Fintraffic

Annual report 2021

Towards the world's safest, smoothest and most environmentally friendly traffic

We provide and develop traffic control and management services for all modes of transport. We help people and goods to arrive safely, smoothly and with respect for the environment. Intelligent traffic control services, digital services for businesses and consumers, and up-to-date traffic data will help Finland become a pioneer in sustainable transport and logistics.

We want to offer an excellent and attractive workplace for top experts. We employ 1,100 professionals.

Parent company
Traffic Management Company Fintraffic Ltd

Subsidiaries
Fintraffic Air Navigation Services Ltd is responsible for air navigation services.

Fintraffic Vessel Traffic Services Ltd is responsible for vessel traffic services.

Fintraffic Railway Ltd is responsible for rail traffic control and management.

Fintraffic Road Ltd is responsible for road traffic control and management.

How to read the report package

Annual Report 2021
Strategy, key events of 2021, and a review of responsibility and sustainability.

Governance and Remuneration Report 2021
Information about the company's governance and steering system, and the remuneration paid to the CEO and members of the Board of Directors.
Read the report here.

Report of the Board of Directors and Financial Statements 2021
A description of the company's operations in 2021 and a summary of its financial results and financial position.
Read the report here.

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Together towards traffic of the future

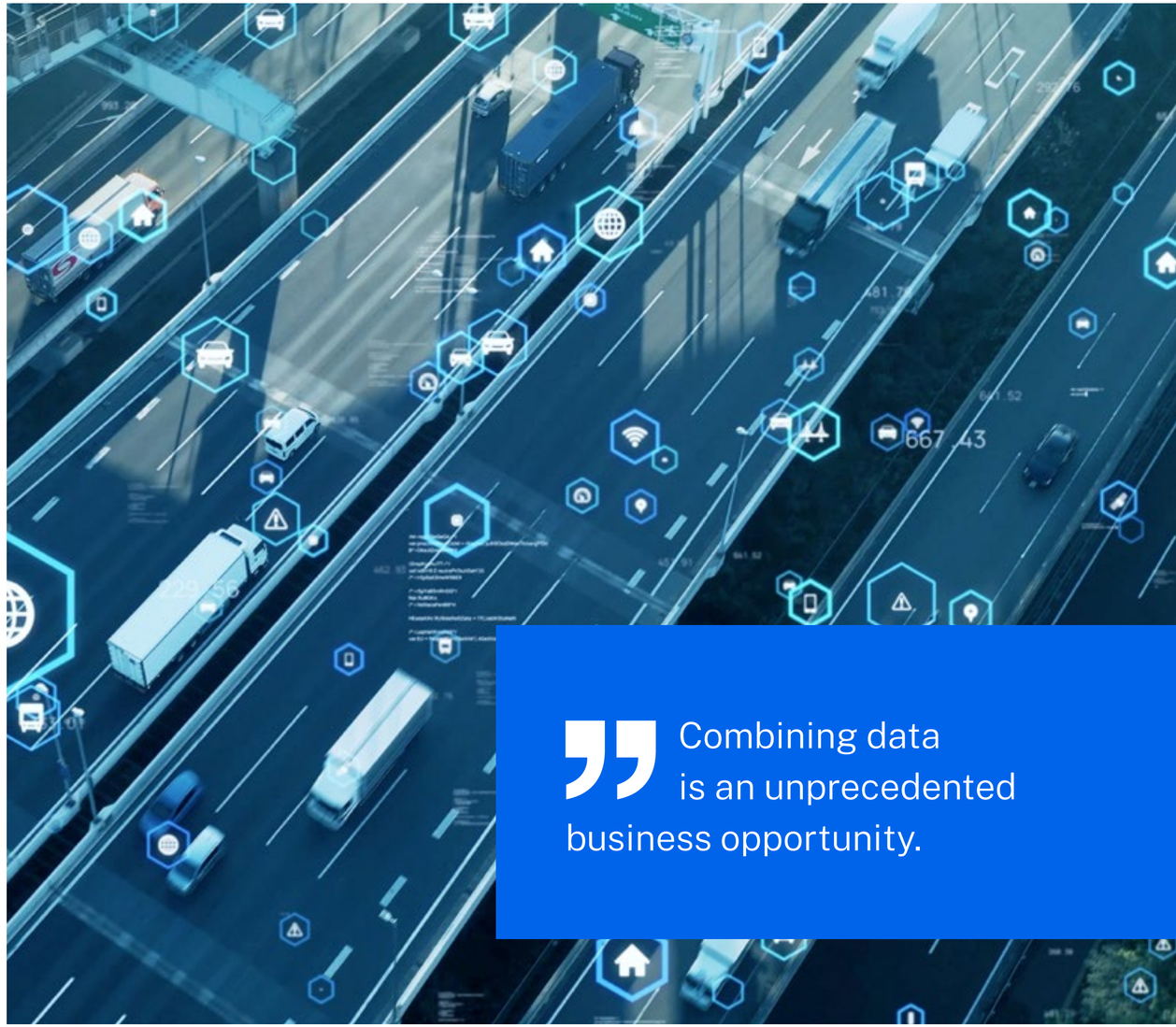
The past few years have been a major upheaval for Fintraffic. We've been recreating ourselves and building new. More than that, the world around is revolving, and with our work, we want to respond to these changes.

Everyone from Helsinki to Mumbai sits in traffic and considers the risks, climate impacts and the cost of transport. Solving these challenges presents an unprecedented business opportunity.

Meanwhile, we experience explosive growth of traffic data. Data is being created everywhere, among different actors. Our role is to manage the data and refine it together with our partners to create user-oriented, safe, and low-emission logistics chains and new, scalable transport services. By successfully harnessing the extracted data, we also succeed in directing traffic on land, railways, at sea as well as in the air. This means a better traffic than before, and higher Finnish competitiveness and well-being.

But, we like to think even bigger: combining fragmented data would allow Finland to create a whole new business area for the global market. We want to create a common operating environment conducive to this new industry. To be a unifying force that provides a platform for joint work.

Now is the time to rev up. The future – the world's smoothest traffic control and a new, globally significant industry – is being built now by actors more ambitious than before. Together.



> Combining data is an unprecedented business opportunity.

Year 2021

CEO's review

The pandemic has drastically changed mobility habits in Finland. The partial easing of pandemic restrictions in 2021 was reflected in increasing traffic volumes in various modes of transport, and there was a distinct rise in the proportion of travel accounted for by private motoring. If this change is permanent, it will become more difficult to achieve emission targets and maintain well-functioning transport services in a sparsely populated country like Finland. Therefore, in order to reverse this trend, it is also worthwhile investing in an effective public transport system and attractive mobility services via the opportunities afforded by digitalisation.

In addition to functional public transport, competitive logistics are also vital for the Finnish economy. This is especially true when Finland is competing for industrial investments against countries that are geographically closer to export markets. About 13 per cent of Finland's GDP is used for transport and logistics, which means that streamlining transport will have a major impact on the national economy.

Our strategy is based on the policies laid down for us in the Government Resolution on State-ownership Policy. Our mission is to be the best in the world at carrying out our basic function, that is, traffic management. We have also been given the special assignment of promoting the digitalisation of transport to enable smoother and more streamlined goods logistics and mobility for people in their everyday lives. Our third important task is to assist the defence and security authorities in all circumstances.

In spite of the coronavirus pandemic, Fintraffic performed extremely well in taking care of traffic management and safety.

We succeeded in our basic task of maintaining uninterrupted service in traffic control in spite of sickness absences. Our performance in air navigation was once again one of the best in Europe: there were zero minutes of delay caused by our operations, and our route optimisation, continuous descent approaches and close international cooperation are helping to reduce emissions. In vessel traffic services, we ensured safety by preventing nine vessels from running aground, thereby protecting Finland's fragile marine nature. In rail traffic management, we continued our significant investment programme to raise the automation level and replace outdated infrastructure. The most significant developments in road traffic management were in the productisation and standardisation of software and interfaces for open-road and tunnel systems.

In our basic function – traffic management on land, in the air and at sea – we generate a great deal of valuable and useful traffic data. The use of open traffic data provided by Fintraffic

rose significantly in 2021, reaching a record-breaking one billion interface calls during the last quarter. This equates to more than 6,000 calls per minute for our situational picture of traffic and information about weather conditions. It enabled traffic data to be displayed to end users via corporate systems, map services, navigators and other media.

We have responded to demand for traffic data and digital services by developing existing services and launching new ones for all transport user groups, such as ports, rail passengers, road users and unmanned aerial vehicle operators (drone pilots). Our user number figures are very gratifying. Our Traffic Situation service, which provides information about traffic events and weather conditions, saw its pageviews double to more than four million pageviews per year in 2021. More than 14,000 drone operators have registered through our new service and hundreds of thousands of people use our passenger information services for train travel every day. Almost all ports in Finland have adopted a port app that shares maritime traffic data between operators, and its use has also been expanded to Sweden.

Harnessing digitalisation offers a whole new way of making the movement of both goods and people even smoother and more efficient. We are digitalising transport in cooperation with our partners. We have established a transport data ecosystem working group that already contains more than 130 partners in Finland: transport and logistics operators, cities, municipalities, IT companies, developers and many others for whom transport is important. With them, we want to build a functional transport data ecosystem that is open to everyone in Finland – an ecosystem that will facilitate better cooperation within the sector and promote the development of better, more seamless services in passenger and goods transport, thereby creating a pioneering domestic market that will provide Finnish companies with new export opportunities.

Fintraffic's business is steered by six strategic programmes: A value-creating transport ecosystem, Productised digital ecosystem services, Traffic control development, Capable ICT architecture, Efficient and reliable processes and Competence, management and corporate culture. These programmes are helping us play our part in giving Finland the world's safest, smoothest and most environmentally friendly traffic (our vision) and providing the world's best traffic management and smart services for transport (our mission).

The Fintraffic Group's shared values form the bedrock of our strategy – they show how we want to work together and what is important to us. We are particularly proud of our personnel, who set out with a positive mindset to encapsulate and refine our shared values. They have now been honed into a statement composed of a few words that, in my opinion, describe us really well: **We ensure safety, we care, and we point the way. Together.**

> Our position as a traffic trailblazer has been even more widely noted among our stakeholders during the year.

Although the coronavirus pandemic has hindered our work throughout the year, we managed to make determined progress in our strategic projects for all modes of transport. In line with our company's strategic ownership policies, we are committed to improving our safety and service level, increasing reliability, and boosting the efficiency of our traffic management service provision. We have been fairly successful in all of these goals, even though our operations have expanded significantly in the process. A streamlining target of EUR 30 million has been set for the company for the period 2019–2022, and by the end of last year we had managed to streamline our operations by EUR 25 million – that is, being able to provide more services with the same amount of money and provide existing services for less money. We must continue to enhance the efficiency of our service provision over the coming years, and ensure that we generate as much benefit as possible for Finland with every euro that we spend. At the same time, we must also work with other transport sector operators to ensure that the outlays required for traffic management and digitalisation are seen as investments and have sufficient resources allocated to them. If the geopolitical crisis in Eastern Europe is prolonged, this will impact on air navigation services. The conflict between Ukraine and Russia is impacting the usability

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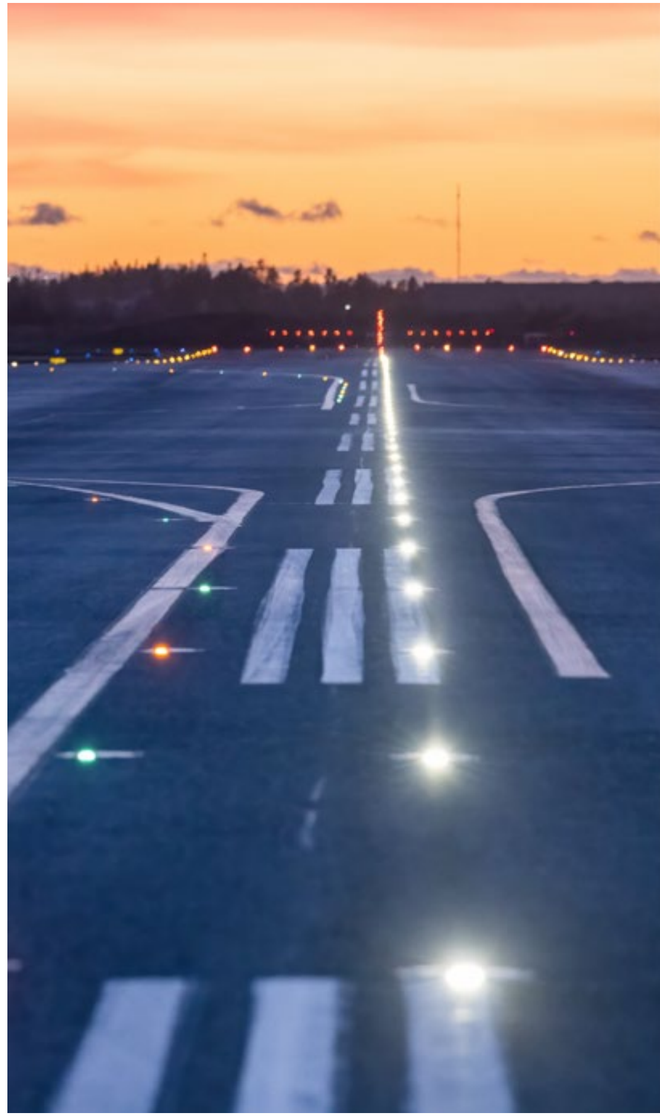
of European and Russian airspace, and thereby income from air routes. The closure of Russian airspace effectively put an end to overflights in Finland and significantly reduced revenue from air navigation.

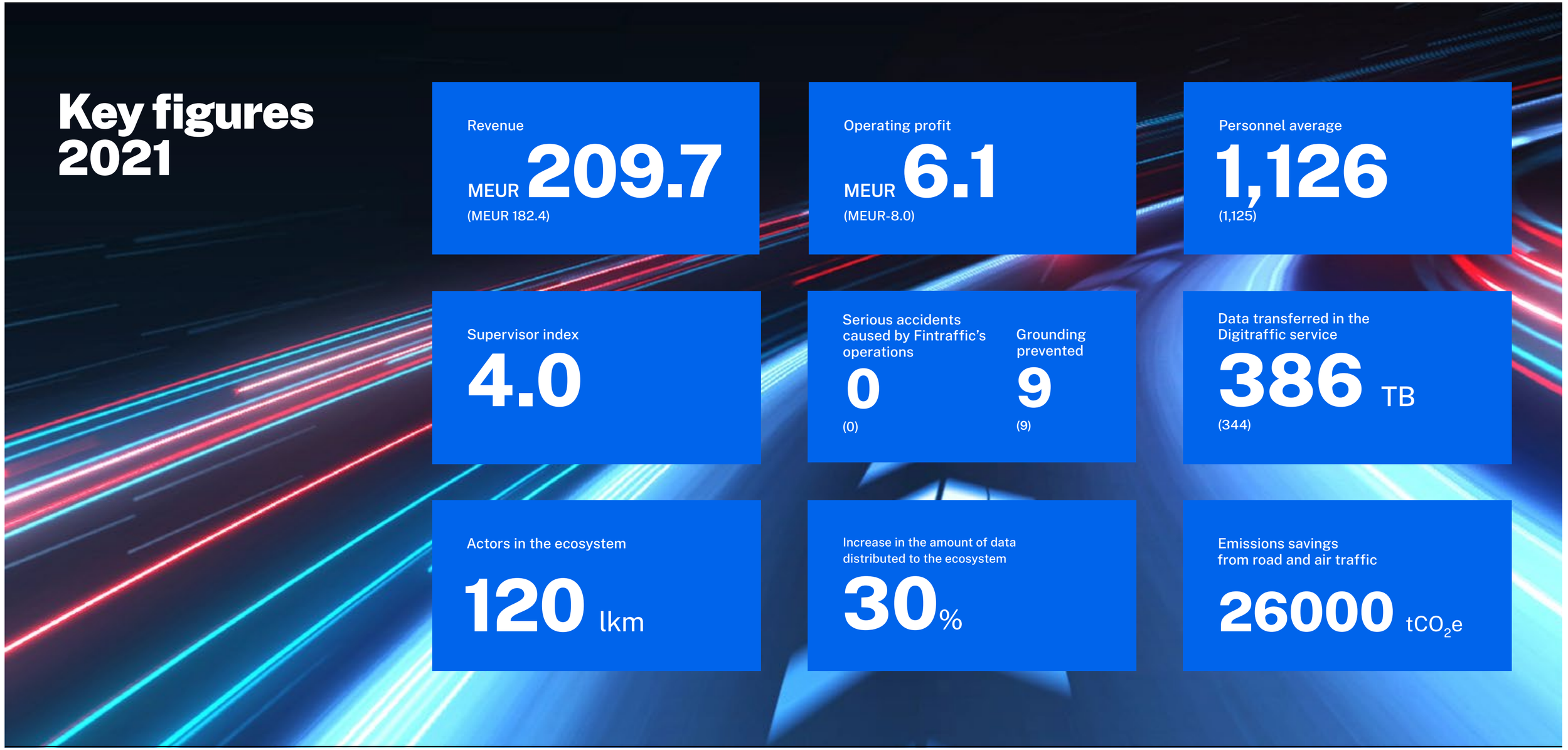
Our position as a traffic trailblazer has been even more widely noted among our stakeholders during the year. This has been evident in, for example, the results of our first reputation survey. We are becoming a strong "quarterback" in the transport sector – we develop core traffic management services for society and, with the aid of data and digitalisation, we make Finnish traffic and the entire transport sector safer, more sustainable and more customer-oriented. During the year, we were also able to more clearly model our own significant input and impact in reducing emissions from transport. We also progressed as planned in our sustainability work, and reaffirmed our goal of being carbon neutral in our own operations by 2023.

The past year has been the third for us since the establishment of our Group and the first in which we operated under a common name, Fintraffic. During the year, we have been a visibly more cohesive force on land, at sea and in the air, making our services known to an even broader range of Finns in their everyday lives. During the exceptional circumstances caused by the pandemic, we have provided our services reliably and to a high standard, even though the pandemic's effects have been reflected in our organisation as, for example, layoffs in air navigation. This is the result of the good work we have done together, caring about each other and successfully following health and safety policies. Fintraffic would like to extend a warm thank you for all of this to our skilled personnel, and in particular to our air navigation professionals for whom the pandemic has been an exceptionally challenging time!

Pertti Korhonen
CEO



Key figures 2021



Revenue
MEUR 209.7
(MEUR 182.4)

Operating profit
MEUR 6.1
(MEUR-8.0)

Personnel average
1,126
(1,125)

Supervisor index
4.0

Serious accidents caused by Fintraffic's operations
0
(0)

Grounding prevented
9
(9)

Data transferred in the Digitraffic service
386 TB
(344)

Actors in the ecosystem
120 lkm

Increase in the amount of data distributed to the ecosystem
30%

Emissions savings from road and air traffic
26000 tCO_2e

Business areas in brief

Air navigation services
Revenue MEUR 62.8 (49.3)
Personnel 427 (443)

Our services
- managing Finland's airspace and providing air route services and air navigation services at 22 airports in Finland
- the design and maintenance of air navigation infrastructure and systems in Finland, and technical maintenance services at five airports in Sweden
- special assignments related to air rescue and area surveillance
- training and consulting services

Vessel traffic services
Revenue MEUR 18.9 (18.1)
Personnel 101 (101)

Our services
- vessel traffic services
- safety radio operations
- monitoring international waters
- radio navigation services

Rail traffic management
Revenue MEUR 76.3 (69.6)
Personnel 470 (465)

Our services
- rail traffic management
- traffic planning to coordinate trackwork and rail traffic
- capacity management
- control centre operations
- passenger information services for train travel
- responsibility for the safety control room and quality control room
- expert and training services.

Road traffic management
Revenue MEUR 49.4 (43.5)
Personnel 87 (80)

Our services
- road traffic control and management services at Traffic Management Centres
- traffic control systems for tunnels, sections of open road, and border crossings
- control and operating systems for traffic lights, and automatic infra-structure for speed limit control
- road weather equipment, systems and analytics
- traffic measurement and analytics

Traffic Data Ecosystem

Our services
- promoting cooperation with traffic sector operators*: enabling and coordinating data ecosystem activities
- developing digital traffic infra-structure*: a technical data platform, data and basic digital business services
- writing a digital rulebook*: templates, standard contracts, cooperation and data transfer standards
- continuous development of our existing services: Digitraffic, Traffic Situation, Feedback Channel Digitransit, Finap

* In cooperation with other operators in the transport ecosystem.

Key events of 2021

January:

We introduced the name Fintraffic to replace Traffic Management Finland and the group of its subsidiaries. We operate as an even more unified group and bring services known to an even larger group of Finns in their everyday life.

A wige range of transport industry operators, invited by Fintraffic, began to build an ecosystem based on data.

We opened a registration service for drone users, where professionals as well as amateur pilots can register as required by law.

February:

The reliability of the Finnish railway network was improved by duplicating the remote control systems of Southern and South-Eastern Finland railway networks.

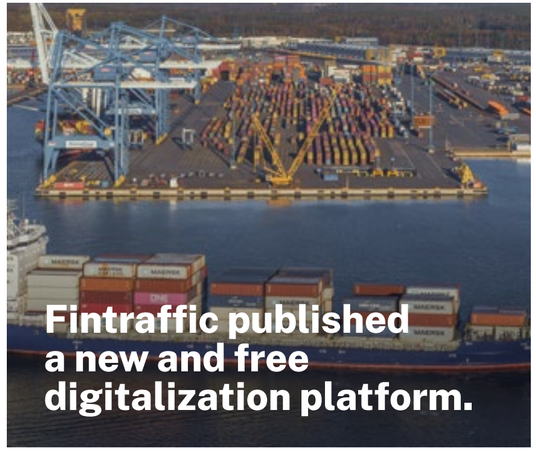
Finnair and Fintraffic established a new type of collaboration aiming at decreasing the carbon emissions and environmental effects of flights.

National Road 1 between Turku and Helsinki received a new traffic control system.

March:

Together with Finavia, we started preparing for an internationally pioneering remote air traffic control concept.

The pandemic slowed down all modes of traffic in the beginning of the year. Especially air traffic was in turmoil: the number of landings at Helsinki-Vantaa airport between January and March was 73% lower than during the corresponding period the year before.

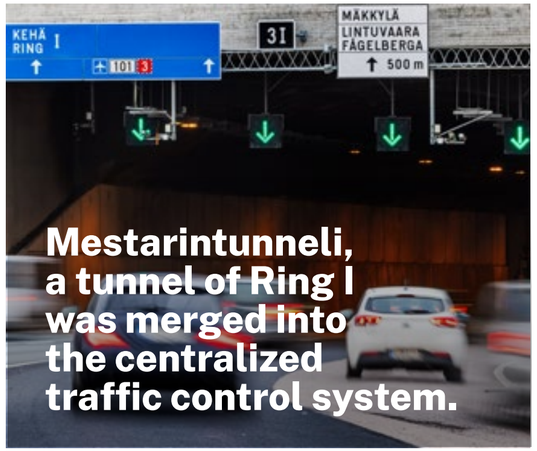


April:

The situation coordinator service began to offer a 24-hour expert service for authorities and other stakeholders in the event of rail traffic faults.

Fintraffic published a new digitalization platform, Port Activity App, open and free for all Finnish ports and port actors. The service and related application make the functions related to port visits of vessels more effective, especially by improving the flow of information.

Maritime traffic control joined the Baltic Sea Action Group's Baltic Sea cooperation to share Baltic Sea Waste Free information to vessels.



May:

Mestarintunneli, a tunnel of Ring I, the busiest highway in Finland, was merged into the centralized traffic control system.

According to the road user satisfaction survey results, the satisfaction of private divers regarding announcements of the weather and traffic conditions of main roads, was improved by 15 percentage points compared to last year, while the same number for professional drivers was 21 percentage points.

We signed a contract of cooperation with car manufacturers, service providers and EU member states concerning the exchange of data of traffic safety across European country borders.

The 112 Finland mobile application, also including traffic announcements, had almost 1,8 million users.

June:

In sustainability work we committed to be part of the World's biggest corporate responsibility network, Global Impact.

The STM Efficient Flow project was finalized. The project researched ways to improve the economic efficiency of ports and to decrease emissions of vessels by harnessing data gathered from different systems.

July:

Removing the pandemic restrictions influenced increased traffic in different modes since July.

Fintraffic's maritime traffic control started a 6-month trial period with the new alarm areas of the Archipelago Sea. The alarm areas will improve the safety and smooth flow of traffic as maritime traffic centers will now receive an automatic alarm in situations where there are multiple vessels in an area at a time.

August:

The Avia College of the air navigation services started work and studies in new facilities.

September:

Port Activity, the port application providing arrival and departure times of vessels, as well as other real time data, was put into operation even more widely across Finnish ports. The application was chosen as the 2021 Seatrade Awards finalist.

Maritime traffic control signed a service agreement of the new Port Call Time Stamp and Estimation Services for use by port operators and authorities.

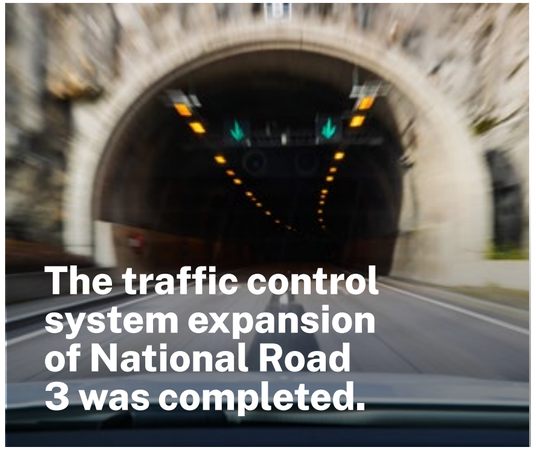
October:

Together with Telia Finland we initiated a research and development project to harness crowd movement data from mobile service networks in road traffic calculations.

We decided to invest in a modern remote-control service for rail traffic control in Northern Finland.

The new passenger information service for railways was put into operation. Passengers noticed changes in new station monitors and announcement content.

We incorporated new group values: we safeguard, care, and lead the way. Together.



November:

The Port Activity application received the Highly Commended mention in the 2021 Seatrade Award finals.

The new rail depot capacity control function pilot was initiated in Kouvola and Kuusankoski.

The traffic control system expansion of National Road 3, carried out as part of the Klaukkala bypass project, was completed.

December:

The Finnish Transport Infrastructure Agency and Fintraffic signed an agreement on the implementation of the Digirail alliance project.

Fintraffic started a development project to renew the national maritime traffic information service. NEMO, the maritime traffic information service will renew the current Portnet information system once completed in 2025.

The use of open traffic data distributed by Fintraffic grew significantly and reached the record level of a billion API's in Q4.

There are 120 operators in the traffic data ecosystem. The jointly drafted digital rule book is in use.

More than 14 000 drone users have registered in the drone register.

