statutory duty to collect information relating to aviation, railways, and maritime transport.

The obligations concerning the provision of information vary from one mode of transport to the next, but the basic rule is that responsibility for reporting occurrences lies with the persons or organisations involved. The methods of notifying Trafi are laid down in law, but the aim is that, with digitalisation, the reports would, in the future, be sent to Trafi electronically using online forms or an interface provided for organisations. With regard to aviation, electronic submission is the rule, and provisions to this effect are laid down in section 126 of the Aviation Act (864/2014). With regard to road transport, Trafi does not collect information itself but uses data compiled by other operators.

The logical data unit is a report of an accident, an incident, or an occurrence, and reports on a single event can be received from multiple parties. Statistics on events, however, are based on the number of events, not the number of reports. Reports include, among other information, a description of the event, information about the vehicles involved, the time and location of the event, weather conditions, and other circumstances.

Accident, incident, and occurrence data are used to monitor and improve traffic safety, target the agency’s regulation and supervision based on risks, and evaluate the effect of regulatory changes. The data are confidential, and one of the key concepts when using the information is the so-called “just culture” principle, which means that no legal ramifications can be imposed on the reporting parties on the basis of accident, incident, and occurrence reports, if the violation is unplanned or accidental.

Obligations concerning the reporting of data are specified below for each mode of transport.

1. Rail: Obligations concerning the reporting of railway accident and incident data are laid down in Section 82 of the Railway Act (304/2011) and in the Government Decree on the safety and interoperability of the railway system (372/2011). Information about rail transport operations, the maintenance of the rail network, and traffic control is received from organisations and private infrastructure managers. Trafi stores the information in its register of accidents, incidents, and occurrences, which is administered through a system called Q-Pulse. The Railway Safety Directive (2004/49/EC) obligates Trafi to compile data on safety indicators, which are based on classifying accident, incident, and occurrence data in order to monitor the number of certain kinds of events. The indicator data are submitted to the ERAIL (European Railway Accident Information Links) system, which the European Railway Agency (ERA) uses to promote railway safety. If necessary, Trafi also forwards the reported accident and incident data to the Safety Investigation Authority.

2. Aviation: The obligations relating to aviation accident, incident, and occurrence data are laid down in Regulation (EU) No 376/2014 of the European Parliament and of the Council on the reporting, analysis and follow-up of occurrences in civil aviation, as well as in the Finnish Aviation Act. Information on flight operations, air navigation services, airport maintenance, ground handling, and aircraft maintenance is received from organisations and private individuals. Trafi stores the information in its register of accidents, incidents, and occurrences, which is administered through a system called Q-Pulse.

Regulation (EU) No 376/2014 obligates Trafi to store the information in its ECCAIRS system (European Co-ordination Centre for Accident and Incident Reporting Systems), from where it is automatically transferred to the central European ECCAIRS database. The data are transferred from Trafi’s Q-Pulse system to the ECCAIRS system by means of electronic integration. Personal details are removed from the data before they are transferred to the ECCAIRS system. The European Aviation Safety Agency (EASA) analyses the information contained in the central database in order to improve aviation safety. In addition to the ECCAIRS system, Trafi also forwards reports of accidents, incidents, and occurrences to the Safety Investigation Authority.
3. **Maritime:** Shipmasters and shipowners are responsible for reporting accidents in merchant shipping under Chapter 18, Section 8 of the Maritime Act. The Ministry of Transport and Communications is currently drafting an amendment to the Maritime Act, according to which Trafi needs to be informed not just of maritime accidents but also close calls in the future. The same procedures and the same register will be used to process and manage the information as for aviation and rail transport.

The Accident Investigation Directive (2009/18/EC) obligates Trafi to report accidents and incidents to the Safety Investigation Authority, which has a duty to store the data in the EMCIP (European Marine Casualty Information Platform) system. The European Maritime Safety Authority (EMSA) uses the EMCIP system to improve maritime safety.

Trafi has commissioned Statistics Finland to compile statistics on boating accidents on its behalf. The statistics are extremely comprehensive, as the information is collected from parties involved in boating safety: the Border Guard, the Finnish Lifeboat Institution, and the Police. The statistics are part of Trafi’s safety status reporting.

