ANNUAL REPORT 2018

ANS FINLAND

WE MANAGE THE AIR AND SPACE FOR YOU

Air Navigation Services Finland Ltd (ANS Finland) is responsible for managing the use of Finnish airspace as well as providing en-route and air navigation services at Finnish airports. In addition, the company has special tasks relating to air rescue, airspace management and area control. ANS Finland is a state-owned company operating under the ownership steering of the Ministry of Transport and Communications.

CONTENTS

KEY INDICATORS OF THE COMPANY

Revenue (EUR million)	**81.5**
Operating profit (EUR million)	**6.8**
Operating profit/revenue (%)	**8.4**
Capital expenditure (EUR million)	**2.1**
Return on equity (%)	**31.2**
Equity ratio (%)	**37.1**
Personnel on average (FTE)	**408**

MISSION

We manage the air and space for you

VISION

- We are the most competitive provider of air navigation services in Finland and the most preferred partner in Europe
- We have the world's most environmentally-friendly airspace

OUR VALUES

- Safety is the starting point of everything we do
- We fulfil our customer promise
- Skilled employees are our strength
- A well-functioning society and healthy environment are important to us

→ We are a reliable and punctual service provider

ANS Finland provides aerodrome control and approach control services for 22 airports.

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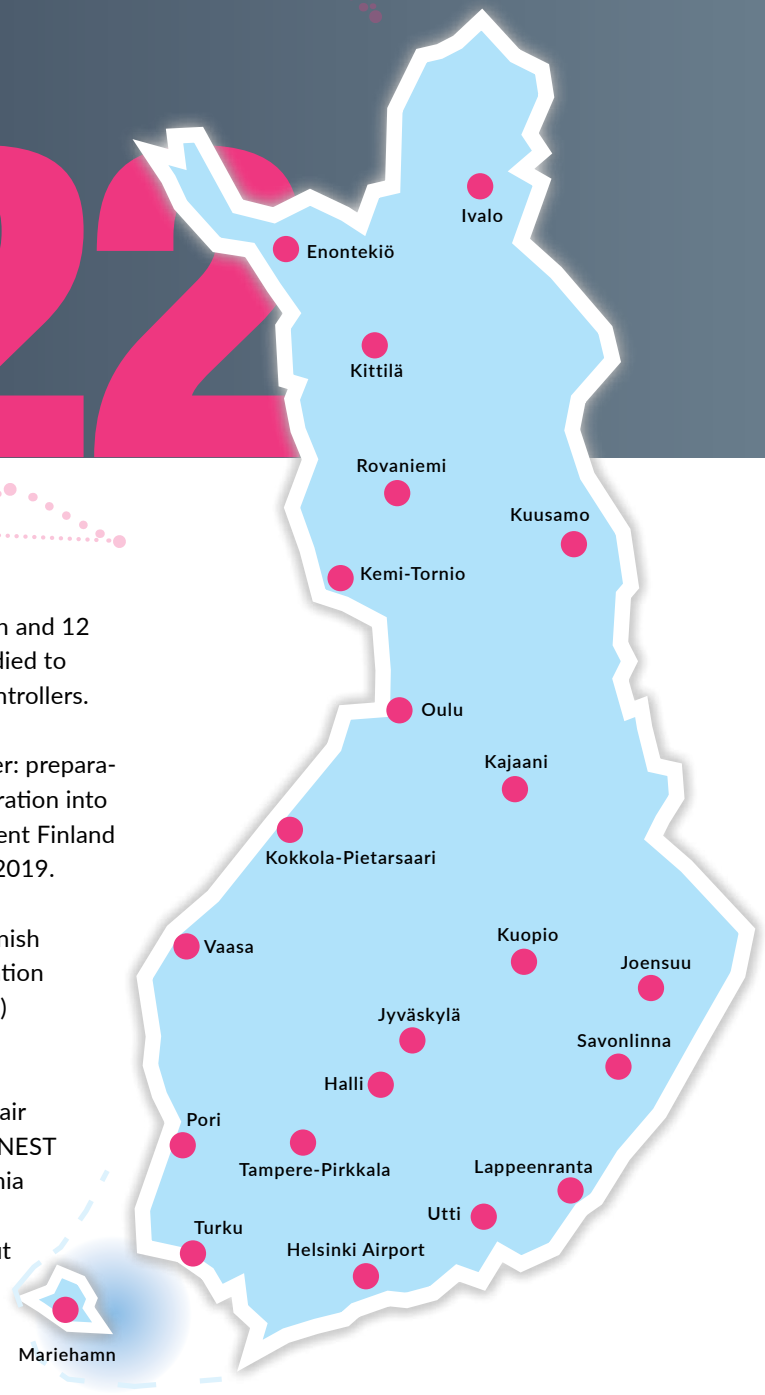


HIGHLIGHTS 2018

- Kittilä air traffic control deployed ATS control service, also known as the tower radar service, on 1 February.
- On 17 May, ANS Finland organised, together with Spanish Canard Drones and the software producer UTM, a drone test at Pori airport. The test's objective was to map out how flight measurements or parts of them can be done by using the latest technology and innovations.
- Operations at Air Traffic Control Centre Finland in Tampere finished on 1 June.
- The new ATSEP (Air Traffic Safety Electronic Person) training course on technical air navigation finished on June 29.
- September: the test phase of CPDLC data link connection, which improves aviation safety and releases radio frequency burden, was launched in Finland's area control. A similar data link connection between the air traffic controller and pilot is currently used across Europe.
- Autumn: a record number of students began their studies in Avia College. 7 Estonian, 6 Latvian, 12 Swedish and 12 Finnish students studied to become air traffic controllers.
- September-December: preparations for the incorporation into the Traffic Management Finland Group on 1 January 2019.
- October: FAIMS (Finnish Aeronautical Information Management System) project began.
- Planning of the joint air navigation system FINEST between EANS Estonia and ANS Finland continued throughout the year.

CEO'S REVIEW

RAINE LUOJUS

The first full operational year of ANS Finland went well in operational terms: we succeeded outstandingly in service production and achieved the objectives set to us, in terms of en-route services and Helsinki air traffic control services. Also at network airports, we were able to provide services in an excellent way.

Air navigation did not cause any delays in air traffic and there was only one flight cancellation due to air navigation operations. In this respect, ANS Finland stands out positively in European comparison.

OPERATIONS ON THE INCREASE

From the business point of view, the year 2018 was a successful year to ANS Finland. The number of flights processed was historically high. In addition, we actively marketed our service to airlines especially in China, to make them use the Finnish airspace more efficiently.

Due to heavily increasing traffic volumes we opened a new work station at Helsinki Airport and recruited new staff. We developed our area control organisation by centralising our activities at Helsinki Airport. As a result, operational activities in Tampere Aitovuori finished in the beginning of June. The transition has already resulted in savings in personnel costs and it will bring further significant savings in work station costs.

Throughout 2018, air traffic controllers were in a state of non-agreement as The Finnish Air Traffic Controllers' Association (SLJY) and The Service Sector Employers Palta could not find an agreement upon the collective agreement. Due to this, the SLJY members had a ban on overtime work and shift swapping since February 2018 and, at the end of the year, air traffic controllers started a work stoppage at specified times. Despite this situation, the provision of air navigation service could be secured as managers put in more than 500 shifts in air traffic control duties. They deserve special thanks for their flexibility.

EYE ON CLIMATE CHANGE

Focusing on safety is a key principle steering all ANS Finland operations. In the beginning of the year, there were two runway incidents at Helsinki Airport of which one was attributable to the air traffic control measures. These potentially hazardous situations, although there were no serious consequences, led to the introduction of new working methods and system alerts, and new safety recommendations were drawn up.

Climate change is already seen in Finland in the increase of extreme weather conditions and the consequent increase in air traffic regulation. To minimise disturbances, we have launched a project with McLaren and Deloitte, to improve the accuracy of air traffic regulation by the use of data.

Combatting climate change is more visible in different functions of society than ever before – also in air traffic. ANS Finland's objective is to be the most eco-efficient air navigation company in the world. Measured by the share of fuel-saving continuous descent operations (CDO) we are already number one among major European cities. We want to further develop our operations together with our airline customers and, as an example, new approach methods will be introduced in spring 2019.

TOWARDS NEW HORIZONS

Changes in the international operating environment of air navigation open us opportunities to compete on international markets. The downside of open competition is the possible competitive bidding of air traffic control services in Finland's network airports. Therefore, we have to maintain our competitiveness.

Also the EU requirements for improving the cost efficiency of air navigation obliges us to operational development. For the 5-year performance period starting in 2020, the EU Commission envisages a 1.9% annual efficiency improvement. ANS Finland has already made its operations more efficient for years. Taking that into account, the new Commission requirement would mean a further annual efficiency improvement of over 2% for altogether 13 years – these demands are unreasonable.

ANS Finland is a young company but we already have our eyes set on the future. Preparations to be incorporated into the Traffic Management Finland Group have required considerable input from our staff. ANS Finland has been actively involved in creating the novel concept. The Group started its operations on 1 January 2019. □

YEAR 2018 IN NUMBERS

Revenue (EUR million)

81.5

Operating profit/revenue (%)

8.4

266,361 flights processed by area air traffic control

730 flights processed per day on average

0 minutes of delays attributable to ANS Finland

447 employees at the end of the year

The number of overflights increased by **4.7** %

The traffic volume of Helsinki Airport increased by **10.3** %

TOWARDS THE NEW GROUP

The Finnish Parliament adopted the Government's proposal for a new traffic management group in June 2018.

Traffic Management Finland is a fully state-owned Group for traffic management. It comprises the parent company Traffic Management Finland Ltd and the following subsidiaries, by modes of traffic: Air Navigation Services Finland Ltd for aviation, Finrail Ltd for rail traffic, Vessel Traffic Services Finland Ltd for maritime traffic and Intelligent Traffic Management Finland Ltd for road traffic.

A project organisation for Traffic Management Finland was set up in the Group project's preparatory phases in August. It was steered by a working party with members from the Finnish Transport Infrastructure Agency, ANS Finland, Finrail and the Ministry of Transport and Communications. The final proposal for the management system and organisation of the new Group, along with its vision, were drawn up during the project preparation phase.

Approximately ten key staff members, led by CEO Raine Luojus, of ANS Finland were involved in the project preparations. This input was extensive, as some of the employees used as much as 50% of their working time for the Group preparations.

The Group aims to develop environmentally conscious traffic and create the best workplace in the country for traffic management professionals. Other objectives include improving traffic efficiency, safety and fluency, better use of data flows and enabling new services. A limited liability company type Traffic Management Group may, for example, use different financing models for its investments and is therefore not dependent on state budget funding only.

In the long-term, Traffic Management Finland aims at improved cost efficiency by joint support and steering services. In 2018, competitive bidding procedures were launched for many services of the future Group. In 2019, the Group takes over its subsidiaries' support services one service at a time. For ANS Finland this means, among other changes, that the amount of support services previously bought from Finavia will significantly decrease. □

FROM THE CHAIRMAN OF THE BOARD

PERTTI KORHONEN

"When I started as the Chairman of the ANS Finland Board of Directors in October 2017, the company had just detached itself from Finavia. It was great to see that the basics of running a company, for example management and finances, had been solidly built and the company was managed in a determined way. The basic operations of ANS Finland to guarantee safety, fluency and punctuality in air traffic were also well taken care of.

Coming from outside the sector, I was particularly impressed by the company's safety culture which helps the company to constantly develop its operations to a better direction. Safety is first priority in all operations. This has been visible also in Board's work: the safety report is always the first item on the agenda and we often use most of our meeting time in safety issues.

Another thing that caught my attention in 2018 was the commitment of ANS Finland staff. The fact that air traffic controllers were in a state of non-agreement throughout the entire year has required a lot of flexibility from the managers, to guarantee the fluency of air traffic. At the same time, managers working as air traffic controllers contribute to the further development of operations and safety aspects as well.

INCORPORATION INTO TRAFFIC MANAGEMENT FINLAND GROUP

In 2018, we started preparations to join the state-owned Traffic Management Finland Group which combines the country's traffic control of all traffic modes.

The establishment of a Group brings many benefits. Finland wants to be the forerunner in traffic services with an aim of benefitting from new technologies and processes. Another objective is to use the data resources from different traffic modes more efficiently and thereby enable companies to create new services and products based on open data.

The basis of the transition is the Ministry of Transport and Communications' vision on a comprehensive Transport Code, and the objective is to make traffic smoother, safer and more efficient. Also global megatrends, such as urbanisation and measures needed to combat climate change, contribute to this development.

TOWARDS SMOOTH TRAVEL CHAINS

The new Group's objective is to contribute to the development of smooth travel chains, to combine different modes of public transport, facilitate the movement of people and provide alternatives for private cars.

To a traveller, a smooth travel chain may mean, for example, receiving mobile suggestions for a combination of different traffic modes after putting in the application the starting point, destination and the desired arrival time. Smoothness also means easy payment of travel services. We will soon see smarter integration between the traffic modes.

Another consequence of different traffic modes operating in the same Group may be the use of road traffic cameras and meteorological systems in the hospitals' patient transports conducted by helicopters.

In a Group, different modes of traffic learn best practices from each other. ANS Finland has a lot to share to other Group companies in terms of safety practices, in particular. The safety systems and safety architecture of air traffic are the most developed of all traffic modes in the world, and ANS Finland represents the top of its sector on a global scale.

GOOD CONNECTIONS ARE VITAL

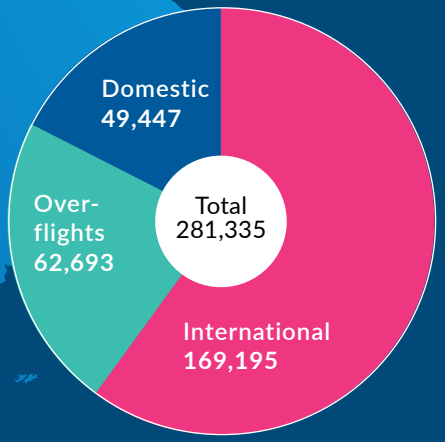
The world and its structures change, but certain basics remain. International air traffic is growing and Finland's geographical position is unbeatable, in terms of flights between Europe and Asia. Consequently, air traffic and the demand for ANS Finland's services may well grow in the future.

Good connections, both domestic and international, are vital to Finland. In long distances, air travel cannot be replaced by other traffic modes. Well-functioning logistic chains will be important also in the future, for both businesses and us Finns." □

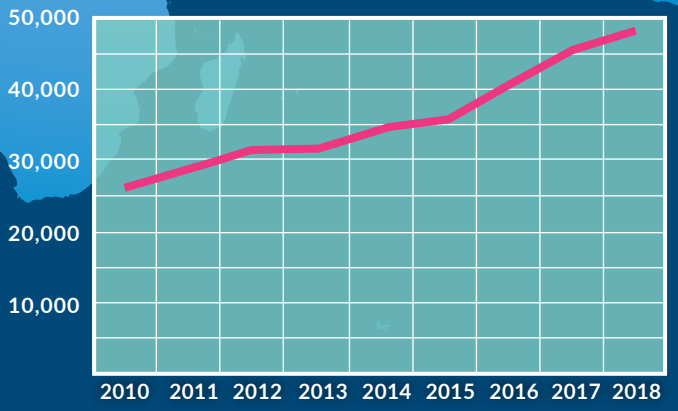
OPERATING ENVIRONMENT

IFR FLIGHTS IN THE FINNISH AIRSPACE BY SERVICES IN 2018

Includes Kvarken and Halti-Manto overflights.



OVERFLIGHTS CONTROLLED IN FINLAND 2002–2018



ANS Finland continuously develops the customer orientation of its operations so that it can serve airlines, the state of Finland's aviation and airport operators even better.

Air navigation operations are strongly regulated and ANS Finland's terms of licence come directly from the EU. This enables the company to offer air navigation services anywhere in Europe, if it so wishes. The sector is opening up to international competition and also ANS Finland prepares for this development. As the safety requirements are similar to all service providers, price becomes a decisive factor.