Operating environment and strategy

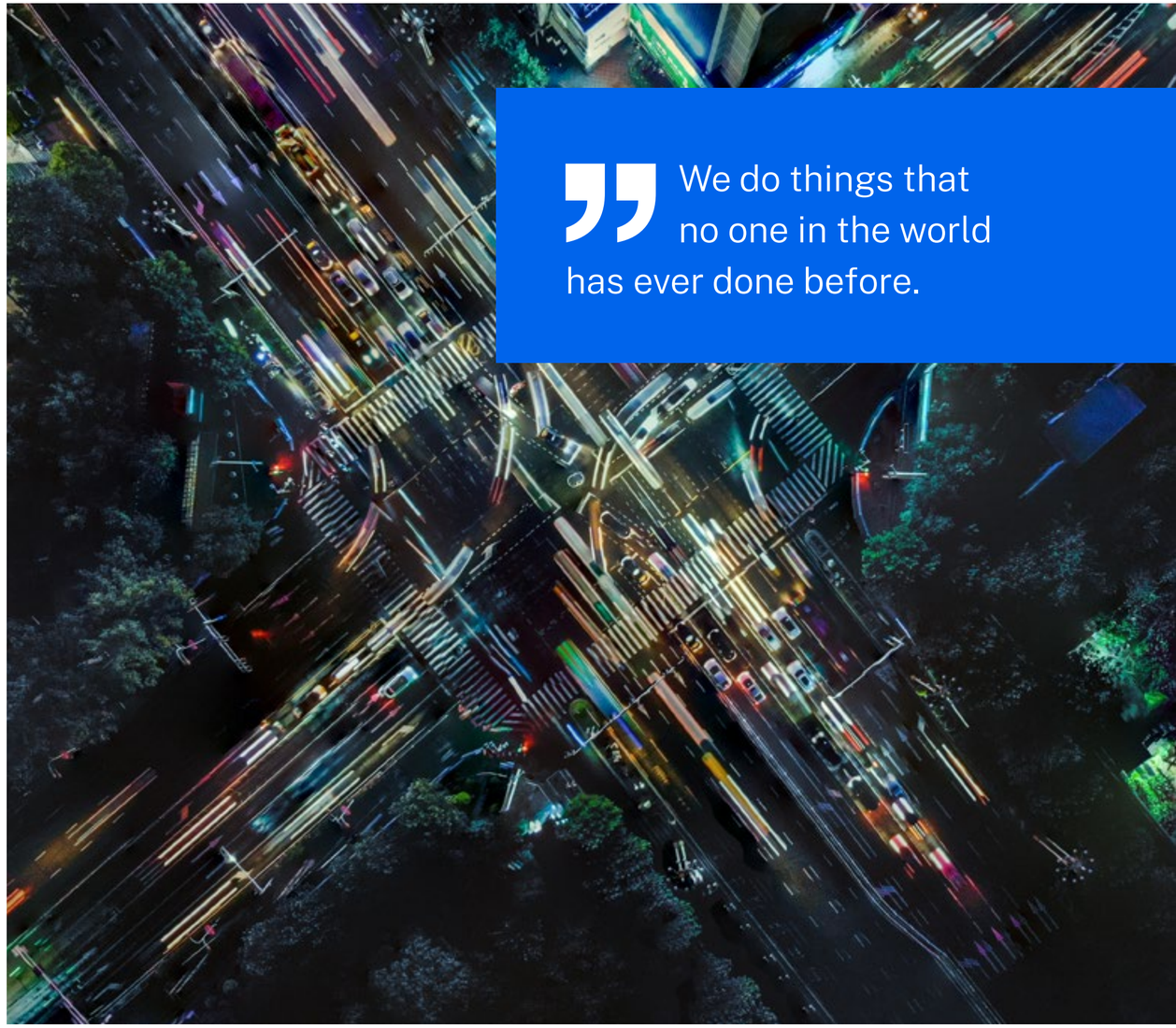
OUR OPERATING ENVIRONMENT

A transport system in transition

The transport system will face major upheavals over the coming years. Fighting climate change, evolving consumer needs, an ageing population, urbanisation, public-sector indebtedness, new business models and rapid technological advancements are all trends that will dramatically affect the transport operating environment. Over the coming years, transport will play a significant role in reducing climate emissions and supporting Finland's international competitiveness.

Transport generates a fifth of Finland's carbon dioxide emissions. Finland has set itself the target of halving transport emissions by 2030. As a result of the pandemic, private motoring has increased and public transport has lost customers. In order to prevent the pandemic from permanently hindering efforts to reduce transport emissions, it is important to have attractive mobility services that provide genuinely competitive alternatives to private motoring, especially within cities and for travel between major cities.

Transport also has a major economic impact. Logistics and mobility account for about 13 per cent of household and company costs. Even minor increases in transport system efficiency are reflected in consumer purchasing power and companies' competitiveness.



How will we know that our strategy has been successfully implemented?

Benefits for society

1. Finland is more competitive
2. Growth in revenue, jobs and exports in the transport market
3. Increased efficiency and lower transport costs for households, companies and society
4. Improved regional and international accessibility
5. Sustainable mobility is more popular
6. Improved information flow and increased data utilisation
7. Less congestion
8. A reduction in emissions
9. Accidents are minimised, preventing injuries, fatalities, and material and environmental damage

Benefits for the transport system

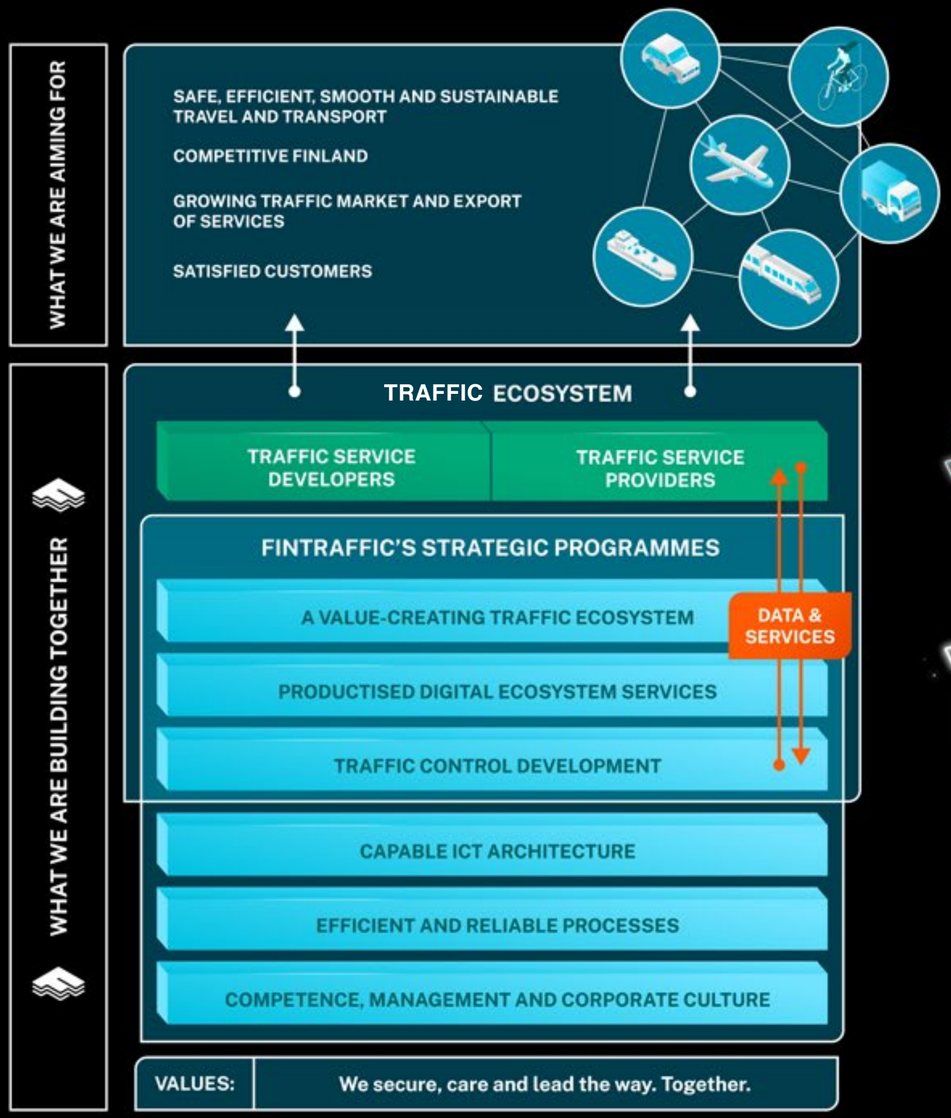
1. A jointly produced situational picture is widely available to operators
2. More companies belong to the transport data ecosystem
3. Increased traffic data utilisation
4. Increased satisfaction among transport end users
5. Functional and efficient travel and transport chains
6. The safest traffic control
7. Traffic management is as reliable and fault-tolerant as possible
8. The most efficient traffic control
9. The smoothest and most environmentally friendly traffic

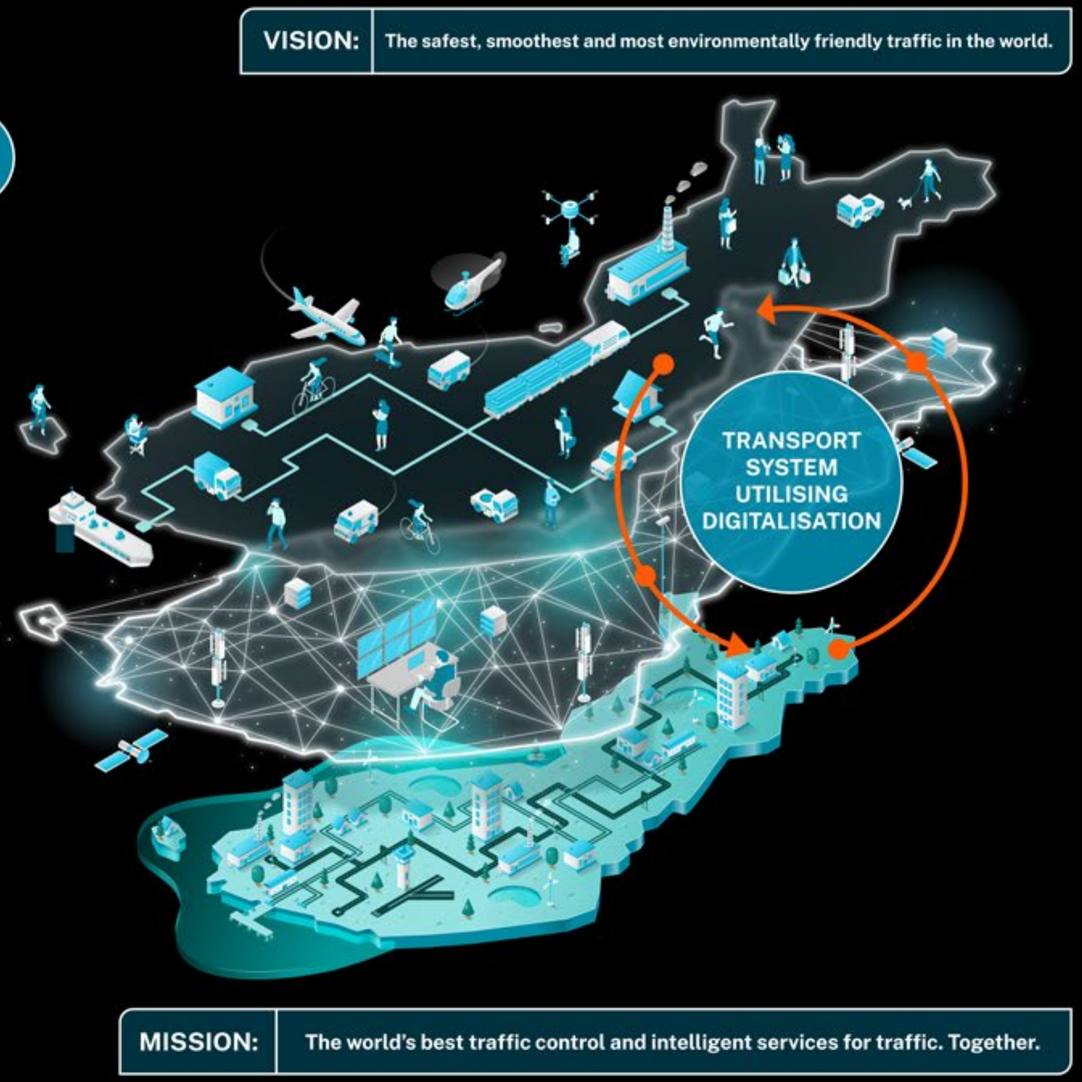
Digitalisation is an important tool in overcoming transport challenges

Digitalisation is having an increasing impact on how the transport system operates. This can be seen in the ever-increasing volumes of data being generated by the various components of the system. Data utilisation is opening up completely new opportunities for improving the safety, efficiency and sustainability of transport and logistics. With the aid of smart services, their supporting systems and open data, we will be able to prevent accidents, shorten travel times, facilitate connections, increase customer satisfaction, speed up logistics, reduce traffic emissions and save taxpayers' money.

Aircraft and drones, cars, trains, ships, digital displays, weather measurement instruments, traffic control, maintenance, and transport service providers and users are all starting to engage in closer dialogue. They are also sharing and using real-time data. However, this change requires all of the transport system's various components to produce, utilise, cross share and enrich growing volumes of data.

Digitalisation and data utilisation provide a unique opportunity to create a pioneering domestic market that will provide a good place to learn about and develop services for quickly growing international markets, in fields such as logistics, passenger transport or IT systems.


WHAT WE ARE AIMING FOR
SAFE, EFFICIENT, SMOOTH AND SUSTAINABLE TRAVEL AND TRANSPORT
COMPETITIVE FINLAND
GROWING TRAFFIC MARKET AND EXPORT OF SERVICES
SATISFIED CUSTOMERS
WHAT WE ARE BUILDING TOGETHER
TRAFFIC ECOSYSTEM
TRAFFIC SERVICE DEVELOPERS
TRAFFIC SERVICE PROVIDERS
FINTRAFFIC'S STRATEGIC PROGRAMMES
A VALUE-CREATING TRAFFIC ECOSYSTEM
DATA & SERVICES
PRODUCTISED DIGITAL ECOSYSTEM SERVICES
TRAFFIC CONTROL DEVELOPMENT
CAPABLE ICT ARCHITECTURE
EFFICIENT AND RELIABLE PROCESSES
COMPETENCE, MANAGEMENT AND CORPORATE CULTURE
VALUES: We secure, care and lead the way. Together.


VISION: The safest, smoothest and most environmentally friendly traffic in the world.
TRANSPORT SYSTEM UTILISING DIGITALISATION
MISSION: The world's best traffic control and intelligent services for traffic. Together.

STRATEGY

Towards the world's safest, smoothest and most environmentally friendly traffic

Our Chief Development Officer **Sanna Reponen** and Chief Impact Officer **Mikko Saariaho** discussed Fintraffic's objectives and potential to promote the safety, smoothness and environmental friendliness of traffic management with the aid of data, digitalisation and an ecosystem approach. Our objectives include safe and smooth travel and transport chains, lower emissions, success for the transport sector, and increased competitiveness for Finnish companies in both domestic and global markets.

Mikko Saariaho
Chief Impact Officer

Sanna Reponen
Chief Development Officer

SR: Our vision is to work with our partners to ensure that Finland has the world's safest, smoothest and most environmentally friendly traffic. In autumn 2021, we gave our strategy its annual service: we revised our targets for the 2022–2026 strategy period and drew up a more concrete implementation plan.

MS: We are the first traffic management company in the world to have combined all traffic control – land, sea and air – under one roof. We have a unique opportunity to provide transport operators and end users with digital services and open data, and also to promote the success of the transport sector in our networked world.

We have six strategic programmes: A value-creating transport ecosystem, Productised digital ecosystem services, Traffic control development, Capable ICT architecture, Efficient and reliable processes and Competence, management and corporate culture. In addition to specifying our key programmes, our 2021 strategy work focused on customer segmentation and reshaping our service structure.

SR: Developing traffic management is the core of our business. We aim to have the safest, most efficient, most reliable, and most prepared and fault-tolerant traffic management on a global scale. We enhanced safety in many ways during 2021: we increased our operational reliability and fault-tolerance with the aid of, for example, system redundancy and location-independent traffic management.

SR: One of our strategic targets is to increase the cost-effectiveness of traffic management. We have streamlined our operations: with the exception of air traffic, the activity level in traffic management has significantly increased over the last three years, yet our service provision costs have not risen comparably. 'An increase in the activity level' means things such as expanding traffic control to new tunnels or introducing camera surveillance at more rail yards.

MS: As the number of data-producing elements in the transport system increases, we need rules and compatible, high-quality interfaces that will enable data to flow smoothly between all of the various components of the transport system. In our data ecosystem work, we are building both common operating models and mutual trust between transport sector operators. This will help the sector to tackle challenges in a more cohesive manner. With our 130 partners, we are creating an open network in which it is both easy and profitable for operators to do business and develop services. Thanks to joint input from all participants, the ecosystem will be able to provide services that no single company could provide alone. When the data produced by both us and our partners is available to everyone – and cooperation is smooth – the whole chain will become more efficient and thereby help to reduce emissions. At the same time, customers in both travel and transport chains will receive improved services.

In order to ensure that cooperation between parties in the data ecosystem is easy, fair and builds mutual trust, we spent 2021 working together to write a digital rulebook based on rules for a fair data economy. This rulebook will be introduced in early 2022. Ecosystem development work progressed very well during the year and was, according to our satisfaction survey, also considered useful.

MS: The Group's sense of cohesion increased significantly in 2021. Now that we have a common name, brand and strategy, we are all working towards the same goals. Although each mode of transport has its own role to play in implementing traffic management and developing mode-specific services, we do everything else together – and have made great progress. In a very short time, we have been able to assemble all the pieces in the puzzle to form a cohesive team.

SR: We are aiming to do things that no one has ever done before. We are also aware that the ambitious nature of our strategy is at once a threat and an opportunity. Transport is such a complex and networked environment that no single party – neither us nor anyone else – can do things alone. We have to work together.

> We are aware that our work has a major impact on Finnish companies and transport users.

SR: We have many strengths. Traffic control for all modes of transport is under one roof and – what's most important – our personnel are skilled, committed and enthusiastic. We are aware that our work has a major impact on society, Finnish companies and transport users. The meaningfulness of this work is a great motivator. This was also reflected in the results of our 2021 personnel satisfaction survey, which clearly improved on the previous year.

Strategic programmes

We are putting our strategy into practice via six programmes:

Building a transport ecosystem that creates value
We are working to ensure that Finland is a world pioneer in transport market practices. This lays a foundation for the success of transport-sector companies, and enables them to utilise data. Together with our partners, we are building a network that utilises data: a transport data ecosystem that will enable new business to be built on Finnish service platforms and facilitate the smooth movement of people and goods. The platform, situational picture and other services provided by Fintraffic will help other transport operators to develop their services and create a good end-user experience.

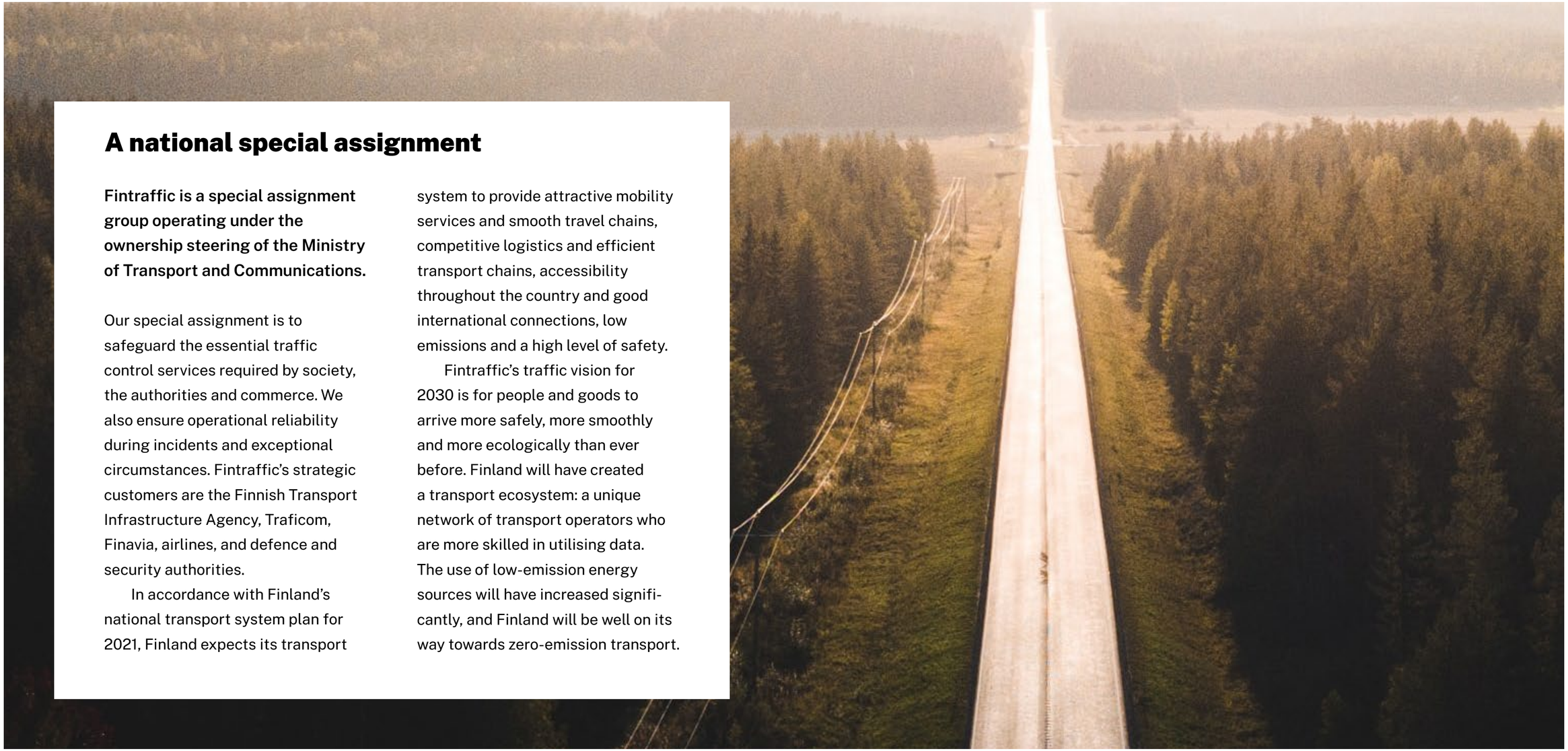
Productised digital ecosystem services
Fintraffic provides digital services for application developers, to boost service development in the transport sector; for transport operators, to improve the service level and grow the market; and for end users, to streamline travel and delivery chains. In Finland, we are building the most comprehensive situational picture of traffic in existence. Our goal is to get more and more operators onboard, so we can enrich and utilise this situational picture together. We provide the most attractive data and service platform for sharing information throughout the entire sector.

Traffic control development
Our goal is to offer the safest, most reliable and most efficient traffic management services in the world. This will also give Finnish transport operators opportunities to promote networking and data enrichment. However, achieving this target will require us to renew our operating model for technical traffic management systems and our control centre structure. It also means developing processes, working methods and operating models. We are investing in operative traffic control systems and their automation.

Capable ICT architecture
In order to support the success of the transport ecosystem, the Finnish transport sector and society as a whole, we must have high-quality and reliable information systems. With the aid of smart technologies, we are improving Fintraffic's productivity, agility, employee experience, customer service and data security level. We leverage common platforms in administrative, operative and data ecosystem architecture.

Efficient and reliable processes
At Fintraffic, we operate in a smart and consistent manner. Our Group aims to ensure a high standard of quality for customers, a high level of safety and security, and efficient operations. We will achieve this through strong leadership, the standardisation and streamlining of common work chains,process digitisation, and competence development.

Competence, management and corporate culture
Fintraffic wants to be a great place to work. Our corporate culture is based on our values of respectful interaction, openness, and working together. It is also solution-oriented, so as to support innovation,continuous improvement and renewal. Our corporate culture has a direct impact on the functionality of our workplace community, and steers our interactions with our partners. We are continually developing our corporate culture in a responsible manner, with our values and code of conduct forming the basis of our operations. Our goal is to have world-class expertise in traffic management and transport ecosystems. We are developing our supervisory work to ensure professional, fair and people-oriented leadership. We are focusing on our ability to attract, retain and develop skilled personnel.



A national special assignment

Fintraffic is a special assignment group operating under the ownership steering of the Ministry of Transport and Communications.

Our special assignment is to safeguard the essential traffic control services required by society, the authorities and commerce. We also ensure operational reliability during incidents and exceptional circumstances. Fintraffic's strategic customers are the Finnish Transport Infrastructure Agency, Traficom, Finavia, airlines, and defence and security authorities.

In accordance with Finland's national transport system plan for 2021, Finland expects its transport system to provide attractive mobility services and smooth travel chains, competitive logistics and efficient transport chains, accessibility throughout the country and good international connections, low emissions and a high level of safety.

Fintraffic's traffic vision for 2030 is for people and goods to arrive more safely, more smoothly and more ecologically than ever before. Finland will have created a transport ecosystem: a unique network of transport operators who are more skilled in utilising data. The use of low-emission energy sources will have increased significantly, and Finland will be well on its way towards zero-emission transport.

IMPACT

We have a broad impact: Fintraffic increases safety, reduces emissions and makes daily life smoother

Traffic is the neural network of society – and its functionality is ensured and enhanced by Fintraffic.

Fintraffic's services have knock-on impacts throughout society, affecting everyone either directly or indirectly. Safe, efficient and sustainable transport is a prerequisite for a functional society and a basic need for residents. It acts as an enabler and neural network for society.

Fintraffic's vision is for Finland to have the world's safest, smoothest and most environmentally friendly traffic. We work towards this goal every day. We treat the transport sector as a single entity in order to ensure that traffic is as safe and smooth as possible, and to generate as much benefit for society as possible with the lowest possible emissions. With the aid of digitalisation and data utilisation, transport services can be developed and renewed both to meet Finland's needs and as global exports.

Transport and logistics account for approximately 13 per cent of the costs of Finnish companies and households. Transport generates about one fifth of Finland's greenhouse gas emissions. Emissions can be reduced by moving away from fossil fuels, improving traffic flow and efficiency (such as the filling rate when making deliveries), and improving public transport to

> Fintraffic's operations have knock-on impacts throughout society, affecting all actors and people either directly or indirectly.

ensure that it offers a genuine alternative to private motoring.

The impact indicators that we introduced in 2021 indicate that the reductions our services make in emissions are significantly greater than the emissions generated by our operations. Fintraffic's carbon handprint is therefore considerably larger than its footprint.

Maximising traffic safety is our company's most important task. By preventing accidents, we reduce human suffering, financial costs and environmental damage.

A lot is expected of us. Our owner (the State), society (transport operators and users) and our own personnel want us to use our available resources to provide as much benefit as possible for the people who live in Finland, the companies that operate here, and the country as a whole. We are committed to making this happen.

Uninterrupted traffic management services

Traffic management services and real-time traffic data help to prevent accidents and facilitate smooth transport and travel chains. This has a positive daily impact on everyone who uses transport, and also reduces emissions. Goods transport will likewise be more efficient and more predictable, which in turn has a positive impact on business. The data and services we provide also help to optimise transport route investments and maintenance, which improves safety and saves public funds.

In road traffic management, our tools for generating social and environmental benefits include traffic control systems and bulletins. We make an impact in many ways, for example, by maintaining and sharing a real-time situational picture of traffic, optimising routes and driving speeds, and controlling congestion. In the event of an incident, we provide information and launch contingency plans to manage the situation – which all have an impact on traffic flow and safety. At the same time, we are building a digital twin of traffic – a more comprehensive and more real-time situational picture – that can be used by both drivers and increasingly intelligent vehicle systems.

In rail transport and air navigation, we are making a difference by ensuring that no accidents are caused by our own operations and that traffic management is carried out as safely, smoothly and effectively as possible under all circumstances. Both rail and air are extremely safe modes of transport, and traffic control services play a key role in ensuring this high level of safety. Our services also help to shorten travel times, improve punctuality and reduce emissions. Due to the high standard of our air navigation services, our airspace is efficient, our air routes are direct, and planes landing at Helsinki Airport use continuous descent approaches more often than on average in the EU – which significantly reduces both noise pollution and climate emissions.

In maritime transport, we prevent dangerous situations, such as vessels from running aground, and share port call schedule data to increase the efficiency of both port operations and the logistics chain as a whole. Our non-stop vessel traffic services protect the Baltic Sea and Lake Saimaa by preventing accidents and intervening in a variety of incidents.

Higher-quality and more efficient traffic control means greater benefits for transport service users, industry operators and the authorities. Companies and organisations can develop their operations, safe in the knowledge that they can rely on a functioning transport sector, which contributes to Finland's success and competitiveness both domestically and internationally.

The ecosystem as an impact enabler

Fintraffic also has an impact on society by developing the interoperability of all modes of transport. We are working with a variety of other operators to build a data ecosystem that is open to everyone in the transport sector. Enhanced data utilisation within this ecosystem will help to promote the development of new services, and common

practices will both accelerate service development and reduce costs.

This will enable many things, such as the development of more attractive mobility services, faster turnaround times for deliveries, and cost savings. The safety level of the transport system will increase, and emissions will decrease.

Strong impact potential

By opening up and combining real-time data, we can take optimising the movement of people and goods to a whole new level. One concrete example of this – a digital service that promotes more functional transport – is the port app developed by Fintraffic. Information about vessel arrival times can now be relayed to all port operators in real time. Previously, only a limited number of parties could use the information supplied to a particular port, but now all operators connected with that port can use the data to optimise the entire logistics chain. So, it is now possible to synchronise truck schedules more accurately with a ship's actual arrival time. And all this accumulated efficiency has a major impact.

