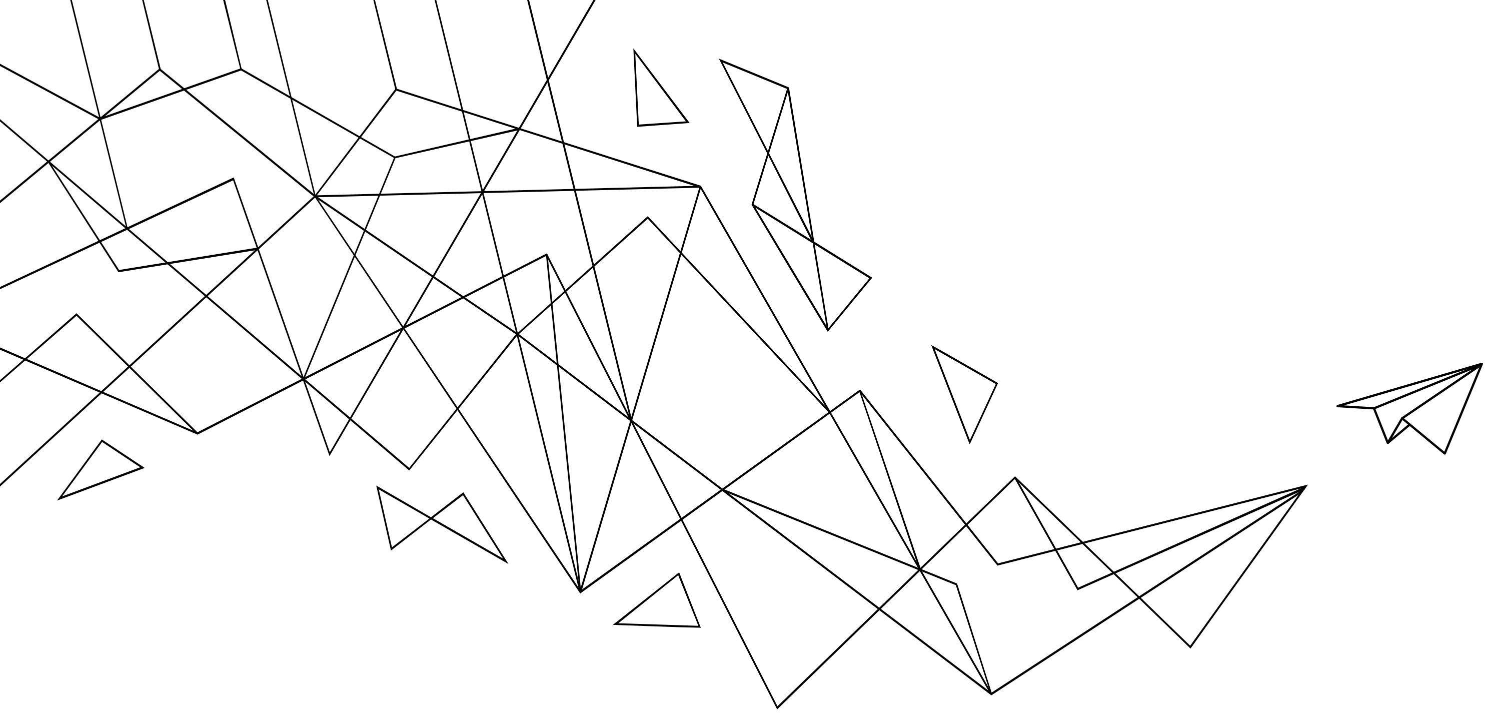


Annual Report 2021

DFS Deutsche Flugsicherung

The business year 2021

This is a courtesy translation of the German original of the DFS Annual Report 2021. It is provided solely for your information and for the convenience of English-speaking readers. In the event that the English and German versions permit different interpretations, the German text shall prevail.

Report of the Supervisory Board

Type and scope of review and consultation

In the business year 2021, the Supervisory Board performed its functions as prescribed by law and the Articles of Association. It regularly advised and monitored the Executive Board and was involved in decisions of fundamental importance to the company.

In fulfilling its tasks, the Supervisory Board was supported by the audit committee, the committee for the commercial business, the personnel committee and the project committee. The committees thoroughly discussed the resolutions to be adopted and prepared recommendations for the decisions to be taken at the plenary meetings.

In the business year 2021, there were several changes to the composition of the Supervisory Board. Dr Tamara Zieschang and Dr Angelika Kreppein left the Supervisory Board, followed by Ms Iris Reimold and Mr Thorsten Ruge. The position of Chairperson of the Supervisory Board was taken over by Ms Antje Geese in September. The Supervisory Board would like to thank the departing members for their dedicated work and the responsibility they assumed.