4. **Road:** From Trafi’s perspective, the most important statistics on road transport accidents are those of Statistics Finland, the Finnish Transport Agency, and the Motor Insurers’ Centre. The statistics of Statistics Finland and the Finnish Transport Agency are based on data produced by the Police. The Motor Insurers’ Centre produces traffic accident statistics based on insurance policy holders’ reports of accidents, as well as statistics on accidents investigated by traffic accident investigation boards. Another source of information is the PRONTO database of rescue departments. International accident data are retrieved from the European Union’s CARE database (Community database on road accidents resulting in death or injury) and from the OECD’s IRTAD database (International Road Traffic and Accidents Database). Statistics Finland delivers the Finnish data to these databases. Trafi contributes to the drawing up of the OECD’s annual reports, which are based on the IRTAD. Other information on the volume of transport and traffic behaviour includes the Finnish Transport Agency’s vehicle-kilometre and driving speed data, vehicle and driving licence data contained in Trafi’s registers, the Police’s records of drunk driving and traffic violations, and Liiken-neturva’s data on the use of safety devices.
FIGURE 27. Information flows to and from the register of accidents, incidents, and occurrences

- Rail traffic
- Maintenance of the rail network
- Traffic control
- ECCAIRS system
- Safety Investigation Authority (notification)
- OTKES (notification)
- ERLAIL system
- ERA

- Aviation
- Air navigation services
- Ground handling services
- European central database
- ECCAIRS system
- Safety Investigation Authority (notification)
- OTKES (notification)
- EMSA

- Ship operation (marine accident notification)
- Vessel traffic service (exchange of information based on agreement)
- Pilotage (exchange of information based on agreement)
- EMCIP system (marine accident reporting)
- EMSA

- Finnish Transport Agency
- OECD IRTAD
- Police
- PRONTO
- OECD IRTAD

- OECD IRTAD
- Statistics Finland, accidents
- Motor Insurers’ Centre
- Vehicular and Driver Data Register
- VALT

- Trafi
- OECD IRTAD

Uses information
7.2.6 Information systems used to manage information flows

Trafi uses several different information systems to manage its information flows:

- **The road** transport information system consists of vehicle information systems, driver systems, information service systems, shared systems and components, as well as operations management systems.
- **The aviation** information system consists of several systems linked to the Aircraft Register and the Licence Register.
- **The maritime** information system also consists of several systems: the Watercraft Register, the Register of Ships, as well as supervision and licences and permits systems.
- **The rail transport** information systems are used to administer the Register of Rolling Stock and the RAHEKE Personnel Register. In addition to the aforementioned systems, a separate information system containing the same data as the Register of Rolling Stock is also used for rail transport.

Trafi has a number of shared information systems that form centralised and harmonised services that other operative systems can make use of for the purposes of different modes of transport.

Documentary information flows in the case management system

Trafi receives vast amounts of information in the form of paper documents, by email, by means of online forms through the Suomi.fi portal, and via operative systems. The registry logs documents in a central case management system, from where cases are assigned to officers. Some of the forms submitted via the Suomi.fi portal bypass the registry and are assigned to officers automatically. Cases opened via operative systems and the associated documents are also assigned to officers automatically via case management interfaces. Cases assigned via case management interfaces are processed in operative systems, and the users may not realise that they are using case management software, as the case management system runs in the background.

After a case is logged, the officer in charge begins to process the document and enters the information contained in it, such as the details required for registering an aircraft, into the relevant register. The officer then draws up a decision on the matter and sends it to the customer. The information contained in decisions usually comprises data held in the relevant register as well as the information contained in the documents associated with the case.

Trafi logs 500,000 cases that involve 800,000 documents every year. Trafi’s paper documents amount to 650 metres of shelf space annually. Paper documents are digitalised and the digitalised documents archived, and the paper copies can be destroyed after a short period of archiving.

Example: Registering an aircraft using the case management system

The Suomi.fi portal contains an application form for aircraft registration, as well as a template of an appendix to applications. The form can be used to apply for aircraft registration or temporary registration, or to report a change of ownership or a change in the aircraft owner’s name. Private individuals can submit applications electronically by signing the form using their online banking ID. If there are several applicants, or if the applicant is an organisation, the form needs to be printed out, signed, and sent to Trafi by post, or scanned and emailed to Trafi with the necessary appendices. Appendices can be sent by email, post, or fax.

Application forms and appendices arrive in Trafi’s registry, where they are logged into the case management system and assigned to officers in charge of aircraft registrations. Applications are processed by officers and the information contained in them (such as the registration date, registration number, serial/identification number, aircraft type and class, year of manufacture, maximum take-off weight, the aircraft’s ICAO address / mode S code, and the nationality, name, identification information, and contact details of the owner and, where applicable, the user, holder, or representative,) entered into the operative system. Officers can request more information from applicants if necessary.
A decision is made on the registration and sent to the customer for information and linked to the relevant case in the case management system. Decisions can be appealed. Many of the processes for transferring information from documents into registers and from registers to documents are still manual at the moment. As digitalisation progresses, it will make sense to digitalise these processes in order to avoid the aforementioned manual information transfers.

**Integration of the aviation information system and the customer information system**

The quality of customer information in the aviation information system was identified as an area in need of improvement. The primary objectives were the reduction of application processing times, the removal of redundant work stages in the addition and updating of personal data, and improved data security with regard to the accuracy of data.