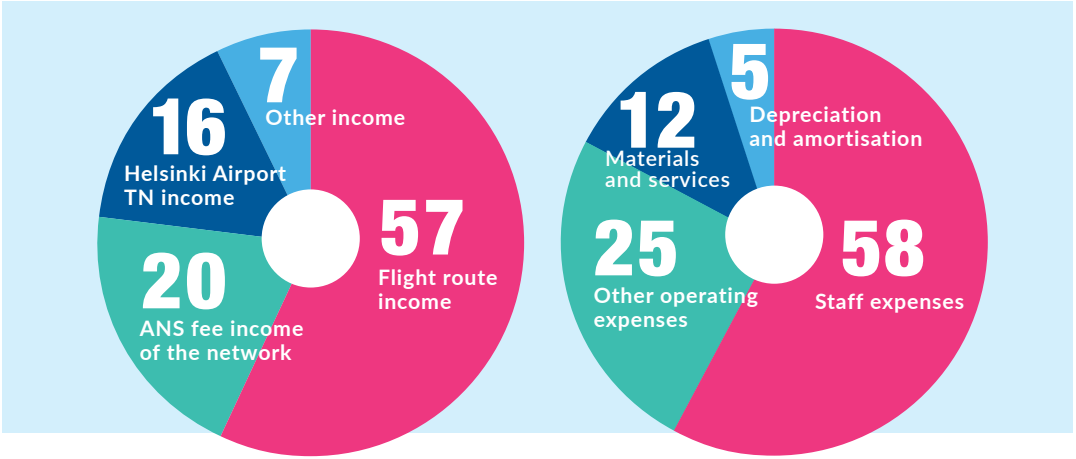
ANS Finland´s revenues are greatly dependent on airline customers and traffic volumes. Revenues accrue when airline customers use Helsinki Airport or fly over the country under the control of ANS Finland. The most significant airline customer, and thereby also ANS Finland's strategic partner, is Finnair. The companies regularly discuss ways of developing their cooperation.

ANS Finland also serves Finnish state aviation, as obligated by law. Contacts with the Finnish Air Force and the Border Guard are regular and aim at continuous improvement of operations. In 2018, ANS Finland launched a cooperation project with the Finnish Air Force to further enhance the usability of the Finnish airspace. Also Traficom, the Finnish Transport and Communications Agency since 1 January 2019, participates in the project.

A third significant customer is Finavia, the company managing Finnish airports. ANS Finland provides, on a contractual basis, both air traffic control services and technical services, such as system servicing, maintenance and flight measurements, for it. In addition to the airports managed by Finavia, these services are provided at Lappeenranta, Seinäjoki and Mikkeli airports.

ANS Finland also cooperates continuously with the Finnish authorities and contributes to international development by taking part in the activities of several organisations in the sector.

INCOME AND EXPENSES %



FINLAND'S LOCATION IS CENTRAL

With regard to overflights, the use of Finland's airspace is encouraged by the country's location and the FRA (Free Route Airspace) phased in since 2015. Key routes using Finland's airspace are between Asia and Europe, the Middle East and North America as well as Russia and North America. In particular, high growth potential is seen in flights between Asia and Europe. Growth is expected to continue on a fairly stable path although various natural phenomena, changes in political situations and fuel prices affect the airlines' routing decisions. ANS Finland continuously aims at increasing the number of overflights in the Finnish airspace as this makes the company's operations more efficient, reduces the unit price and increases revenues.

ANS Finland aims, together with other service providers of different countries, at developing the airspace and flight routes to serve the airlines better. The company has marketed the benefits brought by the free route airspace both through active sales work targeted at airlines and by attending international cooperation and marketing events. Meetings have been arranged with major European and Asian airlines, among others.

Marketing arguments have emphasized, for example, how flying via Finland is low-cost and safe, and how flight operations can be optimised to minimise emissions into the atmosphere. In the free route airspace, the airline can always choose the route in day-to-day flight planning according to the conditions best serving the airline, taking into consideration weather, cost and crew use optimisation. This way, airline customers can save costs while taking environmental aspects into account.

The sales work has provided results in the increasing number of overflights. New airlines to fly over Finland include China Southern Airlines, Cathay Pacific ja Asiana Airlines. Along with Asian airlines, also several European airlines have updated their flight routes to increasingly use Finland's airspace.

DEVELOPING NEW PRODUCTS

With technological and regulatory development, the operating environment of air navigation is evolving rapidly. In addition to the existing service offering, ANS Finland innovates new products. The company actively monitors the development and takes part in Finnish and international development projects. Now that the different traffic modes are incorporated into the TMF Group, the subsidiaries' data resources can be combined to develop new services.

AVIA TRACKER

The Avia Tracker training and qualification management system is used for managing the trainings of the personnel and qualifications of air traffic controllers and flight information service officers, their validity and continuity. In addition, the system tracks operational hours so that they are adequate for the validity of the

DRONES BECOME MORE COMMON AND BRING NEW CHALLENGES

Unmanned, remote-controlled aerial vehicles and model aircraft, i.e. drones, develop fast and become more common at a rapid rate. Therefore, it is important to find solutions to a flexible and safe coordination between traditional and unmanned aviation.

The European Commission wants to enable drone business and Traficom is tasked to create the regulatory conditions for this business in Finland. Traficom's updated drone regulation entered into force on 7 December 2018. The fundamental change compared to the previous regulation was the reduction of airport safety distances which released an important volume of airspace from the agreement procedure.

Unmanned aviation can take place in a controlled or uncontrolled airspace. Traficom tried, by revising the regulation, to cut the burden of

qualifications. Avia Tracker is also offered to other companies with similar needs for tracking the qualifications of their personnel.

AVIA CONSULTING

For ANS Finland, taking safety aspects into consideration is an integral part of day-to-day operations, and the company has accumulated a lot of competence capital on it in recent decades. The company has productised this expertise into the Avia Consulting services for its customers to use. With the application, the users can see what is happening in the airspace and how the airspace can be used. This platform could be utilised by pilots, airspace enthusiasts and other users in their own business. Users could also develop entirely new business with the opportunities provided by the platform.

ANS Finland has also accumulated a lot of experience and professional skill in airspace planning and in particular safety management tasks. The expertise obtained from these special tasks can also be provided to other parties as commercial services. The services are particularly well suited for companies operating in maritime, road and railway traffic, which also face regulatory requirements for their operations. The services will be developed further into a commercial product that will also be marketed to foreign customers. □

air navigation services in terms of unmanned aviation, without compromising safety. Despite the new regulation, compliance with the agreement is still required whenever flying is planned to take place within the airport-specific safety zones.

Agreements are made between the flyer and air traffic control. Finnish airports are very different from one another in terms of traffic volumes and proximity of settlements. Local air traffic control selects the best suitable contracting model in terms of local conditions. Drone flyers or other practitioners of unmanned aviation always have the obligation to give way to manned aircraft.

ANS Finland wants to support new businesses based on the use of drones by providing platforms and creating operational preconditions with which unmanned aerial vehicles can be better integrated into other air traffic. The company develops its own airspace management application in order to manage drone traffic in a safe and flexible way.

ANS Finland participates in the international SESAR project with the objective of testing unmanned aviation in the Finnish and Estonian airspace. The project focuses on, in accordance with the European U-space strategy, the lower level airspace operations. It also tests how, for example, drone taxi flights could be operated from the Helsinki Airport area. The GOF U-space joint undertaking, launched in 2018, focuses on the Gulf of Finland where the UTM (Unmanned Traffic Management) systems' functionalities and data sharing are tested. The project involves authorities, several aviation sector service providers and industry representatives from Finland and Estonia.

ANS Finland is currently also examining the possibility of using drones in flight measurements of precision approach equipment at airports. Their use would considerably improve the measurements' cost-efficiency. In 2018 ANS Finland organised, together with Spanish Canard Drones and the UTM software developer Unifly, a drone test at Pori Airport. The test measured the precision approach equipment of Pori Airport and the Canard Drones drone, by using PAPI lights. The air traffic control monitored in real time the drone used in the measurement and its flight by using the Unifly UTM software. □

INTERNATIONALISATION CONTINUED

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The significance of international cooperation in the field of air navigation is important, on a global scale. The objective of the European Union is to create a functionally uniform airspace in Europe.

Finland adheres to the regulations of the International Civil Aviation Organization (ICAO). ANS Finland takes them into account in all its operations. The Finnish Transport and Communications Agency Traficom monitors the compliance with the regulations.

In 2018, the high level ICAO Air Navigation Conference updated the basic guidelines for the Global Air Navigation Plan (GANP) and the Global Air Navigation Safety Plan (GASP). Changes in the operating environment, caused by unmanned aircraft, near space traffic and cyber security requirements, among others, have to be taken into account in all operations. The European action plan (ATM Master Plan) will be finalised under the leadership of the EU.

EU OBJECTIVES DEFINE OPERATIONS

Single European Sky (SES) is a project of the European Union. It aims at harmonising the practices of different member states. SES is based on binding EU regulations on the uniform implementation of measures, and the rules complementing them. For example, the Free Route Airspace already in use in Finland benefits both airlines and aviators, allowing them to choose the flight route of their choice.

PHOTOS: EUROCONTROL

EU confirms the service charges of air navigation and sets performance targets to service providers in four key areas:

- safety management systems have to meet the set criteria
- air traffic delays must remain within set limits
- flight routes have to be as short and unrestricted as possible
- costs must remain below the set maximum level

The follow-up period of the present EU performance targets finishes in 2019. The principles for the next reference period 2020–2024 were agreed in 2018. On the basis of the EU-wide performance targets the member states set national targets on performance and charges regulation. The Ministry of Traffic and Communications and Traficom prepare the targets for ANS Finland during 2019.

ANS Finland is involved in many EU development projects which are funded by CEF ▷

PHOTOS: EUROCONTROL

(Connecting Europe Facility). According to an agreement of December 2018, ANS Finland participates in the Public Key Infrastructure and Governance report on the reliable use of air navigation data networks.

NEFAB FUNCTIONAL AIRSPACE BLOCK

Finland is part of the North European Functional Airspace Block (NEFAB) together with Latvia, Norway and Estonia. NEFAB is one of nine European Functional Airspace Blocks which have been established within the SES project. States and service providers, including ANS Finland, cooperate in the airspace blocks to develop their operations.

FINEST project between ANS Finland and the Estonian air navigation service provider EANS is underway. It aims at creating a joint air traffic control system in 2020–2022 in which both service providers could provide services to the other party.

NETWORK MANAGER FUNCTION

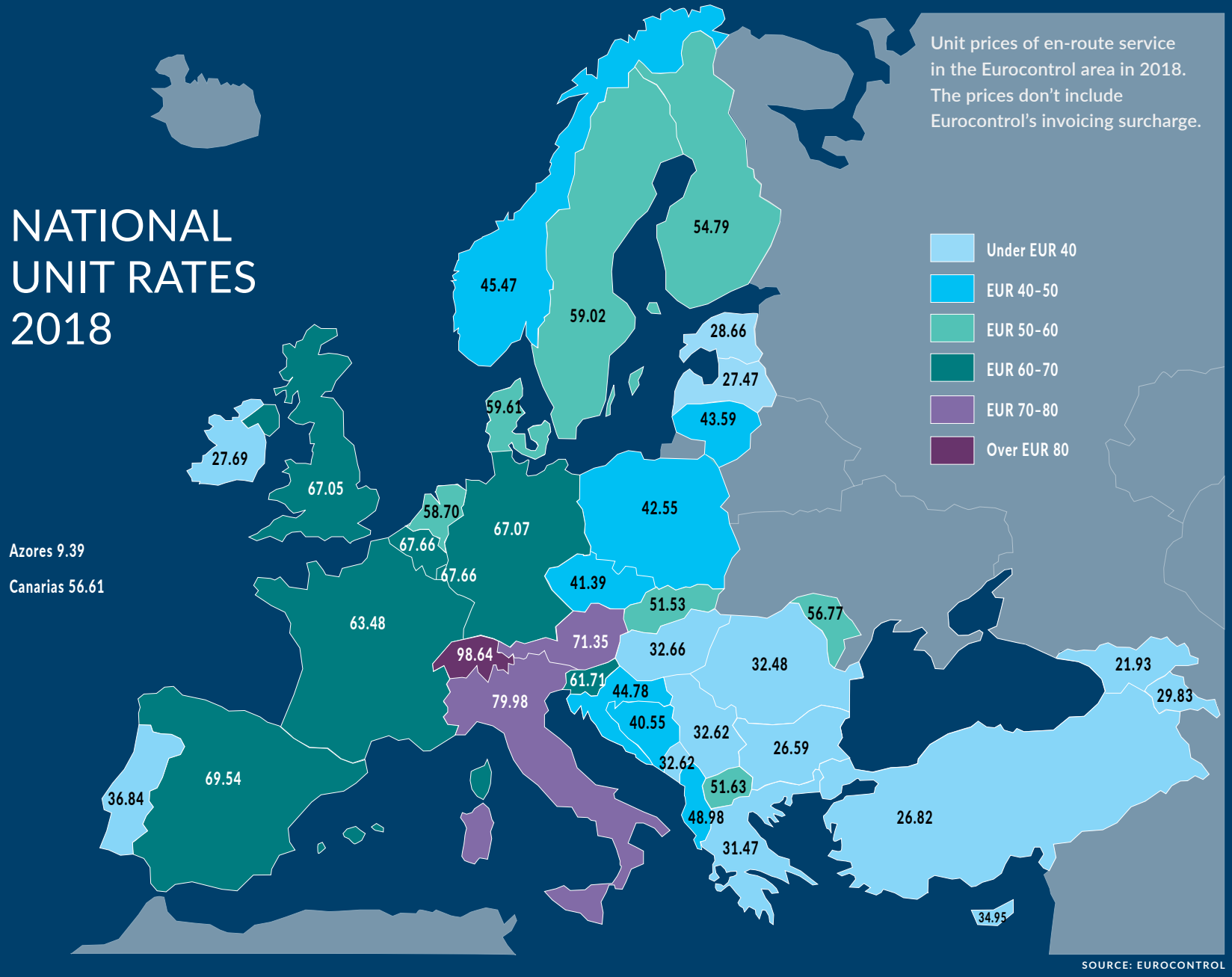
The EU has appointed Eurocontrol as the air traffic Network Manager in Europe. The importance of Network Manager function is estimated to grow in the future as, with the increasing air traffic volumes, data sharing and coordination between different parties become more important to guarantee delay-free air traffic. Against this background, also ANS Finland develops its systems to improve the electronic data sharing with Eurocontrol. ANS Finland represents NEFAB in the Network Manager Management Group.

OTHER COOPERATION

ANS Finland is a member, with nine other air navigation service providers, in the Borealis Alliance consortium. The consortium members jointly implement, for example, the Free Route Airspace with the same principles as already in use in Finland.

ANS Finland is also an active member in the Civil Air Navigation Services Organization CANSO. It aims at enhancing the operational conditions of air navigation service providers and to have an influence on the regulations thereof. At the moment, ANS Finland's CEO acts as the vice president of the CANSO European Region Management Group. □

NATIONAL UNIT RATES 2018



SOURCE: EUROCONTROL

FINLAND'S AIR TRAFFIC CONTROL CENTRE AND HELSINKI AIR TRAFFIC CONTROL

ANS Finland is responsible for the Finnish airspace management and the en-route services and air navigation services at the Finnish airports. In aerodrome control and approach control services, the majority of the equipment and systems are owned by Finavia, and ANS Finland is their primary user. This sets its own challenges for the development of operations and technology. ANS Finland discusses related investment agreements with Finavia.

In 2018, ANS Finland reached an agreement with Finavia on the remote tower study project. In 2019, final simulations of the project will be carried out and the final decisions on the implementation model taken.

The operations of ANS Finland are subject to international qualitative requirements and objectives. The SES Regulation sets objectives for Finland's air navigation regarding delays, efficiency and pricing. The FASP objectives set by Traficom are also derived from the same Regulation, and they concern delays, pricing and safety. In 2018, there was one severe runway incursion at Helsinki Airport but otherwise all objectives were met.

DEMAND FOR AIR NAVIGATION SERVICES INCREASED AGAIN

Air traffic volumes are growing. For example, the traffic volume of Helsinki Airport increased by approximately 10.3% in 2018 and the volume of overflights increased by 4.7% year-on-year. Due to growing traffic volumes at Helsinki Airport, ANS Finland opened a new ATC work station to ease traffic congestion. The target for 2019 is to further improve the co-operation between aerodrome control and approach control services. New shared premises will facilitate achieving this target. In the beginning of 2019, new approach techniques will also be introduced.