Data can be collected and processed from Fintraffic's own sources and its partner network, but things also work the other way: through crowdsourcing, we can also harness the data produced by transport users and increasingly intelligent vehicles. For example, crowdsourced feedback can enrich the data generated by Fintraffic's 20,000 field devices by improving its accuracy, relevance and real-timeness, and thereby also its usefulness to road users, smart vehicle systems, and road maintenance operators.

Ensuring smooth rail traffic is one of our main tools in improving the attractiveness of low-emission train travel in relation to other modes of transport. The greater the proportion of passenger and goods transport accounted for by rail traffic (in terms of kilometres), the lower the climate emissions caused by transport overall. The capacity of existing tracks can be significantly increased in the future thanks to a new train control system (the Digirail project). This is just one example of the opportunities afforded by digitalisation in rail transport.

Several digitalisation-based development projects are also underway in other modes of transport, and will pave the way for optimising the entire transport ecosystem. They include improving information exchange in road traffic control, creating a situational picture of Finland's lower airspace, introducing digital consignment notes, and providing a maritime traffic notification service.

> Personnel are skilled, committed and aware of the national impact of their work.

Personnel as influencers

Fintraffic's personnel are skilled, committed and aware of the national importance of their work. Through their work in road, rail, air and maritime traffic management, personnel play a fundamental role in ensuring the functionality of Finland's transport system.

In order to succeed in this, we need to maintain our professional skills and capabilities, learn new skills and continually develop our competence. Harnessing digitalisation and new technology requires us to build up new expertise in both our basic task of providing traffic management services and in our role as a platform operator in the transport data ecosystem. Our vision of having the safest, smoothest and most environmentally friendly traffic in the world has created a common, inspiring goal that steers both our everyday work and new developments.

Measuring impact more accurately

The further we progress in implementing our strategy, the more impact we have. In 2021, we defined a modelling and utilisation plan for our impact that extends to 2026. It includes indicators to measure the direct and indirect impacts of Fintraffic's services, and the data for these indicators – collected for 2021 – is now being published for the first time. Upright impact modelling is one of the tools we use to determine our impact in all modes of transport.

In 2022, we will continue our development work on traffic management, ecosystem steering, and impact indicators for digital services.

Impact: target state for 2026

The various dimensions of transport digitalisation and the impact of Fintraffic's services are understood in public debate. Outlays on digitalisation are seen as investments, not expenses.

The added value of the services purchased by our customers is based on the social benefits generated by our operations.

Our owner measures Fintraffic's added value primarily through the functionality of the transport system and its operational efficiency – not in terms of revenue growth or maximising operating profit.

Fintraffic is able to measure and assess the value of its services and projects using indicators of their benefit and impact. Impact indicators are part of the company's project management model and portfolio management. Fintraffic also has an impact model that can be used to assess the impact of different transport digitalisation measures in various scenarios.

Indirect impact indicators for Fintraffic's services, 2021

9.7% (15.7%)
Market share held by public transport in terms of passenger traffic kilometres / Traficom 2020

3.9% (6%)
Market share held by railways in passenger traffic / Traficom 2020

10.4 million tons of CO_2e in 2020 (11.3 in 2019)
GHG emissions from domestic traffic

10.5% in 2020 (11.7%)
Household travel costs as a percentage of consumption expenditure / Statistics Finland

12.2 % of GDP
Companies' logistics costs / Logistics 2018 study

5th
Finland's rank in open data (Global Open Data Index)

10th
Finland's rank in the global logistics index (Logistics Performance Index, 2018)

219 (220 in 2020)
Road traffic fatalities / Statistics Finland

Direct impact indicators for Fintraffic's services, 2021

Air navigation services

No accidents or serious incidents resulting from air navigation **0**.

The lack of delays in Finnish airspace saved 54,400 flight minutes (=MEUR 5.4) vs the EU average.*

Finland's **optimised flight paths saved 8,420** tons of CO_2 vs the EU average.*

Continuous descent approaches saved 82 tons of CO_2 vs the EU average.*

Efficient air navigation services for Finnish air traffic **– low service charges saved MEUR 1.8** vs the EU average.*

*Calculations are based on Eurocontrol values

Rail traffic management

No accidents resulting from traffic control **0**.

Safe rail traffic prevented about **9** fatalities in passenger traffic.*

Rail traffic **reduced calculated emissions by** approx. **400,000** tons* of CO_2, which is equivalent to the annual emissions from **200,000** passenger cars.

The **punctuality of Finnish rail traffic: 87.7%** (Sweden 87%) / 2020.

Stakeholder satisfaction with traffic management services as a whole: **8.44**.

*Assumes that rail transport replaces road transport in passenger traffic

Road traffic management

Traffic management services **reduce the number of accidents** leading to injury: **200** fewer accidents per year.*

Travel time saved: 16,000 vehicle hours per year.*

A reduction in CO_2 emissions from road traffic: **18,000** tons per year.*

Services generated **economic benefits for society** worth EUR **90** million per year.*

*Impact compared to a situation in which no traffic management services were produced

VTT NEXT-ITS 2 evaluation

Vessel traffic services

20 incidents prevented in vessel traffic, of which **9** were vessels prevented from running aground.

Real-time ETAs for ships (port call schedules) streamline port operations: **100%** of users found this information useful.

Maritime traffic control **proactively intervened about 20,000 times** to ensure safe and smooth vessel traffic.*

*Intervention = information, guidance and warnings

Ecosystem development

Major operators* committed to the data ecosystem: approx. **110** operators*.

Overall perceived benefit (scale 1–5) of the ecosystem's activities in general **3.9** and its benefits for ecosystem operators' own business **3.7**.

30% growth in the volume of data shared in Fintraffic's ecosystem in 2021 vs 2020.

Number of companies offering travel chain brokerage and combination services, **60** in 2020 vs 50 in 2019, Traficom: Transport Market Review.

*Participated in activities during the year and has more than 10,000 users of their own services or more than MEUR 5 million in revenue

HOW WE CREATE VALUE FOR SOCIETY

Towards the world's safest, smoothest, and most environmentally friendly traffic

This is what we do

Value creating traffic ecosystem

- Streamlining transport and logistics chains
- Exchanging, harnessing, and enriching real time traffic data
- Speeding up the traffic industry service development
- Driving cooperation of traffic industry operators and consolidation of operations

Productised digital ecosystem services and open data

- Situational picture of traffic and the sharing of it
- Services for companies and end-users
- Open sharing of data in API's

Traffic control on land, at sea and in the air

- Ensuring safety and smoothness
- Optimizing routes, stages and speeds, countering congestion
- Strengthening the traffic system with automation

Benefits created together with our partners

Safe traffic

There are more than **200** fewer casualties in road traffic due to Fintraffic services*

9 running agrounds inhibited

0 incidents caused by traffic control in air and rail traffic

Lower emissions in traffic

26 000 tCO_2e emissions saved in road and air traffic

The equivalent of **10 000** passenger cars of saved emissions

Rail traffic saving **400 000** tCO_2e of emissions yearly

Smooth traffic and an accessible Finland

16 000 h worth of saved travel time in road traffic

Punctuality of Finnish train services: **88%**

Almost **1 000** saved flight hours due to a more efficient air space compared to EU level

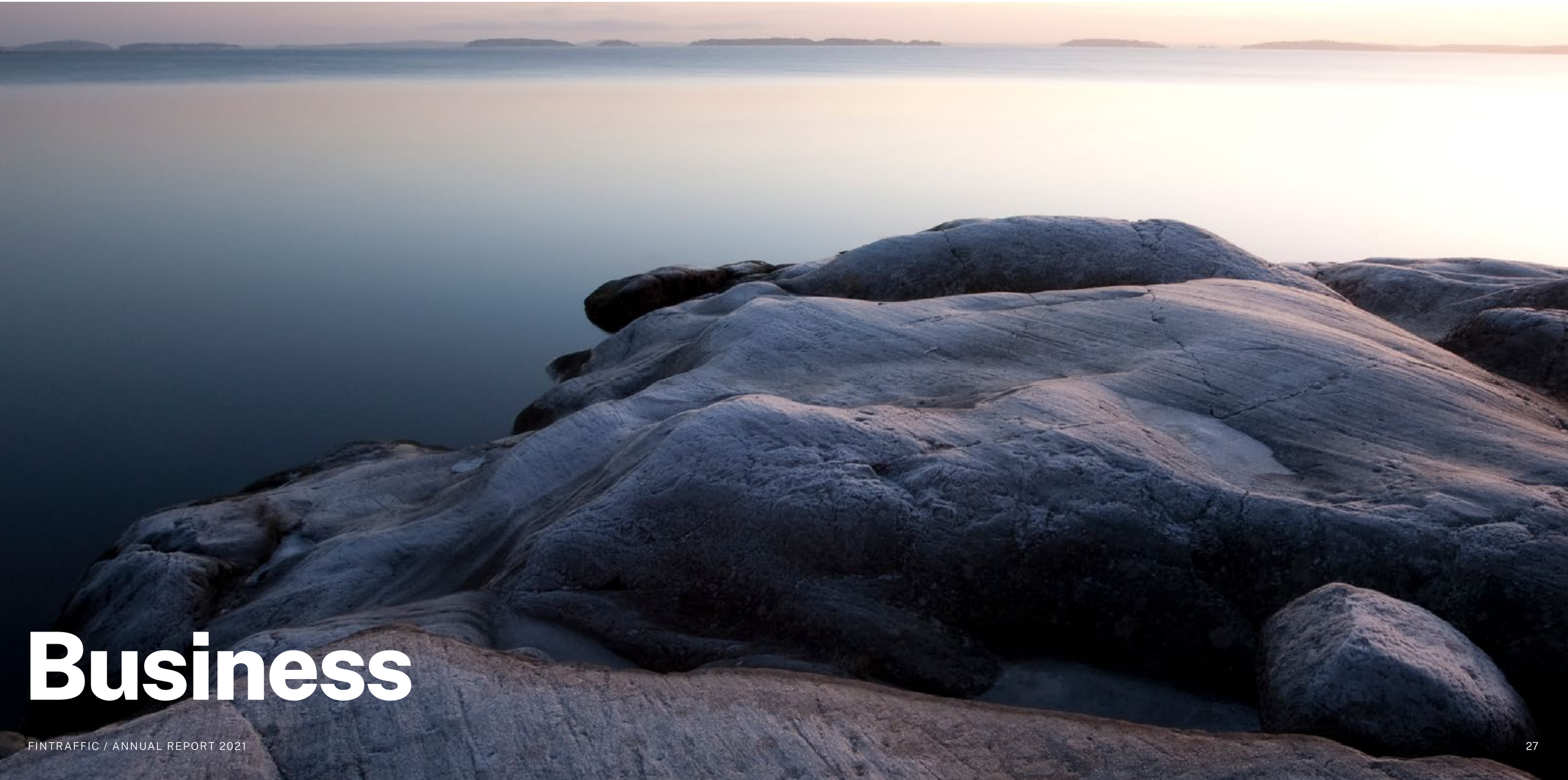
The development of traffic industry and competitiveness of companies

+ 30% growth in demand for data shared by Fintraffic to the ecosystem

+ 10 new companies providing brokerage and connecting services in the travel chains

Finland ranks **5th** in open data (Global Open Data Index)

*To the NEXT-ITS2 project based calculation



Business

Finland's regional air traffic control provided services for 123,300 flights.

Air navigation services

Our vision is to provide Europe's best airspace management, air navigation services and traffic data.

In 2021, we adjusted our operations to the reduction in air traffic. No compromises were made on safety, efficiency or performance. Goal-oriented work to develop the sector continued.

We are responsible for managing Finland's airspace and providing air route services and air navigation services at 22 airports in Finland. We also provide technical maintenance services at five airports in Sweden. In addition to airports, our main customers are airlines and technical air navigation operators.

2021 was marked by the adjustment of our operations to the reduction in air traffic, which is undergoing the biggest crisis in its history as a result of the coronavirus pandemic. In terms of the year as a whole, the number of flights in Finnish airspace was about 57 per cent less than in 2019. Although we made the planned adjustments, we still made a financial loss. We achieved the performance and safety targets set by our regulator, and also our capacity maintenance and environmental efficiency targets. Air traffic volumes began to pick up in August as coronavirus vaccination coverage increased, but pre-pandemic levels were not reached in Finland as a whole at any time. Recovery in traffic volumes was significantly slower in Finland – up to a fifth slower – than elsewhere in Europe.

There was an upswing in charter flights to Northern Finland at the turn of the year. Similar increases – of up to 10 per cent – have not been seen at airports in Northern Finland since 2018.

There is international demand for Finland's top-level air navigation expertise. And for good reason: we have been at the forefront in achieving the safety, efficiency and emission reduction targets set for air navigation by the EU Commission. Safety is

always our number-one priority. And we do not compromise on punctuality or environmental efficiency either. Route optimisation, continuous descent approaches and close international cooperation are just some of the means we use to reduce emissions. Continuous descent approaches are always optimised at our network airports. Thanks to the continuous descent approach procedure used at Helsinki Airport, arriving flights are some of the most energy efficient in Europe. You can read more about this in the Impact section of the Annual Report.

Progress in strategic projects

We are engaging in groundbreaking cooperation with Finnair in the Perfect Flight 2021 project. Our cooperation seeks to reduce fuel and carbon dioxide emissions by finding ways to optimise air routes from an environmental perspective.

We are involved in various European collaboration projects, and are the air traffic ecosystem partner for Finland in the EU network. In 2021, for example, we submitted a Performance Plan for Air Navigation Services to the EU Commission. Environmental issues are playing an increasingly larger role in air traffic at EU level, and sustainability and energy efficiency will be significant drivers in the development of both airspace usage and our own operations.

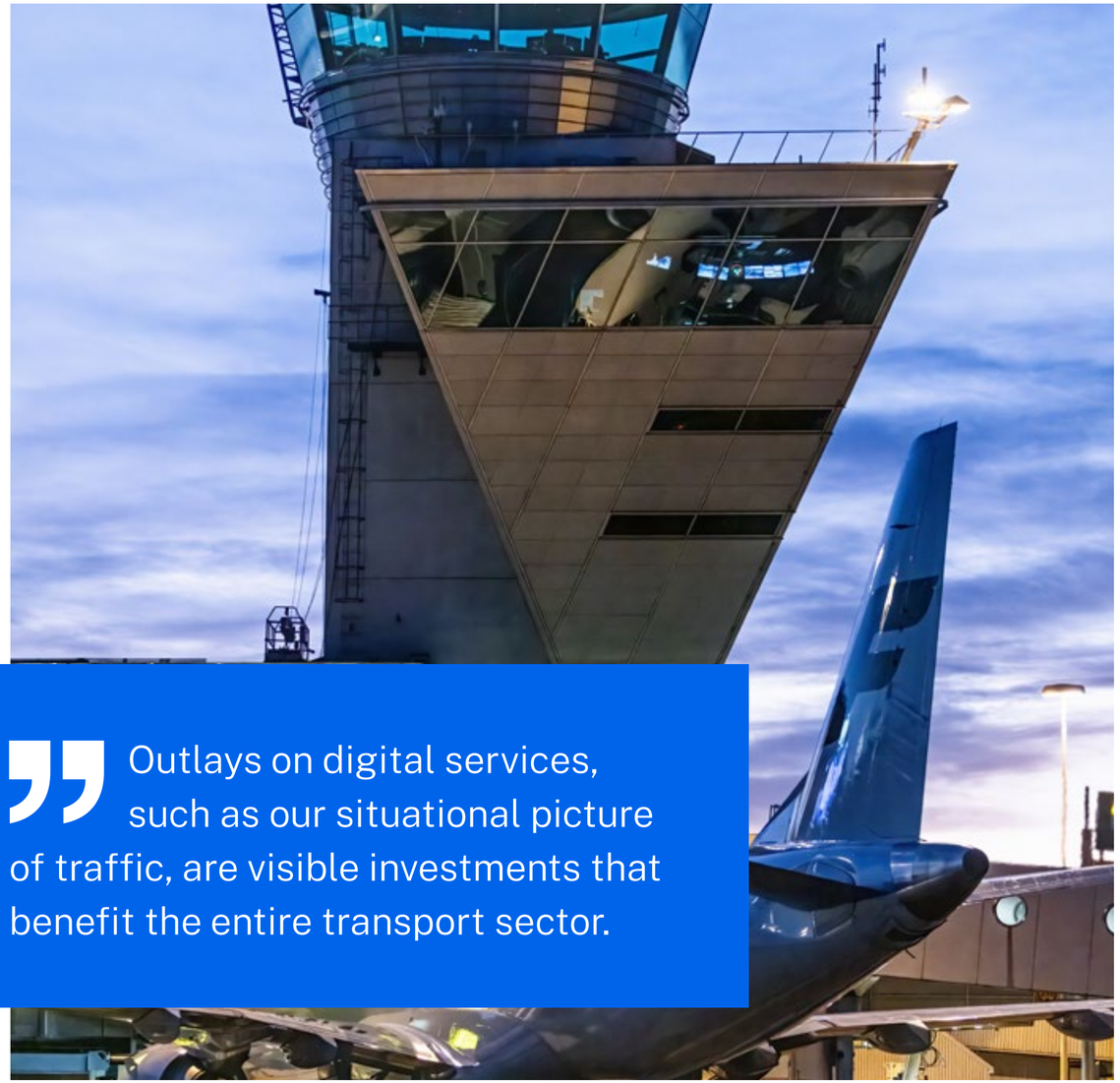
Our services include the design and maintenance of air navigation infrastructure and systems in accordance with international requirements. We made progress in several strategic projects with our partners during the year, and are now ready to move on to the next phases.

Single European Sky (SES) will be the key to maintaining safety as air traffic increases. SES1 legislation came into force in 2002. The EU Commission is currently preparing updates to the SES Regulation, as European cooperation is required to reduce the environmental impacts of aviation, ensure its safety, and provide cost-effective air navigation services all across Europe. Fintraffic has responded to these growing demands in multiple ways. For example, since 2016, we have been working on crossborder air navigation services with Estonian Air Navigation Services (EANS). It was planned that the service would be deployed in 2023, but the defence administration informed Fintraffic in March 2022 that the implementation of the FINEST cooperation project is not feasible in the near future.

Multi-ROT (Multi Remote Operating Tower) progressed in early 2021 when we

Overflights

38 055



> Outlays on digital services, such as our situational picture of traffic, are visible investments that benefit the entire transport sector.

Responsibilities in air transport

Managing body of the airport is responsible for

- Airport network
- The condition of runways and other airport infrastructure
- Airport security measures and civil protection
- Airport announcements

Fintraffic is responsible for

- Controlling air traffic both on the ground and in the airspace, technical air navigation infrastructure, and controlling airspace usage on their designated area of responsibility in the airspace above the Finnish and international sea area
- Managing and distributing information needed for aviation
- Managing airspace reservations
- Contributing to the designing of airspace structure and flight procedures

Airspace users

- Airlines are responsible for passenger services and ticket sales
- Airlines, private operators, flyers of unmanned aerial vehicles (incl. drones) are responsible for aircraft traffic

signed a letter of intent with Finavia to begin preparations for the project. If these preparations lead to the launch of the remote control project, it will be possible to provide flexible air traffic control services to one or more airports from a single workstation. This would improve both airport service levels and preparedness in air traffic control. It would also enable us to provide air traffic services at a lower cost, which would benefit provincial network airports in particular.

The proliferation of unmanned aerial vehicles (that is, drones) in the air transport market has increased the need for new kinds of traffic management services and low-altitude air traffic control. The service portal for drone operators that we created with Traficom was opened at the beginning of 2021. It is now mandatory for both professional and amateur drone operators to register and complete an online test. Almost 14,000 drone pilots registered during the year. The drone register also supports the digitalisation of general aviation and forms part of our air navigation service. We conducted a study for the Ministry of Transport and Communications on the various options for implementing a low flight network. Our report is now awaiting the Ministry's decisions on how to move forward in practice.

Towards a shared vision

Fintraffic's revised strategy and shared values have unified our Group and increased cooperation between its various elements. In 2021, this was positively reflected in our daily lives through things such as joint training sessions, which have increased our understanding of both general and mode of transport-specific strategies and furthered their implementation.

Outlays on digital services, such as our situational picture of traffic, are visible investments that benefit the entire transport sector. This is why, in spite of the exceptional circumstances, we have continued our determined efforts to develop our digital situational picture and other air navigation services. We are also automating aviation information services for airspace users. Our aim is to ensure that air traffic in Finland will continue to have access to air navigation services that are among the best in the world, once the pandemic is over.

According to the results of our 2021 customer satisfaction survey, the principal strengths of our air navigation services are: compliance with safety requirements, good customer service, and a high standard of operations at the Area Control Centre and in the Airspace Management Cell (AMC). Our cooperation with the State and military aviation is also at an excellent level. On the basis of the results, we are also well placed to develop our operations and make the areas for development highlighted in the survey a visible part of our daily lives in accordance with our strategy.

> Environmental issues will also play an increasingly important role in air traffic at a European level.

Unfortunately, personnel layoffs continued throughout the year. Scores in our personnel satisfaction survey fell on the previous year, and particularly with regard to layoffs, which it was felt had been unfairly allocated. Since then, efforts have been made to find a fairer way of allocating layoffs. Personnel were supported in various ways during these different times, and our occupational healthcare services have also been available to laid off personnel. Training was organised throughout the year and included opportunities for remote participation. We have launched development projects aimed at improving corporate culture and job satisfaction during 2022. We successfully managed to take good care of our personnel's health in spite of the challenges posed by the pandemic: there were no service outages caused by us.

A report completed by the Ministry of Economic Affairs and Employment in March 2021 outlines proposed measures to achieve sustainable growth in the aviation industry. These solutions include accelerating the deployment of remote control systems and engaging in closer cooperation with other air navigation service companies. Ensuring competitive operations and functional processes was considered important. These ideas also lie at the heart of Fintraffic's air navigation services, alongside cooperation with other modes of transport: digitalisation will create opportunities for developing easy and seamless travel that combines various modes of transport.

Case

We are preparing to provide low flight network services

One of our strategic spearhead projects involves services for lower airspace and unmanned aerial vehicles. In 2021, we participated in a low flight network study coordinated by the Ministry of Transport and Communications. This study analysed the requirements for establishing a low flight network in Finland and the impacts of its establishment.

If implemented in line with the study, the low flight network would consist of two interrelated elements: a route network across the country and approach procedures to certain aerodromes.

Low flight network routes could be established between only those destinations deemed necessary or to cover the entire country. These routes would be linked to aerodrome approach procedures, which could also exist for uncontrolled aerodromes, selected emergency landing places or other locations deemed appropriate, such as certain geographical sites or marine areas.

The key benefits of the network would be its impacts on Finland's national preparedness and safety infrastructure, as it would enable safe and flexible instrument flight operations at low altitudes. This would make it possible to speed up response times for rescue services and emergency medical services. The operating conditions for military aviation would also be improved by increasing navigation and approach services in terms of time, scope and procedures.

In some places, a separate route network would allow for safe flight at altitudes lower than the current operating environment, thereby increasing the flexibility of airspace use. In addition to the authorities, general aviation has shown an interest in the opportunities afforded by a low flight network to conduct instrument flight operations

at uncontrolled aerodromes, as the low flight network would improve the accessibility of uncontrolled aerodromes.

While the low flight network study was being carried out, the Government was preparing a proposal to amend the Aviation Act and certain related laws. The creation of a low flight network requires a review of several decrees and regulations.

One of the key questions is how to reconcile the many interests of those wanting to use lower airspace and enable equal opportunities for all operators, that is, not only the authorities, but also general aviation and unmanned aviation as a whole.

Drolo project pilots lower airspace management solutions

Fintraffic Air Navigation Services is involved in the Drolo project, which was launched in 2021. This project is coordinated by VTT, and its research partners are Aalto University and the Finnish Meteorological Institute. The project is being piloted in the Oulu region and is seeking solutions for managing traffic in lower airspace.

Unmanned aviation will become more commonplace in the near future. The aim of the Drolo project is to test drones in various operating environments, such as urban areas, ports, archipelagos and near airports. The project will implement Finland's first air traffic control system aimed at drones (UTM, Unmanned Traffic Management) and a Common Information Services (CIS) test area.

As part of the project, Fintraffic Air Navigation Services will be modelling various options for ensuring safe, smooth and flexible air traffic. We are also engaged in open dialogue with various aviation operators.

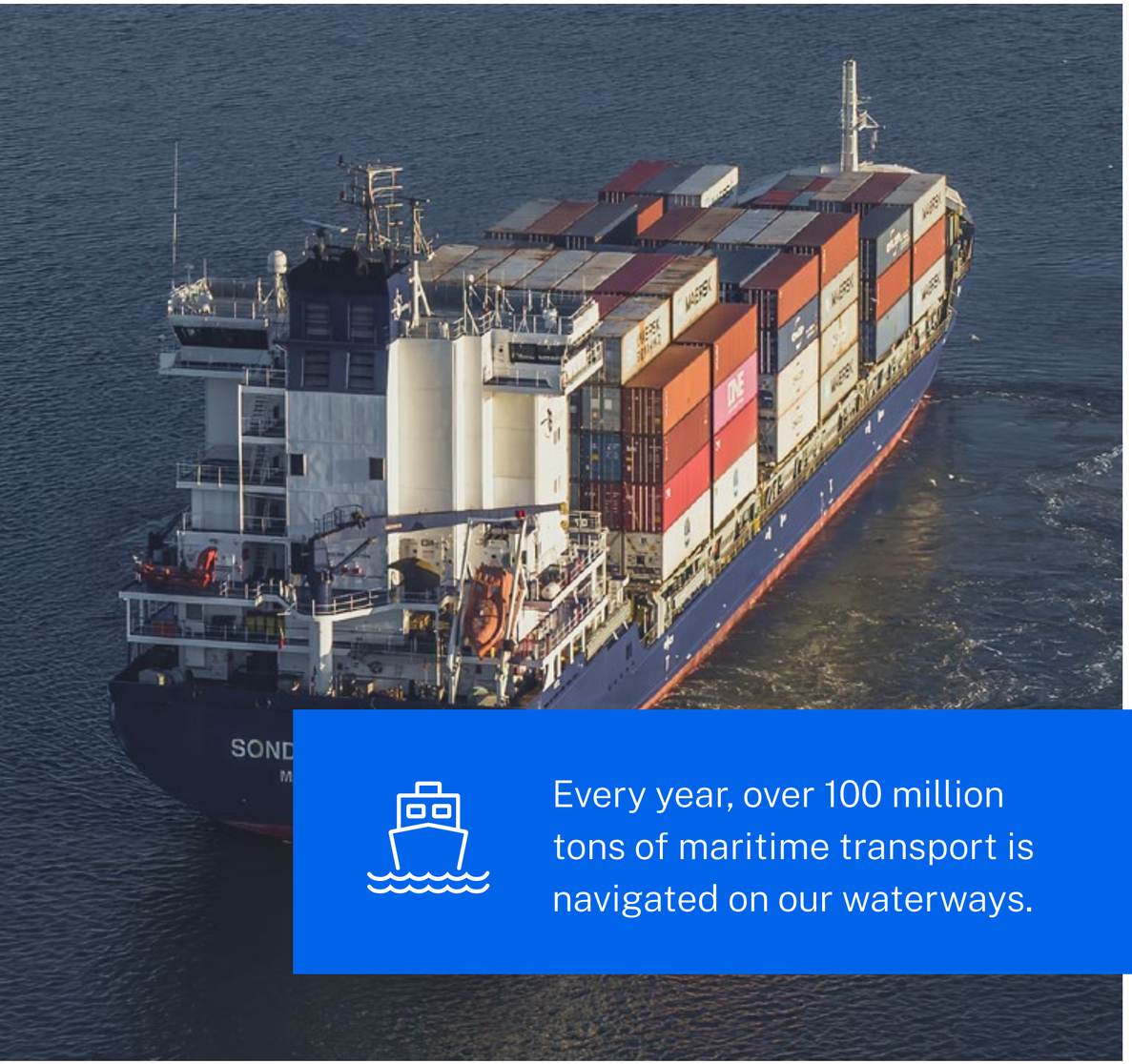
The routes required in the Oulu region have been mapped, and the most realistic route needs will be tested during the initial phase of the project. These will include a route for the transport of samples between a health centre and laboratory (Hailuoto-Oulu) and a fairway inspection route from the port to the open sea. A route from Oulu Airport to the centre of Oulu via the port is also being prioritised.