Personal data are now retrieved into the aviation information system from the customer information system, which contains accurate and up-to-date information, and the possibility of manual errors in data entry has been minimised. The solution also supports the personal data management approach of Trafi enterprise architecture, which means that personal data are managed centrally.

**FIGURE 28. Documentary information processed by Trafi**
7.3 INFORMATION SECURITY AT TRAFI FROM THE PERSPECTIVE OF DATA PROTECTION

Information security management at Trafi

Trafi’s information security policy is aimed at ensuring compliance with the laws and regulations applicable to Trafi’s operations. Trafi’s information security policy has been ratified by the management and published to the staff and external parties that process Trafi’s data. Trafi’s information security management model determines a policy-based approach to the management of information security. The model is based on the ISO 27001 information security standard, which provides a framework for information security. Trafi applies the ISO 27001 standard and uses the VAHTI and other official guidelines. Information security processes, guidelines, and risk management are tools that help Trafi to protect and process its data in accordance with the applicable requirements.

Trafi has set up an enterprise security group, which reviews all reported information security incidents. Trafi has also established a cyber security team, which focuses on the cyber security of the transport system. There is also an ICT information security team, which supports information security work and oversees the ICT controls laid down in the ISO 27001 standard.

Data protection

Trafi protects its data against misuse, for example, by carrying out background checks on personnel in accordance with laws and other regulations. Trafi also sometimes signs agreements on information security responsibilities with relevant members of staff. The personnel’s information security know-how and skills are promoted by means of regular information security training courses.

The assets relating to information and data processing services that require protection are itemised and catalogued in Trafi’s information system portfolio, which contains information about Trafi’s systems and the associated metadata. The portfolio describes the objectives of systems, user groups, administrators, user volumes and frequencies, technical data, and register information. Each system is rated for criticality in the portfolio, although the classification still requires work. The criticality classifications will also need to be revised if Trafi decides to adopt information security classification.

User rights management

The principles of access control are based on business-related requirements and information security requirements. Supervisors use these principles to grant access rights to their subordinates according to their roles. The scope of access rights is re-evaluated at regular intervals. The access rights to certain systems will need to be revised in the future. In some of Trafi’s systems, the right to process a specific document is determined by the person who enters the document into the system.

The functions associated with Trafi’s information systems have been separated so as to ensure that the organisation’s sensitive data are protected against the risk of unauthorised or accidental editing or misuse.
Technical information security
Trafi protects any data transmitted via networks by means of system-specific safety mechanisms, service levels, and administrative requirements. Safe transmission of data between the agency and external parties is ensured by administrative decisions or agreements. The decisions and agreements are accompanied by an information security appendix, which explains Trafi’s information security requirements.

Requirements relating to information security are also incorporated into new systems. Information security is seen as part of the life cycle of system development, and it is incorporated into Trafi’s development life cycle model. The information security aspects of continuous service systems are always defined as part of the system or ICT infrastructure development, and the need for information security measures is evaluated whenever changes are introduced. Particular attention is given to business-critical applications by ensuring that any proposed changes have no harmful effects on the organisation’s operations or security. Availability, integrity, and confidentiality requirements determine the operating environment of each system.

Trafi uses various encryption solutions to protect its systems, networks, and telecommunications. A new domain relating to encryption was incorporated into the ISO 27001 standard in 2015, and Trafi will evaluate different encryption solutions once the decision has been made on the possible information security classification.

In particular, encryption solutions will be re-evaluated based on the potential adoption of information security classification and on the basis of the GDPR.

The information security requirements of Trafi’s operating environment were evaluated in 2016. The evaluation covered not just traceability entries but also other requirements for identifying information security attacks on Trafi. The aim is to introduce information security controls that can be used to identify when an attack is in progress or when systems are being used for inappropriate purposes.

Information security in system development
Work started in 2016 on a more detailed description of the life cycle of information security, which will cover information security relating to all development and be based on the VAHTI system development information security guidelines. The life cycle and the data processing environment will be described taking into account the potential adoption of information security classification. Trafi’s development life cycle model incorporates an information security perspective regardless of whether the development project involves information system development.

Trafi has outsourced the management of its operating environments to an operational service provider. Events in operating environments are recorded in logs so that they can be verified retrospectively. The responsibilities of operational service providers and software suppliers have been separated so that software suppliers cannot access the production server. The operational service provider installs new system versions and configures the settings for the contents of environments. Trafi has assigned coordinators for monitoring and validating these changes.

Trafi has also outsourced its system development. Software developers primarily work in Trafi’s premises, and the development process is based on a flexible development model. Trafi’s information system development is steered by means of architecture and information security policies. The protection of data contained in the systems is ensured by means of continuity planning. System quality assurance tests from the perspective of information security are integral to the system development process. These tests include performance and stress testing, recovery testing, and acceptance testing.