Throughout the 2018, ANS Finland and air traffic controllers were in a state of non-agreement, despite continuous negotiations. However, despite the state of non-agreement there was no traffic regulation attributable to the personnel as the managers worked the necessary shifts during work stoppages. The year 2018 ended by the announcement of air traffic controllers to launch further industrial action.

CLIMATE CHANGE BRINGS NEW CHALLENGES

Also climate change presents new challenges for ANS Finland's operations. In summer 2018, Europe experienced the longest flight delays for 20 years due to insufficient air traffic control capacity and accelerating climate change, manifested in extreme weather conditions. Due to weather conditions, air traffic may have to circle a certain geographical area or traffic restrictions may have to be set. To better forecast weather-related phenomena, ANS Finland launched the Performance Optimizer project in 2018, to improve the accuracy of needed regulation.

RESPONDING TO GROWING PASSENGER FLOWS

To facilitate growth in traffic volumes, a considerable investment programme is underway at Helsinki Airport. ANS Finland cooperates with Finavia in the Helsinki Airport development coordination group. ANS Finland's task is to ensure that construction or overhaul work will not interfere with the airport's operational air navigation.

There are currently three–four peak hours at Helsinki Airport, at other times the traffic volume is clearly lower. The challenges of increasing passenger volumes are related to whether the peak in the demand for air navigation services can be distributed over a longer period or whether the infrastructure and techniques will be built for even higher demand during a short part of the day. There are continuous talks on this with ANS Finland's airline customers. ANS Finland aims to respond to the needs of the customers' business in cooperation with Finavia, and create opportunities for business growth. □

AIR TRAFFIC CONTROL CENTRE FINLAND INCLUDES:

AREA CONTROL

Area control manages the entire Finland's Flight Information Region (EFIN). Area control centre service is provided from 13 sectors, managed from 1–5 air traffic control work stations, depending on the traffic situation. In the beginning of 2018, area control services were provided also in Tampere but since 1 June 2018, the only area control centre is located in Helsinki. In 2018, the area control centre processed 266,361 flights, of which 47,719 were overflights. The average number of flights managed per day is 730.

HELSINKI AIRPORT AIR TRAFFIC CONTROL

Air traffic control at Helsinki Airport includes both aerodrome and approach control. In 2018, Helsinki Airport had 194,122 operations. The average number of operations per day is 532. The hourly maximum operation volumes at Helsinki Airport are 48 arriving and 42 departing aircraft per hour, however without exceeding the total hourly limit of 80 operations.

Aerodrome control (TWR)

Aerodrome control is also referred to as "Tower". It manages air traffic in the controlled traffic region (CTR) of the airport, extending approximately 15 kilometres from the airport. The Tower also manages aircraft taxiing on ground and using runways, as well as vehicles using the traffic area.

Approach control service (APP)

The approach control service is responsible for the terminal manoeuvring area (TMA), extending approximately 50–70 kilometres from the airport. The most important tool of approach control is the radar. Most air traffic controllers work both in the Tower and in approach control.

FINLAND'S FLIGHT PLANNING CENTRE

The FPC provides pilots with pre-flight information service throughout Finland, participates in the process of airspace management and keeps the data of air traffic control system up-to-date. In 2018, it processed 84,584 ATS messages and prepared 6,559 Finnish NOTAM messages.

AIRSPACE MANAGEMENT CELL

The Airspace Management Cell operating in conjunction with the area control centre coordinates daily airspace reservations.

FINLAND'S FLOW MANAGEMENT POSITION

The task of Finland's Flow Management Position is to regulate how much and where air traffic is permitted in case of military exercises, for example. Flow management is international co-operation.

FINLAND'S AIR RESCUE COORDINATION CENTRE

The Aviation Act prescribes Finland's Air Rescue Coordination Centre (ARCC Finland) to take care of aviation search and rescue services in Finland's Search and Rescue Region. This service refers to measures to assist aircraft in an emergency or accident and locate missing aircraft. In addition, the Air Rescue Coordination Centre provides contractual support services to safety authorities. The centre maintains 24-hour readiness for launching operations.

Every year, there are approximately 400 aviation search and rescue alerts, of which on average 5% are emergencies, 35% alarms and 60% uncertainty situations.

Centralised area control enhances efficiency

ANS Finland's operations in Tampere Aitovuori finished in 2018. As a result of the cooperation negotiations finished in February, ANS Finland decided to close its operations in Tampere on 1 June 2018. Since then, area control services have been provided only at Helsinki Airport.

Those who worked in planning functions or as air traffic controllers in Aitovuori moved to the Helsinki Airport ATCC. Technical staff moved to the ANS Finland premises at Tampere-Pirkkala Airport.

Increasing cost efficiency is an international target set to ANS Finland: Finland has to be able to cut the unit costs of air traffic control services in accordance with the EU requirements. In the performance period 2020–2024 (RP3) air navigation service providers should lower the unit costs of en-route services by 1.9% annually.

The objective of centralising air navigation services was to enhance the profitability of the business. Approximately EUR 2–3 million annual savings can be reached by increasing the efficiency of operations as a result of cuts in personnel, premises and data transfer costs. The services can also be provided more efficiently when the staff shares the same premises.

THE NETWORK'S ATS SERVICES AND OPERATIONAL PRODUCTION CONTROL

ATS Service is a common denominator for air traffic services which include flight information, alert, air traffic advice and air traffic control service.

The task of operational production control is to steer and develop the service production of ANS Finland. The objective is to harmonise strictly regulated air navigation working methods through guidelines and thereby guarantee a high-quality, consistent service to customers. The majority of operational production planning tasks are related to approvals, which are a continuous practice in the company. When a change is made in an equipment system or working methods, production control assesses its safety impacts and presents them to Traficom for approval. The training needs of staff are also assessed at the same time.

ANS Finland's long-term operational production planning tasks are the preparation of airspace reforms, participation in the projects of the EU deployment programme and preparation and follow-up of the EU's INEA funding applications, NEFAB and Borealis activities and participation in the international Network Manager forums which support operational work. □

OPERATIONAL PRODUCTION CONTROL STRATEGIC PROGRAMMES AND DEVELOPMENT PROJECTS IN 2018

FINEST PREPARATION WORK CONTINUED

The European Union's requirement for decreasing the costs of air traffic applies to all member states. As part of enhanced efficiency, ANS Finland and the Estonian air navigation service provider EANS have launched the FINEST programme.

The objective is to create an air navigation environment which enables dynamic provision of cross-border air navigation services. By this, any of the two control authorities can, where possible, provide services to the other party. The programme's implementation phase begins in 2019. The target for the CBS (cross border service) deployment is 2021–2022. ANS Finland also examines possibilities for a comparable cooperation with Finland's western neighbouring countries.

ROT (REMOTE OPERATING TOWERS) PREPARATION

Remote air traffic control towers aim to enhance the cost efficiency of air navigation services. Some of Finland's airports see little traffic, and ANS Finland is developing the Multi ROT operational concept in which a single air traffic controller is simultaneously responsible for air traffic control at several airports using remote connections. This model, planned to be ▷

deployed in the 2020s, is one way of keeping costs under control.

In 2018, ANS Finland agreed upon a joint remote tower study project with Finavia. In 2019, the project simulations will be carried out and the final decisions on the deployment model be taken.

DEPLOYMENT OF RADAR TOWER SERVICE IN KITTILÄ

In February 2018, Kittilä air traffic control deployed the ATS monitoring service, i.e. the radar tower service. The service facilitates air traffic control work and coordination with area control services. This will be reflected to our customers as reduced separation minima and increased capacity.

The deployment of the service was thoroughly prepared: in addition to the installment of systems and equipment and the approval by the authorities, all air traffic controllers of Kittilä were trained before the deployment of the monitoring service.

In addition to Kittilä, the radar tower service has been deployed at the network airports of Rovaniemi, Kuopio, Jyväskylä, Halli, Turku, Tampere-Pirkkala, Pori, Vaasa, Mariehamn and Oulu. The objective of ANS Finland is to increase the number of units providing ATS monitoring service.

ILMARI PROJECT

ANS Finland cooperated with the Finnish Meteorological Institute on launching a new aviation meteorological system. In the Ilmari project, ANS Finland personnel provide meteorological services as subcontractors using the Finnish Meteorological Institute's equipment.

EXCEPTIONAL SITUATIONS DRILLS

ANS Finland is obligated to prepare for exceptional situations. In 2018, instructions were drawn up for equipment malfunctions and back-up location procedure, and exercises on exceptional situations were carried out in all units. An agreement on exceptional situations has been concluded with the Finnish Air Force.

LARA AIRSPACE MANAGEMENT SYSTEM

Preparation of the deployment of the common European LARA airspace management system continued in 2018 in Finland as a pioneer project. The LARA deployment project continued in cooperation with the Finnish Air Force and it entered the test phase in the end of 2018. □

Updated version of the quality system of Aeronautical Information Services (AIS)

Air navigation obstacle statements

ANS Finland's statutory task is to provide air navigation obstacle statements to anyone setting up such obstacle, such as hoisting crane entrepreneurs, wind power plants, construction companies and energy and telecommunication service providers, on potential obstacles to aviation such as hoisting cranes, wind power turbines, power lines or telecommunications towers.

The number of air navigation obstacle statements varies annually and also in the longer term. Both energy policy decisions (wind power policy) and society's infrastructure building decisions have an impact on it.

In 2018, the number of air navigation obstacle permits remained stable compared to previous years. In the future, the number of permits applied for wind power plants probably rises, due to strong growth in the sector, whereas the number of permits applied for building purposes is likely to decrease due to forecasted slight slowing down in building activity, with the exception of Greater Helsinki Area.

Laser performances

At the request of laser user, ANS Finland assesses its impacts to the safety and fluency of air traffic and issues, in accordance with the assessment, restrictions and guidelines to both the laser user and the respective ATS unit.

Permissions to fly drones

The flying of remotely piloted aircraft is on the increase. On 7 December 2018, the Finnish Transport Safety Agency issued an aviation regulation OPS M1-32 on the use of remotely piloted aircraft and model aircraft in aviation.

The regulation OPS M1-32 restricts the flying of drones in vicinity of airports on the basis of limits based on distance and altitude. The limits of the aviation regulation are based on the safety zones of air navigation obstacles and by complying with them, drones should not be in the area which may risk the safety of an aircraft in approach, take-off or in aerodrome traffic circuit. During the operational hours of an ATS unit a deviation from the set limits may be allowed as the ATS have been instructed to guide the air traffic outside the coverage area of VLOS flying. □

Aeronautical Information Services (AIS) is responsible for the operations of international aeronautical information services in Finland. The task of the information services system is to guarantee the flow of essential information needed for the safe, regular and economical flow of international and domestic air traffic.

AIS updated its ISO 9001 quality certificate to the ISO 9001:2015 version. The AIS quality system was audited in March 2018. This time, the version update required more efforts in the AIS unit as, for example, the quality manual was completely revamped compared to the previous version. Also risks to the operational environment and processes were defined.

The certificates imply that the ICAO annex 15 quality assurance requirements are applied in the AIS unit. According to ICAO requirements, the quality control system has to cover all processing phases of aeronautical information from the reception of information to its sharing. The quality control system also includes requirements on the qualifications of AIS staff and traceability of the processed information. It also sets requirements to the suppliers of raw data as regards its inspection, coordination and accuracy. A certified quality control system is a precondition for the EAD database data maintenance as stated in the agreement concluded with Eurocontrol.

The updated certificate is issued by Lloyd's Register. The operations and quality assurance of ANS Finland are further developed in order to be able to audit the entire organisation on the basis of the ISO 9001 certificate in the future. □

TECHNICAL AIR NAVIGATION

Technical air navigation comprises equipment, systems and tools used in air traffic service. These include information and radar system located across the country as well as equipment used by aircraft for navigation and landing.

The most important task of technical air navigation is to maintain the equipment and systems so that operations are safe and efficient and comply with the agreed response times.

In part, safety is ensured by requiring ATSEP (Air Traffic Safety Electronics Personnel) qualification from everyone entitled to the technical maintenance of the systems. Obtaining it requires passing specified courses. The validity of this qualification is supervised. In 2018, five persons completed the ATSEP training.

The maintenance of equipment and systems takes place as specified in advance, and safety is ensured in many ways. Safety assessments are made of intended changes to air navigation systems, and they are approved by the authority (Traficom) before they can be implemented. Traficom also conducts its own safety assessment on the most significant changes. Annually, approximately 200 different technical amendments are made.

Technology develops continuously, and the employees' professional skills are kept up-to-date through training. Subcontractors are used in addition to ANS Finland's in-house personnel, and factory maintenance contracts have been concluded with the equipment suppliers for the most important systems.

In air navigation, safety is always the first priority. Therefore, the technology to be adopted must always be tried and tested in practice. According to the indicators in use, ANS Finland reached the 2018 safety targets.

Traficom audits the operations of technical air navigation on an annual basis and tackles the possible shortcomings when needed. In the 2018 audit, two minor process incidents were observed and they were immediately fixed.

ANS Finland is responsible, on a contractual basis, for civil aviation flight measurements in Estonia. To increase the competitiveness of flight measurement, technical air navigation has developed a remote measurement system. With it, both the measured instrument and the measurement system on board an aircraft can be operated by the same person. Some targeted and successful operational measurements were conducted with the system in autumn 2018. Its application will be expanded as soon as a nation-wide, wireless telecommunication system suitable for aircraft use is selected.

Technical investments will replace outdated technology and they help in responding to the new requirements coming from regulation. Investment needs are also assessed from the business point of view. ▷

MAJOR PROJECTS IN 2018

DATALINK

The test using phase of CPDLC (controller–pilot data link communications) was started in area control in September 2018, in cooperation between ANS Finland and Finnair. A similar data link connection is currently in use between the air traffic controller and pilot across Europe. In the beginning of December, also Finland brought the system improving aviation safety and releasing radio frequency burden into permanent use. The final deployment was implemented at the same time with the update of AIRAC (Aeronautical Information Regulation and Control) aviation handbook.

Data link connections aim at improving aviation safety by modern communication. The use of data link connections reduces the need for traditional radio traffic and releases busy ATC frequencies for other air traffic. In the reading back and understanding of data link clearance there are less misunderstandings than with traditional voice communication, even with standardised phraseology.

TOPSKY MAIN DATA MANAGEMENT SYSTEM

Updating the TopSky – main data management system – is a continuous investment in technical air navigation services. The 2018 update will further increase the efficiency of airspace use. Using state-of-the-art technology in air navigation can be concretely seen in straighter and faster flights, less fuel consumption and reduced emissions.

RADARS

Technical air navigation has launched a modernisation project on five radars, with an objective of enhancing technical performance including the modern Mode-S features. The project will be finalised by the end of 2020.

WAM SURVEILLANCE SYSTEM

WAM (Wide Area Multilateration) surveillance system is a nationwide civilian aircraft location monitoring system providing enhanced surveillance coverage, extending to ground level

Digitalisation continues

The development of technology, working environment and work-related requirements has brought new challenges into the world of work, which is currently being reshaped. Digitalisation has introduced new possibilities for a successful transformation. ANS Finland has started to renew the existing processes and to develop modern ways of work. The preliminary study on the digitalisation project of ANS Finland and the preparations for the procurement

if necessary. The preparations for the system, which will be implemented in four phases, continued in 2018. The first part will be completed in autumn 2019 and the entire system will be operational in 2020.

AVIATION RADIOS

All aviation radios used by Finnish area control, aerodrome control and approach control services were replaced in 2018. The project, comprising hundreds of radios, was completed according to the plan.

PENS NETWORK

ANS Finland has joined in the Pan-European Network Service (PENS) data traffic network. The network utilises IP technology, and it is intended for use by air navigation service providers and aviation. ANS Finland will also participate in the implementation of the upcoming NewPENS network which will increase operational reliability and data security in the information exchange between aviation operators.

VOICE COMMUNICATIONS SYSTEM

Planning for new voice communications system covering all air traffic control functions was continued by launching competitive bidding. The upcoming remote tower concept will be taken into account in many ways during the implementation.

EQUIPMENT MONITORING SYSTEM

A renewed error control system for the ATCC air navigation equipment was deployed in spring 2018. Its technical platform is based on a modern and widely-used industry logic and it is therefore scalable to, for example, other airports and remote tower use.