The Executive Board, which was completed in April when Mr Arndt Schoenemann took office as Chairman and CEO, reported to the Supervisory Board properly, regularly, promptly and comprehensively on the course of business and all important strategic and operational decisions. The Supervisory Board was also provided with ad hoc information on important issues. The financial situation and especially the liquidity situation continued to be reported on a monthly basis. Regular reporting was carried out in accordance with Article 90(1)(3) of the German Stock Corporation Law (AktG).

During the business year 2021, the Supervisory Board held four ordinary meetings to discuss the situation and development of the company. In addition, two extraordinary meetings were held to decide on the target agreement of the Executive Board with the Supervisory Board and on a bid submission in the commercial business.

The Supervisory Board specifically dealt with the following topics at its meetings in 2021:

- the 2020 annual financial statements and consolidated financial statements, the management report as well as the group management report and the audit report on the 2020 annual financial statements and consolidated financial statements
- the 2022 group economic plan, with the associated investment and financial plan
- the group strategy DFS 2030
- the target agreement system with the Executive Board
- the setting of targets for the proportion of women on the Supervisory Board and the Executive Board
- the IP upgrade project of the radio and radar sites
- follow-up investment for the new Logistics Centre project
- a bid submission by DFS Aviation Services Bahrain CO. W.L.L. (DAS Bahrain)

- the submission of bids by DFS Aviation Services GmbH (DAS) for a remote tower centre in Lower Saxony

- the adaptation of the rules of procedure of the Executive Board and the rules of procedure of Supervisory Board committees

Result of the review

The Supervisory Board notes that the company has prepared itself well for the coming years through an intensive strategy process and has thereby also created a solid structure to deal with future challenges. Implausibilities that subsequently became known with regard to the project application "New Logistics Centre", which required approval, were investigated by the Supervisory Board with the assistance of the Group's internal audit department. As a result, project management and control were further improved in order to exclude the occurrence of such implausibilities in the future. In the current COVID-19 crisis, the company succeeded in providing the necessary capacities while maintaining a high level of safety and thus reliably fulfilling the sovereign task of providing air navigation services in Germany.

On the basis of the audit report prepared by the auditors Mazars GmbH & Co. KG, the Supervisory Board discussed the 2020 annual financial statements and consolidated financial statements and the associated management reports including conclusions in accordance with Article 53 of the German Budgetary Principles Act (HGrG). The audit committee met for discussions in advance. The comprehensive control and risk management system established in the company was also included in the audits. The auditors were present at the discussions. They gave an account of the key results of their report and were available to answer questions. The Supervisory Board found no exceptions to be taken against the audit reports and the auditors' conclusions. It proposed that the Shareholder Meeting approve the annual financial statements and the consolidated financial statements. The Supervisory Board reviewed the proposal of the Executive Board on the use of profits and agreed to it.

The pandemic posed new challenges for companies as well as for society as a whole. The aviation industry was very much affected by this. The Supervisory Board would therefore like to thank the Executive Board and all employees in particular for their commitment in what once again proved to be a difficult year for aviation in 2021.

May 2022 The Supervisory Board

Antje Geese
Chairperson

Members of the Supervisory Board

Chairperson **Antje Geese** *Ministerialdirigentin* Federal Ministry for Digital and Transport	***Deputy Chairperson*** **Sabrina Leitzbach** Air traffic controller
Carmen von Bornstaedt-Radbruch *Ministerialrätin* Federal Ministry of Defence	**Armin Havenith** Colonel (G.S.) Federal Ministry of Defence
Oktay Kaya Chairperson of the Central Staff Council	**Dr Carl-Stefan Neumann** Managing Director Carl-Stefan Neumann Advisory & Investments GmbH
Iris Reimold *Ministerialrätin* Federal Ministry for Digital and Transport	**Thorsten Ruge** *Ministerialrat* Federal Ministry of Finance
Markus Siebers Supervisor tower *(in transitional retirement)*	**André Vöcking** ANS engineer
Andrea Wächter Head of Operations Tower	**Jörg Waldhorst** Senior expert air navigation obstacles