Digital service offering improves

The increasing number of digital services and the proliferation of unmanned aerial vehicles (that is, drones) in the air transport market is increasing the need for new kinds of services for airspace users.

In cooperation with Traficom, we launched a registration app for drone operators in 2021 and will be expanding our service offering for airspace users in spring 2022. Users will soon have a one-stop shop for real-time information such as weather data, airport services and opening hours, as well as information about any airport maintenance work or exceptional circumstances that may affect flying. Aerial vehicle operators will also be able to check airspace reservations with the aid of a digital map. This will enable them to choose a safe route that, for example, avoids military training grounds.

This one-stop shop will enable all pilots to obtain consistent, real-time data that will increase safety throughout Finnish airspace.



Every year, over 100 million tons of maritime transport is navigated on our waterways.

Vessel traffic services

Our goal is for maritime transport to be smart and efficient, and for Finland to be competitive. Our operations ensure safe and smooth-flowing vessel traffic, and also protect fragile marine environments.

Finland lives off shipping. It is the task of Fintraffic Vessel Traffic Services to ensure that both foreign trade and domestic vessel traffic is safe and uninterrupted. Our vessel traffic centres monitor the safe passage of passenger ships, cargo vessels and tankers through Finland's coastal waters 24/7, every day of the year.

Amid the current digital revolution in maritime transport, we are working to develop not only vessel traffic services but also information exchange platforms, smart data services and a situational picture of maritime transport. We are aiming for efficient and real-time data transfer between vessels, Finnish ports and a variety of other port operators. This will enable safer, smoother and more efficient shipping, and the ability to link maritime transport to other modes of transport.

As our operating environment becomes increasingly digitalised and automated, we must continuously invest in our professional skills and learning new things. Our corporate culture is based on our values, and enables solution-oriented and innovative operations with an inbuilt capacity for renewal.

Profound Baltic Sea expertise at VTS centres ensures safety in heavily trafficked waters

At Fintraffic's vessel traffic service centres, we ensure that maritime traffic runs safely and smoothly 24/7, every day of the year. We are familiar with conditions in the Baltic Sea and are constantly monitoring the traffic

situation. Our vessel traffic management enables the smoothest possible sailing in both shallow and rocky seas. It also guarantees safety during the demanding winter season. Our Vessel Traffic Service Centres inform vessels about other traffic in the area and anything else that may affect their passage, such as weather and ice conditions or safety equipment failures. They also control traffic, provide navigational assistance, and administer safety radio operations.

The reliability of our VTS centres was at a good level in 2021. We successfully took care of our personnel's health, and the pandemic did not cause any deviations in our operations. Basic traffic management was carried out to a high standard and in line with agreements throughout the year.

During the year, our vessel traffic service centres prevented nine vessels from running aground. We also assisted two vessels with navigation, and prevented near-misses from evolving into accidents by making vessels aware of the situation. These kinds of situations may occur when two vessels encounter or pass close to each other, or when vessels are exiting a fairway. A total of 834 reports of violations and deviations in vessel traffic were made.

Major steps forward in 2021

Fintraffic Vessel Traffic Services maintains and develops one of the world's most extensive vessel traffic control and management systems. It also promotes the new service models required by autonomous maritime transport in areas such as information services, situational picture services, and support for remote vessel control and remote pilotage.

NEMO (a national maritime traffic notification service), the Port Call Time Stamp and Estimation Service (a port call schedule service) and Port Activity (a port app) are all examples of spearhead projects that Fintraffic VTS is using to harness digitalisation. These projects aim to boost the competitiveness of Finnish shipping, support the emergence of smart vessel traffic, and promote the development of transport ecosystems at both national and international level.

The port call schedule service we launched in December 2021 estimates vessel arrival times and monitors their actual arrival and departure times. Port Activity is a port app that collates schedule information from the systems of various port stakeholders to provide a one-stop shop for real-time data. This app is already in use at sixteen ports in Finland. In the finals of the 2021 Seatrade

> Fintraffic Vessel Traffic Services maintains and develops one of the world's most extensive vessel traffic control and management systems.

> Our work is only possible thanks to our experts. Our goal is to have world-class expertise in maritime traffic management and transport ecosystems.

Responsibilities in waterways

Finnish Transport Infrastructure Agency (area harbours) is responsible for

- Waterways
- Maritime aids to navigation and navigation marks
- Ice-breaking

Fintraffic is responsible for

- Providing vessel traffic services (VTS)
- Maritime safety radio broadcasts and distress communications in the Saimaa region
- Receiving problem reports of maritime aids to navigation
- National Aeronautical Information Service and the maritime DGPS service

Traficom is responsible for

- Maritime safety
- Hydrography
- Information service for port calls (NSW/Portnet)
- Qualifications, permits, and waterway verdicts

Finnish boarder guard is responsible for

- Assistance at sea and maritime emergency notices

Awards, Port Activity was also Highly Commended in the Port & Terminal Digital Technology Award category.

Everything revolves around safety

In 2021, we extended our ISO 9001 quality system certificate to cover all of our operations. As in 2020, safety mainly revolved around health security, that is, combatting the pandemic. We also developed our risk management, preparedness and contingency planning.

Staff in the spotlight: Get involved!

Our work is only possible thanks to our experts. Our goal is to have world-class expertise in maritime traffic management and transport ecosystems.

In HR management, we focused on our ability to engage and develop our personnel. We launched a two-year, internal HR programme called Tuu messiin! (Get Involved!). During its first year, we highlighted the themes of competence and wellbeing at work. We also started internal training programmes aimed at continual competence development and strengthening our common corporate culture to ensure that it supports renewal, innovation, change management, and the development of personal expertise and career paths.

Case

Maritime traffic notification service NEMO entering the practical implementation phase

Fintraffic Vessel Traffic Services is proactively developing new digital service packages.

Data from NEMO will be utilised in a variety of tasks, such as monitoring the border crossings of persons, maritime search and rescue, overseeing the transport of hazardous substances, collecting fairway dues, running port operations, safety and security surveillance, planning port state control, and monitoring infectious diseases. Thanks to the new system, notification data on port visits by merchant ships can be smoothly sent to numerous recipients through a single system.

NEMO is part of efforts to meet the regulatory obligation of EU member states to standardise the process of submitting port visit notifications. Traficom is responsible for the implementation of this EU Regulation in Finland. System design, construction and support have been outsourced to Fintraffic Vessel Traffic Services so that NEMO can be forged into a broader service that goes beyond the official requirements.

The NEMO development project was launched in late 2021 and will replace the existing Portnet notification system when it is completed in 2025.

We are anually responsible for more than 500,000 safe and smooth train journeys.

Railway traffic control and management

Our vision is for Finland to have the world's safest, smoothest and most environmentally friendly rail transport. Our goal is to provide some of the best rail traffic management services in the world.

We are responsible for controlling rail traffic in Finland's track network, which is 6,500 kilometres long and trafficked by more than 500,000 trains carrying tens of millions of passengers every year. It is our duty to ensure that passengers and cargo reach their destination safely and smoothly.

Our services include rail traffic control and capacity management, and traffic planning to coordinate trackwork and traffic. By carrying out these tasks, we promote smooth traffic flow that enables goods and passengers to reach their destinations safely and on schedule. We also develop new ways of making railways more efficient, so that an even greater proportion of traffic can run on the railways, thereby improving the environmental friendliness of the transport system.

We are responsible for passenger information services, so that passengers travelling by train can receive up-to-date information via station displays and announcements, or by using the Junalähdöt.fi service on their mobile devices.

We maintain a 24-hour fault reception service, and will initiate repairs as necessary to ensure that traffic in the rail network can return to normal as quickly and safely as possible after an incident. We play a key role in providing advice on the safe use of electrical equipment and electrical safety for electric tracks.

It is also our task to help rail traffic recover after incidents, and thereby minimise the impact on railway network users. The rail traffic control centre monitors traffic 24/7 every day of the year, and also maintains a national situational picture of rail traffic. Our situation coordinator service provides expert assistance in the event of operational incidents, accidents and other disruptions. We are also responsible for the security control room and the traffic quality control room. Our goals are to improve passenger safety and prevent vandalism, ensure that trains run safely, and enhance transport quality. We also provide expert and training services to promote the development of the railway system as a whole.

Service level remains good

Overall, we were successful in the provision of our traffic management services in 2021. Operative work was carried out to a high standard, and disruptions to the network caused by Fintraffic accounted for less than one per cent of all factors that led to disruptions.

The safety level of rail traffic is continually rising due to, among other things, the increased level of automation. Our service level remained good in spite of the pandemic, and progress was made in numerous major development projects during the year to ensure that rail travel and transport will be even smoother, more attractive and more technologically advanced in the future.

Long-distance traffic was down by about 5.5 per cent on the previous year, and the total number of commuter trains fell by about 3.3 per cent on 2020. However, the number of freight trains rose by almost 6 per cent on 2020. Passenger traffic between Finland and Russia was suspended for almost the entire year, and only started up again in December 2021.

Progress in development projects

Our intensive development programme for rail traffic control is modernising outdated systems and raising the automation level with the aid of new technology. One of our most important development projects is Digirail, in which we are renewing our train control systems. We further developed the Digirail system solution during the year, and in late 2021 we signed an alliance agreement with the Finnish Transport Infrastructure Agency to continue the project.

We initiated an operative process change with the aim of making our expert work even more dynamic, so that we will be able

> The data from railways is more widely available for use than before. In addition, the reliability of operational systems and automation increased further.

> We carry out Fintraffic's strategy which allows for smoother traveling regardless of the mode of transport and the development of digital ecosystem.

to provide even better service in the event of an incident. This process change reached its first practical trials in the autumn, and will continue over the coming years as the technical requirements are put in place.

We continued to build a safer railway system by introducing the Situation Coordinator service, which provides expert assistance in the event of an accident or other incident. The service operates at the interface between the emergency rescue authorities and traffic control, and enables even faster recovery from disruptions and a return to normal traffic. The service is now available 24/7 in two cities: Helsinki and Tampere.

Lifecycle upgrades were made to existing systems by, for example, switching to cloud services and continuing to implement technical redundancy in our centralised train control (CTC) systems to improve their fault tolerance level. The redundancy upgrade of the Southern Finland CTC system was completed in 2021.

The expansion of the CTC system in the Southeast Finland track network continued throughout the year. We started to build the Northern Finland CTC system in 2021 and it is scheduled for deployment during 2022. The changes to these CTC systems will improve safety, preparedness and quality. We improved the operational reliability of control centres for electric tracks with the aid of training and increased system redundancy.

A new passenger information system, RAMI, was introduced all across Finland in 2021. Stations, displays and announcements now have standardised content provided by RAMI, which helps both passengers and transport sector operators. Station displays can also show a more diverse range of information in a more visual manner to suit user needs.

In cooperation with VR, we implemented a DAS system to assist train drivers of both passenger and freight trains. This system helps drivers to optimise their driving style in order to increase energy efficiency, improve punctuality and increase passenger comfort.

Also under development is the SAAGA capacity management system, which aims to promote traffic management by taking the needs of multi-operator rail yard environments into account in traffic management and providing all operators with a real-time situational picture. The system and its associated operating models have already been introduced to manage capacity at rail yards in Helsinki and Ilmala. A SAAGA pilot at rail yards in Kouvola and Kuusankoski was launched in late 2021.

The increased availability of open data and greater situational awareness have paved the way for us to provide some of the world's most advanced rail traffic. We are implementing Fintraffic's strategy to enable smoother travel chains in all modes of transport and develop a digital transport ecosystem. Smart traffic management will help rail transport to increase its market share, which will in turn help Finland to reduce its carbon dioxide emissions. In 2021, we analysed the current situation and continued to enrich our data reserves with new data sources and deeper analytics.

We have formulated a vision of traffic management in 2030, and have also defined the steps that must be taken to realise this vision. During 2021, we moved further towards this vision through a variety of pilots and background studies in our development projects.

Service level remains good

A well-functioning trunk network forms the core of all rail traffic, and we are working with the Finnish Transport Infrastructure Agency to ensure and enhance traffic safety and reliability. 2021 saw the completion of demanding trackwork, such as the renewal of Kerava's interlocking and the repair of the Pukinmäki

Case

Digirail – Working together to reach the top in Europe

Thanks to the Digirail project, Finland is at the forefront in promoting digitalisation in Europe to both improve the safety and functionality of rail transport and increase its popularity.

The Digirail project will replace Finland's existing automatic train control system. Its goal is to introduce a modern radio network-based train control system throughout the country's entire track network by 2040. You could say that Digirail will completely renew the Finnish railway system, as the project will also be upgrading safety equipment, train control systems and almost all of the rail network's systems. Among other things, the project seeks to operate trains more safely and efficiently. Modernisation will also take EU technology standards into account.

A broad range of parties and experts are involved in the Digirail project. In December 2021, Fintraffic and the Finnish Transport Infrastructure Agency signed a one-year agreement to move forward with Digirail as an alliance project. The alliance is working to specify the technologies required to transition to a pan-European, radio network-based train control system. The parties are currently preparing a service agreement that would extend to 2027. Although the composition of Digirail's multidisciplinary

steering group was revised in late 2021, it is still chaired by the Ministry of Transport and Communications.

In summer 2021, EUR 130 million was allocated to fund Digirail's development and verification phase. The project is also part of the Ministry of Transport and Communications' national transport system plan (Transport 12).

Concrete steps were made in October 2021 when the first section of Digirail track was completed in Finland. This section, Tampere–Pori/Rauma, will be the first Digirail line to be used specifically for commercial purposes. As the digitalisation of railway systems is a major endeavour, thorough testing will be required. The first field test project will involve a test track on the Kouvola–Kotka/Hamina line and an ERTMS test laboratory that will pilot ground-breaking data transfer on European railways. The first phases of the test track and laboratory will be completed in conjunction with a project to improve that section of track.

The project's development and verification phase began after the completion of the preparatory phase in autumn 2021, and is expected to continue until 2027. The aim is to begin construction of the system in 2028 and complete work on the entire Finnish rail network by 2040.

Digirail will enable a further increase in the popularity of rail transport

A radio network-based train control system will enable an increase in the number of trains and passengers in the existing track network. More accurate traffic scheduling will enable tracks to be used more efficiently and allow people and goods to be transported more cost-effectively and in greater volumes. Estimates indicate that track capacity could be increased by up to 30 per cent.

Thanks to Digirail, the impacts and duration of incidents will also be reduced. More punctual train travel will also encourage passengers to switch to rail transport, thereby helping to achieve both Finnish and EU sustainability requirements. Increased use of rail transport will reduce total emissions from transport.

Thanks to the availability of more accurate and up-to-date information, Digirail will also improve rail safety. Data, combined with a more accurate situational picture, will also enable the development of new digital services for both passengers and freight traffic.

Digirail is aiming to harness the latest advancements in artificial intelligence and data and to utilise Finland's world-class telecommunications and radio network infrastructure – initially 5G and then subsequent generations. Thanks to the Digirail project, Finland is at the forefront in promoting digitalisation in Europe to both improve the safety and functionality of rail traffic and increase its popularity.

rail bridge, which was successfully carried out in cooperation with other operators. We also worked with other operators to increase winter preparedness, and these changes have already improved the punctuality of rail traffic during the winter.

We are cooperating with transport operators, transport-sector clients, trackwork contractors, the Finnish Transport Infrastructure Agency, Traficom and the Ministry of Transport and Communications to develop our operations and provide a high standard of service every day of the year.

According to our 2021 customer satisfaction survey, we maintained a good service level and the results improved on the previous survey. Every year, Fintraffic's rail traffic management is recognised for the same things: we are seen as safe, reliable and professional. The results show that we are an important and significant partner to our stakeholders. The free-form comments conveyed stakeholders' experiences of smooth cooperation and positive developments. We are seen as an essential enabler of a smoothly running rail network.

A challenging year for personnel

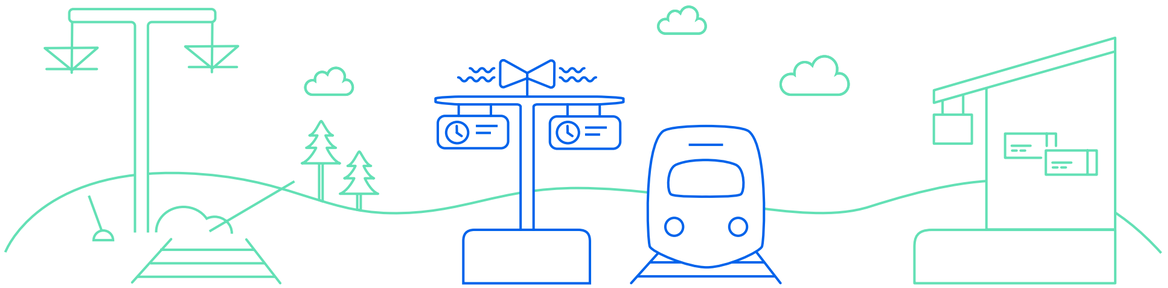
The continuation of the coronavirus pandemic in 2021 was reflected in a need to take even greater care of occupational health and safety. Although the pandemic posed challenges to operational continuity, there were no breaks in our service. Personnel who could work remotely continued to do so.

Improved results were seen in our personnel survey, especially among supervisors. We enhanced internal communications and defined common policies for our corporate culture. We held more briefings for personnel and supervisors, and provided increased support for coping at work by, for example, introducing life situation management. The pandemic made it more difficult to organise training and development activities, and people were given the opportunity to participate remotely.

It was more challenging to carry out basic tasks at control centres, as coronavirus guidelines had to be followed and required the use of masks.

However, our personnel managed to successfully perform their vital role in society in spite of the challenges. Their competence and professional pride are visible, and likewise the courage to make improvements. When all our experts take part in development work, we are able to provide modern services of a high standard.

Responsibilities in railway networks



Finnish Transport Infrastructure Agency is responsible for

- The railway network
- Maintaining the railway network
- Platform areas

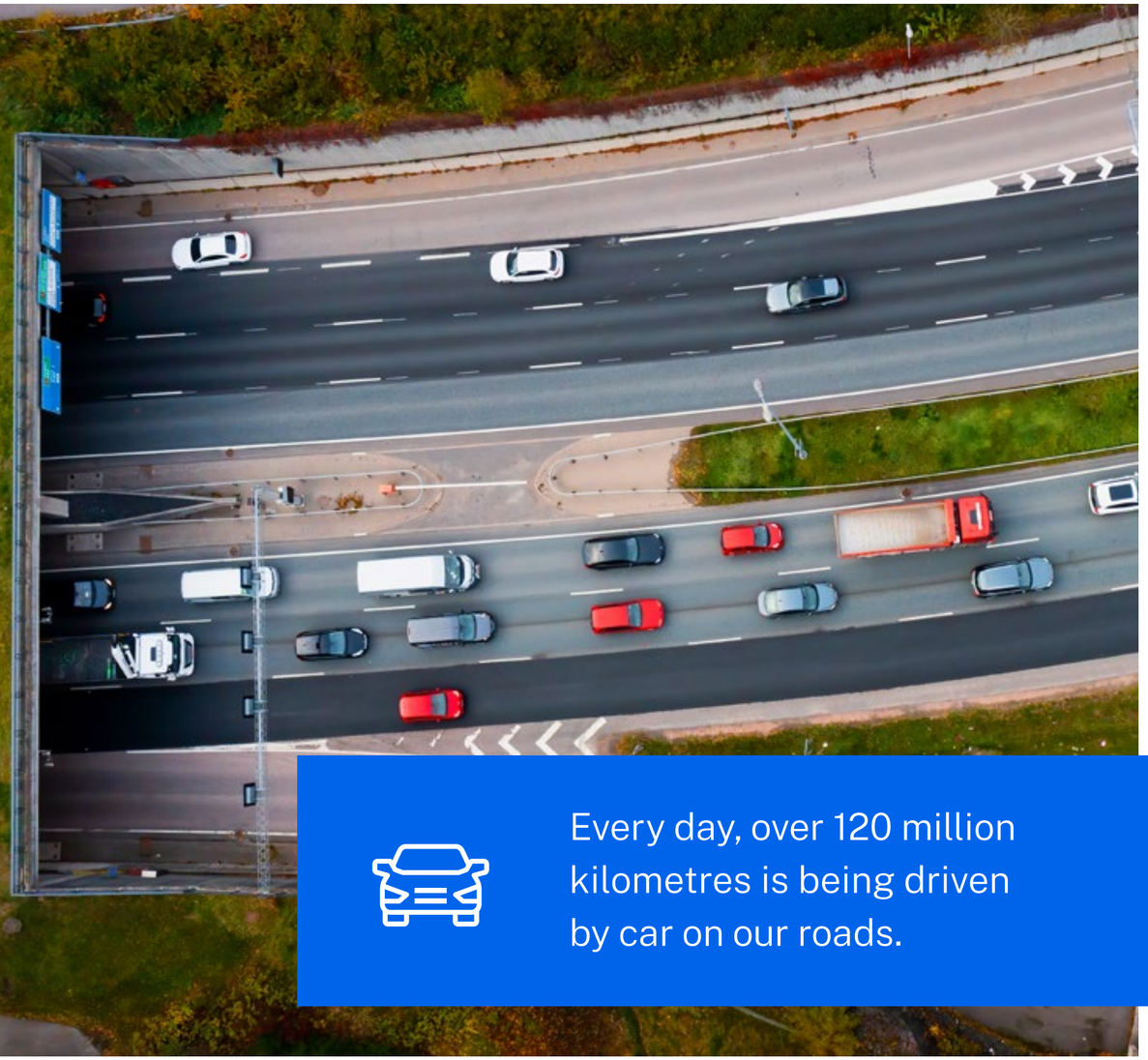
Fintraffic is responsible for

- Train platform displays
- Station announcements
- Traffic management

VR/HSL is responsible for

- Passenger transport
- Train announcements
- Ticket sales

> The competence and professional pride of our personnel are visible, and likewise the courage to make improvements.



Every day, over 120 million kilometres is being driven by car on our roads.

Road traffic management

Our vision is to provide the safest, smoothest and most environmentally friendly transport in the world. Our goal is to provide some of the best road traffic management and smart traffic services in the world in close cooperation with our partners.

Finland's passenger and goods transport relies on smooth and efficient road traffic. Road transport accounts for about 63 per cent of goods traffic and 90 per cent of passenger traffic.

In road traffic management, we ensure safe and smooth traffic flow on the roads 24/7/365. Our services include designing technical systems for roads, border crossings and tunnels; providing and maintaining traffic lights and automatic monitoring infrastructure; producing road weather data; and providing continuous traffic monitoring and announcements.

A total of about 20,000 devices produce the data required to create a continuous real-time situational picture, including 900 road condition cameras, 420 road weather stations and other traffic management equipment. We utilise this situational picture in both our traffic management and service development – for the benefit of all road users and sector operators.

A year of close cooperation

In 2021, our work received a boost from close cooperation within our partner network: the Finnish Transport Infrastructure Agency, ELY Centres and the Finnish Meteorological Institute; the police, emergency rescue department and other authorities; cities and their transport companies; and a whole host of other technical and service providers. These partners enabled us to provide continually evolving services and kept our traffic nerve centre – the Traffic Management Centre – humming.

2021 saw extensive technical development work that improved our ability to collect and enrich data, and provide an even better situational picture. Technical platforms, operating models and productisation have progressed on schedule, system services have been harmonised, and our digital situational picture has been enhanced through technical and database updates and the integration of new data sources.

The most significant steps forward were made in the productisation and standardisation of software and interfaces for open-road and tunnel systems. They will enable us to operate in a more cost-effective manner and provide road users with a standardised and high-quality service experience.

New traffic control systems were connected to our centralised control system. The updated interface for road weather became the primary user interface for maintenance and stakeholders. All of the data that is essential for traffic control and management was added to Fintraffic's modern user interfaces in order to create an even more complete situational picture of traffic. The data produced and processed by our traffic management and situational picture systems forms the basis for the open data and Traffic Situation service that we provide to our customers.

In 2021, our most critical operative information systems were transferred to Fintraffic's own datacentre, which significantly reduced incidents resulting from the datacentre environment Thanks to this transfer, we were also able to renew our ICT user services and range of ICT support services.

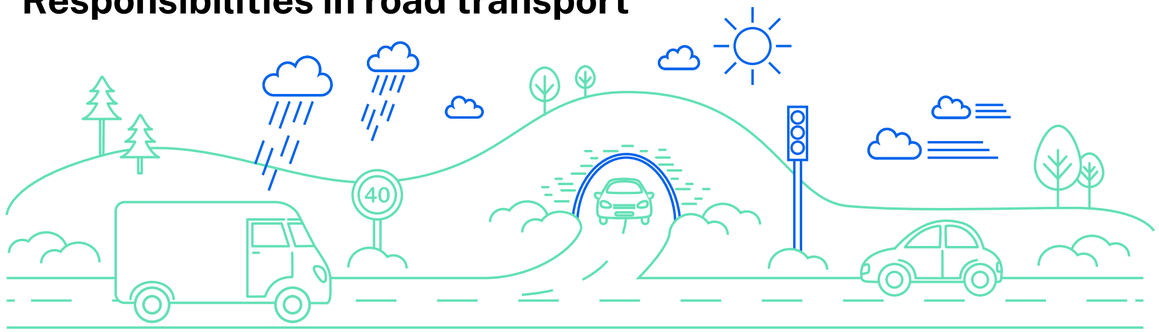
In our traffic measurement services, we continued working on updates to the service provision model that were begun in 2020. In autumn 2021, we launched an R&D project with Telia so that crowd movement data from the mobile phone network can be used in general calculations of road traffic volumes. This practice will create a foundation for combining traffic and communications networks, and our intention is to use this data to enable more targeted traffic planning, create new services, and facilitate maintenance and upkeep tasks.

Information sharing and exchange

In 2021, the Traffic Management Centre sent about 10,000 traffic bulletins to the authorities, media, our websites and, when necessary, also to navigators. The Road User Line – a telephone service for reporting acute situations that may endanger road users – received about 150,000 calls.

In addition to providing continuous traffic control, another of our main goals is to create a

Responsibilities in road transport



Roads and streets

Finnish Transport Infrastructure Agency, Centres for Economic Development, Transport and the Environment, and cities

- The development and maintenance of roads and streets, fixed road signs and speed limits

Traffic management

Fintraffic

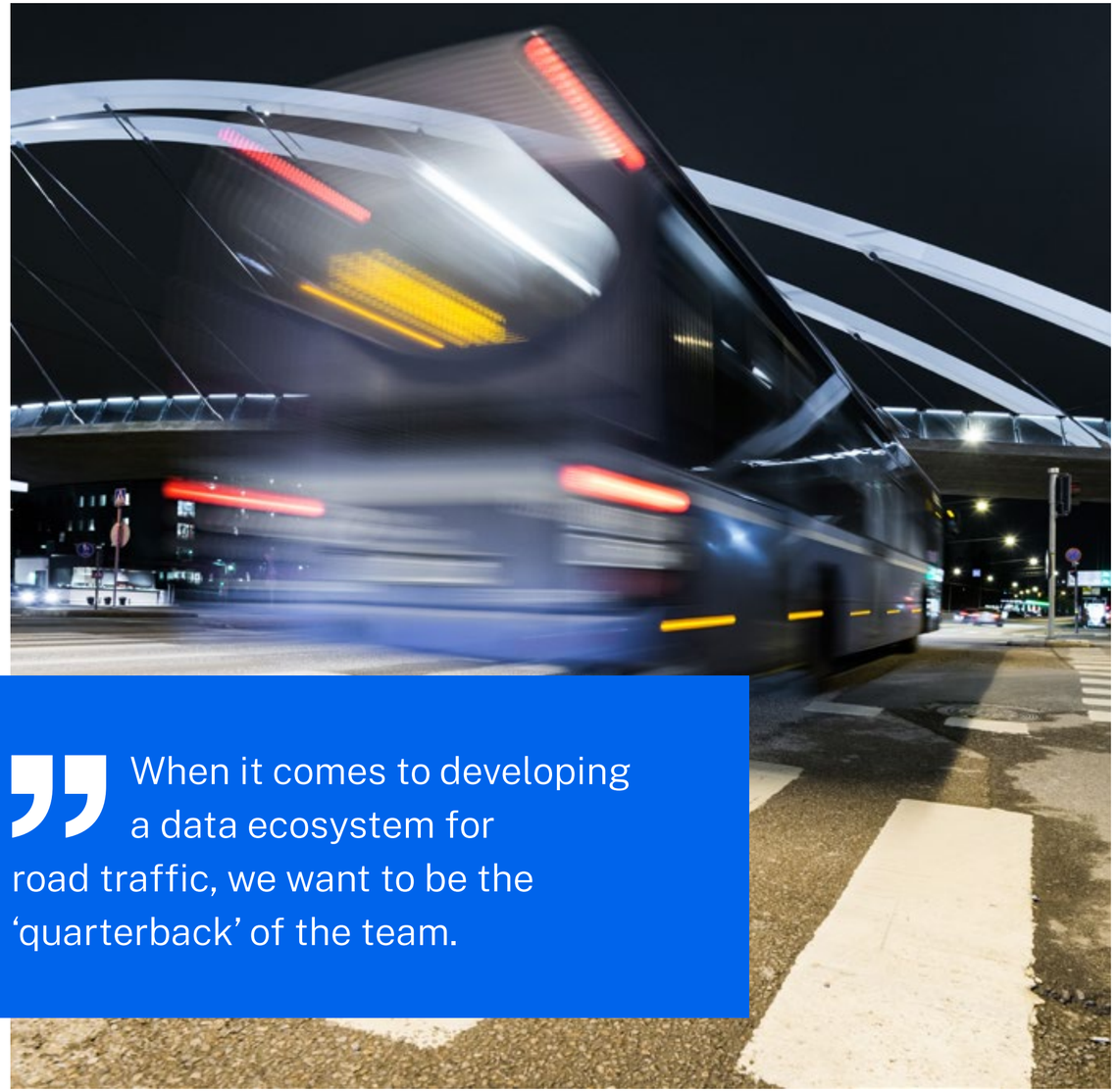
- Operating traffic management systems, incl. tunnels, changing speed limits, traffic lights, road weather services and images
- Analysis on traffic situation and delivering it to users
- Road User Line 24-hour tel. +358 (0)200 2100 for reporting traffic incidents
- Managing incidents and cooperating with the authorities
- Incident management and cooperation with the authorities

Road users

Drivers, transport companies

- Driving safe and taking others into account, adhering to the rules

> Our teamwork spirit has been strong and forward-looking.