SERVICING AND FAULT PROCESSING SYSTEM

The step-by-step deployment of the new servicing and fault processing system continued in 2018. The management system of ATSEP qualifications and spare parts was also deployed. □

process were completed in summer 2018.

ANS Finland will launch a competitive bidding process for innovation partnership in early 2019. The selected innovation partner will bring the technological expertise to the project. The objective is to build a step-by-step platform solution enabling digital business. With the solution, ANS Finland can flexibly provide tailored e-services to different target groups. The solution will include common platform services for these different services. In the first implementation phase ANS Finland focuses on the production of a map-based aerial situational image and the integration of its data sources to the system. In addition, user interface views on making and processing flight plans will be developed.

By digitalising the existing and future functionalities as regards, for example, situational image, the state and preparation of a flight and customer service using artificial intelligence, ANS Finland can respond to future challenges.

Drone market is growing fast and it is expected to result in considerable economic growth and new business creation. ANS Finland, as an operator in air navigation, holds a key role in enabling drone experiments and pilot projects. Their implementation requires seamless cooperation to take the needs of all airspace users and authorities into account, and the safety aspects as well. To be able to create new business models and applications, ANS Finland has to provide the needed data to third parties.

The new set of services is expected to be completed in 2021. The drone platform solution (U-space) developed in the project will significantly improve aviation safety and, at the same time, enhance the business opportunities of companies using the platform. ANS Finland has received support funding of EUR 50,551 for this project from Business Finland (former Tekes). □

AVIA COLLEGE

Avia College is a vocational special education institution owned and maintained by ANS Finland providing air navigation training services meeting international standards and recommendations.

Year 2018 was a record year for Avia College. The basic training courses in air traffic control for the needs of ANS Finland were organised with the usual cycle: one group of students completed their studies in early spring, another group studied throughout the year and a new course started in autumn. There were approximately 20 registered students on these courses.

A large volume of international activities, in addition to the courses organised for the company's own needs, made the year 2018 a record one. ANS Finland was successful in many international public tenders for arranging air traffic controller training.

In addition to high-quality training offer Avia College has been able to respond flexibly, with its training services, to the time constraints of its customers. The good reputation in providing training and education services is also well-known; Finland is an excellent place to learn and study.

STRONG INTERNATIONALISATION

As a result of its success in public tenders, the year 2018 was a year of strong internationalisation for Avia College. During the year, it had 15 students from Bosnia and Herzegovina, 12 from Sweden, 7 from Estonia and 6 from Latvia. Avia College also participated in the selection process of the Estonian and Latvian students.

For the first time in history, the majority of students were foreigners. In practice, this was reflected in the selection of English as the first language of teaching.

Increased training offer has meant that the capacity of the premises near Helsinki Airport has been in full use, and the premises have part-

- Avia College is a vocational special education institution owned and maintained by ANS Finland. Its task is to produce and provide air navigation training services meeting international standards and recommendations.
- Avia College provides vocational air traffic controller training. In addition, it offers refresher, conversion, follow-up and specialisation training in various fields of air navigation.
- A state subsidy of EUR 1.6 million was granted for ANS Finland's education and training operations in 2018. The annual budget of Avia College is approximately EUR 3.5 million.
- At the end of 2018, Avia College had 18 employees, half of whom were instructors and the rest tasked for the development, support or maintenance of training.

ly become too small. The organisation of refresher and follow-up training to the ANS Finland air traffic controllers has also contributed to the shortage of space.

Equipment and facilities needed in training were complemented by acquiring a new 180-degree tower simulator. UFA and TopSky air traffic control simulators are also in use. Staff resources have been in full use as well. Due to a growing number of students, Avia College recruited two instructors in air navigation. The job vacancies attracted a lot of interest, partly because growing internationalisation has introduced new interesting elements into the instructors' work.

PRAGMATIC TRAINING

The Avia College training contents are partly similar to the Finnish and foreign students and they also have joint lessons. This means that the training focuses on teaching the basic skills in air traffic control instead of learning how the Finnish operational environment works. This is also a European-wide objective, to harmonise air traffic control across the continent.

Working as air traffic controller is attractive so there is a lot of interest towards the training. For the course that started in 2018, there were 889 applicants of whom 12 passed the selective assessment and started the training. The selection is rigorous and includes several phases. The selection process includes, in addition to written tests, also interviews by the training provider and a psychologist.

The 1.5-year air traffic controller training is very pragmatic and focuses on learning the basic skills. As the training is not equipment-bound, the acquired knowledge gives the students the qualification to work in other countries as well. Students who have completed the training and the on-the-job-training thereof, are ready to work as ATCs and they receive the ATC licence at graduation. □

AVIA COLLEGE 2018:

Training hours
in the vocational ATC training

19,866

Study hours in the basic
ATC qualification

2,800

Training hours in the ATC follow-up,
refresher and conversion training

13,935

Technical staff training hours

4,589

Personnel training hours

24,124

CORPORATE SERVICES AND PREPARATIONS FOR THE INCORPORATION

ANS Finland's corporate services include financial, HR and administration functions, IT administration and communications. The company's aim is to operate as efficiently as possible. In accordance with that, the aim in 2018 was to produce corporate services with highly optimised in-house resources and use outsourced services where necessary.

Towards the end of 2018, preparations to transfer support services to the new Traffic Management Finland Group were underway. The Group's future subsidiary ANS Finland was actively involved in these preparations by sharing its know-how and participating in meetings, reporting and other necessary measures. ANS Finland played a central role in the establishment of the Group's safety management system, due to its special expertise in the field. Many services such as communication and the administration's IT, financial, HR and insurance services were put to tender for the future Group in autumn 2018.

The TMFG subsidiaries are operationally independent but they share certain corporate services. In 2019, the buying of support services from Finavia will be phased-out, as the Group will centrally source the needed services for its subsidiaries. At the same time, the competitiveness of ANS Finland air navigation services is expected to increase as the corporate services and other support services become more cost-efficient and the pressure to raise customer charges will be decreased.

Dismantling the commercial connections between Finavia and ANS Finland to eliminate obstacles to tendering continued in 2018. ANS Finland procured security management services, i.e. security of premises, access control and security of personnel, from Finavia in 2018. The company leases its premises from LAK Real Estate Plc and Finavia Plc. □

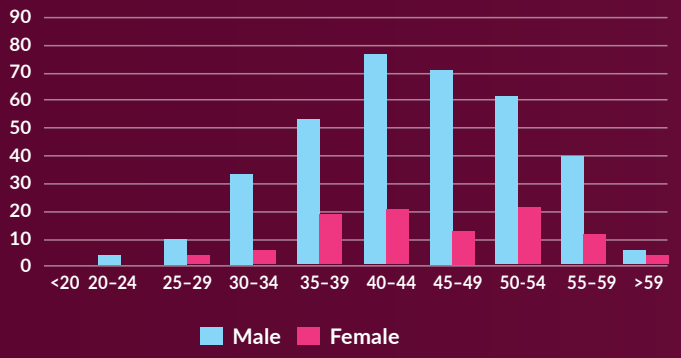
PERSONNEL

OCCUPATIONAL GROUP BREAKDOWN

OPERATIONS:	
Air traffic controllers, flight information officers and managers	257
Air traffic control operators, flight data assistants	30
Technical personnel	59
MANAGEMENT, PRODUCTION CONTROL AND SUPPORT SERVICES	
Management	6
Headquarters and centralised services	14
Training tasks	7*
Safety	4
Aviation information	15
Specialists	30

*) + 25 pseudo pilots (summoned to work as necessary)

AGE AND GENDER DISTRIBUTION



Average age of employees

45 years

Average duration of employment relationships

17 years

Absences due to sickness rate

2.84

Workdays lost due to occupational accident

29

DISTRIBUTION OF LOCATIONS

Vantaa	308
Northern Finland	42
Enontekiö	1
Ivalo (Inari)	2
Kajaani	4
Kemi	3
Kittilä	3
Kuusamo	3
Oulu	13
Rovaniemi	13
Eastern Finland	36
Joensuu	5
Jyväskylä	12
Halli (Jämsä)	1
Kuopio (Siilinjärvi)	13
Lappeenranta	1
Savonlinna	2
Utti (Kouvola)	2
Western Finland	61
Kokkola (Kruunupyy)	5
Maarianhamina	4
Tampere	2
Tampere-Pirkkala	22
Pori	6
Turku	14
Vaasa	8
Total	447

Competent and skilled employees are ANS Finland's biggest asset. Joining the TMFG on 1 January 2019 did not result in any reduction needs in the number of personnel. In 2018, mainly replacement recruitments were made. New recruitments were only made in Avia College as the demand for its services considerably increased in 2018.

At the end of 2018, the company employed a total of 447 professionals from different fields, of whom approximately 290 worked in air traffic control duties. In addition to administrative and air traffic control personnel, the company employs technical air navigation, safety and risk management professionals in 22 production units across Finland.

The average age of employees is 45 years and the average duration of employment relationships is 17 years. Of the employment relationships, 89 per cent are permanent and 11 per cent are fixed-term.

In 2018, ANS Finland applied the Service Sector Employers PALTA and ILTT (local union of Finnish Aviation Union) collective agreements. With the air traffic controllers, the company was in a state of non-agreement throughout the year. ANS Finland's managers executed the air traffic control duties during the air traffic controllers' additional work and overtime ban. ANS Finland wants to follow a coherent line in salary increases towards all employee groups. Collective agreement negotiations with the air traffic controllers continue in 2019.

A personnel survey was carried out in the end of 2018. The dissatisfaction with the closure of the Area Control Centre in Tampere was somewhat reflected in its results. The results of the personnel survey provide valuable feedback for the planning of the new organisation in 2019.

FOCUS ON OCCUPATIONAL HEALTH

The work of the Cooperation Council and the Central Committee for Occupational Health and Safety has been established through regular meetings, and the occupational safety manager leads the preparations between the meetings. In 2018, the action plan for occupational health, the equality and fairness plan and the substance abuse policy were completed.

ANS Finland invested in occupational health and well-being by organising awaydays for different units and vaccination campaigns. Early intervention model was more actively used in the follow-up of sickness absences. The number of sickness absences went down from the previous year, despite the severe influenza pandemic during the early months of the year.

If the company accrues profit bonuses to be paid to the personnel, they will be paid to the ANS Finland personnel fund. There are three performance bonus criteria: the company's financial position, good air traffic safety result (no hazardous situations or accidents attributable to the company's operations) and positive development of customer satisfaction. In 2018, EUR 701,171 profit bonuses were paid to the personnel fund.

TRAINING OF EMPLOYEES

ANS Finland maintains and continuously develops the competence of its personnel. This is also a precondition for all operations, as air navigation work is strictly controlled by international regulation.

In all, 65 per cent of ANS Finland employees work in air traffic control duties. Responsible work requires continuous refreshing of skills, training and learning new things. The qualifications of ANS Finland's air traffic control employees are regulated by, among others, the regulations of the European Union, and with regard to the personnel in technical duties, the national qualifications and refresher trainings of the ATSEP (Specification for Air Traffic Safety Electronics Personnel) training system, as required by Eurocontrol.

Refresher training to maintain the professional skills of operational personnel was carried out in accordance with the annual plan as local training or as refresher/conversion training at Avia College. It included the training of the personnel of the ATCC Finland and air traffic control units elsewhere in Finland. The trainings were realised in accordance with international regulation.

Technical personnel completed refresher or conversion training as required by regulation at their workplaces alongside their own work. The refresher training of the personnel of the Flight Planning Centre has been realised at the workplace using the eAvia online training platform.

The first Further Qualification in First-Line Management was launched for ANS Finland supervisors in 2018.

All trainings are reported to the Finnish National Agency for Education. □

GOVERNANCE

BOARD OF DIRECTORS

ASTA SIHVONEN-PUNKKA
Director, Electricity Market
Fingrid Plc
Member of ANS Finland's Board of Directors as of 17 March 2017

PERTTI KORHONEN
Chairman of ANS Finland's Board of Directors
as of 10 October 2017

TEEMU PENTTILÄ
Director of Department
Ministry of Defence
Member of ANS Finland's Board of Directors as of 17 March 2017

The Board of Directors of ANS Finland sees to the administration of the company and the appropriate organisation of the company's operations. In addition, the Board of Directors ensures that the company's accounts and asset management are appropriately organised. The Board of Directors complies with the Articles of Association, governance policy, agreement on authorisations, Limited Liability Companies Act and other valid legislation.

The Board of Directors has ratified a Board Charter, specifying the key tasks of the Board of Directors and the key procedures associated with Board work. In addition to the duties set forth in the Limited Liability Companies Act, the Board of Directors' duties include approving and monitoring the long-term strategy, confirming the annual objectives and budget and monitoring their realisation, approving the essential organisation structure, approving significant investments, establishing the investment policy, approving the principles of risk management and other similar key control systems, appointing the CEO and confirming the appointment of management team members, confirming the remuneration paid to the senior management and approving the company's performance bonus schemes.

The Board of Directors has no separate committees. The Board of Directors assesses its operations regularly itself and, if necessary, using an external auditor. The company's Board of Directors is elected by the general meeting of shareholders in accordance with the provisions of the Limited Liability Companies Act.

The chairman of the Board of Directors was **Pertti Korhonen**. The other members of the Board of Directors have been **Asta Sihvonen-Punkka** and **Teemu Penttilä**.

The chairman of the Board of Directors is paid EUR 2,300 per month and members EUR 1,500 per month. In addition, Board members are paid a meeting fee of EUR 600 per meeting.

The amount of remuneration and meeting fees paid to the Board of Directors in 2018 is reported in the notes to the financial statements.

The Board of Directors has convened 10 times. The members of the Board of Directors have attended the meetings as follows: Pertti Korhonen 10/10, Asta Sihvonen-Punkka 10/10 and Teemu Penttilä 10/10.

CEO AND MANAGEMENT TEAM

The CEO sees to the day-to-day management of the group in accordance with the instructions and orders issued by the Board of Directors. The CEO is appointed and the CEO's remuneration and other terms of employment are confirmed by the Board of Directors.

The company's CEO has been **Raine Luojus**. In addition to the CEO (chair), the operational management team of ANS Finland comprises Chief Corporate Services Officer **Matts-Anders Nyberg**, Chief Operations Officer **Heikki Isomaa**, Air Navigation Services Chief Technical Officer **Jukka Piilola**, Director ATCC Finland **Karri Hannula** and SVP, development, marketing and customer relations **Pasi Nikama**. The six-member operational management team convened on a weekly basis.

In addition to the members of the operational management team, the company's nine-member management team comprises Director of Safety **Tom Hätinen**, Business Controller **Jarkko Luoma** and, as representative of the personnel, air traffic controller **Vesa Tarvainen**. The management team convened nine times.

The salary and performance bonuses paid to the CEO and management team in 2018 are disclosed in the notes to the financial statements concerning the management. The company has no additional pension schemes in use.

REMUNERATION SCHEMES

The company's Board of Directors confirmed a remuneration scheme for the company's management and experts in 2018.

The employees covered by the remuneration scheme are annually confirmed by the company's Board of Directors. At the end of 2018, the performance bonus scheme covered the management team and other executives, managers and experts, totalling 36 people. The purpose

of the performance bonus scheme is to encourage the executives and management to perform above average and commit them to the company. The CEO has a personal employment contract and remuneration scheme, while other members of the management have their own personal objectives and bonus schemes.

The guidelines on remuneration in state-owned companies ratified by the Government are complied with in terms of remuneration.

The performance bonus scheme confirmed by the Board of Directors specifies its key provisions, such as the grounds of determination and measurement of objectives, possible maximum bonuses and the entry and exit rules of the scheme. The company's Board of Directors decides on the payment of performance bonuses at the management team level after the adoption of the financial statements. The Board of Directors can amend the rules of the system or decide not to pay performance bonuses.

Challenging and measurable objectives are set for everyone in the performance bonus scheme. The objectives are based on the company's strategic themes: safety, improving operational efficiency, growth, customer satisfaction, management of personnel and management of operations/implementation of projects. The weightings of the objectives vary by position and role.

The annual combined total amount of remuneration variable based on objectives is a maximum of 15 per cent of the bonus earner's fixed annual salary. If the performance of the company and the bonus earner is exceptionally good, the total maximum amount of bonuses paid can be a maximum of 30 per cent of fixed salary.