The tests are performed on either anonymised data taken from the production system or on a special test data set.

Information security events
Information security events in Trafi’s production environment are reported into Trafi’s integrated management system according to agreed procedures. The reports are analysed by information security experts, who are responsible for processing and reporting events according to the agreed process. Information security events are also reviewed by Trafi’s enterprise security group. They are referred to the management if necessary.

Information security audits on development tasks
numbered 13 in 2016. In addition, one system log check and 4 partner information security audits were carried out.

In November, Trafi participated in a Hackathon event organised by the Finnish Communications Regulatory Authority (FICORA) to identify any vulnerabilities in Trafi’s systems. No significant vulnerabilities were found.

**Continuity and risk management**
Trafi’s business continuity planning currently only covers Trafi’s key processes. Recovery plans have been drawn up for the majority of systems, but they will need updating in the future. The status of recovery planning and testing of continuous service systems will be reviewed with regard to critical systems.

Trafi’s information security risks are evaluated as part of Trafi’s risk management process. The risks are assessed and coordinators appointed for each risk. Risks affecting information systems are monitored by the ICT information security team. Trafi’s risk management process is being revised at the moment.

**Partners’ information security**
Partners’ information security requirements are laid down in the information security appendix enclosed with agreements and administrative decisions. Trafi has reserved the right to carry out audits in order to monitor compliance with the appendix. Each partner draws up a description of their services, which Trafi must approve before data can be disclosed to the partner in question.
8 Trafi’s information flows

The following appendices describe information flows to and from the registers discussed in the Data Balance Sheet in more detail. The descriptions cover regular sources of information and those parties to whom information is regularly disclosed. The descriptions do not cover information reported by data subjects themselves.
### Public sources of information

<table>
<thead>
<tr>
<th>Authority</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Register Centre</td>
<td>Basic personal data:</td>
</tr>
<tr>
<td></td>
<td>- Name</td>
</tr>
<tr>
<td></td>
<td>- Personal identity code</td>
</tr>
<tr>
<td></td>
<td>- Address</td>
</tr>
<tr>
<td></td>
<td>- Home town</td>
</tr>
<tr>
<td></td>
<td>- Place of birth</td>
</tr>
<tr>
<td></td>
<td>- Country of birth</td>
</tr>
<tr>
<td></td>
<td>- Nationality</td>
</tr>
<tr>
<td></td>
<td>- Mother tongue and preferred language</td>
</tr>
<tr>
<td></td>
<td>- Death</td>
</tr>
<tr>
<td></td>
<td>- Data disclosure restrictions</td>
</tr>
<tr>
<td>Finnish Patent and Registration Office and Tax Administration</td>
<td>The same information on legal persons as on natural persons</td>
</tr>
<tr>
<td>Courts</td>
<td>Offences committed while operating a motor vehicle or a towed vehicle and resulting sentences and other penalties, and information about insolvency proceedings</td>
</tr>
<tr>
<td>Enforcement authorities</td>
<td>Seizure of vehicles</td>
</tr>
<tr>
<td>Police</td>
<td>Thefts of motor vehicles or towed vehicles, and the right to drive and associated applications, driving licence permits, driving instruction permits, training licences, driving instructor's licences, taxi driver licences, disabled parking permits, driving licences, and entries on lorry or bus driving competencies, restrictions on the right to obtain a driving licence permit or a driving licence, driving bans and their grounds, cancellations of ADR permits, information about administrative sanctions relating to the right to drive, driving licence permits, and other licences and permits, criminal records relating to the issuing of driving instruction permits, taxi driver licences, and driving instructor's licences, and suitability testing relating to driving school licences, and information about the issuing and confiscation of the aforementioned driving licences and permits</td>
</tr>
<tr>
<td>Defence Forces</td>
<td>Driving licences of the Defence Forces</td>
</tr>
<tr>
<td>Customs</td>
<td>Vehicle transfer permits issued by Customs and motor vehicle liability insurances valid during transfers</td>
</tr>
<tr>
<td>Centres for Economic Development, Transport and the Environment</td>
<td>Traffic licences and driving school licences</td>
</tr>
<tr>
<td>Border Guard</td>
<td>Temporary driving bans and their grounds, and confiscation of driving licences</td>
</tr>
</tbody>
</table>
## Private sources of information