> When it comes to developing a data ecosystem for road traffic, we want to be the ‘quarterback’ of the team.

real-time digital model (aka a digital twin) of road traffic that will provide a real-time situational picture of road traffic infrastructure, weather conditions, maintenance and actual traffic.

Our aim is to exchange information more extensively, thereby enabling motorists to receive more comprehensive and more real-time information and forecasts for traffic and weather conditions. Road maintenance will also be more predictable and better targeted, logistics and transport operators will have access to more efficient routes, and emergency vehicles can be given priority at traffic lights.

More infrastructure in our centralised services

In 2021, we integrated Ring Road I’s Mestari Tunnel into our centralised traffic control system. This tunnel is one of Finland’s most challenging due to its high traffic volumes: 110,000 vehicles per day. However, high-quality design and good cooperation with a service provision partner ensured the success of this system renewal. The impact on traffic was minor, as the tunnel only needed to be closed for short periods. A traffic control system for a section of road on Highway 1 (Ring Road III–Munkkivuori) was also built as part of a highway project with the Finnish Transport Infrastructure Agency. Other infrastructure implementations included a new traffic management system for the route between Klaukkala and downtown Nurmijärvi and new traffic control systems at the border crossing in Rajajooseppi.

Satisfaction at a good level

Our goals for 2021 were to promote the quality, availability and efficiency of traffic management services. The management, usability and availability of traffic services was at a good level in 2021, and there were no major disruptions in road traffic caused by traffic control. The safety level in road tunnels operated by Fintraffic remained high.

We were also successful in providing traffic bulletins and information about disruptions. On the basis of our 2021 road user surveys, both private motorists and professional drivers in Finland are satisfied that traffic data has remained at a good level.

Private road users made slightly more active use of the Road User Line and Feedback Channel; the majority of respondents felt that feedback facilitated dealing with the reported problems. 56 per cent of private road users were either satisfied or very satisfied with the service they have received. This figure was 41 per cent for professional drivers.

56 per cent of private road users were either satisfied or very satisfied with bulletins about disruptions in traffic, and 49 per cent with bulletins about roadworks. The corresponding figures for professional drivers were somewhat higher, at 59 per cent and 53 per cent.
13 per cent of private road users and only 7 per cent of professional drivers were dissatisfied with bulletins about disruptions in traffic.
17 per cent of private road users and slightly fewer professional drivers (14 per cent) were dissatisfied with bulletins about roadworks.

Developing our common corporate culture

Alongside the development of our traffic management services, we are also continually improving our competence and capabilities in a fair, motivating and people-oriented corporate culture that provides the best possible support for achieving our targets in line with our values.

Although the coronavirus pandemic has brought changes, and especially to arrangements for in-person work at our control centres, our team spirit has remained strong and forward-looking. According to our annual personnel satisfaction survey, job satisfaction has also increased. In personnel's opinion, the strengths of their work included being valued and having an opportunity to influence their work.

Case

Black Tuesday leads to developments in road traffic control

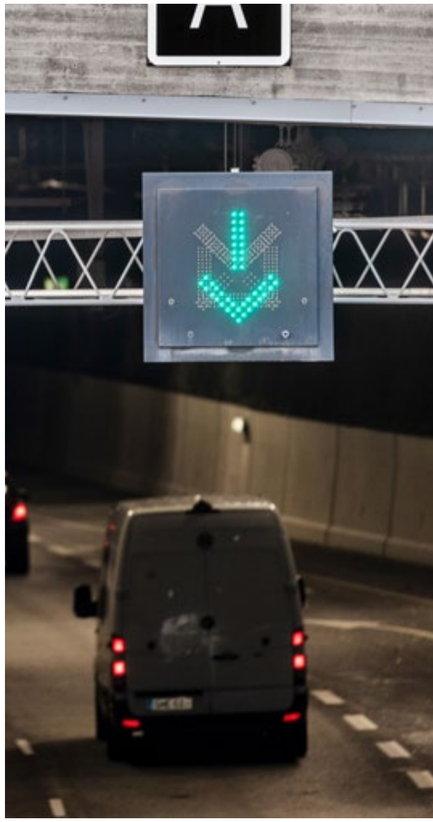
As road traffic is by far our largest mode of transport, its functionality has a visible and significant impact on traffic flow and safety.

An incident in a heavily trafficked area will have a broad impact, as was the case on 9 March 2021, which was dubbed "Black Tuesday" due to a wave of accidents. Snowfall in southern and western Finland caused accidents all across the region, and traffic was also disrupted in the capital city area. The largest single accident occurred in Espoo on Turunväylä, where more than 80 vehicles were involved in a multi-vehicle collision.

Earlier that morning, we had informed the emergency rescue services, the media and other operators about poor driving conditions. On sections of road with variable speed limits, we reduced permissible speeds to the lowest possible limits for motorways: 80 km/h or 60 km/h. According to images from road weather cameras, the conditions on Highway 1 were in accordance with norms for winter driving throughout the day, and the Finnish Meteorological Institute's criteria for issuing a hazard warning were not met. Consequently, official channels were not immediately connected to the hazard warning system when the situation rapidly deteriorated.

Whirling powder snow began to pile up on the road and hamper visibility, causing a multiple-vehicle collision involving more than 80 vehicles. Accidents also occurred on other highways in the capital city region. Road surface friction values did not exceed the limits specified by management policy, which meant that road maintenance operators did not receive adequate warning of the slippery conditions and could not therefore react in time.

This situation caused congestion in public transport and widespread failure to keep to schedules. We continuously monitored road



traffic flow and actively issued bulletins on any changes. More than ten times the normal amount of bulletins were sent in Uusimaa that day: 85 bulletins were sent about Uusimaa and 116 about Finland as whole.

We are continuously forecasting and seeking new areas for development in order to improve traffic safety and flow. We learnt a number of lessons from this situation involving surprising weather conditions, and these have led to changes in both our own operations and our cooperation with various operators.

Although there were no fatalities or serious injures, Fintraffic analysed the situational data with ELY Centres, maintenance contractors, road weather centres, the Finnish Transport Infrastructure Agency and the Finnish Meteorological Institute. We used this data to make numerous changes to our joint operating models with the aim of preventing any future incidents of this nature.

These changes included closer cooperation and a reassessment of our bulletin practices, alert triggers and foresight processes. One concrete example of this is a new operating model in which the Finnish Meteorological Institute provides Traffic Management Centre personnel with a weekly briefing on expected weather conditions and any changes therein. Meteorologists will also receive new information on the impact of weather on traffic in various situations. Our bulletin process was revised, and the threshold for sending hazard warnings has been lowered.

Internationally, Finland is at the forefront when it comes to having a real-time situational picture of traffic, and we are continually updating it with the aim of having the safest transport in the world. Ways of achieving this include enhancing our traffic management processes and developing more accurate systems based on the utilisation of up-to-date information. Our goal is to create a transport data ecosystem in which input from all operators enriches our shared real-time situational picture for everyone's benefit.

A more comprehensive situational picture

By developing our methods and systems, we aim to minimise incidents and risks by making sure that we can always provide information and safe conditions – even in unexpected circumstances.

The road data for Black Tuesday revealed a lot of speeding and drivers not maintaining a safe distance from the vehicle in front. Individual drivers shoulder a great deal of responsibility in traffic: according to the Road Traffic Act, drivers must adapt the speed of their vehicle to the prevailing weather conditions and anticipate the actions of other road users in order to avoid dangerous situations and accidents.

Traffic is a network in which everything affects everything else. And also in a positive way: we are now able to put together an increasingly comprehensive situational picture from even more sources. It helps us to forecast and control traffic more accurately, and ensure that information is available to other operators. For example, the Finnish Meteorological Institute uses the data from our road weather stations in its own model, enriches it with its own data, and returns the data in the form of weather forecasts for the whole of Finland.

386 TB

The amount of transported data on Fintraffic's open interfaces.

Traffic data ecosystem and productised digital ecosystem services

One of our main objectives for 2021 was to launch work on the traffic data ecosystem and increase the use of traffic data provided by Fintraffic. We achieved this target as planned.

Fintraffic's tasks include the provision of safe, reliable and efficient traffic management services in all modes of transport, and the development and maintenance of digital traffic services, the most important of which are situational pictures for each mode of traffic. These situational pictures are formed by collating and sharing data both between our own services and with other operators, such as traffic companies and other transport service providers, administrators and authorities. Another important part of our strategy is to build a value-generating data ecosystem in cooperation with other traffic sector operators.

This traffic data ecosystem is a network consisting of traffic sector companies, service operators and service developers that is coordinated and enabled by Fintraffic. We are also one of the parties that produces data and develops services. Building this data ecosystem is part of the assignment specified in Fintraffic's ownership strategy, that is, to create new **platform solutions** that are able to share and utilise traffic data more extensively, and to promote new **data-based service business** and **value creation**.

The ecosystem seeks to promote the digitalisation of traffic and thereby accelerate the development of new services; increase the attractiveness of public transport; boost the efficiency of logistics chains and reduce emissions; and pave the way for new innova-

tions to export through a pioneering domestic market. A key means of achieving this is to promote the collection, processing, sharing and compatibility of traffic data with the aid of open interfaces, thereby creating the conditions required for smooth and efficient mobility and logistics.

One of our main objectives for 2021 was to launch work on this traffic data ecosystem and increase the use of traffic data provided by Fintraffic. We achieved this target as planned.

The ecosystem activities launched in January 2021 are based on cooperation between traffic sector operators, digital traffic infrastructure, and an agreed set of rules that have been set down in a rulebook. This rulebook adapts the Finnish Innovation Fund's fair data economy rules to the needs of the traffic sector. 120 operators already got involved during the ecosystem's first year of operation. The various aspects of the system are being promoted via six working groups whose work progressed rapidly during the year:

The **Governance and Rulebook** working group has compiled a set of rules for the ecosystem. This rulebook will form a legal basis for cooperation and a foundation for building trust in data sharing. The Architecture working group is seeking to reduce siloing between different modes of transport, and has defined both the current state and target state for architecture. The **Situational Picture** working group launched pilots to share cities' situational picture data. The **Logistics Data and Interfaces** working group has identified areas of development in information exchange and will launch projects to address these issues. The **Travel Data** working group has contributed to the creation of digital public transport infrastructure and improved data quality. The **EU and GaiaX** working group is supporting opportunities to export Finnish smart traffic solutions at EU level via the Gaia-X project.

The use of digital information is growing

The platform, situational picture and other services provided by Fintraffic help traffic sector operators to develop their services and create a good end-user experience.

Digitraffic is a traffic data marketplace that connects traffic data providers and users. It enables them to collect, combine, share and, if necessary, charge for traffic data, thereby promoting business in the traffic ecosystem. The data produced by traffic control, measurement and monitoring systems is used in a variety of ways, such as in road traffic

> Ecosystem activities are based on cooperation between traffic sector operators, digital traffic infrastructure and the rulebook.

navigation systems, positioning services, and mobile apps for consumers.

During the second half of the year, 30 per cent more data was distributed than in the corresponding period of 2020. More than two billion interface calls were made to Digitraffic in July–December 2021 – an average of 350 million calls per month.

Digitraffic data is also used in our **Traffic Situation service** for consumers, which provides a broad variety of information including weather conditions, roadworks, winter maintenance, charging points for electric vehicles and fuelling stations for gas-powered vehicles. The service also provides information about rail, air and maritime traffic. Use of this service grew considerably in 2021. The number of pageviews for the Traffic Situation service doubled in 2021 to more than four million pageviews per year. It is used by, for example, Radio Nova.

Case

A shared set of rules for the traffic data ecosystem

The Finnish traffic sector consists of numerous operators of various sizes with expertise and knowledge in their own fields.

The goal is to convert the data they collect into a standard format, so that it can be shared for the benefit of the entire sector.

In 2021, we brought traffic operators together and began working together to build a data ecosystem for smart traffic. This work has progressed well, and by the end of the year the ecosystem consisted of 120 operators. Our cooperation is steered by a digital rulebook that is based on the Finnish Innovation Fund's rules for a fair data economy, which have been adapted for use in the traffic sector.

Rulebook speeds up our journey towards a fair data economy

The rulebook forms a legal basis for cooperation and foundation for the trust required to share data. It will ensure fair practices and equal treatment. The rulebook contains concrete ethical rules and models for sharing data. The rules were drawn up in a constructive spirit, and the goal is to introduce the rulebook in early 2022.

Increasing cooperation between traffic operators will further improve efficiency and create new traffic services for both Finland and the export market.

> Services based on digitalisation are now available for all modes of transport.

National and international development

We improved traffic flow and safety by creating applications for use by both our customers and various modes of traffic. For example, we worked with the Finnish Transport Infrastructure Agency to develop traffic situation services based on open data, such as an up-to-date situational picture of traffic and bulletins about disruptions. Our cooperation with Traficom has focused on public transport services: the Digitransit service contains information about routes, stops and timetables, which is displayed to consumers via route planners for public transport in various cities. During the year, we also invested in improving the system's user experience. Our goal is to enable the collation of high-quality information about public transport for the whole of Finland, and to share it in a simple manner that will support a broad range of operators in the development of high-quality travel chain services.

We are also preparing a project in which we will become Finland's digital cargo information operator, and a digital consignment note for logistics is already in the pipeline. This project is aiming to introduce standardised infrastructure for digital information exchange and data reuse in goods transport and logistics, at both national and EU level. It will facilitate and promote information exchange between economic operators and the authorities in digital format, thereby streamlining and speeding up logistics chains.

One of the most important objectives in Fintraffic's international cooperation is to enhance the compatibility of National Access Points (NAP). The EU's ITS Directive obligates mobility service providers to supply data about their digital interfaces for use in National Access Points. NAP is part of an international service package that seeks to provide mobility and information services, such as route planners, across Member State borders. Fintraffic is responsible for Finland's access point.

We are also involved in the EU's Gaia-X project, which aims to create European travel services and collaboration models for them, and in **ODIN** (Open Mobility Data in the Nordics), which involves smart traffic cooperation that is seeking to develop public transport services across the Nordic countries.

Pandemic puts on the brakes and steps on the gas

The operating environment was quite challenging in 2021, as the coronavirus pandemic hindered traffic operators' business and the organisation of face-to-face meetings. However, we remained active and achieved a lot.

Services based on digitalisation are now available in all modes of traffic and there is a constantly growing need for data. Our own volume of shareable data increased dramatically, and we have used it to develop our own services, such as Traffic Situation and Feedback Channel. Digitalisation accelerated as traffic sector operators were further motivated to build smart solutions in order promote business recovery. Progress has been made in the construction of many travel chains, such as a Matkahuolto service that enables the purchase of combined bus and train tickets.

In early 2021, we found it challenging to create enthusiasm, cooperate effectively and get our ecosystem efforts moving forward whilst working remotely rather than meeting in person. However, our rapid progress and the results of participants' satisfaction surveys indicate that we still managed to succeed. On a scale of one to five, Fintraffic's external partners gave our activities a score of 3.7 for usefulness and 4 for inspiration.

Responsibility

RESPONSIBILITY

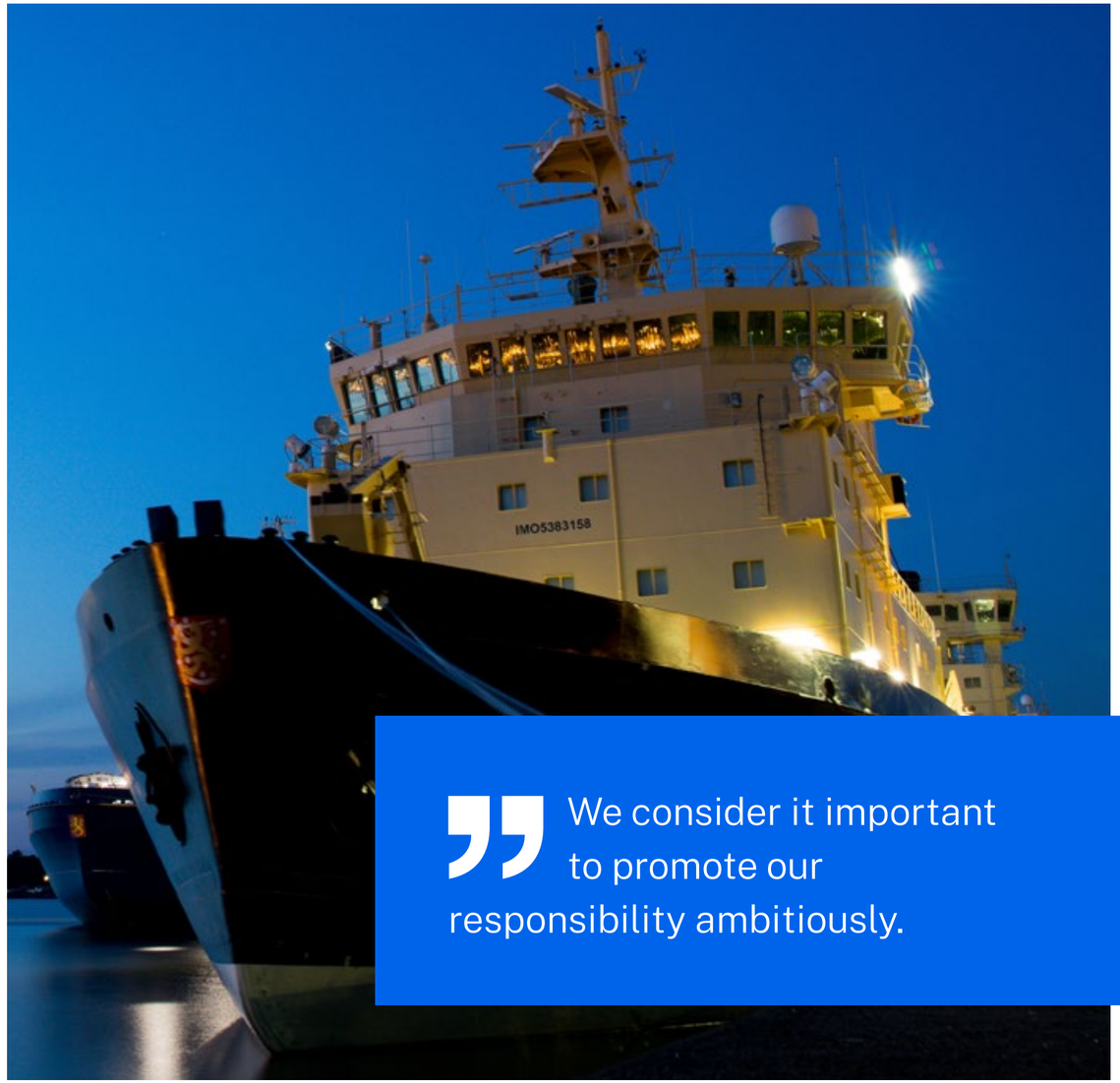
Responsibility is an integral part of Fintraffic's core business

At Fintraffic, responsibility and sustainability issues are an integral part of our business. Our responsibility efforts are based on our company's strategy, financial targets and corporate culture. Every year, we publish a report on responsibility and sustainability as part of our Annual Report.

We want to meet the expectations placed on state-owned companies, which is why we have integrated responsibility into our decision-making. Our strategy revolves around the financial, social, regional and environmental impacts of our operations, so that we can be among the forerunners in safety, harnessing digitalisation, and transitioning to a carbon-neutral circular economy. We consider it important to promote our responsibility ambitiously and on our own initiative.

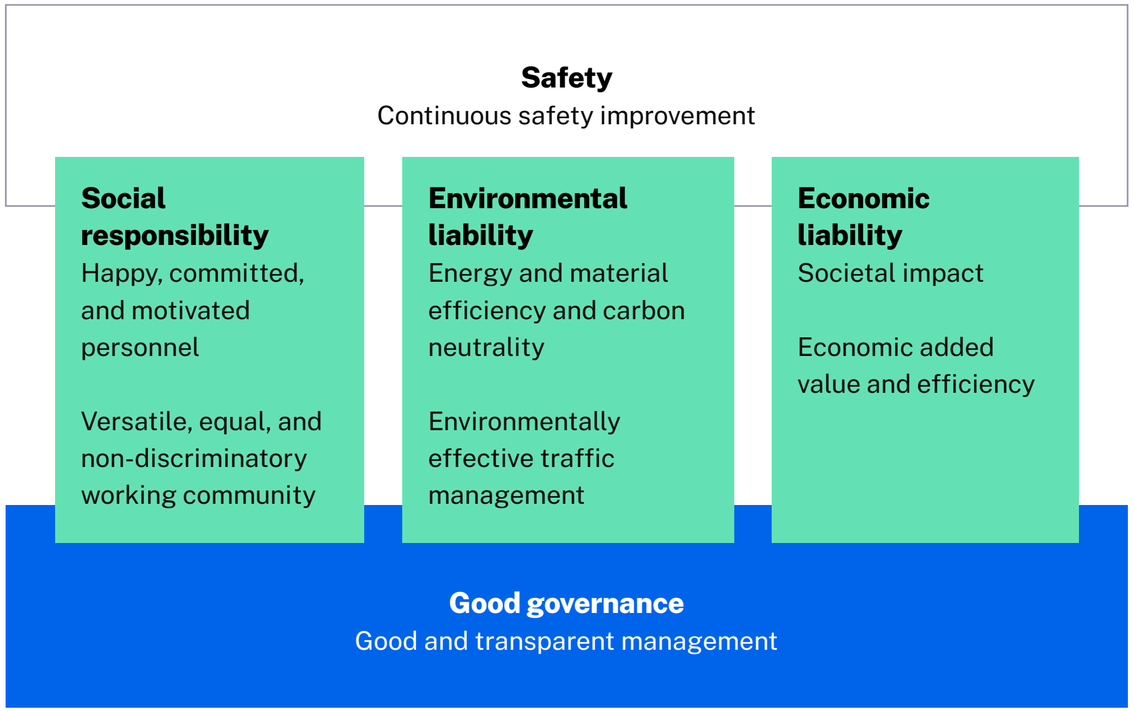
Operating in a safety-critical sector makes it vital for Fintraffic to ensure safety. Our core task is to ensure overall traffic safety. In addition to traffic safety, the spearhead themes of our 2021 safety work were health security and information and cybersecurity.

At the same time, we must identify the impacts of climate change on our business and the impacts our operations have on the climate, the environment and biodiversity. We firmly support Finland's goal of being carbon neutral by 2035 and the Paris Agreement's objective to limit climate change to 1.5 degrees. We are also committed to supporting the UN Global Compact's



> We consider it important to promote our responsibility ambitiously.

Relevant topics for sustainability



Fintraffic supports UN's Sustainable Development Goals

Action Plan and its principles relating to the environment, labour, human rights, and anti-bribery and anti-corruption activities.

At Fintraffic, we are committed to operating honestly, responsibly and ethically – and we require the same from our stakeholders. Fintraffic's Code of Conduct creates a shared way of working and helps us to ensure that we act in accordance with our values and internal guidelines. Our personnel also receive training in the Code of Conduct to ensure that everyone understands why it is important for Fintraffic to operate ethically.

Impact at the heart of strategy and sustainability

On a global scale, we are an exceptional company, as we are responsible for controlling all modes of transport and providing traffic data and services to a wide range of stakeholders. This also gives us a unique opportunity to influence major transport sustainability themes, such as climate issues and traffic safety. It is not enough for us simply to be responsible. We want to better understand how our services indirectly affect society and the environment. Only in this way can we help our customers, stakeholders and the whole of Finland to develop an even more sustainable transport system. We have described this in more detail in the Impact section of the Annual Report.

Responsibility: from definition to integration

Our goal is to make responsibility and sustainability an integral part of our business and to be a forerunner in selected topics. We want our responsibility efforts to strongly support the company's business, stakeholder relations and strategic implementation, and for development in this area to be part of our daily work.

In 2021, responsibility and sustainability were integrated into all of our activities and began to generate added value for our business. This trend will also be a firm feature of 2022. Our goal for 2023–2024 is to be a forerunner in continuously improving safety, developing an excellent workplace community, enhancing our environmental sustainability, and both modelling and increasing our social impact.

We conducted a materiality analysis of sustainability in 2020. We appointed persons to be responsible for key stakeholders, and we used our discussions with them as a basis for defining the stakeholder expectations that are included in our materiality themes. Our materiality themes are also in line with our 2021 strategic updates. Fintraffic's most material sustainability topics relate to social

responsibility, environmental responsibility, financial responsibility, safety and good governance. Targets and indicators were defined for all of these topics during the company's annual target setting as part of routine business management.

Sustainability management

The company's Board of Directors approves the company's sustainability-related strategy, measures and risk assessment. The Group Management Team holds ultimate responsibility for putting sustainability into practice, for example, in the strategy and spearhead projects. Safety and environmental management teams also meet at Group level. They meet monthly to decide on development projects, monitor their progress, and promote safety and environmental action.

2021 was the first year that we assessed climate change risks and opportunities for our business and reported on them in our Annual Report in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). From now on, an assessment of climate change risks and opportunities will be included in the company's risk management process and will support our efforts to enhance service provision continuity and sustainability action.

Sustainability goals and KPI's

Material topic	Goal	KPI	2021	2020
Committed, motivated and healthy personnel	• The personnel perceives the work environment to be safe. • The well-being of employees at work is constantly being developed	• Accident and sickness absence metrics. • Training days. • Personnel surveys. • Implementation of action plan for risk of work ability. • Paying attention to cost awareness related to invalidity payment categories	Workplace accidents 3. Commute accidents 3.	Workplace accidents 2. Commute accidents 5.
A diverse, equal and discrimination-free workplace community	Achieving a balanced gender structure in the management of the Group and its subsidiaries	Gender distribution in the Group management	Women 32%, Men 68%	Naisia 19.5% Miehiä 80.5%
Energy and material efficiency, and carbon neutrality	Carbon neutrality on own operations	Emissions of own operations, tCO_2e	557	484
Financial added value and efficiency	Moderate profitability	Operating profit %	2.90%	-4.4%
Good, transparent governance	Clear responsibilities and transparency in operations	Number of incidents through the Whistleblowing channel	6	–
Societal impact				
Environmentally efficient traffic control				
Continual improvements in safety				

Read more about the goals and KPI's of societal impact on page 24

The European Union's classification system for sustainable economic activities, aka the EU taxonomy, came into force in 2020 under the Taxonomy Regulation (EU) 2020/852. This taxonomy will help the EU to create a clear definition of the type of activity that can be considered environmentally sustainable. The aim is to steer economic activity and channel capital towards achieving the EU's ambitious climate and environmental objectives.