In addition to the management and specialists, all permanent employees are covered by a separate performance bonus scheme. It is not possible to be included in the scope of two different systems at the same time. ANS Finland also has a personnel fund.

RISK MANAGEMENT

The company's risk management comprises two parts. In addition to safety and compliance, the company addresses risk management relating to financial, IT, investment, cash flow, income and insurance risks, for example. A risk management plan was prepared when the company began operations, and it is updated on a regular basis.

Risk management is an integral part of the internal control system and safety and quality management. The company aims to analyse and identify predictively the impacts of diverse changes on en-route service and area traffic control operations.

Rapidly increased drone activity places new challenges on ANS Finland. The company has to consider ways for best managing the effects of drones on its own service. ANS Finland actively cooperates with the authorities, supporting the flow of information by reporting and considering technical and operational means for minimising the negative impacts together with the authorities.

In 2018, a key objective has been to safeguard operations in exceptional situations. For this, situations in which operations are compromised due to technical or other reasons in the normal premises are practised in evasion exercises. For example, during a natural disaster or a cyber attack situation, area control is able to move very quickly to the underground back-up premises of Helsinki Airport.

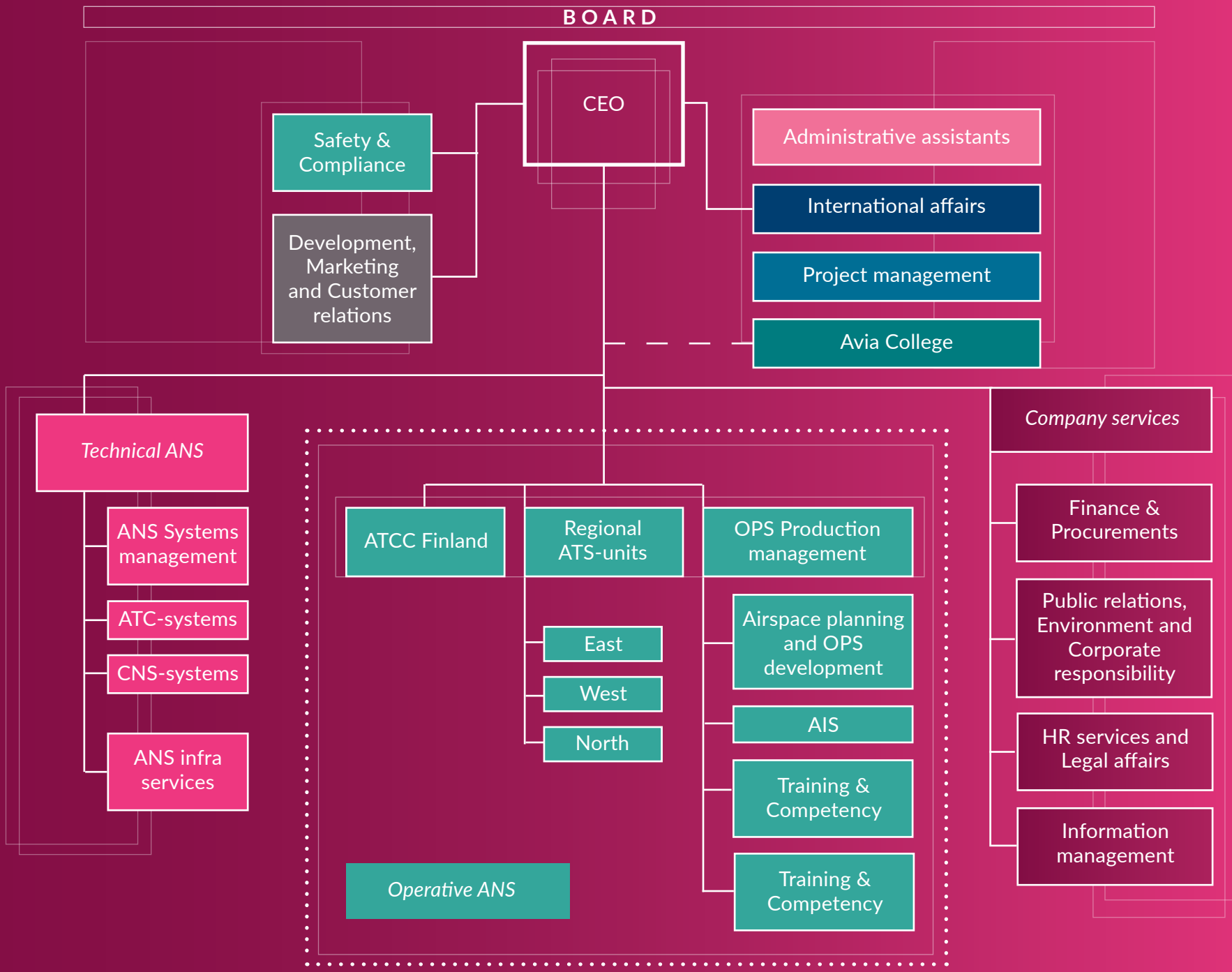
During 2018, the air traffic control operations of Helsinki Airport were taken to a back-up location twice in exercises. It is located in the immediate vicinity of Helsinki Airport, and it features the technical resources required for operations. In addition, the back-up tower of the back-up premises of Helsinki Airport was approved for use in exceptional situations in 2018.

ANS Finland has prepared for cyber attacks by, among others, entirely secured networks and in-house cyber security specialists. The personnel constantly practises and prepares for possible cyber attacks.

The Flight Planning Centre has also conducted emergency exercises. They have proved that service provision can also be ensured in the back-up premises.

AUDITING

The company's auditor is Ernst & Young. □


BOARD
CEO
Safety & Compliance
Development, Marketing and Customer relations
Administrative assistants
International affairs
Project management
Avia College
Technical ANS
ANS Systems management
ATC-systems
CNS-systems
ANS infra services
ATCC Finland
Regional ATS-units
East
West
North
OPS Production management
Airspace planning and OPS development
AIS
Training & Competency
Training & Competency
Operative ANS
Company services
Finance & Procurements
Public relations, Environment and Corporate responsibility
HR services and Legal affairs
Information management

OPERATIONAL MANAGEMENT TEAM

RAINE LUOJUS
CEO

MATTS-ANDERS NYBERG
Company Services

HEIKKI ISOMAA
Operational Production Control

JUKKA PIILOLA
Technical Air Navigation

KARRI HANNULA
ATCC Finland

PASI NIKAMA
Development, marketing and customer relations

RAINE LUOJUS, CEO

B. 1966, air traffic controller

KEY PROFESSIONAL EXPERIENCE

- ANS Finland, CEO 1 April 2017–
- Finavia, director of air navigation business 2011–2017
- Finavia, COO, air navigation business 2008–2011
- Finnish Civil Aviation Administration/Finavia, Helsinki Airport air traffic control deputy and operations manager 2002–2008
- Finnish Civil Aviation Administration, Helsinki Airport supervisory air traffic control positions 1999–2002, air traffic controller at Helsinki Airport, Kuopio and Oulu, among others 1991–1999

POSITIONS OF TRUST

- Finnish Meteorological Institute: member of the Advisory Board 2018–
- Civil Air Navigation Services Organisation (CANSO) EC3, member 2011–, vice chairman of EC3 2018–
- North European Functional Airspace (NEFAB) ANSP CEO board, chairman 2015–2017
- NEFAB ANSP CEO board, member 2012–
- Borealis Alliance CEO board, chairman 2014–2015
- Borealis Alliance CEO board, member 2013–
- NEFAB ANSP management board, member 2009–2011
- Noracon Governing Body, member 2011–
- Eurocontrol: Operations Consultation Group, Stakeholders Consultation Group, Aerodrome Terminal Area Working Group

MATTS-ANDERS NYBERG, senior vice president

b.1961, air traffic controller

KEY PROFESSIONAL EXPERIENCE

- ANS Finland Chief Administrative Officer 1 April 2017–
- Finavia, Head of Business Innovations 2012–2017
- Finnish Civil Aviation Administration/Finavia, NEAP Programme Office Manager 2009–2012
- Finnish Civil Aviation Administration/Finavia, Director, planning, air navigation business 2008
- Finnish Civil Aviation Administration/Finavia, Deputy Department Manager 2001–2008
- Finnish Civil Aviation Administration, Deputy Director 1994–2001
- Finnish Civil Aviation Administration, air traffic control inspector 1992–1994
- Finnish Civil Aviation Administration, air traffic controller 1983–1993: Northern Finland air navigation centre, Rovaniemi airport

HEIKKI ISOMAA, senior vice president

b.1959, air traffic controller

KEY PROFESSIONAL EXPERIENCE

- ANS Finland Chief Operations Officer 1 April 2017–
- Finavia, Vice President, Operations 2014–2017
- Manager, Finavia's operational production control unit 2011–2014
- Finnish Civil Aviation Administration/Finavia Group administration, planner 2005–2011
- Finnish Civil Aviation Administration, Group administration, air traffic controller/FATMI training coordinator 2002–2005
- Finnish Civil Aviation Administration, Group administration, planner 1999–2002
- Lapland Air Command, pilot officer 1998–1999, 1983–1998
- Finnish Defence Forces 1983–1999: warrant officer
- Finnish Defence Forces warrant officer, Air Force Academy, pilot officer 1981–1983

JUKKA PIILOLA, senior vice president

b.1959, engineer

KEY PROFESSIONAL EXPERIENCE

- ANS Finland, Senior Vice President, Technical air navigation 1 April 2017–
- Finavia, Air Navigation Services Chief Technical Officer 2016–2017
- Finnish Civil Aviation Administration/Finavia technical production control manager 2008–2016
- Finnish Civil Aviation Administration, Air navigation technique unit manager 2005–2008
- Finnish Civil Aviation Administration, engineer 1999–2005
- Finnish Civil Aviation Administration, sector manager 1998–1999
- Finnish Civil Aviation Administration, navigation engineer 1996–1998
- Finnish Civil Aviation Administration, service manager and message engineer (NAV team supervisor) 1989–1996

KARRI HANNULA, senior vice president

b.1968, air traffic controller

KEY PROFESSIONAL EXPERIENCE

- ANS Finland, Vice President, ATCC Finland 1 April 2017–
- Finavia, Director, ATCC Finland 2015–2017
- Finavia, Helsinki Airport chief of ATC 2008–2015, chief of ATC training 2004–2008
- Finnish Civil Aviation Administration/Finavia air traffic controller Helsinki Airport 1995–2015
- Finnish Civil Aviation Administration, air traffic controller at Pori airport 1992–1995

PASI NIKAMA, senior vice president

s.1968, air traffic controller

KEY PROFESSIONAL EXPERIENCE

- ANS Finland, Senior Vice President, Development, marketing and customer relations 1 April 2017–
- Finavia, Vice President, ANS marketing and customer relations 2015–2017
- Finavia, Chief of Area Control Centre Finland
- Southern Finland air navigation centre 2010–2015
- Finavia, traffic manager Oulu airport 2007–2010
- Finavia, instructor and chief instructor Avia College 2002–2007
- Finnish Civil Aviation Administration, air traffic controller Southern Finland air navigation centre 1997–2002
- Finnish Civil Aviation Administration, air traffic controller Ivalo and Halli airport 1995–1997
- Finnish Civil Aviation Administration, air traffic controller assistant summer 1994, 1991–1992: Tampere-Pirkkala airport, Southern Finland air navigation centre

CORPORATE RESPONSIBILITY

RESPONSIBILITY FOR THE ENTIRE FINNISH AIRSPACE
WE MANAGE THE AIR AND SPACE FOR YOU

The operations of ANS Finland affect the day-to-day lives of many Finns in one way or another. ANS Finland provides en-route service and aerodrome control and approach control services for airports. In practice, the company ensures smooth take-offs and landings at Finnish airports and that crossing the Finnish airspace is smooth and safe.

Air traffic enables the global citizenship of Finns. It allows tourism and business to thrive and provides employment to tens of thousands of Finnish people. ANS Finland works to ensure that air traffic supports Finland's success in a comprehensive way. Air traffic allows Finland to stay active 24/7.

ANS Finland's most important customer promise is the safety of its services which also is the foundation for all its operations. Another key factor is to keep the Finnish airspace open in every day of the year, 24/7. The third success factor is the smoothness of air traffic: there were no delays in 2018 due to ANS Finland's en-route services.

Corporate responsibility is a natural part of the operating culture and corporate identity of ANS Finland even by the nature of the company's operations. The concrete guidelines on corporate responsibility are derived from the company's values, strategy, risk management policy, government guidance and international regulation on the air navigation sector.

The operations of ANS Finland are guided by several international regulations, such as the performance level requirements laid down by SES (Single European Sky) legislation for 2015–2019 and the subsequent five-year period. Finnish air traffic control is expected to operate more efficiently year by year. In practice, this means that flight routes must be as short and unrestricted as possible, delays minimised, safety level high and costs accurately defined. □

ANS FINLAND'S RESPONSIBILITY THEMES

- Air traffic safety guides everything we do
- We do things well and sharply
- Skilled employees are our asset
- The well-being of society and the environment is important to us
- We fulfil our promise to the customer

PHOTO: ISTOCK

SAFETY

Safety is ANS Finland's first and foremost value
which we will not compromise under any circumstances.
ANS Finland continuously develops the safety
of its operations and related quality assurance activities.
Each employee also carries personal responsibility for safety.

ANS Finland has a licence for providing air navigation service issued by the Finnish Transport Safety Agency. This means that the company continuously proves that it has a well-functioning and effective safety management system (SMS) meeting the common European requirements of the SES regulation. The system´s compliance is controlled by inspections, information requests and audits, among others. The authority regularly controls our safety management operations.

The SMS is an integral part of ANS Finland's management system. This ensures the priority of safety also at the practical level. The assessment of safety impacts is part of our daily processes. In 2018, the company conducted a total of 335 assessments of safety impacts related to changes which partly demonstrates the commitment of our entire personnel to safety assurance. Even the smallest changes are assessed so that the company can ensure that the changes are managed, and adequate safety can be ensured in conjunction with them. We also assess the safety impacts of changes that our cooperation partners make, for example in the airport environment, that may have an effect on air navigation.

Good safety and quality management also includes internal audits and an encouraging reporting culture. The number of internal audits increased significantly from the previous year and 16 audits were made. In accordance with the audit plan, we audit our own units at least three times a year and larger units once a year. One of the indicators of an encouraging reporting culture and good safety culture is the number of observations and incident reports. The number of reports shows that our reporting culture is at an excellent level.

PERFORMANCE GOALS AND SAFETY

The Performance Scheme set by the European Commission sets stringent goals for Finland regarding the punctuality, safety, environmental efficiency and charges collected in air traffic.

The Performance Scheme of air navigation prepared as part of European airspace development is binding on the state of Finland and the air navigation service provided by ANS Finland, and it steers the development of air navigation services. The obligations under the Performance Scheme have been set by the Finnish Transport and Communications Agency Traficom.

In addition, safety goals are set in the Finnish Aviation Safety Programme (FASP). It requires aviation organisations to conduct a survey of risk factors and set separate target levels for the risks and regularly monitor them.

AIRSPACE BLOCK NEFAB PERFORMANCE SCHEME

Finland is part of the functional airspace block comprising the NEFAB countries. The purpose of the NEFAB area is to lower the costs of European airspace and thereby improve Europe's competitiveness.

In 2015, the European Commission approved the Reference Period 2 (RP 2) of the NEFAB area's Performance Scheme for the reference period 2015–2019 among the first functional airspace blocks (FABs). The Performance Scheme for the NEFAB area complies with the Europe-wide goals set by the European Commission. □

DATA SECURITY AND DATA PROTECTION

As the world becomes digital and many functions are carried out on-line, the importance of cybersecurity is emphasised. Solid cybersecurity is particularly important in activities of national significance strictly regulated by international rules, and which also directly involve people's safety, such as air navigation services. ANS Finland pays particular attention to the operational reliability and data security of its ICT services and processes.

The ANS-SEC operating model, based on the best data security practices and created by ANS Finland was completed in 2017. It compiles different functions and upcoming new regulations, and also includes the techniques, processes and diverse tests associated with implementing the data security practice. The maintenance of ANS-SEC model was continued in 2018.