<table>
<thead>
<tr>
<th>Source</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle manufacturers and importers</td>
<td>Vehicle approval information and information on fuel consumption and carbon dioxide emissions based on the Consumer Protection Act</td>
</tr>
<tr>
<td>Motor Insurers’ Centre and motor vehicle liability insurance companies</td>
<td>Group motor vehicle liability insurances, motor vehicle liability insurances, and information about periods when vehicles are declared as off the road</td>
</tr>
<tr>
<td>Driving test examiners</td>
<td>Information about driver instruction, the supervision of driver instruction, driving tests, and other examinations, as well as examination certificates and driving licences, and the issuing of these, as well as ADR permits and ADR permit examinations</td>
</tr>
<tr>
<td>Inspectors and partner controllers</td>
<td>Information about inspection and registration duties</td>
</tr>
<tr>
<td>Processors of driver cards, workshop cards, control cards, and company cards as per the EU Tachograph Regulation</td>
<td>Information concerning the aforementioned cards</td>
</tr>
<tr>
<td>Producers of driving licences and permits</td>
<td>Information relating to the production and provision of driving licences and permits</td>
</tr>
<tr>
<td>Providers of road transport licence and permit services, providers of lorry or bus driver and tax driver competence training and further training, and examiners</td>
<td>Information about the issuing of road transport licences and permits, professional competence training or further training, and examinations</td>
</tr>
</tbody>
</table>
## Disclosure of public information

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Search criteria</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorities</td>
<td>Registration numbers and serial numbers of vehicles</td>
<td>Register entries on vehicles and associated taxes and liens, names, addresses, and contact details of owners and holders of vehicles, and insurance policy holders</td>
</tr>
<tr>
<td>Finnish Motor Insurers’ Centre</td>
<td>Personal identity codes</td>
<td>Scope, validity, and start dates of the right to drive different categories of vehicles, validity and scope of drivers’ professional competencies, ADR permits, taxi driver licences, and their start dates</td>
</tr>
<tr>
<td>Motor vehicle liability insurance companies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Treasury</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traffic Accident Board</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traffic accident investigation boards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspectors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner controllers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driving test examiners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processors of tachograph cards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Åland Islands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration authorities of EEA Member States</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Authorities of EEA Member States</td>
<td></td>
<td></td>
</tr>
<tr>
<td>European Commission</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Authorities referred to in international treaties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Providers of professional competence services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Providers of road transport licence and permit services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Producers of driving licences and other permits</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Disclosure of confidential information

<table>
<thead>
<tr>
<th>Operator</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police, other criminal investigation authorities, and prosecutors</td>
<td>Criminal investigations and other investigations, photographs and signatures for identification purposes</td>
</tr>
<tr>
<td>Police and Defence Forces</td>
<td>Processing of matters relating to driving licences</td>
</tr>
<tr>
<td>Courts</td>
<td>Processing of matters relating to the right to drive</td>
</tr>
<tr>
<td>Traffic control authorities</td>
<td>Traffic control</td>
</tr>
<tr>
<td>Parking control authorities</td>
<td>Disabled parking control</td>
</tr>
<tr>
<td>Traffic licence and permit authorities</td>
<td>Processing of matters relating to traffic licences and permits</td>
</tr>
<tr>
<td>Driving school authorities</td>
<td>Processing of matters relating to driving school licences</td>
</tr>
<tr>
<td>Driving test examiners</td>
<td>Processing of matters relating to driving examinations</td>
</tr>
<tr>
<td>Processors of tachograph cards</td>
<td>Processing of tachograph cards</td>
</tr>
<tr>
<td>Traffic accident investigation boards</td>
<td>Traffic accident investigations</td>
</tr>
<tr>
<td>Authorities of the Åland Islands and other EEA Member States that are responsible for the registration of vehicles, driving licences, tachograph cards, professional competence cards, and ADR permits, or related supervision</td>
<td>Registration of vehicles, driving licences, tachograph cards, professional competence cards, and ADR permits, or related supervision</td>
</tr>
<tr>
<td>Border Guard</td>
<td>Maintaining border security, criminal investigations and other investigations, search and rescue operations, and imposing sanctions on transport operators referred to in the Aliens Act, as well as identification of individuals</td>
</tr>
<tr>
<td>Providers of road transport licence and permit services</td>
<td>Issuing driving licence permits and driving licences, professional competence cards and taxi driver licences, driving instructor’s licences and disabled parking permits, as well as driving instruction permits and motorcycle training licences</td>
</tr>
<tr>
<td>Police and other authorities of EEA Member States that are responsible for ensuring law and order, maintaining public order and safety, or the prevention, investigation, and prosecution of criminal offences</td>
<td>Performance of duties arising from EU legislation or international treaties that are binding on Finland</td>
</tr>
<tr>
<td>Emergency Response Centre Administration</td>
<td>Performance of duties mandated to the Emergency Response Centre Administration</td>
</tr>
<tr>
<td>Producers and providers of licences and permits</td>
<td>Production and provision of licences and permits</td>
</tr>
<tr>
<td>Customs</td>
<td>Customs controls, taxation and collection, as well as the prevention, detection, and investigation of customs offences</td>
</tr>
</tbody>
</table>
Disclosure of information for other purposes

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opinion polls and market research</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Direct marketing</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Other address and information services</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Updates to customer registers</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Compiling of statistics *</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Historical or scientific research and other similar research *</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Other purposes</td>
<td>Register data as required</td>
</tr>
</tbody>
</table>

*Provisions on the disclosure of information and the processing of personal data for these purposes are also included in the Personal Data Act and the Act on the Openness of Government Activities.