We have begun to analyse the taxonomy eligibility of our operations. As current climate change regulations primarily focus on carbon-intensive sectors, there is no clear-cut taxonomy category for Fintraffic's activities at present. The company sees rail traffic management as a potentially taxonomy-eligible activity in the future, as it focuses on railway infrastructure and systems to manage rail traffic and its safety. Although taxonomy categories and their interpretations are not yet sufficiently established, and still need clarifying in terms of both legislation and practices, the company is preparing to update its analysis during 2022 in line with evolving legislation.

Good governance

	SAFETY	SOCIAL RESPONSIBILITY		ENVIRONMENTAL RESPONSIBILITY	FINANCIAL RESPONSIBILITY	GOOD GOVERNANCE
		Workplace community	Partners			
Our work is steered by policies and guidelines	• Safety policy • Information and cybersecurity policy • Risk management policy	• Remuneration management • Equality and diversity plan	• Management and organisation • Procurement principles	• Management and organisation • Environmental strategy • Procurement principles	• Management and organisation • Group's decision-making guidelines • Guidance on actual beneficiaries and politically influential persons, as per the Act on Detecting and Preventing Money Laundering and Terrorist Financing • Financial policy • Risk management policy • Procurement principles	• Code of Conduct • Guidelines on compliance with competition law • Insider guidelines
Responsibilities	• SQE Director • Safety management team • Persons responsible for safety at subsidiaries	• HR Director	• Chief Impact Officer	• SQE Director	• CFO	• CEO • Director of legal affairs and procurement • Responsibility divided between several directors
Activity in 2021	• Establishing an information and cyberse-curity management team • Coronavirus management team operation (was already established last year) • Launching the information and cyberse-curity management system • Updating the safety action plan • Launching guidelines for best practices in safety • Revising safety reporting practices	• Revising the overall remuneration policy • Drawing up anti-substance abuse guidelines • Creating coronavirus-related guidelines and implementing occupational health and safety measures to control the coronavirus pandemic • Whistleblowing channel operation • Adding special services to occupational healthcare	• Establishing a joint working group with other industry oper-ators to develop the transport ecosystem • Sharing information and opinions on the transport sector with authorities, politicians and the media	• Updating the environmental strategy • Establishing an environmental management team • Developing environmental indicators • Launching the creation of an environmental information system	• Establishing a model for financial reporting • Developing an internal calculation model for monitoring service-specific costs, the activity level, and operational efficiency • Introducing Power BI • Procurement principles • Putting the new management system and management model into practice • Improving operational efficiency • Adjustment measures resulting from the collapse in air traffic volumes and loss of income from air navigation	• Mobilising and establishing the use of regulations and guidelines in the company • Organising training in topics related to good governance

At Fintraffic, good governance is a service function

We are a wholly state-owned special assignment group operating under the ownership steering of the Ministry of Transport and Communications. Our special assignment is to safeguard the essential traffic control services required by society, the authorities and commerce. Our special assignment also involves ensuring reliability in the event of disturbances under both normal and exceptional circumstances. As our operations are significant to society, it is our duty to act responsibly, sustainably and as transparently as possible in everything we do.

In accordance with the Government Resolution on State-ownership Policy issued on 8 April 2020, as the owner of the company, the State is seeking the best possible overall financial and social benefit from the management of its assets, and this will be assessed on the basis of how well and at what cost the company fulfils its social service duties. The company's decision-making and governance comply with the Limited Liability Companies Act, the company's Articles of Association, the guidelines for the ownership steering of limited liability companies issued by the Ministry of Transport and Communications on 1 January 2019, most of the Corporate Governance Code for Finnish listed companies

issued by the Securities Market Association in 2020, the OECD Principles of Corporate Governance, the strategic ownership policies for Traffic Management Company Fintraffic Ltd issued on 16 October 2019, and the corporate governance code contained in the Group's own management system. Fintraffic is also committed to compliance with the UN Global Compact.

Our company's highest decision-making body is the Annual General Meeting. It decides on the matters specified in the Limited Liability Companies Act and the company's Articles of Association.

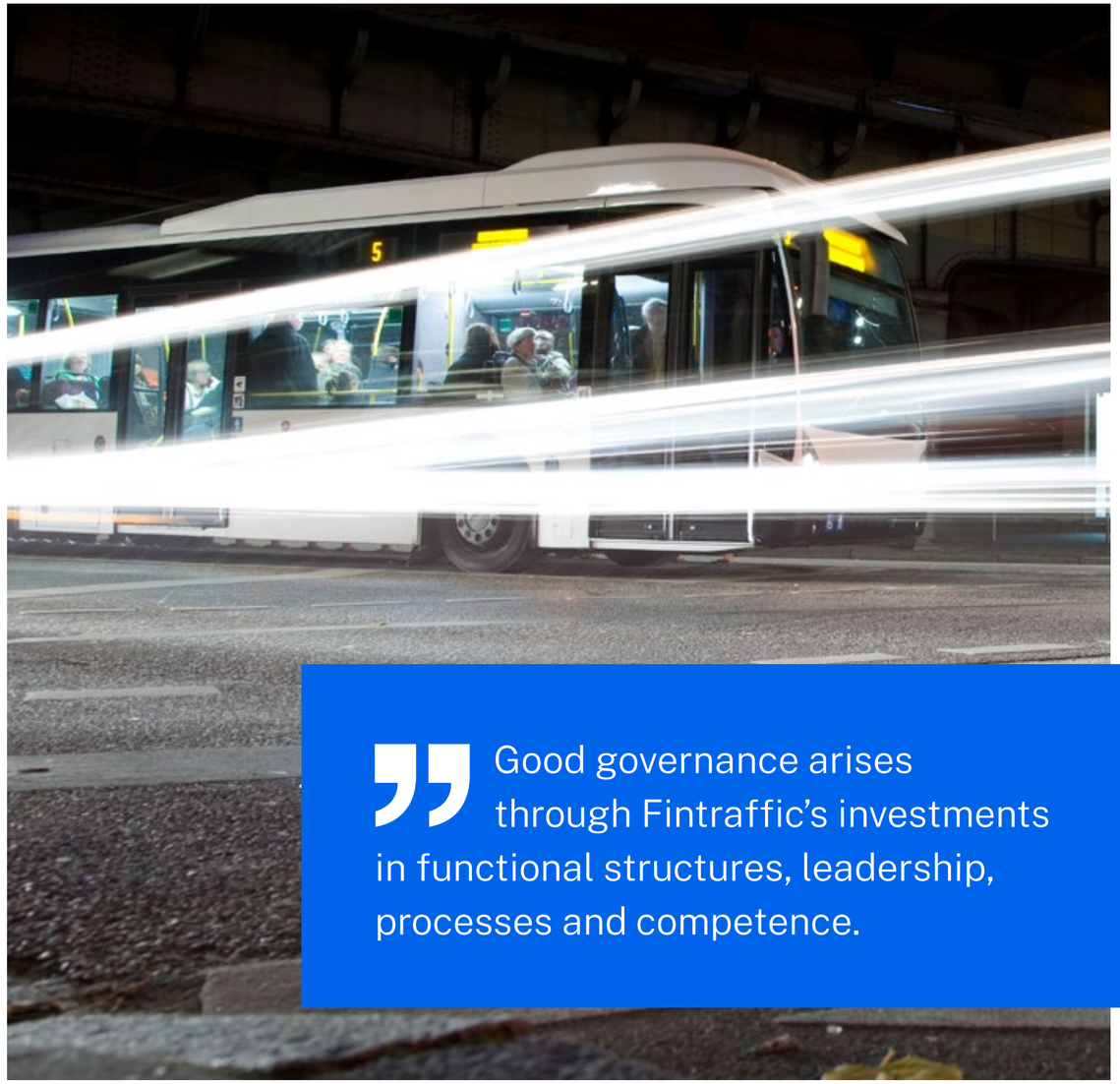
Good governance arises through Fintraffic's investments in functional structures, leadership, processes and competence. We strive for smooth, agile and efficient operations, and an appropriate governance model that will enable us to carry out our basic assignment. Best practices are based on our jointly defined values, and are continually shaped and revised through collaborative efforts. Our Group governance is a service function that enables all of the company's operations.

Updates to several policies

As our Group consists of five companies, it is vital to have and maintain a joint management system – and this system was therefore updated in 2021. Management systems do more than just steer a company: they also have a service function. The necessary services are handled in a centralised and cost-effective manner, ensuring that subsidiaries have operating methods that are appropriate for their own modes of transport and regulatory environments.

We revised our information security policy, privacy policy, risk management policy and financial policy in 2021. The Group's decision-making rights, procurement guidelines, and equality and non-discrimination plans were also updated. The growing importance of cybersecurity was also reflected in a need to update guidelines.

The most significant administrative changes made in 2021 related to responsibilities: in order to guarantee its independence, the internal audit was transferred from the finance function to the legal and procurement function, and internal audit guidelines were updated to reflect this change. We also appointed a Deputy CEO to clarify our leadership structure and ensure continuity in the event of absences.



> Good governance arises through Fintraffic's investments in functional structures, leadership, processes and competence.

STAKEHOLDER COOPERATION

An expert and transparent partner

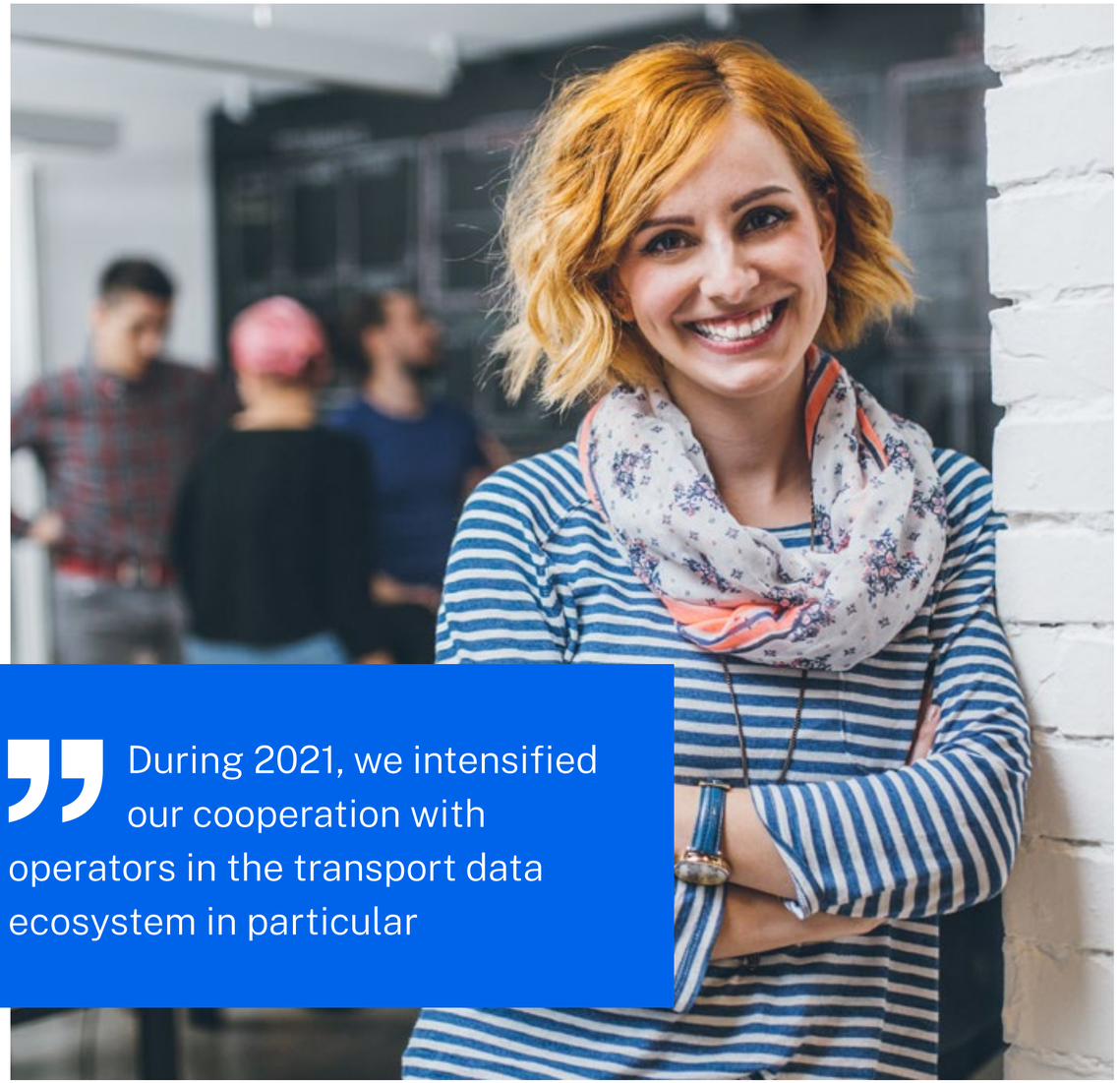
Our goal is for Finland to have the world's safest, smoothest and most environmentally friendly transport system. This ambitious target cannot be achieved without close partnerships with our stakeholders. Continuous development of our stakeholder work is therefore necessary, so that we can work together to produce as much benefit as possible for the people who live in Finland, the companies who operate here and the country as a whole.

We are committed to promoting trust and openness in our partnerships. We want to bring our competence and expertise to our collaborative relationships, so that our interaction with stakeholders will be as beneficial as possible for all those involved.

We actively participate in public debate on themes that affect our operating environment. We also strive to ensure that we have relevant things to say and our expertise is in demand. We think it is important for decision-making to consider perspectives relating to traffic management and raising the level of digitalisation in transport, so as to ensure the best possible implementation of a safe, smooth and low-emission transport system in Finland.

Our strategic customers and partners are those who purchase our services: the Finnish Transport Infrastructure Agency, Finavia and airlines, Traficom, and ports and cities. Other key partners include the Finnish Defence Forces, the Finnish Border Guard, Customs and the Police, ELY Centres, and transport sector operators.

We actively participate in public debate on themes that affect our operating environment.



> During 2021, we intensified our cooperation with operators in the transport data ecosystem in particular

During 2021, we intensified our cooperation with operators in the transport data ecosystem in particular. The data ecosystem already consists of 130 companies and other organisations with whom we promote a fair data economy and a common set of rules for the transport sector. Our roles in the data ecosystem include both coordinator and convener.

As a responsible state-owned company, we promote good dialogue not only with the aforementioned partners but also with the research community and educational establishments, interest organisations, municipalities, politicians and the media. We are also actively involved in many of the international organisations associated with our sector, which have an impact on transport operating environments both at EU level and globally.

Increasing confidence among stakeholders

After the company was established, we appointed members of the Management Team to be responsible for key stakeholders. We have since continued to create common practices and intensify cooperation with our partners. In addition to keeping in regular contact with our stakeholders, we actively ask for their feedback on our operations. We have conducted targeted stakeholder and customer satisfaction surveys, and also carried out the first corporate image survey of Fintraffic's business among the general public. Both the stakeholder surveys and aforementioned reputation survey indicated growing confidence in Fintraffic.

During 2021, we paid particular attention to our partnership with the Finnish Transport Infrastructure Agency, in which we established a customer relationship model and drew up standardised service descriptions and service plans. In 2022, we will continue to work on defining service level indicators, and will begin a step-by-step transition to a pricing model for the Finnish Transport Infrastructure Agency that takes the service level into account.

SAFETY

Multiple levels of safety

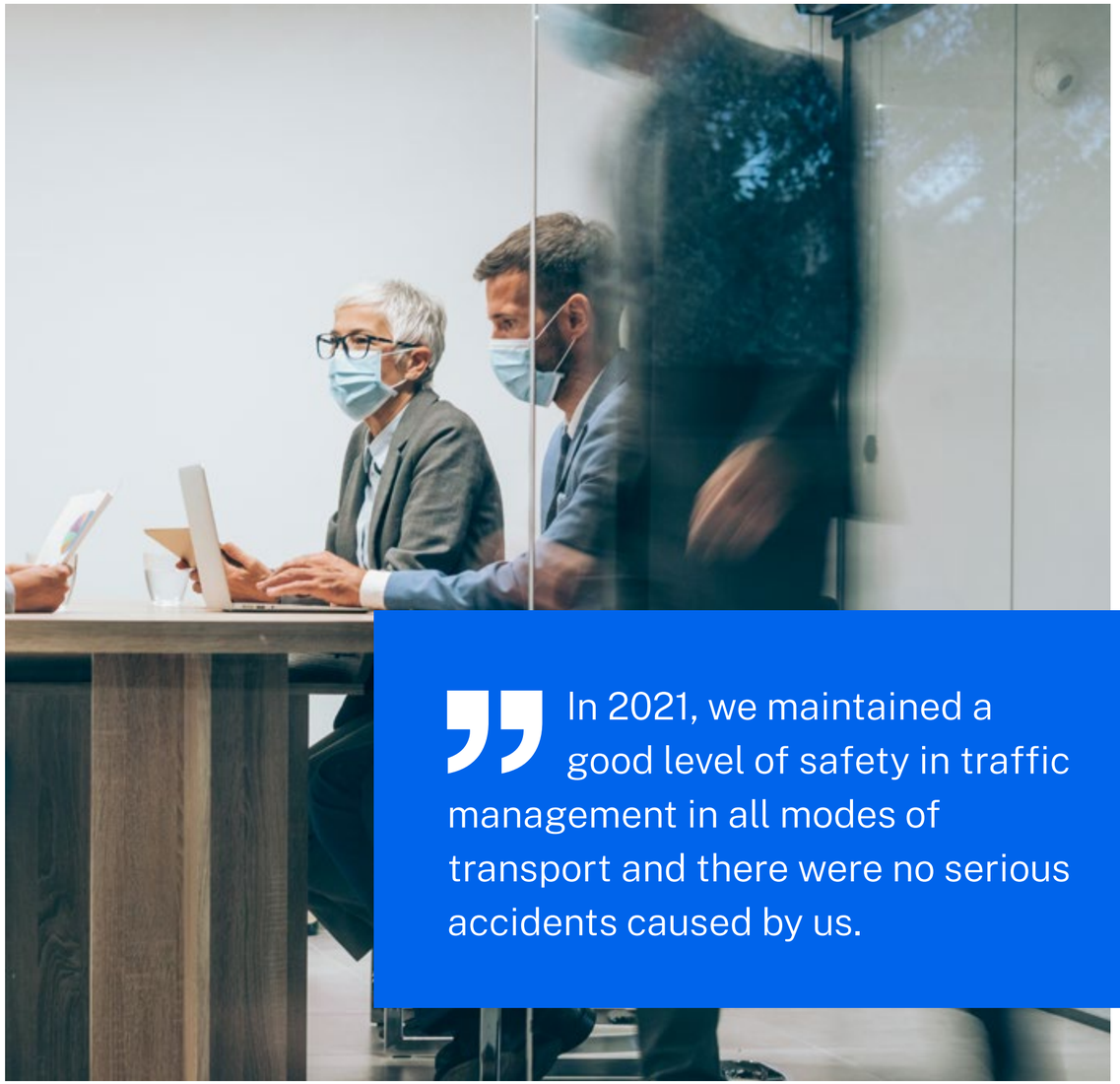
Guaranteeing safety is critical for Fintraffic because, at worst, any potential accidents can cause harm to people, the environment and the economy. In addition to raising the overall safety level of the transport system, information and cybersecurity is emerging as a key safety theme in which we are making increased investments.

Our work revolves around continuously increasingly the safety level of the transport system, traffic control and traffic management. Ensuring safety includes activities such as incident management, risk management, preparedness, information and cybersecurity, corporate security, and the management of safety deviations. Our main operational risks relate to serious accidents, accident precursors, and threats to information and cybersecurity.

Our safety and security work is being simultaneously affected by a number of megatrends. For example, digitalisation affects inter-system connections, which in turn require a higher level of cybersecurity.

Safety is at a good level in all modes of transport.

In 2021, we maintained a good level of safety in traffic management in all modes of transport and there were no serious accidents caused by us. With regard to serious safety-related incidents, we achieved our targets in all modes of transport with the exception of rail traffic control, even though the number of serious accident precursors decreased significantly. No significant deviations or breaches in information or cybersecurity were reported during the year. Maritime traffic control enabled us to prevent nine vessels from running aground.



> In 2021, we maintained a good level of safety in traffic management in all modes of transport and there were no serious accidents caused by us.

> In 2021, we created key indicators for safety that we will monitor for each mode of transport on a monthly basis.

Safety levels are supervised using a variety of means. We conduct both internal and external audits, and organise safety tours. We report on the agreed safety issues to the authorities. We measure safety using both common indicators and indicators for specific modes of transport. Common indicators include the number of accidents, serious accident precursors and significant deviations in safety, and the success of safety control functions. We have an evolving set of indicators to manage deviations and processes to analyse them. The basic premise is that we should be able to report all potential deviations, investigate them and react immediately.

Health security is still a major theme due to the pandemic

The coronavirus pandemic had the biggest impact on our safety work in 2021, as it could at worst have temporarily crippled the operational capacity of our control centres. All modes of transport worked closely together within the Group to ensure health security and keep our operations running without unnecessary exposures. Since 2020, a preparedness team has met approximately every second week depending on the current coronavirus situation. This team consists of health and safety delegates and representatives from our companies and shared services.

The Safety Makers team, which was also established in the previous year, continued to meet throughout 2021 as well. Support and best practices have been shared within the team, which has not only increased synergies but also strengthened our culture of working together in line with the company's values.

None of the coronavirus cases detected in our company were work-related, and they did not compromise our ability to operate.

New strategy for safety and information and cybersecurity

In 2021, we created key indicators for safety that we will monitor for each mode of transport on a monthly basis. We also drew up a five-year, Group-wide strategy for safety and information and cybersecurity. This has led to performance and development targets for different modes of transport, both mode-specific and at Group level. We launched a major development programme in information and cybersecurity. Similar developments are also being made in corporate security, which has resulted in security clearance procedures for personnel being carried out in a more expedient manner.

In 2021, we also enhanced the Group's indicators for overall safety and security, and started building a maturity model. We reviewed the company's reference framework for safety, risk management and quality, and enhanced the safety of our premises.

Safety management

Our safety work is led by the Safety Management Team, which consists of representatives from each mode of transport and representatives from information and corporate security. The team coordinates the Group's safety work and each mode of transport is responsible for its own safety – so safety is promoted on many different levels.

The Information and Cybersecurity Team works alongside the Safety Management Team, and has representatives from modes of transport and ecosystem services.

Our safety efforts are steered by our policies for safety, risk management, and information and cybersecurity. These policies have been approved by the Board of Directors. Safety management is based on our management systems for both safety and information and cybersecurity. We want to network more closely with other operators in the sector and also seek best practices from outside the Group.

Regular training in occupational safety continues

We continually maintain personnel competence through a variety of training and share best practices between different modes of transport. We have extensive training programmes for personnel working in traffic control, and organise safety exercises for personnel. Personnel also receive training in ergonomics, first aid, fire extinguishing, and specific areas related to their own job description. Occupational health and safety training is organised for supervisors. Occupational health and safety delegates actively participate in safety planning, and units involve their personnel in efforts to improve their own working conditions.

All subcontractors receive induction in construction site safety, and we ensure that their occupational safety guidelines are in order during the tendering process. Eight occupational accidents occurred in 2021, three of which led to more than one day of sickness absence. Ten commuting accidents occurred, three of which also led to more than one day of sickness absence. Work-related accidents at Fintraffic typically involve minor falls, stumbles or slips at work or while commuting. Fintraffic Group's accident frequency rate for 2021 was 2.

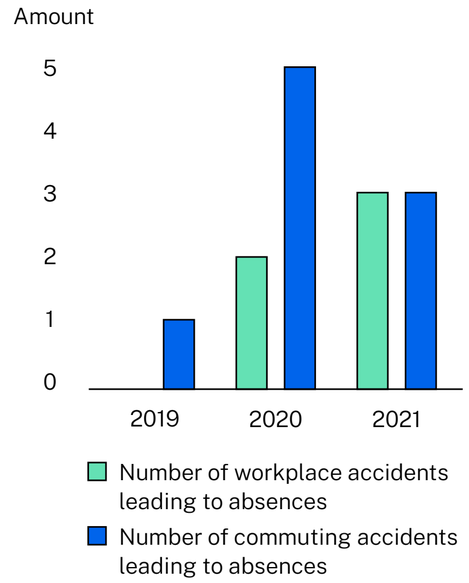
Information and cybersecurity increasingly important

Information and cybersecurity are of increasing importance in our digitalising world, and we have been making considerable investments in this area. In addition to defining a new information and cybersecurity strategy, we updated the information and cybersecurity policy that guides our everyday work.

On the basis of our revised strategy, we launched a broad-ranging, multi-year development programme to raise the level of information and cybersecurity in all modes of transport. We reviewed all of our critical systems and their information security levels. We mobilised key projects relating to technical control and monitoring systems. We also significantly increased our monetary investments in information and cybersecurity, and intensified our cooperation with key stakeholders and external service providers.

Our biggest challenges in information and cybersecurity are change management and the fast pace of change. We have also strengthened our expertise through internal training and by hiring more cybersecurity experts. However, as technology is renewed with increasing frequency, we must be prepared to balance the workload involved in continuous induction. As only a few have access to cutting-edge

Workplace accidents



technology, we must continually develop and share our competence. On the other hand, we also have a huge variety of systems at different stages of their lifecycles.

Proactive safety work is a Group effort

We expect that Fintraffic's safety priorities will remain relatively unchanged in the near future. We will continue to systematically improve the safety level of traffic management, and develop corporate and health security with regard to our business premises in particular.

We will also continue to develop Group-wide processes, reporting systems and tools so that we can harness our expertise and smart working methods more consistently and effectively throughout the Group.

In the field of information and cyber-security, we have started to create an ISO27001-compliant information security management system, and will continue to manage and conduct risk assessments for all existing systems regardless of their age.

One good example of function-specific safety planning for the near future is the development of our rail traffic control room activities. Our new control room strategy and its mobilisation will create new opportunities for improving passenger safety.

> We will continue to systematically improve the safety level of traffic management, and develop corporate and health security with regard to our business premises in particular.