In January 2018, ANS Finland organised the ANS18 cyber exercise together with its strategic cooperation partners. New technical investments in air navigation infrastructure have also been made, to respond to more stringent requirements and new risks. ANS Finland has also conducted self-assessment on the safety of the new air navigation network to be deployed by using a national auditing tool.

The European Aviation Safety Agency EASA has paid increasing attention to cybersecurity, and it aims to build a common cybersecurity operating model for Europe. ANS Finland actively cooperates with the authorities, aviation operators, international aviation organisations and other data security parties to strengthen cybersecurity.

PREPAREDNESS AND CONTINUITY ARE IMPORTANT

ANS Finland designs its services and implements its systems by always taking aspects of preparedness and continuity into account, in

Cybersecurity is the first priority in activities such as air navigation services.

addition to security. The use of back-up systems and incident procedures plays a key role in terms of uninterrupted provision of services.

ANS Finland's risk assessment plan guides the measures. Even though the company uses modern data security controls, preparation and procedures planned in advance play a key role. Technology alone is not enough; each of the company's employees must have the sufficient expertise and awareness of data security.

Practising for acting in abnormal situations and incidents in advance is an important part of data security. Reacting, flow of information and communication are regularly practised together with strategic cooperation partners.

In addition, the company organises continuous training, such as national qualification and refreshment training in the ATSEP (Specification for Air Traffic Safety Electronics Personnel) training system required by Eurocontrol.

HIGH LEVEL OF DATA SECURITY

ANS Finland follows a high level of data security in all its operations. Key themes include ensuring the confidentiality of communication, protection of individuals' privacy and online security.

The company has taken the necessary measures related to the General Data Protection Regulation by the deadline. In addition, the data protection process has been updated during the year and privacy notices, as required by the GDPR, have been drawn up.

Employees and partners are continuously trained in matters pertaining to data protection and data security. Data protection training to data controllers and processors, with an emphasis on general principles and legal obligations, was organised in 2018. A data protection online course was organised to the entire personnel to give them a good general knowledge on data protection obligations and requirements. □

PHOTO: ISTOCK

FINANCIAL RESPONSIBILITY

ANS Finland's financial responsibility refers to the creation of financial added value to the company's shareholder and other stakeholders, and thereby also indirectly to Finnish society.

FINANCIAL ADDED VALUE TO STAKEHOLDERS, EUR MILLION

GENERATION OF ADDED VALUE		
Customers	Revenue, other operating income and financial income	81.9
Generated added value		**81.9**
DISTRIBUTION OF ADDED VALUE		
Providers of services and goods	Purchased materials and services, other operating expenses	28.5
Personnel	Salaries and bonuses, pension expenses, voluntary staff expenses	43.8
Public sector	Indirect staff expenses, income tax, value added tax	4.0
Investors	Interest and other financial expenses	0.1
Owners	Dividends	0.0
Organisations	Donations	0.0
Distributed added value		**76.3**
Carried over for the development of business operations		5.5

ANS Finland ensures smooth take-offs and landings at Finnish airports and that crossing the Finnish airspace is smooth and safe. Therefore, ANS Finland's operations do not only have effects on the functioning of the Finnish society but also the smoothness and safety of international air traffic.

ANS Finland's financial responsibility is steered by its business strategy. It defines operational efficiency, development of services and appropriately reacting to international regulation as the company's key targets, among others.

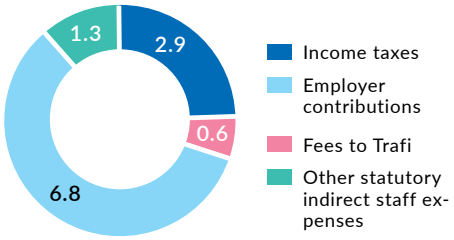
ANS Finland is subject to the EU requirement for increasing the efficiency of the regulated service, i.e. the area traffic control service and Helsinki air traffic control service by four per cent each year. Targets have been set for the five-year reference period 2015–2019.

In 2018, ANS Finland started preparations for the folllowing five year period 2020–2024 although the final objectives were not entirely known yet. The EU has required a more efficient air navigation service for years now. Reaching these objectives becomes more difficult year by year as it is by now very difficult to find new areas to be streamlined. At the same time, traffic volumes are on the increase.

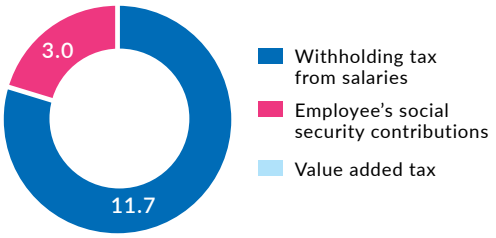
OBJECTIVES WERE LARGELY MET

In 2018, ANS Finland reached the set service provision targets in an excellent way, despite the regular work stoppages by the air traffic controllers throughout the year. Services at network airports were also provided as planned, with only one incident. There were two safety incidents at Helsinki Airport which did not cause any immediate hazard.

TAXES AND TAX-LIKE PAYMENTS, EUR MILLION



TAXES PAID, EUR MILLION



ANS Finland's financial result for 2018 exceeded expectations. Cost management was effective and also the traffic volumes and revenues increased. The good result reduced the service charges of ANS Finland's customers. The unit price of the en-route charge was decreased by 9.0% for 2019.

The financial administration unit takes care of ANS Finland's tax affairs centrally. The company also has a ratified financial policy specifying the taxation-related processes. Operations are additionally supervised by an audit firm.

ANS Finland pays 100% of its taxes in Finland.

EFFICIENCY IN IN-HOUSE OPERATIONS

ANS Finland continuously tries to decrease the unit costs of en-route service in accordance with the EU requirements by different measures. It has launched, together with the Estonian air navigation service provider EANS the FINEST programme, with an aim to create a joint air traffic control system by 2020–2022 enabling the provision of services in any of the two countries. In that way, Finland and Estonia could, for example during quiet night time, take turns in air navigation service provision and thereby enhance their cost-efficiency. ANS Finland plans comparable cooperation also with its western neighbouring countries.

Another project to enhance cost-efficiency is the remote air control concept project which is currently being planned together with Finavia.

ANS Finland has been incorporated into TMFG as one of its subsidiaries on 1 January 2019. This means savings and synergies particularly in corporate services which the Group can now provide in a combined way. □

PHOTO: ISTOCK

RESPONSIBILITY FOR STAKEHOLDERS

ANS Finland's key stakeholders include airlines, the country of Finland, state aviation, employees and shareholder. The responsibility for stakeholders is manifested in ANS Finland's goals and values.

CUSTOMER HEARINGS

In 2018 ANS Finland has consulted its customers in several joint and customer-specific meetings. The official customer consultations of 2018 were:

* Eurocontrol's regular (twice a year in June and November) Enlarged Committee consultation dealing with en-route charges of the Eurocontrol countries (airlines are represented by IATA and other airline associations)
* NEFAB countries' customer consultation in Tallinn on 31 October 2018
* Customer consultation in Vantaa on 13 September 2018, dealing with airport and air navigation charges for 2019

ANS Finland is engaged in continuous and open dialogue with its stakeholders to develop its operations and the entire industry in an increasingly sustainable direction. ANS Finland operates with an emphasis on safety, in a customer-oriented way and in accordance with the Code of Ethics.

Finavia, the company operating Finnish airports, is a significant customer for ANS Finland. ANS Finland provides both air traffic control services and technical services, such as system servicing, maintenance and flight measurements, for it. The company's strategic intent is to grow together with Finavia.

AIRLINE CUSTOMERS

A customer satisfaction survey was carried out at the end of 2018. The respondents assessed the different functions on a scale of 1–5 (5=very good, 1=very poor). The company's operations were ranked competent, reliable, professional and safe. Cooperation with ANS Finland was ranked good (3.8). The customers were most satisfied with the achieved safety level (4.4). In customer service, the customers particularly appreciated the attitude of ANS Finland employees (4.5) and their expertise (4.6).

The customers expressed a wish for the company to develop predictability and the efficiency of Helsinki Airport traffic control. Pilots would appreciate the possibility to anticipate the course of the flight at an earlier stage to ensure smooth and ecological landings.The customers appreciate cooperation discussions between them and ANS Finland.

In all, 167 persons responded the survey. 135 of them were pilots, 8 represented the management and 24 persons other staff. The biggest customer group was airline operators with 149 respondents. The feedback received is used to constantly develop the quality of services. For example, datalink connections were introduced in November 2018 and the new approach techniques, which were completed and simulated together with the airline customers in 2018, will be introduced in early 2019.

MILITARY AND STATE AVIATION

We support the mission of the Finnish Defence Forces by providing the required airspace reservations and monitor the airspace of the Gulf of Finland in cooperation with the Finnish Air Force. We are obligated to serve the Finnish state aviation also by law. Contacts with the Finnish Air Force and the Border Guard are regular and aim at continuous improvement of operations. In 2018, ANS Finland launched a cooperation project with the Finnish Air Force and Traficom to further enhance the usability of Finnish airspace.

PERSONNEL IN A KEY ROLE

In an area of special expertise such as air navigation, skilled and competent employees play a central role. ANS Finland is a responsible employer. The company takes care of the well-being, health, competence and safety of its employees by providing good managerial work and training and by complying with collective labour agreements and labour legislation. Good management of personnel is a key element of ANS Finland's strategy.

ANS Finland looks after the equal and fair treatment of its employees. An equality and fairness plan was drawn up together with the personnel in 2018, and it is updated whenever needed, at least every 3 years.

In 2017, ANS Finland signed a cooperation agreement with the healthcare service company Terveystalo to promote occupational health and well-being of employees according to a plan. Preventive campaigns were chosen as a means to influence employees' absence due to sickness and working capacity. In addition, preparations have been made for diverse corrective measures, such as restoring the working capacity of chronically ill employees. In 2018, the absence due to sickness rate was 2.84.

INTERACTION WITH EMPLOYEES

ANS Finland uses a harmonised performance appraisal model. The development discussions pursuant to it began in 2018, and they are carried out with all employees on an annual basis.

The personnel is kept up-to-date on company issues by regularly organising personnel's information events and by communicating on the intranet.

The company has a Cooperation Council and a Central Committee for Occupational Health and Safety. Comprehensive training for the entire occupational health and safety organisation was organised in 2018. The organisation also prepared an occupational health and safety action plan for the company. □

RESPONSIBILITY FOR THE ENVIRONMENT

ANS Finland cooperates with international industry organisations and parties to reduce the negative environmental impacts of air traffic. The most important means of influence in this work include planning as short as possible flight routes, taking advantage of weather conditions, using efficient flight techniques, keeping delays to a minimum and using the entire European airspace as efficiently as possible.

PHOTO: ISTOCK

SHARE ON GREEN LANDINGS (CDO) OF ALL LANDINGS AT HELSINKI AIRPORT

22R/L	04R			
	7:00–22:00	22:00–7:00	14:30–16:00	14:30–16:00
2013	58%	61%	58%	44%
2014	64%	69%	57%	55%
2015	67%	70%	61%	63%
2016	68%	75%	67%	65%
2017	69%	76%	67%	66%
2018	72%	82%	70%	73%

SOURCE: FINAVIA

The environmental permit of Helsinki Airport includes target levels for CDO landings. During daytime, at 7–22, the target level is 70%, at night time at 22–7 it is 80% and during parallel approaches at 14:30–16 the target level for the high side runways (22L and 04R) is 60%. In 2018, the target levels were reached for the first time at all times.

The most important individual factor with regard to ANS Finland's environmental responsibility is efficient airspace management. Finland's large and well-managed airspace makes it possible for aircraft to smoothly descend and ascend, which reduces fuel consumption and noise. ANS Finland's short-term goal is to maintain the current good situation but take development measures over time to make Finland's airspace management the most environmentally-friendly in the world.

Air traffic control and flight techniques are continuously optimised in an increasingly environmentally-friendly direction together with international industry parties. New approach techniques were completed in 2018 to be launched in early 2019.

The EU wants to promote the free movement of people and goods. Creating a common airspace is part of this development. Previously, the flight route network was built according to a ground-based navigation device network. Modern satellite-based navigation makes it possible to fly along the straightest route possible, provided that there are no military zones or other restrictions along the way.

Airspace is a system that also includes the systematic usage of runways in different weather and traffic situations. It is an entity that must be planned to function also under unfavourable circumstances and in case of diverse incidents.

CLIMATE CHANGE IS A CHALLENGE

The global circumstances affect Finland, too. In summer 2018, Europe experienced longest flight delays for 20 years. This was due to insufficient air traffic control capacity and accelerating climate change which is manifested in extreme weather conditions. Due to weather conditions, air traffic may have to circle a certain geographical area or traffic restrictions may have to be set. To better forecast weather-related phenomena, ANS Finland launched the Performance Optimizer project in 2018, to improve the accuracy of needed regulation.

The airspace system aims to guarantee safety in all situations. Safety margins are dimensioned according to the worst-case scenario so that it is not always mandatory to precisely follow the routes in a normal situation. Air traffic control can issue the aircraft flexible clearances that shorten the route and may also have a positive impact on environmental effects (lower emissions as the route is shorter, guiding aircraft to less populated areas). Such clearances are issued considering other traffic in the airspace.

NOISE MITIGATION ON SEVERAL FRONTS

ANS Finland aims to mitigate aircraft noise at Helsinki Airport by using a primary runway system according to which take-off and landing directions with the smallest settlements are primarily used. During parallel use, the priority applies to the operating direction of parallel runways.

The priority order emphasises both the settlements in the take-off and landing sector of each runway and the safe use of different runways in proportion to each other. The aim is to use the best possible runways taking the noise management, traffic situation and air safety comprehensively into account. The use of runways is limited during night time so that runway 15 is not used for take-offs or runway 33 for landings during night time unless required by air traffic safety.

As a means of reducing approach noise, the airport has aimed to increase the continuous descent operations (CDO) technique where possible. In the descent phase, the ground noise of the aircraft is reduced if the approach takes place through continuous descent without a horizontal flight phase before landing. The structure of the airspace and operations of the air traffic control allow continuous descent in most cases. In practice, however, the pilot is responsible for realising it. In 2018, the share of CDO approaches at Helsinki Airport was very high compared to other major European airports.

EFFICIENT WORK

ANS Finland aims at the efficient use of working time. Remote technologies and tele- and videoconferences are utilised for meetings whenever possible.

ANS Finland's production and company car choices aim at environmentally-friendly alternatives. □

ANS
FINLAND

BOARD OF DIRECTORS' REPORT AND FINANCIAL STATEMENTS 2018

CONTENTS:

BOARD OF DIRECTORS' REPORT

MISSION

Air Navigation Services Finland Ltd (ANS Finland) commenced operations on 1 April 2017. Finavia's air navigation services operations personnel, Avia College's air navigation training employees and, for example, some of the financial, communications, risk management and HR personnel, were transferred to ANS Finland.

On 1 January 2019, ANS Finland was incorporated as a subsidiary into Traffic Management Finland Group, a wholly state-owned company. ANS Finland is a special assignment company steered by the Ministry of Transport and Communications.

ANS Finland is responsible for special tasks relating to air navigation, such as airspace management, area control, services for the state's aviation and aeronautical rescue services. In addition, the company is responsible for en-route services in the Finnish airspace and air navigation services at Finavia-owned airports and the Lappeenranta airport. ANS Finland is also responsible for the design and maintenance of the infrastructure and systems required for air navigation in compliance with international requirements.

ANS Finland's customers include commercial aviation operators, airports, the Finnish state aviation operations including military aviation, general aviation and pilot training schools.

KEY EVENTS IN THE FINANCIAL YEAR

In the financial year, our key task was the work towards achieving our vision. According to our vision;

- We are the most competitive air navigation service provider in Finland and the most attractive business partner in Europe.
- We have the world's most environmentally-friendly airspace.

We have stabilised the operations of the new company by ensuring the functionality of the key processes and moved on to implementing the strategy of ANS Finland. The strategic goals can be achieved by improving cost-efficiency and the quality of services, for example, through developing new ways of traffic control (e.g. the concept of remote air traffic control) and closer cooperation with other air navigation service providers (cross-border services) and by creating new business based on innovations.