Transfer of information beyond the EU or the EEA

<table>
<thead>
<tr>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information may in special circumstances be disclosed from the Vehicular and Driver Data Register to the authorities of countries outside the EU and the EEA for the purposes of official duties.</td>
</tr>
</tbody>
</table>
Appendix 2. Information flows to and from the Aircraft Register

### Public sources of information

<table>
<thead>
<tr>
<th>Authority</th>
<th>Information</th>
</tr>
</thead>
</table>
| Population Register Centre | Basic personal data:  
- Name  
- Personal identity code  
- Address  
- Home town  
- Place of birth  
- Country of birth  
- Nationality  
- Mother tongue and preferred language  
- Death  
- Data disclosure restrictions |
| Finnish Patent and Registration Office and Tax Administration | The same information on legal persons as on natural persons |
| Enforcement authorities | Seizure of aircraft |
| Police | Aircraft thefts |
| Courts | Aircraft ownership information |

### Private sources of information

<table>
<thead>
<tr>
<th>Source</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type approval certificate holders</td>
<td>Technical data on aircraft</td>
</tr>
</tbody>
</table>

### Disclosure of public information

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorities</td>
<td></td>
</tr>
</tbody>
</table>
- Safety Investigation Authority  
- Authorities of EEA Member States  
- European Commission  
- Authorities referred to in international treaties |

### Individual disclosure of public information

<table>
<thead>
<tr>
<th>Search criteria</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aircraft registration numbers</td>
<td>Information about aircraft and names, addresses, and other contact details of aircraft owners, holders, users, and representatives, as well as inspections and airworthiness from the Aircraft Register based on aircraft registration numbers; some information can also be disclosed on previous owners or holders of aircraft.</td>
</tr>
</tbody>
</table>

### Transfer of information beyond the EU or the EEA

<table>
<thead>
<tr>
<th>Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Public information may in special circumstances be disclosed from the Aircraft Register to the authorities of countries outside the EU and the EEA for the purposes of official duties.</td>
<td></td>
</tr>
</tbody>
</table>
### Public sources of information

<table>
<thead>
<tr>
<th>Authority</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Register Centre</td>
<td>Basic personal data:</td>
</tr>
<tr>
<td></td>
<td>- Name</td>
</tr>
<tr>
<td></td>
<td>- Personal identity code</td>
</tr>
<tr>
<td></td>
<td>- Address</td>
</tr>
<tr>
<td></td>
<td>- Home town</td>
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<tr>
<td></td>
<td>- Place of birth</td>
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<tr>
<td></td>
<td>- Country of birth</td>
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<tr>
<td></td>
<td>- Nationality</td>
</tr>
<tr>
<td></td>
<td>- Mother tongue and preferred language</td>
</tr>
<tr>
<td></td>
<td>- Death</td>
</tr>
<tr>
<td></td>
<td>- Data disclosure restrictions</td>
</tr>
<tr>
<td>Aviation medical examiners</td>
<td>Information about medical examinations and health</td>
</tr>
<tr>
<td>Police and courts</td>
<td>Convictions for the endangerment of traffic safety in aviation, the operation or steering of an aircraft or another vehicle while under the influence of alcohol or other intoxicating substances as referred to in Chapter 23 of the Criminal Code (39/1889), the use of alcohol or other intoxicating substances while performing a ground-based task that affects aviation safety, aggravated endangerment of traffic safety, or aviation offences; information can also be entered concerning individuals who are being investigated, prosecuted, or tried for the aforementioned offences.</td>
</tr>
</tbody>
</table>
### Private sources of information

<table>
<thead>
<tr>
<th>Source</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trafi-authorised flight examiners</td>
<td>Flight examination results</td>
</tr>
<tr>
<td>Trafi-authorised training organisations</td>
<td>Training certificates</td>
</tr>
<tr>
<td>Trafi-authorised language proficiency examiners</td>
<td>Language proficiency certificates</td>
</tr>
<tr>
<td>Aviation medical examiners</td>
<td>Information about medical examinations and health</td>
</tr>
</tbody>
</table>

### Disclosure of public information

<table>
<thead>
<tr>
<th>Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorities</td>
</tr>
<tr>
<td>Safety Investigation Authority</td>
</tr>
<tr>
<td>Authorities of EEA Member States</td>
</tr>
<tr>
<td>European Commission</td>
</tr>
<tr>
<td>Authorities referred to in international treaties</td>
</tr>
</tbody>
</table>