ENVIRONMENT

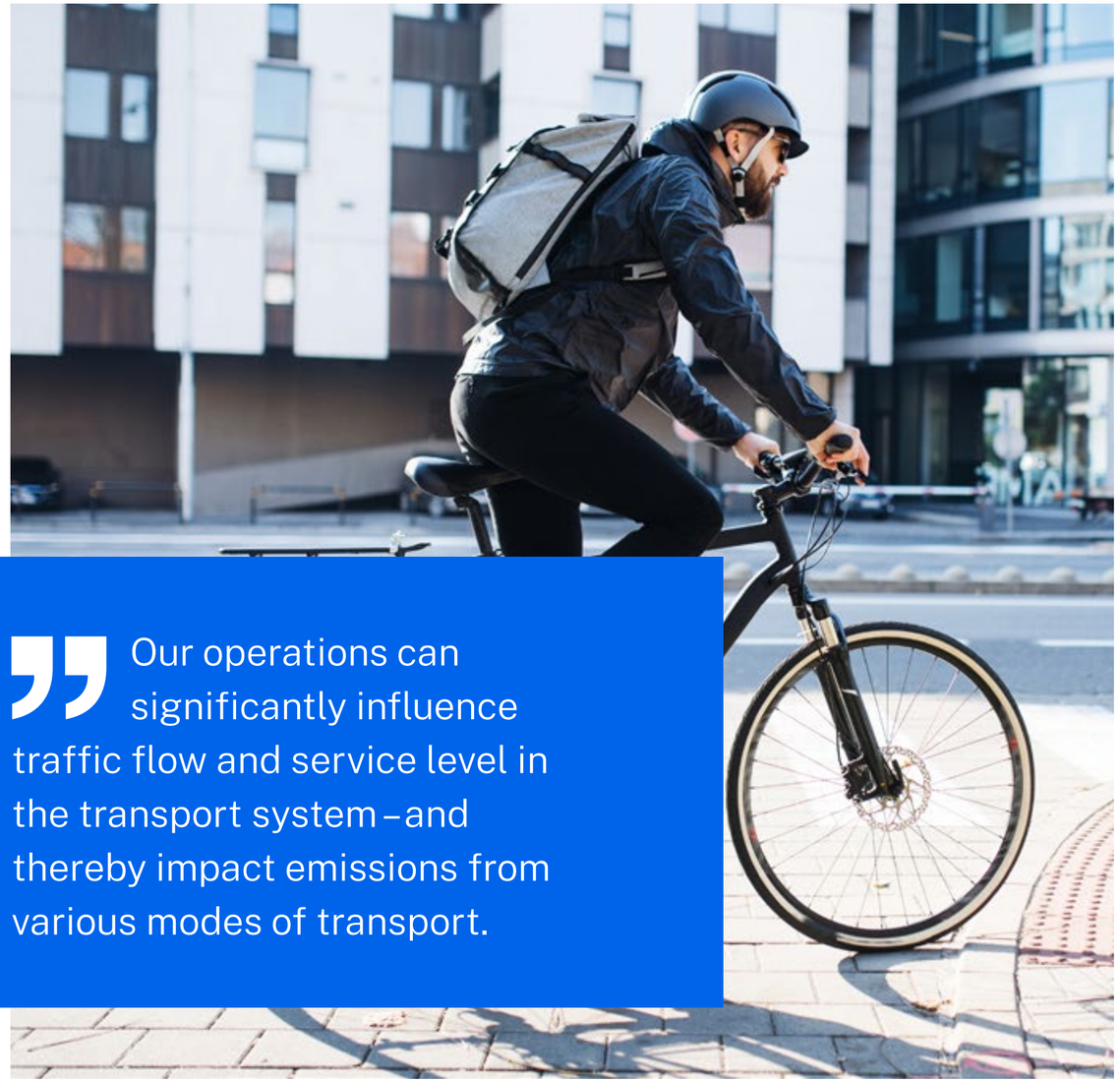
We shoulder responsibility for the environment

There are several ongoing global developments that Fintraffic is able to influence. Climate change, urbanisation, new forms of energy, autonomous traffic, transport emissions, new ways of working and Finland's goal of becoming carbon neutral by 2035; they all affect our work – and we them. Transport emissions are one of the most concrete topics in our environmental action, as transport causes one fifth of Finland's climate emissions.

We shoulder responsibility for the environment by improving the sustainability of the transport system, for example, through traffic management services and by providing traffic data and digital services to end users. We have divided our environmental action into two parts: managing the environmental impact of our own business and value chain and influencing emissions throughout the entire transport system.

Our new environmental strategy extends to 2024 and states that: we are an environmentally oriented group; we are an enabler for a smooth and environmentally efficient transport system; we are an influencer for environmentally driven travel; and we prevent accidents and environmental damage. We are committed to the Finnish State's carbon neutrality objective, and are ambitiously aiming to reduce the greenhouse gas emissions from our own operations to zero by 2023.

We are committed to the Finnish State's carbon neutrality objective, and are ambitiously aiming to reduce the greenhouse gas emissions from our own operations to zero by 2023.



> Our operations can significantly influence traffic flow and service level in the transport system – and thereby impact emissions from various modes of transport.

In addition to carbon neutrality, our environmental responsibility also includes energy and material efficiency, and environmentally safe and efficient transport.

A key role in building a sustainable transport system

Our operations can significantly influence traffic flow and service level in the transport system – and thereby impact emissions from various modes of transport. We have identified several areas of the transport system whose environmental load is directly or indirectly affected by the services and information we provide.

Optimised, environmentally efficient traffic management reduces emissions from transport; and by providing data and traffic solutions we can streamline travel and logistics chains and prevent environmental accidents and damage. New solutions can also help us to tackle incidents and congestion. Our extensive carbon handprint is the sum of many factors, and we have significant opportunities to mitigate climate change and protect the environment by working with other operators in the transport ecosystem.

For example, air route optimisation and continuous descent approaches play an important role in reducing emissions from air traffic. 21,371 continuous descent approaches were made at Helsinki Airport in 2021, which equates to 60.2 per cent of all approaches. Optimised air routes and continuous descent approaches helped Finland to reduce emissions by 8,500 tons of CO_2 in 2021. Maritime traffic control prevented nine vessels from running aground, thereby protecting aquatic biodiversity. We have described our handprint for different modes of transport in more detail in the Impact section on page 21.

2021 was a year of determined environmental action in our own operations.

During the year, we revised our roadmap for carbon neutrality and took many concrete steps towards it. We further developed calculations of our carbon footprint, and can now report more transparently on indirect emissions from our value chain as well. We also took steps to achieve carbon neutrality by switching our electricity contracts to renewable energy and promoting the use of electric mobility equipment.

The Environmental Management Team continued to work on our environmental targets and key areas for development during 2021, which included establishing our new

management model for environmental action. We also started building an environmental management system based on the ISO 14001 environmental management system. This system will be introduced in 2022, and will enable systematic environmental management and standardised practices throughout the Group, as well as more efficient data collection and reporting.

During the year, we revised the Group's environmental policy and analysed tools for improving energy and environmental efficiency. We also renewed our procurement processes to take environmental perspectives into greater account. In 2021, we introduced clearly defined environmental indicators that take different modes of transport into account, and also invested in their development and reporting.

2021 was the first year that we assessed climate change risks and opportunities for our business and reported on them in our Annual Report in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). In the future, assessing climate risks and opportunities will support our efforts to enhance our sustainability and service provision continuity.

Towards carbon neutrality and broader emissions reporting

In line with our carbon neutrality target, we are committed to reducing the greenhouse emissions caused by our own operations to zero by 2025. The most significant direct and indirect emissions from our own operations (Scope 1 and 2 emissions) are generated by our vehicles' consumption of fuel, electricity consumption and heating in our properties, and the energy consumption of other electrical equipment and systems (such as traffic control and information technology). We have also identified and reported on our own substantial sources of indirect emissions (Scope 3), and will be further developing reporting for both direct and indirect sources of emissions in our value chain during 2022.

We calculated the carbon footprint of our value chain in 2020. This calculation will be repeated in a few years, when we will be able to see developments in these slowly changing figures. The theoretical carbon footprint caused by procurement in 2020 was 23,300 tons of CO_2. Our purchased products and services in areas such as ICT, construction, repair and maintenance account for the most significant proportion of our indirect

> 2021 was the first year that we assessed climate change risks and opportunities for our business and reported on them in our Annual Report in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

> Fintraffic's goal is to play an active role as both a developer and an enabler of environmentally friendly transport and traffic management.

emissions and were calculated at 15,500 tons of CO_2 in 2020. On the basis of their calculated carbon footprints, our various types of procurement were classified according to their significance with regard to sustainability. Our procurement process was developed during 2021, and major procurements will now pay greater attention to promoting carbon neutrality, energy efficiency targets, the circular economy and biodiversity. Value chain emissions from procurement were largely calculated on the basis of estimates, assumptions and theoretical values. Refining these calculations forms part of our continuous environmental work.

Emissions from our own operations (Scope 1, Scope 2 and Scope 3) totalled 557 tons of CO_2 in 2021, which represented an increase of 15 per cent on 2020. The reasons for this increase in emissions included the introduction of new electricity consumption points and more accurate calculations.

Our total energy consumption in 2021 was 23.2 GWh. Although purchased energy accounts for a significant proportion of our annual energy consumption, greenhouse gas emissions from purchased energy are already at a very low level, as 96 per cent of the electricity we consume is either nuclear power or comes from renewable sources.

Fintraffic's environmental indicators

Stakeholder	2021	2020
Greenhouse gas emissions, CO_2-ekv. t		
Fuel consumption of owned vehicle fleet, Scope 1	23	77
Electricity and district heat consumption, Scope 2 market based*	302	237
Total Scope 1 and 2 greenhouse gas emissions	**325**	**314**
Business and employee travel, Scope 3	195	150
Waste, Scope 3	38	20
Procurement, Scope 3**	23 300	23 300
Total greenhouse gas emissions	**23 858**	**23 784**
Energy consumption, MWh		
Electricity use	23 858	14 000
from which renewable sources	96%	93%
Heating	497	685
Total energy consumption*	**23 697**	**14 024**
Waste, t		
Total amount of waste	141	73

* Consumption of electricity, cooling and heating in rental properties has not been taken into account in the calculation.
** Based on a theoretical carbon footprint estimate from 2020. The estimate is not expected to change significantly in 2021.

We also measure and aim to reduce emissions from commuting, business travel and waste. Calculated emissions from commuting and business travel totalled 195.3 tons of CO_2 in 2021, a rise of 30 per cent on the previous year. Our premises generated 141 tons of waste, which caused an estimated 38 tons of CO_2 emissions. At Fintraffic's premises, waste is sorted into recoverable, recyclable, incinerable and hazardous waste.

A new climate reporting to support risk management

For the first time in 2021, Fintraffic assessed the risks and opportunities related to climate change for its business. The reporting applies the Task Force on Climate-related Financial Disclosures (TCFD) reporting recommendations. In the future, a comprehensive climate risk and opportunity mapping supports the development of the continuity of our service production and sustainability and can be harnessed in the administrative climate risk mapping work of the Ministry of Transport and Communications.

The Board of Directors of Fintraffic accepts the strategy, operating principles and assessment related to the risks and opportunities of climate change. The highest operative responsibility e.g., for the sustainability strategy and main projects is on the group management team. In practice, Fintraffic's climate work is driven in the business areas by offering services for the optimization and improvement of environmental efficiency of the whole traffic system. Fintraffic's environmental management team plans, prepares ad monitors environmental development projects affecting external stakeholders through its own activities. The groups environmental management team gathers monthly.

The mapping of 2021 was constructed as a separate assessment, involving the key people from all business areas, communications & public relations team and the people working with environmental topics. In the future, the assessment of climate risks and opportunities will be conducted annually as part of the group's risks process. The adjacent table describes the main identified risks and related ways of preparedness.

Assessing climate risks and opportunities

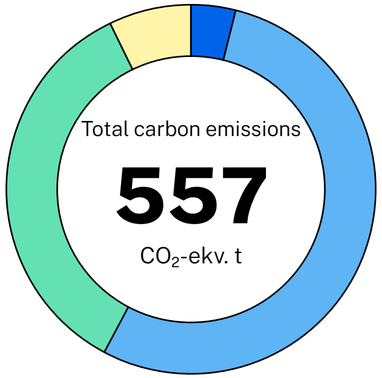
Type of risk or opportunity	Way of preparedness
Physical risks related to climate change (related to acute and chronic effects of climate change)	
Extreme weather phenomena, such as storms, droughts and rains can affect the ability of traffic control centers to act by causing damage to buildings, centers' devices, or the infrastructure used by them e.g., in the railway network.	Fintraffic prepares for extreme weather phenomena by safeguarding and protecting its own infrastructure and by ensuring necessary backup systems for its critical systems.
Increasing extreme weather phenomena can hinder the operation of a single mode of transportation and indirectly influence Fintraffic's operation through the lower demand for traffic control services.	Fintraffic prepares for exceptional situations e.g., by working closely with operators. The traffic information and real-time situational picture produced by Fintraffic can help the traffic system adapt to extreme weather phenomena.
Transitional risks related to climate change (related to e.g., markets and laws)	
The lower demand for traffic control services influenced by changes in traffic and transportation and caused by climate change can have a significant impact on Fintraffic's operations.	Fintraffic is constantly developing its activities and aims to increase the overall efficiency, smoothness, and environmental friendliness of the transport system, e.g., through ecosystem services.
The potential increase in levels of insurance costs or operational maintenance costs caused by the global risks of climate change can increase Fintraffic's operating expenses.	Fintraffic prepares for the increase in energy and material costs e.g., by energy efficiency procedures and procurement and insurance protection mechanisms, in accordance with the environmental strategy.
The opportunities related to climate change mitigation	
The demand for solutions to improve environmental efficiency of transport is increasing, related to e.g., the dynamic and adaptable traffic control, as well as to the need for a predictive, real-time situational picture.	Fintraffic's traffic control covering all modes of transportation can provide overall concepts which aid in the improvement of the whole traffic system's environmental efficiency and the industry's export potential.
Offering open traffic data, APIs and information sharing enables the creation of completely new types of services.	Serving the whole traffic ecosystem is in the core of Fintraffoc's strategy to enable streamlined and environmentally friendly transport.

Future focus on introducing an environmental system

Fintraffic's goal is to play an active role as both a developer and an enabler of environmentally friendly transport and traffic management. We are continually developing concrete action to streamline traffic and reduce emissions, to enhance our ability to prevent accidents, and to provide high-quality traffic data and analyses of transport-related environmental factors. We are an active participant and partner in environmental cooperation groups for all modes of transport, thereby enabling the successful achievement of environmental goals at all levels of the transport system. Environmentally efficient traffic management reduces the negative environmental impacts caused by traffic throughout the transport system.

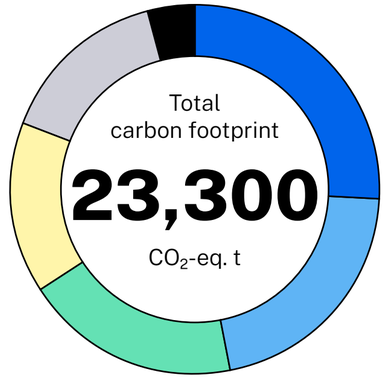
In 2022, we will be introducing a new environmental management system and organising associated training and communications. Environmental work will be more closely integrated into all of our business functions and practices. We will be further developing our carbon handprint and footprint calculations, our environmental and impact reporting, and our own environmental capabilities at every level. We will make concrete progress in achieving our carbon neutrality objective by, for example, increasing the use of renewable electricity and heating energy, boosting energy efficiency and space usage, favouring hybrid work models and remote meetings, further electrifying work-related mobility, taking environmental perspectives into greater consideration in our procurement process, and increasing the effectiveness of waste sorting at our own and rented properties.

Direct emissions from own operations and other indirect emissions



- Fuel consumption of owned vehicle fleet (Scope 1), 4 %
- Electricity and district heat consumption (Scope 2), 54 %
- Business and employee travel (Scope 3), 35 %
- Waste (Scope 3), 7 %

Indirect emissions from procurement*



- Building and building area maintenance, 26%
- ICT procurement, 21%
- Infrastructure, 19%
- Machinery, equipment and transportation, 15%
- Professional and administrative services, 15%
- Others, 4%

* Based on a theoretical carbon footprint estimate from 2020. The estimate is not expected to change significantly in 2021

SOCIAL RESPONSIBILITY

Successes fuels continued HR work

Fintraffic wants to provide world-class expertise in traffic management, open data and digital services to the transport sector ecosystem and everyone in Finland. We want to be innovative and solution-oriented, and continually improve our expertise and capacity for renewal.

1,127 people worked for our company at the end of the year. 22 per cent of them were women and 78 per cent men. The average age of our personnel was 45. As we provide traffic control services around the clock, the majority of our personnel do shift or period-based work.

We provide all HR services using a single HR team led by the HR Director, who also belongs to the Group Management Team. Although the company's occupational safety manager is part of the HR organisation, responsibility for occupational safety is always held by operative management.

Major efforts in 2021: Shared values

As exceptional circumstances continued, 2021 was another challenging year from a HR perspective. Tourism and flight numbers remained below pre-pandemic levels, which led to the continuation of extensive lay-offs among air navigation personnel. Redundancies were, however, avoided. 77 new employees joined us in 2021. Personnel turnover was 5.9 per cent, and exactly 3 per cent excluding retirements. Those working at control centre workstations took precautions by maintaining safe distances and wearing masks. A lot of people worked remotely and in-person events were cancelled.

> A major theme in our 2021 HR work was to launch a set of common values for Fintraffic.

In 2021, we took a lot of measures to promote our personnel's wellbeing and competence. We have a strong and comprehensive portfolio of HR and occupational healthcare services.

A major theme in our 2021 HR work was to launch a set of common values for Fintraffic. They are: We ensure safety. We care. We point the way. Together.

In order to define these values, we requested suggestions from all personnel and invited volunteers to join HYVÄ workshops. A total of nine workshops were held. During these workshops, personnel and shop stewards worked together to come up with a set of proposals for the company's management and Board of Directors to shape into a final set of values.

We implemented the Group's first mentoring programme, which received excellent feedback. The pairs were chosen so that representatives of different modes of transport and Group services could exchange ideas.

We also implemented an exchange student programme that had been requested by personnel. "Host families" were chosen for "exchange students" from all across the organisation. The exchange students were then able to spend one working day getting acquainted with their host family's activities.

Further enhancing supervisory and management skills

We provided supervisors with both training and new tools. Our supervisory work scores highly: in the personnel satisfaction survey, it received a score of 4 (on a scale of 1-5).

In spring 2021, we ran "book clubs" for supervisors, in which they read high-quality professional literature and discussed topical themes in management.

We also implemented a large-scale development programme for executives. The goal was to help management personnel increase their self-awareness, identify their own strengths, and build a culture of inclusive leadership. Personal development plans were drawn up on the basis of the results.

We developed company-specific pay systems and defined pay levels based on the requirements of each position. Our overall remuneration policy was revised in 2021. We also updated our target setting model to support our strategy. We continued to develop HR processes, and prepared a tendering process for an HR system that will be carried out in 2022.

Supervisors and experts were offered a low-threshold coaching service through a pilot with Auntie Solutions Oy. Participants received support in areas such as change management. 99 per cent of participants were satisfied with the programme and reported lower levels of stress.

Healthy and happy experts

Our personnel have the opportunity to participate in training and give us regular feedback, and our HR plans are drawn up on the basis of this training and feedback. As part of a new programme to support personnel wellbeing, we established teams to focus on nutrition and coping at work. The teams sought solutions for managing alertness and weight in cooperation with a psychologist and nutritionist. The effectiveness of this programme will be assessed through long-term monitoring, which makes it particularly interesting. Shift workers were offered training to improve their sleep quality and eating rhythm, and to help them cope at work.

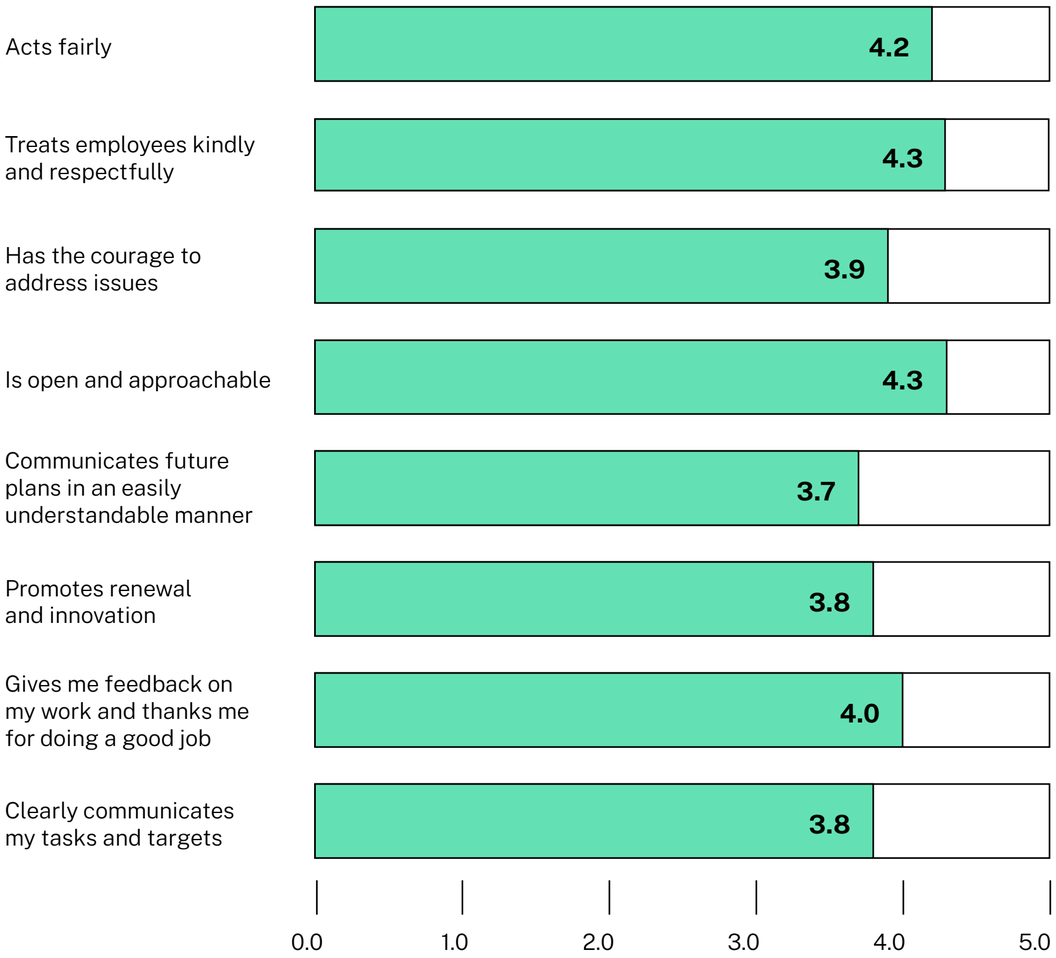
Break Pro – an app that supports taking exercise breaks – was also introduced, and we changed our meeting practices so that our calendar software offers 50-minute meetings instead of a full hour. On Thursdays from 12–17, we have "Thursday Turbo Time", when time is reserved for uninterrupted work.

All personnel have access to comprehensive occupational healthcare services at Suomen Terveystalo. We also have two mental health support services at our disposal: Mielen Chatti 24/7 and the digital Mielen Sparri. Short-term psychotherapy will be offered with a referral from an occupational healthcare physician.

In principle, development discussions are held with all employees at least once a year. Annual performance discussions will also

> Our supervisory work scores highly: in the personnel satisfaction survey, it received a score of 4 (on a scale of 1-5).

Results of the supervisor index



usually be held with those who fall within the scope of personal remuneration. We encourage supervisors to have regular one-on-one conversations with their employees, and to run through their tasks and any issues relating to job satisfaction and wellbeing.

Sickness absences low, occupational health and safety successful

Sickness absences were down on the previous year and stood at 2.8 (3.4) per cent in 2021. The number of sick days totalled 1,144 fewer days than in 2020. 53 per cent of personnel did not have any sickness absences, and most sickness absences lasted less than ten days. 22 per cent of sickness absences lasted 11–30 days and 21 per cent lasted 91–365 days. There were no work-related coronavirus cases in 2021. All of our personnel have access to the same extensive occupational healthcare services.

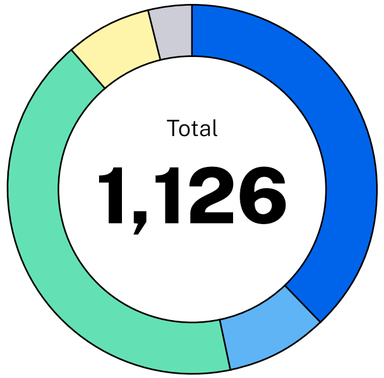
Fintraffic's occupational health and safety efforts focused on safe and healthy working conditions, a safe and healthy working environment, and measures to maintain employees' mental and physical working capacity. Due to the exceptional circumstances, proactive occupational health and safety activities focused on managing the pandemic through unit-specific measures and the effective implementation of the Group's coronavirus guidelines. Three work-related accidents occurred at Fintraffic in 2021 (LTI1). These accidents involved minor stumbles and slips.

Collective agreements will mainly be up for renewal in 2022.

Different subsidiaries comply with different collective agreements. A new collective agreement for air traffic controllers came into force on 19 May 2021. Negotiations on a collective agreement for aeronautical technical personnel were underway as this report was being written. Negotiations on other collective agreements will begin in 2022 once the current contractual terms have ended.

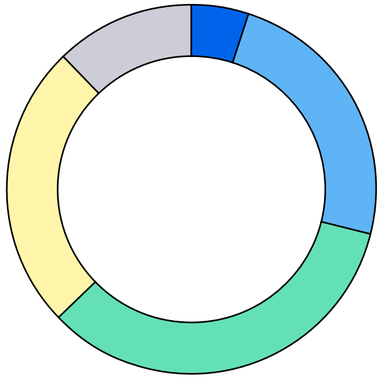
In quantitative terms, most of our personnel are covered by the Collective Agreement for Customer Service, Traffic Management and Control and Administrative and Other Office Work (10 March 2020–28 February 2022). The second largest number of personnel are covered by the collective agreement for air traffic controllers at Fintraffic Air Navigation Services Ltd (19 May 2021–30 April 2024). The majority of personnel at Fintraffic Road Ltd and Fintraffic Vessel Traffic Services Ltd are covered by the collective agreement for Fintraffic Road and Vessel Traffic Services (6 November 2020–28 February 2022). The other collective agreements used at Fintraffic are: the

Personnel by business area



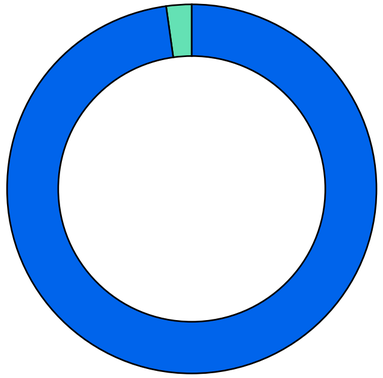
- Air navigation services, 427
- Vessel traffic services, 101
- Rail traffic management, 470
- Road traffic management, 87
- Parent company, 41

Age distribution of personnel



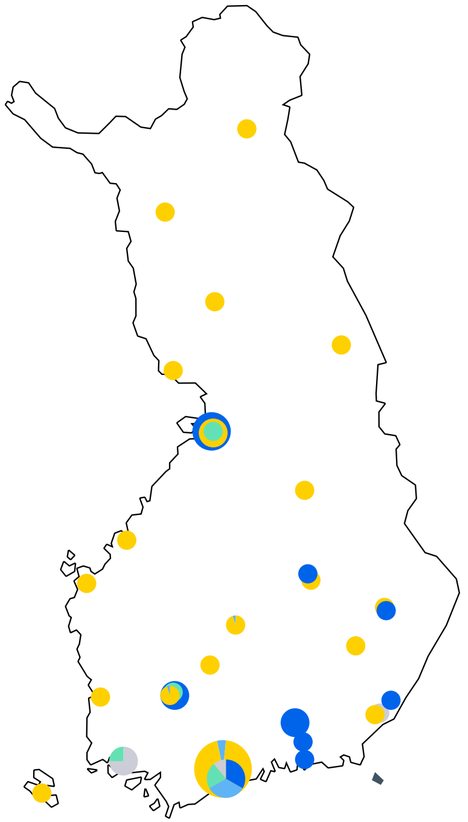
- Under 30, 5%
- 30–39, 24%
- 40–49, 34%
- 50–59, 25%
- Over 60, 12%

Personnel by type of employment contract



- Permanent, 98%
- Fixed-term, 2%

Geographical distribution



- Common services
- Air navigation services
- Vessel traffic services
- Rail traffic management
- Road traffic management

collective agreement for aeronautical technical personnel and the collective agreement for the railway industry (1 April 2021–28 February 2022).

Respect for equality and values

Management and supervisors play a key role in ensuring non-discrimination and equal treatment for all personnel. Supervisors must intervene more firmly in inappropriate behaviour and activities that are contrary to our values, and are receiving coaching in this.

Every employee has the right to give feedback on actions and behaviour that are contrary to our values and vice versa: in November 2021, we launched a campaign called “Thank your colleague for adhering to our values”.

The percentage of men and women in fixed-term positions has balanced out, and the number of women in supervisory and managerial positions has grown. A more even gender balance has been achieved in the Group Management Team, in our subsidiaries’ Boards of Directors, and among the CEOs of our subsidiaries. The age structure of the Group Management Team is also balanced.

Fintraffic’s whistleblowing channel allows people to make anonymous reports of suspected criminal offences, violations and misconduct, or breaches of our Code of

Conduct. Six reports were made in 2021. No evidence of the alleged wrongdoing was found during investigation of these cases.

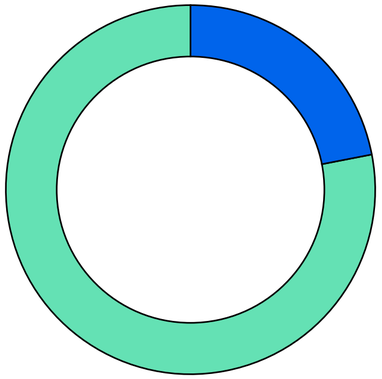
Following guidelines in exceptional circumstances

We drew up extensive hybrid working guidelines and conducted three internal surveys of how people were coping with the exceptional circumstances. According to the results, personnel feel they have received increased support during the pandemic, which indicates success in our supervisory work.