With regard to strategic projects, the FINEST project made considerable progress in 2018. The FINEST project was established as a cooperation between Finnish and Estonian air navigation service providers. Its purpose is to survey the opportunities of providing air navigation services across country borders. On 31 August 2018, the Board of Directors of Estonian Air Navigation Services (EANS) and ANS Finland met in Tallinn, Estonia, to decide on further preparation for the project. EANS' Management Board and the Board of Directors of ANS Finland decided on the progress of the project from after the pre-design phase to the actual implementation phase. At the same time, the companies were authorised to make the investments necessary in terms of the cooperation.

In addition, the company's management and Board of Directors have prepared operational and financial indicators as well as a reporting system for monitoring operations.

Other key issues reviewed by the Board of Directors during 2018 included approving the investment framework, approving the company's remuneration and incentive scheme for the personnel and the management, reviewing key business risks and progress reports on the security system and reporting, as well as the related development measures.
It also discussed, for example, preparation of the Traffic Management Finland Group, preparation for the performance requirements set by the European Commission and the related pricing requirements and planning of operations and goal setting for the year 2019.

The company's management reports to the Board on security, finances, traffic, personnel, investments and data security projects on a monthly basis.

REVENUE AND PROFIT

ANS Finland's revenue for the financial year amounted to EUR 81.5 million and operating profit to EUR 6.8 million. Strong traffic growth led to the increase in the revenues from en-route charges and the Helsinki Airport air navigation services. The turnover was decreased, however, by the application of the regulation adjustments from the SES legislation (EUR −8.6 million), which have been registered in the financial statements for the first time. The operating profit margin was 8.4 %.

KEY INDICATORS	2018	2017*
Revenue (EUR million)	81.5	63.9
Operating profit (EUR million)	6.8	9.3
Operating profit/revenue (%)	8.4	14.5
Investments (EUR million)	2.1	4.0
Return on equity (%)	31.2	45.1**
Equity ratio (%)	37.1	40.8
Personnel on average (FTE)	408	402

* operations commenced on 1 April 2017
** calculated based on the balance values at the closing date

TRAFFIC

The traffic volumes of the en-route service and air navigation service in Helsinki Airport continued to develop positively in 2018. The volume of en-route services (service units) increased 14.4% from the previous year. The biggest growth was in domestic traffic (+23.0%). The Helsinki Airport and the airports of Northern Finland played a major role in this growth. Volumes also increased in international traffic (+15.2%) and overflights (+9.7%). The traffic volume of Helsinki Airport (tn units) increased by a total of 10.3% in 2018. International traffic (+12.0%) slightly outgrew domestic traffic (+11.7%) in Helsinki Airport.

EU LEGISLATION

As a Member State of the European Union, Finland is subject to the Single European Sky (SES) legislation regulating aviation in Europe. With regard to air navigation fees, the regulations on performance and the common charging scheme are essential SES legislation. In Finland, the current regulations apply to en-route service and air navigation service in Helsinki Airport.

The EU regulation on performance for air navigation services requires each functional airspace block (Finland belongs to the North European Airspace Block NEFAB with Norway, Estonia and Latvia) has a five-year performance plan approved by the Commission. The current performance plan is for 2015–2019. It sets the goals regarding safety, capacity, environment and cost efficiency. The cost-efficiency goals have a direct impact on the level of air navigation charges.

The performance plan expects the cost efficiency of Finland's en-route service to improve by 3.5% annually and the air navigation service at Helsinki Airport by 2.2%. The calculation of cost efficiency and unit prices takes into consideration specified expenses, predicted traffic volume and inflation, among other factors. The determination of unit rates is stipulated in detail by the regulation on charges.

OPERATIONAL UNCERTAINTIES AND ASSESSMENT OF KEY RISKS

The company's risk management comprises two parts. The risk management unit deals with cases relating to the safety of air traffic, in addition to which the company addresses other risk management matters relating to financial, IT, investment, cash flow, income and insurance risks, for example. A risk management plan was prepared when the company began operations, and it is updated on a regular basis.

Air traffic is expected to increase further in the next few years. The most significant financial risk is associated with overflight traffic. Traffic between the Middle East and North America uses Finland's airspace daily because the route over Finland is the shortest between these locations. Should changes regarding safety or availability take place in the airspace of a country along this route, this could significantly alter the routes chosen by airlines, which may also have an effect on the number of overflights operated by ANS Finland. ANS Finland expects the risk to be approximately EUR 4 million at the annual level.

EXPECTATIONS FOR 2019

Strong growth in traffic volumes is expected to continue, especially at Helsinki Airport. The unit rate of the en route charge was decreased by 9.0 % for 2019, and revenue is expected to witness a slight decrease from 2018.

In 2019, operations will continue in accordance with the strategy. In addition to the good management of the profitability and operational efficiency of basic business operations, key issues include launch of the digitalisation project and launch and establishment of cooperation with the Traffic Management Group. Moreover, ANS Finland aims to find new business areas by tendering in the field of air navigation training, for example, and to develop digital services not only for customers but society as well.

ANS Finland's investments are expected to amount to approximately EUR 9.5 million. The most significant investments will be the ongoing control system project, which started in 2017, and the procurement of new radio and voice communication systems. As a new project, the company will launch the FINEST project together with EANS to create a model for cross-border air navigation services. The project meets the EU-level performance requirements and the goals of the Single European Sky programme.

In addition, ANS Finland and Finavia are preparing a remote tower solution in which aerodrome control and approach control services would be provided from a centralised air traffic control unit using remote connections. The project aims to achieve cost-savings compared to the current operating model.

PERSONNEL, TRAINING AND SALARIES

At the end of 2018, the company employed a total of 447 professionals from different fields, of whom approximately 290 work in air traffic control duties. In addition to administrative and air traffic control personnel, the company employs technical air navigation, safety and risk management professionals in 22 production units across Finland. The salaries paid to the personnel during the financial year totalled EUR 35.8 million.

The average age of employees is 45 years and the average duration of employment relationships is 17 years. Of the employment relationships, 89 per cent are permanent and 11 per cent are fixed-term.

In 2018, ANS Finland applied the collective agreements of the Service Sector Employers Palta and Ilmailutekniset ILTT. No collective agreement existed for air traffic controllers in 2018, however. The new collective

agreement for air traffic controllers was signed on 28 February 2019, and it reflects the general line of pay rises. Regarding pay rises, ANS Finland wants to treat all employee groups equally.

At the end of 2018, the company conducted a personnel survey, and the results showed that air traffic controllers were particularly unhappy with the decision to close the Tampere Area Control Centre and with the incomplete collective agreement negotiations that lasted all of year 2018. According to the results, the personnel sees the future of the company as partially uncertain, which might reflect the fact that the effect of the Traffic Management Finland Group is unclear. The results of the personnel survey provided valuable feedback for the preparation of the new organisation in 2019.

The work of the Cooperation Council and the Central Committee for Occupational Health and Safety has been established through regular meetings, and the occupational safety officer leads the preparations between the meetings. In 2018, the action plan for occupational health, the equality plan and the substance abuse policy were completed.

If the company accrues profit bonuses to be paid to the personnel, they will be paid to ANS Finland's personnel fund. There are three criteria for profit bonuses: finances, safety and customer satisfaction. In 2018, after administrative costs, the profit bonuses to be paid to the personnel fund totalled EUR 701,171.21.

Joining the TMF Group on 1 January 2019 did not require any personnel cuts or structural changes.

ANS Finland maintains and continuously develops the competence of its personnel. This is also a precondition for all operations, as air navigation work is strictly controlled by international regulation.

Refresher training to maintain the professional skills of operational personnel was carried out in accordance with the annual plan as either local training or as refresher or conversion training at Avia College. It included the training of the personnel of the Air Traffic Control Centre Finland and air traffic control units elsewhere in Finland. The trainings were realised in accordance with international regulation.

In addition to its own work, the technical personnel completed the refresher or conversion training required by regulation. The refresher training of the personnel of the Flight Planning Centre has been realised at the workplace using an electronic training platform.

The first Further Qualification in First-Line Management was launched for supervisors in 2018.

Regarding occupational health and safety in the workplace, ANS Finland focuses on measures that promote safe and healthy working environments and working conditions, as well as the maintaining the personnel's physical and mental ability to work. To improve the working environments and conditions, the employer and the employees prevented or removed work-related hazards. The aim was to minimise occupational health and safety risks to ensure that no accidents at the workplace occur. Disability due to occupational disease or occupational accidents as well as close calls were also minimised.

In 2018, there was one occupational accident and one commuting accident in ANS Finland. It seems that the highest physical risk for occupational and commuting accidents of ANS Finland's personnel is caused by slipping and tripping at work or on the way to or from work. 14 occupational safety and health observations were made. The observations concerned, for example, construction site noise that disrupted work and heating and ventilation problems in the control tower.

In 2018, the absence due to sickness rate of ANS Finland's personnel was 2.84 % and accident rate 1.45 % (the annual number of accidents per a million working hours).

AIR TRAFFIC SAFETY

Safety is ANS Finland's first and foremost value, that we will not compromise under any circumstances. ANS Finland continuously develops the safety of its operations and the related quality assurance. Each employee also carries personal responsibility for safety.

ANS Finland has a licence for providing air navigation service granted by the Finnish Transport Safety Agency. This means that the company continuously demonstrates that a safety management system (SMS) that meets the common European requirements of the SES regulation is in place. Compliance is monitored, for example, with inspections, information requests and audits. The authority regularly controls our safety management activities.

The SMS is an integral part of ANS Finland's management system. This ensures the priority of safety also at the practical level.

Assessment of safety impacts is part of our daily processes. In 2018, the company conducted a total of 335 assessments of safety impacts related to changes, which reflects the strong commitment of the employees to assurance of safety. The company assesses even the most minor changes to ensure that the changes are managed and safe. We also assess the safety impacts of changes that partners make in the airport environment, for example, that can affect air navigation.

Good safety and quality management also includes internal audits and an encouraging reporting culture. The number of internal audits increased significantly from the previous year, and 16 audits were made. In accordance with the audit plan, own units are audited at least three times a year and larger units once a year. One of the indicators of an encouraging reporting culture and good safety culture is the number of observations and incident reports. The number of reports shows that our reporting culture is excellent.

Reporting activity, internal control and safety assurance of changes in 2018

Incident and observation reports by the personnel	1,785
Technical notifications related to the operation of equipment or technical systems	2,211
Assessments of safety impacts	335
Internal audits	16

Performance goals and safety

The Performance Scheme set by the European Commission sets stringent goals for Finland regarding the punctuality, safety, environmental efficiency and charges collected in air traffic.

The Performance Scheme of air navigation services prepared as part of European airspace development is binding on the state of Finland and the air navigation service provided by ANS Finland, and it steers the development of air navigation services. The obligations under the Performance Scheme have been set by the Finnish Transport Safety Agency (Finnish Transport and Communications Agency Traficom from 1 January 2019).

In addition, safety goals are set in the Finnish Aviation Safety Programme (FASP). It requires aviation organisations to conduct a survey of risk factors and set separate target levels for the risks and regularly monitor them.

Airspace block NEFAB performance plan

Together with Norway, Estonia and Latvia, Finland is part of the functional airspace block comprising the NEFAB countries. The purpose of the NEFAB area is to lower the costs of European airspace and thereby improve Europe's competitiveness.

In 2015, the European Commission approved the Reference Period 2 (RP2) of the NEFAB area's Performance Scheme for the reference period 2015–2019, among the first functional airspace blocks (FABs). The Performance Scheme for the NEFAB area complies with the Europe-wide goals set by the European Commission.

Performance targets set for ANS Finland

TARGET	IMPLEMENTATION IN 2018
Safety	
- Efficiency of the safety management system	The target was achieved
- Use of the risk analysis tool (RAT)	The target was achieved
- Just Culture	The target was achieved

In addition to the Performance Scheme, ANS Finland has specified its own safety targets:

TARGET	IMPLEMENTATION IN 2018
1) Indicators monitored in accordance with the Finnish Aviation Safety Programme (FASP) - FASP level 2 indicators, totalling 12 indicators	The target was achieved with regard to 11 indicators and not achieved with regard to one indicator.
2) Incidents related to airspace reservations - Number of severe incidents decreased	The target was achieved
3) Introduction of new alerts in the runway management system of Helsinki air traffic control unit - Target schedule for the operative implementation of the alert system during the first quarter	The target was achieved
4) Runway incursions due to ANS Finland's activities - Target: A declining trend in the number of incursions compared to previous years	The target was not achieved
5) Losses of minimum separation due to ANS Finland's activities - Target: A declining trend in the number of incidents	The target was achieved
6) Training the use of back-up locations or working methods in abnormal conditions and emergencies - Target: Regular training in accordance with the plan	The target was achieved

1) There are several FASP safety indicators. Level 1 and 2 indicators are retrospective, measuring what has already taken place. Level 3 indicators are most commonly events that could predict a trend in something. They have not caused dangerous situations, however. 31 level 3 incidents were reported in our operations, providing valuable information to support our safety work. The FASP target was not reached in one monitored area, as there was one runway incursion classified as severe. The incursion did not result in an immediate risk of collision between an aircraft using the runway and vehicles, but the nature of the incursion warranted its classification as severe. With regard to the other eleven indicators, the target was reached. Corrective measures are presented in section 4.

2) Prevention of severe incidents related to airspace reservations was set as a safety target for 2018. When compared to previous years, the number of incidents was average but no severe incidents took place. The incidents did not cause any concrete danger to air traffic. The target was achieved.

3) Technical systems of the Helsinki air traffic control unit were updated. One target was to ensure the introduction of alerts to improve runway safety. These alert features were introduced in 2018 with the approval of the authority. The target was achieved.

4) There were ten runway incursions attributable to ANS Finland's operations. With regard to runway safety, ANS Finland's goal was to have a declining trend compared to previous years. In the six previous years, the average number of runway incursions caused by the ATS unit was slightly higher than 5, ranging from 1 to 9 per year. The interpretation of the term runway incursion has changed in some cases, however, and the statistics are not entirely comparable. The targeted number of incursions was not achieved, however. Several corrective measures were undertaken to ensure high-level runway safety. These included, for example, publishing working methods recommended by a runway safety working group, implementing automatic alert systems, updating the safety review of the working methods at the Helsinki air traffic control unit, specified collaboration agreement between the Helsinki air traffic control unit and airport maintenance as well as publishing and discussing runway safety topics in safety publications and briefings.

5) Loss of minimum separation refers to cases where aircraft are closer to each other than the specified minimum separation as a result of the actions of air traffic control. This does not automatically mean that there is a risk of a collision, but each case is nevertheless reported as an incident in accordance with the principles of good safety culture. A loss of separation could be, for example, a situation where the distance between two aircraft is 8 kilometres instead of the intended 9 kilometres. A total of 20 cases of loss of separation were reported during the year, while their number was 24 during the corresponding period in the previous year. A declining trend in losses of separation was set as a safety goal. None of the reported incidents caused a concrete risk of collision or was uncontrollable. The safety goal was met.

6) Practising for various emergency and abnormal situations and incidents is part of our operation. This helps us ensure the continuity of operation in all conditions. The goal was to ensure that these situations are practised regularly. Comprehensive exercises were held in January and October. The exercises included national testing of the systems. The target was achieved.

ENVIRONMENT

ANS Finland cooperates closely with Finavia in Finland and internationally with industry organisations and parties to reduce the negative environmental impacts of air traffic. In this work, means of influence include planning flight routes which are as short as possible and make use of weather conditions, using efficient flight methods around airports, keeping delays to a minimum and using the entire single European airspace as efficiently as possible.

ANS Finland aims to mitigate aircraft noise and emissions at the Helsinki Airport by using a primary runway use system according to which take-off and landing directions with the smallest settlements are primarily used. During parallel use, the priority applies to the operating direction of parallel runways. Similar development work has been and will be carried out at other airports in cooperation with Finavia; flight methods with maximum efficiency make it possible to minimise the environmental burden.

The priority order of the Helsinki Airport emphasises both the settlement in the take-off and landing sector of each runway and the safe use

of different runways in proportion to each other. The aim is to use the best possible runways from the point of noise management, taking the traffic situation and air safety comprehensively into account. The use of runways is limited during night time so that runway 15 is not used for take-offs or runway 33 for landings during night time unless required by air traffic safety. As a means of reducing approach noise, the airport has aimed to increase the continuous descent operations (CDO) technique where possible.