### Disclosure of information for other purposes

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financing and insurance</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Inspections</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Parts and maintenance</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Determination of aviation charges and other similar business</td>
<td>Register data as required</td>
</tr>
</tbody>
</table>

### Individual disclosure of public information

<table>
<thead>
<tr>
<th>Search criteria</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal identity codes</td>
<td>Pilot licence information</td>
</tr>
</tbody>
</table>

### Transfer of information beyond the EU or the EEA

<table>
<thead>
<tr>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public information may in special circumstances be disclosed from the Licence Register to the authorities of countries outside the EU and the EEA for the purposes of official duties.</td>
</tr>
</tbody>
</table>
### Public sources of information

<table>
<thead>
<tr>
<th>Authority</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Population Register Centre</td>
<td>Basic personal data:</td>
</tr>
<tr>
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<td></td>
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</tr>
<tr>
<td></td>
<td>- Data disclosure restrictions</td>
</tr>
<tr>
<td>Finnish Patent and Registration Office and Tax Administration</td>
<td>The same information on legal persons as on natural persons</td>
</tr>
<tr>
<td>Enforcement authorities</td>
<td>Seizure of watercraft, preliminary injunctions, and other enforcement actions</td>
</tr>
<tr>
<td>Police</td>
<td>Thefts of registered watercraft and engines</td>
</tr>
<tr>
<td>Finnish Communications Regulatory Authority</td>
<td>Radio licence information</td>
</tr>
<tr>
<td>Lapland Centre for Economic Development, Transport and the Environment (Tana boats)</td>
<td>Information about registration duties, and the production and provision of registration certificates</td>
</tr>
</tbody>
</table>
Private sources of information

<table>
<thead>
<tr>
<th>Source</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspectors</td>
<td>Inspection information</td>
</tr>
<tr>
<td>Register operators</td>
<td>Information about registration duties, and the production and provision of registration certificates</td>
</tr>
<tr>
<td>Producers of registration certificates</td>
<td>Notifications of completed registration certificates</td>
</tr>
<tr>
<td>Watercraft and engine manufacturers and importers, and their representatives</td>
<td>Technical and identifying information about watercraft and engines for registration purposes</td>
</tr>
</tbody>
</table>

Disclosure of public information

<table>
<thead>
<tr>
<th>Recipient</th>
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<tbody>
<tr>
<td>Authorities</td>
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<tr>
<td>Insurance companies</td>
</tr>
<tr>
<td>Safety Investigation Authority</td>
</tr>
<tr>
<td>Producers of registration certificates</td>
</tr>
<tr>
<td>Register operators</td>
</tr>
<tr>
<td>Registration authorities of the Åland Islands</td>
</tr>
<tr>
<td>Authorities of EU and EEA Member States</td>
</tr>
<tr>
<td>European Commission</td>
</tr>
<tr>
<td>Authorities referred to in international treaties</td>
</tr>
</tbody>
</table>

Disclosure of information for other purposes

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opinion polls and market research</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Direct marketing</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Other address and information services</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Inspections</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Financing and insurance</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Parts and maintenance</td>
<td>Register data as required</td>
</tr>
<tr>
<td>Notifications of restrictions, orders, or dangers relating to watercraft, and other similar activities</td>
<td>Register data as required</td>
</tr>
</tbody>
</table>

Individual disclosure of public information

<table>
<thead>
<tr>
<th>Search criteria</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watercraft registration numbers</td>
<td>Information about watercraft, names, addresses, and other contact details of watercraft owners and holders, as well as inspections</td>
</tr>
<tr>
<td>Examination codes</td>
<td>Information about operators, their addresses and other contact details, as well as business identity codes</td>
</tr>
</tbody>
</table>

Transfer of information beyond the EU or the EEA

<table>
<thead>
<tr>
<th>Information</th>
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<tbody>
<tr>
<td>Information may in special circumstances be disclosed from the Watercraft Register to the authorities of countries outside the EU and the EEA for the purposes of official duties.</td>
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</tr>
<tr>
<td>Enforcement authorities</td>
<td>Seizure of watercraft, preliminary injunctions, and other enforcement actions</td>
</tr>
<tr>
<td>Finnish Transport Agency</td>
<td>Entries concerning additions to and removals from the Register of Merchant Vessels</td>
</tr>
<tr>
<td>Police</td>
<td>Thefts of registered ships</td>
</tr>
<tr>
<td>Trafi-authorised (designated) inspectors</td>
<td>Ship inspection information</td>
</tr>
</tbody>
</table>

### Transfer of information beyond the EU or the EEA

- Personal data from the Register of Ships are not generally disclosed to countries outside the EU or the EEA.
### Public sources of information