Remote working has been an option for about a quarter of our personnel, and the survey indicates that it has become more popular during the pandemic. Only one per cent of non-operative personnel would now like to work in the office alone. In the latest survey, 30 per cent of respondents would like to work remotely all the time, compared to 19 per cent a year earlier. In 2021, we took insurance for remote workers to cover accidents during breaks and meal times.

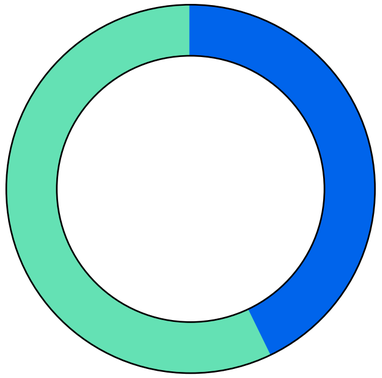
Yet in addition to enjoying the benefits of working from home, people have also suffered with ergonomic issues and difficulty in taking breaks. However, the overall stress experienced by employees has decreased slightly during the follow-up period, and both employees and supervisors feel that efficiency has increased.

Proportion of men and women in the Group



Women, 22%
Men, 78%

Proportion of men and women on Boards of Directors and in management teams



Women, 43%
Men, 57%

Proactive strategic HR work continues

In 2022, we will continue to provide wellbeing services and training, and promote equality at work. One of our goals is to apply for a Hyvän mielen työpaikka (Mental Health Friendly Workplace) certificate, which is issued by MIELI Mental Health Finland to companies that support mental health in the workplace. We also intend to conduct a TyöOptimi work stress survey.

Maintaining a consistent and high standard of managerial and supervisory work is one of our strategic targets. Personnel have become more resilient, more flexible and more prepared for change. All personnel adhere to our values, and any exceptions are addressed. Fintraffic has a strong, unified corporate culture that encourages employees to do their best every day.

Comments from mentoring programme participants:

"It's great that they've managed to find such a like-minded mentor for me! We were on the same wavelength from the outset, which has made it easier to create a mentoring relationship and helped us to open up both our hearts and minds. It's important to find someone that you can talk to confidentially about things that would otherwise just go round and round in your head."

"My mentor and I hit it off from day one. My mentor is great – they know exactly what to say and give the best tips. I've also enjoyed listening to their career adventures. My mentor has also been able to give advice and answer every single question I've asked."

"When you have a discussion with someone, it helps you clarify your own thoughts."

"I've really enjoyed our brainstorming sessions and flying thoughts, as well as the chance to share experiences and get things off my chest. I've received good high-level ideas and tips for my own work and life in general."

Case

Personnel do meaningful work

The autumn 2021 personnel satisfaction survey gave Fintraffic good grades as a workplace. The response rate also attested to this: 77 per cent of employees responded to the survey (66% in 2020).

According to the results, 80 per cent of our employees feel they are doing meaningful work. They gave their colleagues' behaviour a score of 3.9 (4.0) and the workplace atmosphere 3.7 (3.8). When assessing different aspects of the workplace atmosphere, 'effective cooperation with colleagues' was ranked highest and remained at the same level as in 2020. The index for 'success in important areas' was 3.6, as in the previous year.

Fintraffic's supervisory work received an overall rating of 4.0 (4.0) on a scale of one to five. The supervisory work index increased considerably at three companies: the parent company, which scored no less than 4.4 (4.2), Fintraffic Road with 4.0 (3.8) and Fintraffic Vessel Traffic Services with 3.9 (3.6).

These supervisors received top marks for qualities such as 'is friendly and treats employees with respect' and 'is open and approachable'.

Supervisors in road traffic management were also particularly successful in areas such as providing feedback and thanking people for doing a good job. The parent company's supervisory work invested in promoting renewal and innovation, while supervisors in vessel traffic management were considered good at clearly communicating targets and tasks.

The supervisor index for Fintraffic Air Navigation Services fell slightly to 3.8 (3.9), but remained at a high level in rail traffic management 4.2 (4.2).

Personnel's opinion of how well survey results are utilised also improved: 62 per cent felt that the results of the survey have been successfully utilised.

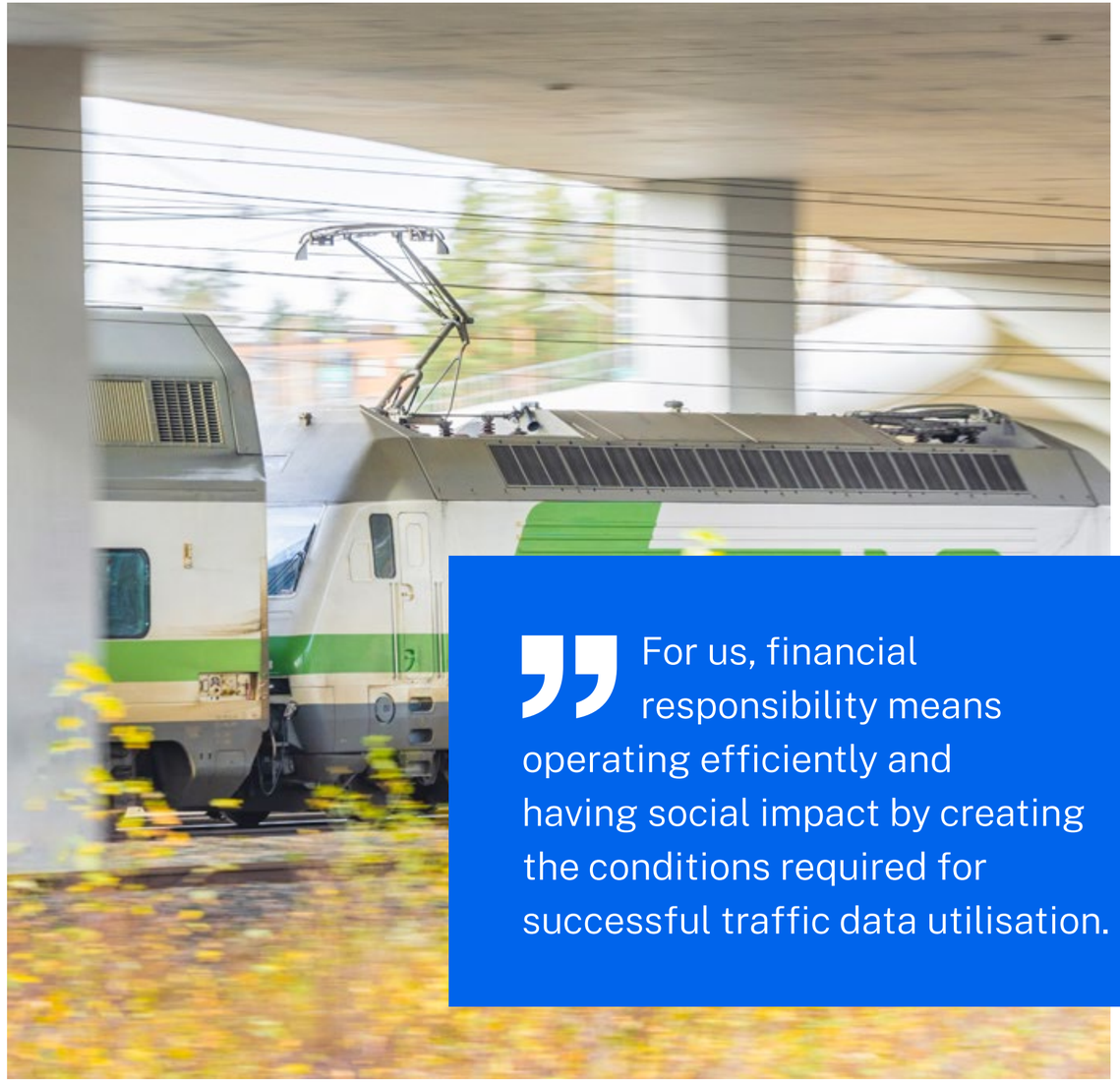
FINANCIAL RESPONSIBILITY

Efficiency that radiates into the community

Efficiency lies at the heart of Fintraffic's business, and the effects of our financial responsibility are reflected throughout society as a whole. As a special assignment company, our goal is to be moderately profitable and to maintain a stable balance sheet and use it wisely. We want to generate as much benefit as possible with the money at our disposal – for the transport system, people, companies and Finland as a whole.

For us, financial responsibility means operating efficiently and having social impact by creating the conditions required for successful traffic data utilisation. Our road, rail and maritime traffic management operations were stable in 2021. As in 2020, the coronavirus pandemic lowered demand for the company's air navigation services and reduced their profitability. The Group's revenue totalled EUR 209.7 (182.4) million and the operating result for the financial year was EUR 6.1 (-8.0) million.

In spite of weakened cash flow from air navigation operations, we were able to implement planned investments of around EUR 61 million with the aid of EUR 40 million in additional loans. Although indebtedness has increased, our balance sheet remains strong. In 2021, the largest individual investments in road traffic management were made in system development and the development and replacement of traffic control systems in the road network. In rail traffic management, the largest investments were the renewal



> For us, financial responsibility means operating efficiently and having social impact by creating the conditions required for successful traffic data utilisation.

> In 2022, we will continue to make goal-oriented strategic investments, and develop our services and service provision in cooperation with our key partners.

of the passenger information system and the development of analytics. The biggest investment in maritime traffic management was the replacement of the sensor network. In air navigation, the largest investment project in 2021 was a two-year project to upgrade our existing operative air navigation system, Top Sky. Our investments also included a business transaction with the Finnish Transport Infrastructure Agency at the turn of the year: the transfer of EUR 26.3 million in traffic management assets that were incomplete when the company was incorporated. The largest of the transferred assets related to traffic management on the Lahti Southern Ring Road and the Hamina–Vaalimaa section of E18.

As in the previous year, the Group's result was impacted by a traffic risk mechanism based on EU air navigation legislation: a regulatory adjustment of about EUR 16.6 million was recorded as revenue for 2021, which significantly improved the profitability of our air navigation services. This business risk mechanism seeks to prevent any sharp fluctuations in traffic charges, taking into account airlines' ability to pay, and ensuring that air navigation providers are able to operate.

Strategic investments continue

Profitability in road, rail and maritime traffic was in line with our target for 2021: the result after financial items was about 5 per cent of revenue. Our strategic partner for these functions is the Finnish Transport Infrastructure Agency, which orders a major proportion of their services. Revenue from our service agreement with the Finnish Transport Infrastructure Agency rose by about EUR 10.8 million (8.2 per cent).

In 2022, we will continue to make goal-oriented strategic investments, and develop our services and service provision in cooperation with our key partners. Future investments will be made in improving safety, reliability and traffic flow, and also in ecosystem development and digitalisation.

The challenging situation in air navigation continues

We continued to adjust our operative air navigation services during the year, but also entered a regulatory adjustment under revenue. Although the book result for Fintraffic Air Navigation Services Ltd improved significantly as a result, it was still EUR -1.2 (-16.1) million. Without the official regulatory adjustment, which is based on

> The financial added value that we generate can be seen both directly in our own operations and indirectly through effects on our stakeholders' everyday lives.

future earnings expectations, the company's revenue would have been about 26.5 per cent less than reported, with an operating loss of EUR 17.8 million. The regulatory adjustment may be eliminated in the future as business recovers and revenue streams from airlines return to pre-pandemic levels.

Progress towards streamlining targets

One of the targets set when our company was incorporated was to improve the efficiency of service production in road, rail and maritime traffic management in particular. The goal was to achieve a cumulative efficiency improvement of EUR 30 million during the years 2019–2022, taking changing activity levels into account. In line with our strategic ownership policies, we are committed to continually improving our service level and boosting the efficiency of our traffic management service provision by developing our operations.

Achieving this target requires sensible and effective investments, service redesign, upgrades to service provision through the development of processes and harnessing of new technologies, and cost-effective operations that tender out procurement. This will enable us to promote the efficient use of tax revenue, the renewal of the Finnish transport system, and Finland's competitiveness.

During 2020–2021, we created a calculation model that will enable us to achieve our streamlining target as transparently as possible. According to the calculations, we had achieved EUR 25 million of our EUR 30 million target by the end of 2021. We expect to meet the target in full by the end of 2023.

Financial added value for stakeholders

As a state-owned special assignment company, it is important for us to promote an economically sustainable transport system in Finland. The best economic value and impact will be generated by ecological and efficient traffic control that promotes safety and improves traffic flow at transport system level.

In addition to its traffic management function, Fintraffic plays an important role in consolidating traffic data streams. In 2021, we took the first significant steps towards building a transport data ecosystem with our growing partner network. Although it is a small-scale activity for Fintraffic in monetary terms, it will provide significant opportunities for both companies in the sector and society as a whole to utilise traffic flow-related information and generate new business.

The financial added value that we generate can be seen both directly in our own operations and indirectly through effects on our stakeholders' everyday lives: when traffic data is available in one place, it is easier to create added-value services and promote effective traffic solutions. Our partners also benefit financially from our services: their operating models develop, accidents are prevented, and fuel costs are reduced with the aid of route optimisation and evolving logistics. Our projects often generate savings in the long term, as we safeguard our partners' business continuity. At the same time, we provide our partners with tools and efficiency models to help in the fight against climate change.

The data compiled by Fintraffic is quite widely used by various actors in society. Many operators would not necessarily be able to invest in obtaining data from a commercial provider, but Fintraffic enables even small startups to develop transport services.

The strategic partnership between our company and the Finnish Transport Infrastructure Agency in road, rail and maritime transport plays a great role in improving Finland's competitiveness in passenger and goods logistics. Cooperation with other authorities and private-sector transport operators is also important.

One of the key developments in recent years has been our enhanced cooperation with the Finnish Transport Infrastructure Agency. Service-specific cost monitoring had already been developed to support this, and in 2021 we made service-specific plans for the future and created concrete indicators for monitoring services. In the future, we will make longer-term plans with the Finnish Transport Infrastructure Agency on a service-by-service basis, which will make both parties' work more efficient and easier to prioritise.

Greatest risks and opportunities

Risk management has become an increasingly important aspect of our company's business. Ensuring operational efficiency and prioritising tasks within the limits of the State budget play a key role in managing financial risks.

Financial risk management has become even more important during the pandemic. In addition to safeguarding the health of our operative personnel, it has also been important to accurately scale air navigation services according to changing air traffic volumes. We plan our operations on a long-term basis, and forecast that our business will grow and our profitability will remain at the target level.

By developing our services and new business models, we will be able to expand our customer base and increase our impact at transport system level. The digitalisation of both society and the transport system will increase demand for our services over the coming years. Air navigation is subject to market changes, and flying may change decisively in the future. The coronavirus pandemic and increasing environmental awareness may permanently reduce people's desire to travel for business or leisure. However, other megatrends are taking things in the opposite direction, as increasing prosperity in emerging countries is also boosting air travel. New business opportunities in air navigation include lower airspace management, drone traffic, and tenders for air navigation services in Europe.

One structural risk in air navigation is that we provide the authorities with services for which we do not receive any payment. The pandemic has exacerbated this risk. Fintraffic Air Navigation Services Ltd is currently obliged to provide the State with services and include the costs of their provision in en route charges. These services include Aeronautical Information Circular, airspace management, air rescue services, and services for the State's aviation operations at combined civil and military airports. Fintraffic's objective is for the State to purchase any services required by the authorities in order to cover the costs of providing those services.

> Fintraffic's goal is to be a good corporate citizen.

The rise in Fintraffic's indebtedness is moderate, but still increases our financial risks, which we have been managing by revising our financial policy in 2021 and keeping it constantly up to date. We have acquired loans from several financial institutions in order to finance our operations. This loan portfolio has been diversified over time, and the current agreements also enable additional financing for new projects. We also have appropriate interest derivatives to hedge against interest rate risks.

The development and expansion of our rail, road and maritime traffic management services – and thereby their impact at transport system level – is limited by the maximum amount allocated to the Finnish Transport Infrastructure Agency in the State budget to purchase traffic management services. In 2022, we will continue our discussions with the Ministry of Transport and Communications and the Finnish Transport Infrastructure Agency in order to find a way of financing service orders that ensures the achievement of the strategic objectives set by the Ministry of Transport and Communications for Fintraffic and the Finnish Transport Infrastructure Agency, and also covers the necessary investments and their resulting

> The digitalisation of both society and the transport system will increase demand for our services over the coming years.

depreciation. Our common goal is to reach a situation in which we are able to flexibly and effectively plan our operations in both the short and long term.

Unless the company can be assured of stable income, it may be forced to reassess its strategic targets, scale back development programmes, take adjustment measures, and lower its target levels for safety, smoothness or cost-effectiveness in traffic management.

Tax practices unchanged

There were no significant changes in taxation practices in 2021. Fintraffic aims to be a good corporate citizen: we comply with current legislation on the payment, collection, settlement and reporting of taxes and charges. All of the Group companies are Finnish and almost all taxes are paid and registered in Finland. Tax practices are the responsibility of the CFO.

Fintraffic has no branches in other countries. Fintraffic does not pay or register taxes in any tax havens (as defined by the OECD) and has not received any financial support from such countries. In 2021, Fintraffic's total tax footprint was EUR 39.2 (33.4) million. During the year, the company received public funding of EUR 9.1 million, of which EUR 3.2 million is related to Traficom's support for Finland's Eurocontrol membership fees. EUR 1.4 million in funding has been received to finance air navigation training. The company's stakeholders have not expressed their views on the company's taxation. The company acts carefully in accordance with legislation and regulations, including those governing taxation, and preliminary rulings are sought from the tax authorities as necessary.

Cash flows for stakeholders

Customers, MEUR	2021	2020
Revenue	209.7	182.4

Goods suppliers and service providers, MEUR	2021	2020
Purchases of materials and services	49.0	46.9
Other operating expenses	30.1	31.3
Investments	61.0	61.7
Total	**140.1**	**139.8**

Personnel, MEUR	2021	2020
Salaries and fees	75.4	72.0
Pension costs	13.0	11.5
Employee-related expenses	2.6	2.4
Total	**90.9**	**85.8**

Public sector, MEUR	2021	2020
Taxes (direct taxes)	0.4	1.0

Shareholders , MEUR	2021	2020
Dividends and returns of capital	0.0	0.0
Increase in shareholder value (profit for the financial year)	5.4	-9.4
Total	**5.4**	**-9.4**

Financiers, MEUR	2021	2020
Financial expenses (net)	0.4	0.4

Unlike the accrual based figures, investments are reported on cash basis.
Investments, of which 26.3 M € based on business transaction.

Taxes to be paid and accounted for

Key indicators for paying taxes, MEUR	2021	2020
Revenue	209.7	182.4
Profit before taxes	5.8	-8.4
Tax losses utilised	0.0	0.0
Personnel	1 126	1 125

Taxes payable and tax-like charges, MEUR	2021	2020
Income tax	0.0	0.0
Employer contributions	1.1	1.0
Transfer tax	0.0	-0.9
Other taxes and tax-like charges	0.6	0.7
Total payable	**1.7**	**0.7**

Taxes to be accounted for, MEUR	2021	2020
Payroll taxes	21.4	22.2
VAT, sales	77.0	67.1
VAT, purchases	-60.9	-56.6
Total taxes to be accounted for	**37.5**	**32.6**

The figures presented in the tax report have been collated from the Financial Statements of subsidiaries on an accrual basis.

GRI-Index

Fintraffic reports in accordance with the framework by Global Reporting Initiative (GRI) and adheres to the reporting standards. The reporting is based on materiality assessment on sustainability that was drawn up in 2020. The reporting period is 1 January to 31 December 2021. Fintraffic reports about its sustainability in accordance with GRI Core Standards.

Standard	Content	Location	Comment
GRI 102 GENERAL DISCLOSURES			
Organisational profile			
102-1	Name of the organisation	**Front cover**	
102-2	Activities, brands, products, and services	**p. 2**, **Business areas in brief p. 9**	
102-3	Location of headquarters	**Back cover**	
102-4	Location of operations	**p. 2**	
102-5	Ownership and legal form	**p. 2**, **Governance and Remuneration Report p. 4**	
102-6	Markets served	**p. 2**, **Business areas in brief p. 9**	
102-7	Scale of the organisation	**Key figures 2021 p. 8**, **Business areas in brief p. 9**	
102-8	Information on employees and other workers	**Successes fuels continued HR work pp. 71, 73–75**	
102-9	Supply chain	GRI Index	Fintraffic is a service company. Our main production factors are personnel, soft-ware and equipment, our control centres and open data. We provide traffic man-agement services, digital traffic services and information for our customers, stakeholders and end users. Fintraffic does not produce material products.
102-10	Significant changes to the organisation and its supply chain	**CEO's review pp. 5–7**	
102-11	Precautionary Principle or approach	GRI Index	Fintraffic applies the precautionary principle.
102-12	External initiatives	**Responsibility is an integral part of Fintraffic's core business pp. 54–55**	
102-13	Membership of associations	**Responsibility is an integral part of Fintraffic's core business pp. 54–55**	

Standard	Content	Location	Comment
Strategy			
102-14	Statement from senior decision-maker	CEO's Review pp. 5–7	
Ethics and integrity			
102-16	Values, principles, standards, and norms of behaviour	CEO's Review pp. 5–7 Operating environment and strategy pp. 16–18, Strategic programmes p. 19	
Governance			
102-18	Governance structure	Governance and Remuneration Report pp. 4–10	
102-19	Delegating authority	Governance and Remuneration Report pp. 4–10	
102-20	Executive-level responsibility for economic, environmental, and social topics	Governance and Remuneration Report pp. 4–10	
102-22	Composition of the highest governance body and its committees	Governance and Remuneration Report pp. 4–10	
102-23	Chair of the highest governance body	Governance and Remuneration Report pp. 4–10	
102-24	Nominating and selecting the highest governance body	Governance and Remuneration Report pp. 4–10	
102-26	Role of highest governance body in setting purpose, values, and strategy	Governance and Remuneration Report pp. 4–10	
102-28	Evaluating the highest governance body's performance	Governance and Remuneration Report pp. 4–10	
102-29	Identifying and managing economic, environmental, and social impacts	Governance and Remuneration Report p. 11, We shoulder responsibility for the environment p. 69	
102-30	Effectiveness of risk management processes	Governance and Remuneration Report p. 11	
102-31	Review of economic, environmental, and social topics	Governance and Remuneration Report p. 11	
102-35	Remuneration policies	Governance and Remuneration Report pp. 13–14, Remuneration report pp. 16-18, Further information about remuneration p. 19	
Stakeholder engagement			
102-40	List of stakeholder groups	An expert and transparent partner pp. 59–60	
102-41	Collective bargaining agreements	An expert and transparent partner pp. 59–60	
102-42	Identifying and selecting stakeholders	An expert and transparent partner pp. 59–60	
102-43	Approach to stakeholder engagement	An expert and transparent partner pp. 59–60	
102-44	Key topics and concerns raised	An expert and transparent partner pp. 59–60	

Standard	Content	Location	Comment
Reporting practice			
102-45	Entities included in the consolidated financial statements	**s. 2**	
102-46	Defining report content and topic Boundaries	GRI Index	
102-47	List of material topics	**Responsibility is an integral part of Fintraffic's core business pp. 54–55**	
102-48	Restatements of information	GRI Index	No changes in reported data.
102-49	Changes in reporting	GRI Index	No significant changes.
102-50	Reporting period	GRI Index	1 January 2021–31 December 2021
102-51	Date of most recent report	GRI Index	22/03/2021
102-52	Reporting cycle	GRI Index	Annually
102-53	Contact point for questions regarding the report	GRI Index	viestinta@fintraffic.fi
102-54	Claims of reporting in accordance with the GRI Standards	GRI Index	
102-55	GRI content index	GRI Index	
102-56	External assurance	GRI Index	The report has not been externally assured.
Management Approach			
103-1	Explanation of the material topic and its boundary	**Responsibility is an integral part of Fintraffic's core business pp. 54–55**	
103-2	The management approach and its components	**Responsibility is an integral part of Fintraffic's core business pp. 56–57**, **Multiple levels of safety p. 63**, **We shoulder responsibility for the environment pp. 66–67**, **69**, **Successes fuels continued HR work p. 72**, **Efficiency that radiates into the community pp. 78–79**	
103-3	Evaluation of the management approach	**Responsibility is an integral part of Fintraffic's core business pp. 56–57**	

Standard	Content	Location	Comment
LIST OF MATERIAL TOPICS			
GRI 200 ECONOMIC DISCLOSURES			
GRI 201: Economic Performance			
201-1	Direct economic value generated and distributed	**Efficiency that radiates into the community p. 82**	
201-2	Financial implications and other risks and opportunities due to climate change	**We shoulder responsibility for the environment p. 69**	
GRI 203: Indirect Economic Impacts			
203-2	Significant indirect economic impacts	**We have a broad impact: Fintraffic increases safety, reduces emissions and makes daily life smoother pp. 24–26**	
GRI 203: Indirect Economic Impacts			
205-2	Communication and training about anti-corruption policies and procedures	**Responsibility is an integral part of Fintraffic's core business p. 55**	Anti-corruption is included in Fintraffic's Code of Conduct.
205-3	Confirmed incidents of corruption and actions taken	GRI Index	No cases in 2021.
GRI 207: Tax			
207-1	Approach to tax	**Efficiency that radiates into the community pp. 81–82**	
207-2	Tax governance, control, and risk management	**Efficiency that radiates into the community pp. 81–82**	
207-3	Stakeholder engagement and management of concerns related to tax	**Efficiency that radiates into the community pp. 81–82**	
GRI 300 ENVIRONMENTAL DISCLOSURES			
GRI 302: Energy			
302-1	Energy consumption within the organisation	**We shoulder responsibility for the environment p. 68**	
GRI 305: Emissions			
305-1	Direct (Scope 1) GHG emissions	**We shoulder responsibility for the environment pp. 67–70**	
305-2	Energy indirect (Scope 2) GHG emissions	**We shoulder responsibility for the environment pp. 67–70**	
305-3	Other indirect (Scope 3) GHG emissions	**We shoulder responsibility for the environment pp. 67–70**	
305-5	Reduction of GHG emissions	**We shoulder responsibility for the environment pp. 67–70**	
GRI 307: Environmental compliance			
307-1	Non-compliance with environmental laws and regulations	GRI Index	No cases in 2021.

Standard	Content	Location	Comment
GRI 400 SOCIAL DISCLOSURES			
GRI 401: Työsuhteet			
401-1	New employee hires and employee turnover	**Successes fuels continued HR work p. 71**	
GRI 403: Occupational Health and Safety			
403-1	Occupational health and safety management system	**Multiple levels of safety p. 63**, **Successes fuels continued HR work p. 71**	
403-2	Hazard identification, risk assessment, and incident investigation	**Multiple levels of safety pp. 63–64**	
403-3	Occupational health services	**Successes fuels continued HR work p. 72**	
403-4	Worker participation, consultation, and communication on occupational health and safety	**Successes fuels continued HR work pp. 72–73**	
403-5	Worker training on occupational health and safety	**Multiple levels of safety p. 63**, **Successes fuels continued HR work pp. 72–73**, **75**	
403-6	Promotion of worker health	**Successes fuels continued HR work pp. 72–73**, **75**	
403-7	Prevention and mitigation of occupational health and safety impacts di-rectly linked by business relationships	**Successes fuels continued HR work pp. 72–73**, **75**	
403-8	Workers covered by an occupational health and safety management system	**Successes fuels continued HR work pp. 72–73**, **75**	
403-9	Work-related injuries	**Multiple levels of safety p. 63**, **Successes fuels continued HR work p. 73**	
GRI 404: Training and Education			
404-2	Programmes for upgrading employee skills and transition assistance programmes	**Successes fuels continued HR work p. 72**, **75**	
404-3	Percentage of employees receiving regular performance and career development reviews	**Successes fuels continued HR work pp. 72–73**	
GRI 405: Diversity and Equal Opportunity			
405-1	Diversity of governance bodies and employees	**Successes fuels continued HR work pp. 74–75**, **Governance and Remuneration Report pp. 3–4**	
GRI 416: Customer Health and Safety			
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	GRI Index	No cases in 2021.
GRI 419: Socioeconomic compliance			
419-1	Non-compliance with laws and regulations in the social and economic area	GRI Index	No cases in 2021.

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