MANAGEMENT AND AUDITING

In 2018, the Chair of the Board of Directors of ANS Finland was Pertti Korhonen, and members of the Board included Asta Sihvonen-Punkka and Teemu Penttilä. The Board of Directors convened 10 times during the 2018 financial year. The Board members were paid a total of EUR 78,000 in compensation.

The CEO of the company is Raine Luojus. The company's auditor was Ernst & Young Oy (Authorized Public Accountant Firm), with Mikko Rytilahti as the auditor in charge.

There were no related party transactions/responsibilities. All transactions are based on market-based decisions. This was verified by gathering information about related parties.

SHARES AND SHARE CAPITAL

The State of Finland owned the shares of ANS Finland directly until 31 December 2018, after which all shares were transferred to Traffic Management Finland Group. The Ministry of Transport and Communications is responsible for ownership steering. The company's share capital is comprised of 330 shares of equal value. The share capital amounts to EUR 3,300. The company does not hold any treasury shares.

EVENTS AFTER THE FINANCIAL YEAR

Collective agreement negotiations concerning the largest employee group, air traffic controllers, took place in January–February, and the parties accepted the agreement on 28 February 2019.

In the beginning of 2019, ANS Finland is planning an organisational change, and the related cooperative process was carried out in January–February.

BOARD OF DIRECTORS' PROPOSAL FOR THE DISTRIBUTION OF PROFITS

The company's distributable assets in the financial statements of 31 December 2018 amounted to EUR 18,755,424.90. The Board of Directors proposes to the annual general meeting that no dividends be distributed and that the profit for the financial year, EUR 3,653,853.43, be carried over in retained earnings. □

INCOME STATEMENT

		1 January–31 December 2018		1 January–31 December 2017
REVENUE		81,470,565.86		63,884,508.67
Other operating income		375,013.51		107,197.08
Materials and services				
Materials and supplies				
Purchases during the financial year	778,314.90		978,980.64	
External services	8,261,314.62	9,039,629.52	5,502,005.87	6,480,986.51
Staff expenses				
Salaries and bonuses	35,820,903.51		26,218,969.41	
Indirect staff expenses				
Pension expenses	6,698,312.01		5,003,385.73	
Other indirect staff expenses	1,238,368.10	43,757,583.62	1,030,428.64	32,252,783.78
Depreciation, amortisation and impairment				
According to plan		3,615,406.94		2,597,536.21
Other operating expenses		18,593,672.82		13,384,422.28
OPERATING PROFIT (LOSS)		**6,839,286.47**		**9,275,976.97**
Financial income and expenses				
Other interest and financial income	9,397.55		7,813.56	
Interest expenses and other financial expenses	-72,727.71	-63,330.16	-73,998.97	-66,185.41
PROFIT (LOSS) BEFORE APPROPRIATIONS AND TAXES		6,775,956.31		9,209,791.56
Appropriations				
Increase (–) or decrease (+) in depreciation difference		-289,318.27		-758,310.07
Income taxes		2,832,784.61		1,649,514.92
PROFIT (LOSS) FOR THE FINANCIAL YEAR		**3,653,853.43**		**6,801,966.57**

BALANCE SHEET

Assets		31.12.2018		31.12.2017
NON-CURRENT ASSETS				
Intangible assets				
Intangible rights	8,608,964.93		10,795,539.86	
Other capitalised long-term expenditure	1,700,621.74	10,309,586.67	1,960,192.75	12,755,732.61
Tangible assets				
Machinery and equipment		3,950,943.42		4,386,552.02
Advance payments and construction in progress				
Purchases of machinery and equipment	4,047,798.38		3,225,279.71	
Purchases of licences and software	390,771.92	4,438,570.30	98,971.36	3,324,251.07
CURRENT ASSETS				
Receivables				
Current receivables				
Accounts receivable	7,796,415.53		7,091,176.21	
Other receivables	51.67		159,956.82	
Accrued income	5,597,864.54	13,394,331.74	4,474,762.63	11,725,895.66
Cash and cash equivalents		18,572,305.65		6,450,695.49
TOTAL ASSETS		50,665,737.78		38,643,126.85
Equity and liabilities				
EQUITY				
Share capital	3,300.00		3,300.00	
Reserve for invested unrestricted equity	8,300,000.00		8,300,000.00	
Retained earnings	6,801,571.47		-395.10	
Profit (loss) for the financial year	3,653,853.43	18,758,724.90	6,801,966.57	15,104,871.47
Cumulative appropriations				
Depreciation difference		1,047,628.34		758,310.07
Statutory provisions				
Other statutory provisions		268,392.14		1,009,061.08
LIABILITIES				
Non-current liabilities				
Loans from credit institutions	5,001,895.83		5,001,895.83	
Liabilities for regulatory over-recoveries	8,605,225.00	13,607,120.83	0.00	5,001,895.83
Current liabilities				
Advances received	0.00		1,586,049.67	
Accounts payable	3,647,044.81		2,055,379.43	
Other liabilities	1,703,019.60		1,601,589.19	
Accrued liabilities	11,633,807.16	16,983,871.57	11,525,970.11	16,768,988.40
TOTAL LIABILITIES		50,665,737.78		38,643,126.85

CASH FLOW STATEMENT

	2018	2017
CASH FLOW FROM OPERATING ACTIVITIES		
Cash receipts from customers	80,674,130.05	61,561,040.02
Cash paid for operating expenses	-63,928,414.61	-50,780,327.36
Cash flow from operating activities before financial items and taxes	16,745,715.44	10,780,712.66
Interest and other financial expenses paid	-74,672.16	-67,818.41
Interest received	9,397.55	7,813.56
Income taxes paid	-2,486,202.69	-1,392,920.97
Cash flow from operating activities	14,194,238.14	9,327,786.84
CASH FLOW FROM INVESTING ACTIVITIES		
Investments in tangible and intangible assets	-2,072,627.98	-4,003,689.54
Proceeds from sale of tangible and intangible assets	0.00	53,287,43
Acquisition of business operations 1 April 2017	0.00	-3,929,594.14
Cash flow from investing activities	-2,072,627.98	-7,879,996.25
CASH FLOW FROM FINANCING ACTIVITIES		
Withdrawal of long-term loan	0.00	10,000,000.00
Repayment of long-term loans	0.00	-5,000,000.00
Cash flow from financing activities	0.00	5,000,000.00
NET INCREASE (+)/ DECREASE (–) IN CASH AND CASH EQUIVALENTS	12,121,610.16	6,447,790.59
Cash and cash equivalents 1 January	6,450,695.49	2,904.90
Cash and cash equivalents 31 December	18,572,305.65	6,450,695.49
	12,121,610.16	6,447,790.59

NOTES TO THE INCOME STATEMENT AND BALANCE SHEET

The company's operations commenced on 1 April 2017. Consequently the information of the previous financial period in not fully comparable.

VALUATION PRINCIPLES

Valuation of fixed assets

Fixed assets are measured at cost less depreciation according to plan. Depreciation according to plan is calculated based on the economic useful life of the assets as follows:

Computer sofware	straight-line depreciation	5 years
Other long-term expenditure	straight-line depreciation	5–10 years
Machinery and equipment	straight-line depreciation	5–15 years

Revenue

During the financial year 2018, revenue was reduced by a provision of EUR 8,605,225.00 based on the SES legislation requirements for the change of en-route charge and the Helsinki-Vantaa air navigation fees in future years.

	2018	2017
Staff expenses		
Salaries and bonuses	35,820,903.51	26,218,969.41
Fringe benefits	126,256.05	91,590.33
Total	35,947,159.56	26,310,559.74
Indirect staff expenses		
Pension expenses	6,698,312.01	5,003,385.73
Other indirect staff expenses	1,238,368.10	1,030,428.64
Total	7,936,680.11	6,033,814.37
Average number of personnel during the financial year	408	402
Personnel at the end of the year		
Permanent	400	403
Temporary	47	53
Total	447	456
Salaries and bonuses of the CEO and Board of Directors	364,136.50	239,836.00
Depreciation, amortisation and impairment		
According to plan		
Computer software	2,677,382.51	1,951,754.04
Other long-term expenditure	259,571.01	194,678.26
Machinery and equipment	678,453.42	451,103.91
Total	3,615,406.94	2,597,536.21
Other operating expenses		
Other staff expenses	1,250,402.71	847,787.98
Travelling expenses	1,004,610.78	703,864.93
Rents	8,550,502.68	6,446,937.71
Supplies and fixtures	419,676.94	168,196.75
Other operating expenses	7,368,479.71	5,217,634.91
Total	18,593,672.82	13,384,422.28
Auditor's fees		
Audit fee	25,266.86	10,000.00

NOTES TO THE INCOME STATEMENT AND BALANCE SHEET

	2018	2017
Financial income and expenses		
Interest income	9,397.55	7,813.56
Interest expenses	-72,727.71	-73,998.97
Total financial income and expenses	-63,330.16	-66,185.41
Intangible assets		
Computer software		
Acquisition cost 1 January	12,747,293.90	0.00
Increase during the financial year	490,807.58	12,748,767.65
Decrease during the financial year	0.00	-1,473.75
Acquisition cost 31 December	13,238,101.48	12,747,293.90
Accumulated depreciation according to plan 1 January	-1,951,754.04	0.00
Accumulated depreciation on decrease	0.00	0.00
Depreciation according to plan during the financial year	-2,677,382.51	-1,951,754.04
Book value 31 December	8,608,964.93	10,795,539.86
Other long-term expenditure		
Other capitalised long-term expenditure		
Acquisition cost 1 January	2,154,871.01	0,00
Increase during the financial year	0.00	2,154,871.01
Decrease during the financial year	0.00	0.00
Acquisition cost 31 December	2,154,871.01	2,154,871.01
Accumulated depreciation according to plan 1 January	-194,678.26	0.00
Accumulated depreciation on decrease	0.00	0.00
Depreciation according to plan during the financial year	-259,571.01	-194,678.26
Book value 31 December	1,700,621.74	1,960,192.75
Tangible assets		
Machinery and equipment		
Acquisition cost 1 January	4,837,655,93	0.00
Increase during the financial year	242,844.82	4,843,550.93
Decrease during the financial year	-7,581.93	-5,895.00
Acquisition cost 31 December	5,072,918.82	4,837,655.93
Accumulated depreciation according to plan 1 January	-451,103.91	0.00
Accumulated depreciation on decrease	7,581.93	0.00
Depreciation according to plan during the financial year	-678,453.42	-451,103.91
Book value 31 December	3,950,943.42	4,386,552.02
Advance payments and construction in progress		
Other work and purchases in progress		
Acquisition cost 1 January	3,324,251.07	0.00
Increase during the financial year	2,544,015.18	5,994,262.04
Decrease during the financial year	-1,429,695.95	-2,670,010.97
Acquisition cost 31 December	4,438,570.30	3,324,251.07
Material items contained in accrued income		
Accrued income form Eurocontrol	4,596,805.00	4,130,595.00
Other accrued income	889,134.45	273,016.88
Receivables from occupational health care	111,925.09	71,150.75
VAT receivables	0.00	159,956.82
Total	5,597,864.54	4,634,719.45

NOTES TO THE INCOME STATEMENT AND BALANCE SHEET

	2018	2017
Restricted equity		
Share capital 1 January	3,300.00	3,300.00
Share capital 31 December	3,300.00	3,300.00
Restricted equity total	3,300.00	3,300.00
Unrestricted equity		
Reserve for invested unrestricted equity 1 January	8,300,000.00	0.00
Reserve for invested unrestricted equity 31 December	8,300,000,00	8,300,000.00
Retained earnings 1 January	6,801,571.47	-395.10
Disrtibution of dividend	0.00	0.00
Retained earnings 31 December	6,801,571.47	-395.10
Profit (loss) for the financial year	3,653,853.43	6,801,966.57
Unrestricted equity total	18,755,424.90	15,101,571.47
Total equity	18,758,724.90	15,104,871.47
Distributable equity on 31 December		
Retained earnings	6,801,571.47	-395.10
Profit for the financial year	3,653,853.43	6,801,966.57
Reserve for invested unrestricted equity	8,300,000.00	8,300,000.00
	18,755,424.90	15,101,571.47
Statutory provisions		
Other statutory provisions	268,392.14	1,009,061.08

A provision amounting to EUR 1,099,727.75 was transferred to the company in the acquisition of business operations in April 2017 to fulfill the commitments relating to the transfer of the operations of Tampere Area Traffic Control Centre. In the beginning of the year the provision amounted to EUR 1,009,061.08. During the 2018 financial year, EUR 636,666.68 of the provision was used and EUR 104,002.26 was written down.

Non-current liabilities		
Loans from credit institutions		
Balance in the beginning of the financial year	5,000,000.00	0.00
Increase during the financial year	0.00	10,000,000.00
Decrease during the financial year	0.00	-5,000,000.00
Balance at the end of the financial year	5,000,000.00	5,000,000.00
Provisions for regulatory over-recoveries		
Increase during the financial year	8,605,225.00	0.00
Balance at the end of the financial year	8,605,225.00	0.00

The regulatory adjustment includes liabilities of EUR 17,053,242.00 and receivables of EUR 8,448,147.00.
The adjustment booked 2018 covers also receivables and liabilities incurred previously.

Loans maturing later than within five years		
Bank loan	0.00	0.00
Provisions for regulatory over-recoveries	1,900,000.00	0.00

The portion of the regulatory over-recoveries maturing after five years is related to customer refunds of EU grants for investments.

The secured loans involve covenants effective from 1 January 2018. The agreed special terms and conditions concern the company's solvency and liquidity. Breaching the covenants may increase the costs of financing or result in the termination of the loans. According to the company's management, the terms of the covenants have been met and they are regularly monitored.

NOTES TO THE INCOME STATEMENT AND BALANCE SHEET

	31.12.2018	31.12.2017
Current liabilities		
VAT liability	3,674.81	0.00
Withholding tax liability	909,968.98	910,483.52
Social security contribution liability	23,805.81	29,161.52
Other	765,570.00	661,944.15
Total	1,703,019.60	1,601,589.19
Material items included in accrued liabilities		
Salary and social security expense accruals	1,160,999.02	1,253,823.86
Holiday pay liabilities including social security contributions	8,131,756,60	7,873,573.64
Tax liability	609,175.87	259,593.95
Other accrued liabilities	1,731,875.67	2,138,978.66
Total	11,633,807.16	11,525,970.11
Commitments and contingent liabilities		
Lease liabilities		
Payble during the next financial year	373,906.88	104,045.19
Payable in later years	585,909.33	291,628.15
Total	959,816.21	395,673.34
Other contingent liabilities		
Due during the next financial year	2,425,901.00	1,052,686.00
Due in later years	0.00	1,098,715.00
Total	2,425,901.00	2,151,401.00
Total commitments and contingent liabilities	3,385,717.21	2,547,074.34

The company has a long-term lease on its business premises expiring 30 June 2032. The monthly rent is EUR 67,453.22. In the financial statements dated 31 December 2018 the company's lease liability from this agreement totals EUR 10,927,421.64.

The company is involved in a few minor disputes relating to the company's business operations, the outcomes of which will not have any material impact on the company's financial position.

SIGNATURES

Signatures of the financial statements and Board of Directors' report

Vantaa, 4 March 2019

Pertti Korhonen
Chairman of the Board of Directors

Teemu Penttilä
Member of the Board of Directors

Asta Sihvonen-Punkka
Member of the Board of Directors

Raine Luojus
CEO

Auditor's note:
A statement on the audit performed has been issued today.

Vantaa, 4 March 2019

Ernst & Young Oy
Authorised Public Accountants

Mikko Rytilahti
APA, CPFA

List of accounting ledgers and document types used

List of accounting ledgers used

Cash journal and nominal ledger	Computer printout
Fixed assets accounting	Computer printout
Accounts payable ledger	Computer printout
Accounts receivable ledger	Computer printout
Payroll accounting	Computer printout
Journal	Electronically archived
General ledger	Electronically archived
Balance sheet book	Bound book
Balance sheet specifications	Bound book

List of document types used

Purchase invoices	Electronically archived
Sales invoices	Paper documents
Purchase invoice payment transactions	Computer printout
Payments of sales invoices	Computer printout
Cash transactions	Computer printout
Bank transactions	Computer printout
Accrual documents	Paper documents
Memorandum documents	Paper documents

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