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<tr>
<th>Authority</th>
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<tr>
<td></td>
<td>- Data disclosure restrictions</td>
</tr>
<tr>
<td>Authorised medical practitioners</td>
<td>Information about medical examinations and health</td>
</tr>
<tr>
<td>Courts</td>
<td>Rulings relating to seafarer competencies</td>
</tr>
</tbody>
</table>

### Private sources of information

<table>
<thead>
<tr>
<th>Source</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipowners and their representatives</td>
<td>Personal data and seagoing service information (names of ships, start and end dates of periods of service, length of services, roles, and trading areas)</td>
</tr>
<tr>
<td>Employers and their representatives</td>
<td>Personal data and seagoing service information (names of ships, start and end dates of periods of service, length of services, roles, and trading areas)</td>
</tr>
<tr>
<td>Authorised medical practitioners</td>
<td>Information about medical examinations and health</td>
</tr>
<tr>
<td>Training organisations</td>
<td>Training information</td>
</tr>
<tr>
<td>Competence card producers</td>
<td>Notifications of completed competence cards</td>
</tr>
</tbody>
</table>

### Transfer of information beyond the EU or the EEA

**Information**

Trafi has an obligation to provide information about certificates, endorsements, and exemptions to parties to the STCW Convention and to shipowners for the verification of the correctness and validity of certificates issued by the agency.
Appendix 7. Information flows to and from the Register of Rolling Stock

### Public sources of information

<table>
<thead>
<tr>
<th>Authority</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Commission</td>
<td>Serial codes and IDs of goods wagons, as well as IDs of engines, motor coaches, carriages, and machinery</td>
</tr>
<tr>
<td>European Railway Agency (ERA)</td>
<td>Supplementary information for issuing serial codes as required</td>
</tr>
</tbody>
</table>

### Disclosure of public information

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<thead>
<tr>
<th>Recipient</th>
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<tbody>
<tr>
<td>Authorities</td>
</tr>
<tr>
<td>Safety Investigation Authority</td>
</tr>
<tr>
<td>Authorities of EEA Member States</td>
</tr>
<tr>
<td>European Commission</td>
</tr>
<tr>
<td>Authorities referred to in international treaties</td>
</tr>
<tr>
<td>European Railway Agency</td>
</tr>
<tr>
<td>Rail transport operators</td>
</tr>
<tr>
<td>Infrastructure managers</td>
</tr>
<tr>
<td>Individuals and businesses that register items of rolling stock or that are included in the Register of Rolling Stock</td>
</tr>
</tbody>
</table>

### Transfer of information beyond the EU or the EEA

<table>
<thead>
<tr>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information about rolling stock is disclosed in accordance with Commission Decision 2012/757/EU amending Decision 2007/756/EC (operation and traffic management). Personal data are not disclosed.</td>
</tr>
</tbody>
</table>
## Public sources of information

| Authority                                                      | Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                               | Basic personal data:                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                               | - Name                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                               | - Personal identity code                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                               | - Address                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                               | - Home town                                                                                                                                                                                                                                                                                                                                                         |
|                                                               | - Place of birth                                                                                                                                                                                                                                                                                                                                                   |
|                                                               | - Country of birth                                                                                                                                                                                                                                                                                                                                                  |
|                                                               | - Nationality                                                                                                                                                                                                                                                                                                                                                       |
|                                                               | - Mother tongue and preferred language                                                                                                                                                                                                                                                                                                                                |
|                                                               | - Death                                                                                                                                                                                                                                                                                                                                                             |
|                                                               | - Data disclosure restrictions                                                                                                                                                                                                                                                                                                                                       |
| Population Register Centre                                    | The same information on legal persons as on natural persons                                                                                                                                                                                                                                                                                                                                                                     |
| Police and courts                                             | Criminal records, information about fines, ongoing prosecutions based on courts’ information systems, and applicants’ and licensees’ convictions for offences referred to in Section 54 of the Railway Safety Roles Act (1664/2009) and offences referred to in Chapter 23, Sections 1–8 and 10 of the Criminal Code, and ongoing criminal investigations, prosecutions, or trials for such offences based on criminal investigation authorities’ records, as well as resulting sentences and other penalties |
### Private sources of information

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<thead>
<tr>
<th>Source</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operators</td>
<td>Identifying information on traffic safety personnel and changes to the information, as well as details of licensees’ complementary certificates</td>
</tr>
<tr>
<td>Producers of permits and certificates</td>
<td>Information relating to the production and provision of documents</td>
</tr>
<tr>
<td>Trafi-authorised educational institutions, refresher training providers, and examiners</td>
<td>Traffic safety training and refresher training certificates</td>
</tr>
<tr>
<td>Specialist medical practitioners, psychologists, and healthcare professionals</td>
<td>Information about psychological assessments, periodic medical examinations, and other health-related examinations</td>
</tr>
</tbody>
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<td>Railway and accident investigation authorities of other Member States</td>
<td></td>
</tr>
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<td>Operators</td>
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