Correct at 31 December 2021

Members of the Advisory Council

Chairperson **Steffen Bilger** Member of the German Bundestag	
Dr Constantin Alsheimer Chairperson of the Management Board Mainova AG	**Dr Karsten Benz** Chairman of the Supervisory Board Droniq GmbH
Dr Jürgen Bierbaum Alternate Chairperson ALTE LEIPZIGER – HALLESCHE Group	**Ingo Gerhartz** Chief of Staff, Air Force German Air Force Command
Prof Dr Elmar Giemulla President Aircraft Owners and Pilots Association (AOPA Germany)	**Winfried Hermann** **Member of the *Land* Parliament** Minister Ministry of Transport Baden-Württemberg
Michael Hoppe Chairperson BARIG – Board of Airline Representatives in Germany e.V.	**Dr Detlef Kayser** Member of the Executive Board Deutsche Lufthansa AG
Oliver Luksic Member of the German Bundestag	**Joachim Müller** Group Chief Executive Officer Allianz Global Corporate & Specialty AG
Alois Rainer Member of the German Bundestag	**Prof Dr Bernd Sanner** Medical Director AGAPLESION BETHESDA KRANKENHAUS WUPPERTAL gGmbH
Dr Stefan Schulte President German Airports Association (ADV) Chairperson of the Executive Board Fraport AG	**Björn Simon** Member of the German Bundestag
Prof Dr Sven Simon Member of the European Parliament	**Ralf Teckentrup** President German Airline Association (BDF) CEO of the Executive Board Condor Flugdienst GmbH

Correct at 31 December 2021

Combined management report of DFS Deutsche Flugsicherung GmbH for the business year 2021

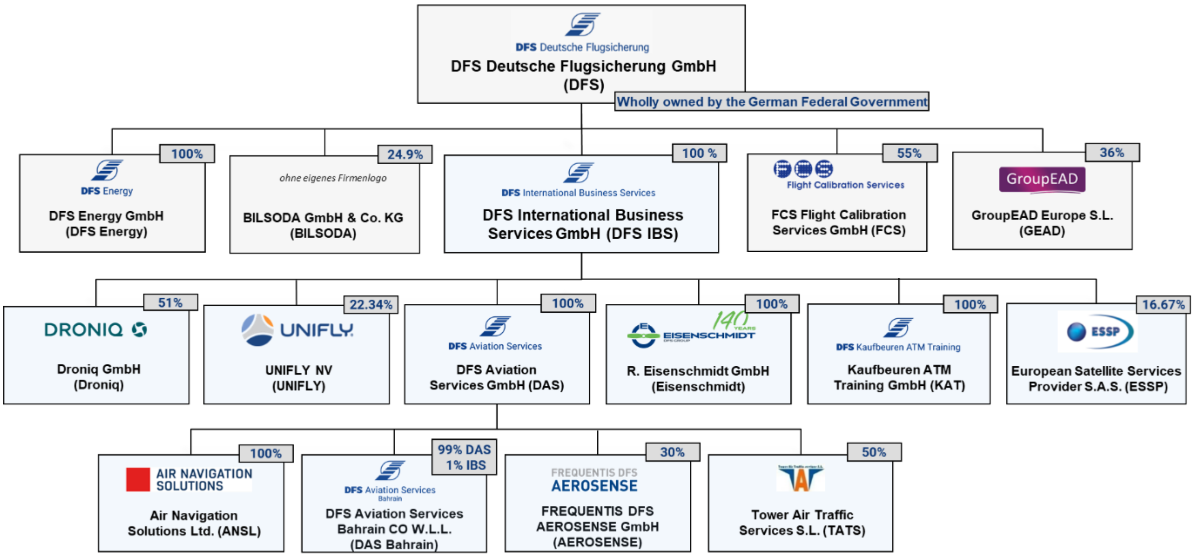
The Group management report 2021 has been combined with the management report of DFS Deutsche Flugsicherung GmbH (DFS) in accordance with Section 315(5) of the German Commercial Code (HGB) in conjunction with Section 289(2) of the HGB. The financial statements of DFS, which are prepared in accordance with the provisions of the HGB, and the combined management report are published simultaneously in the electronic German Federal Gazette. Unless otherwise stated, the following information applies jointly to the DFS Group and DFS. Sections that contain information on DFS only are marked as such.

Group management report

Consolidated financial statements

1 Group organising principles

1.1 Structure of the Group



The regulated business – providing air navigation services – is defined by the tasks set out in Section 27c of the German Aviation Act (LuftVG). As a company entrusted to perform State functions, DFS provides air traffic services (ATS) and support services. To provide air traffic control, DFS operates four control centres in Langen, Munich, Karlsruhe and Bremen as well as control towers at the 15 designated international airports in Germany.

From these sites, en-route and approach control (APP) services for lower and upper airspace as well as aerodrome control services are provided.

Air navigation services include the aeronautical information service, air traffic flow management and airspace management. For this purpose, the company develops and operates systems for air traffic management (ATM); communication, navigation and surveillance services and the administration.

The en-route and the terminal charges are laid down by EUROCONTROL per calendar year on the basis of a decision of the enlarged Commission in accordance with the German Ordinance on Route Charges of the Air Navigation Services (FSStrKV).

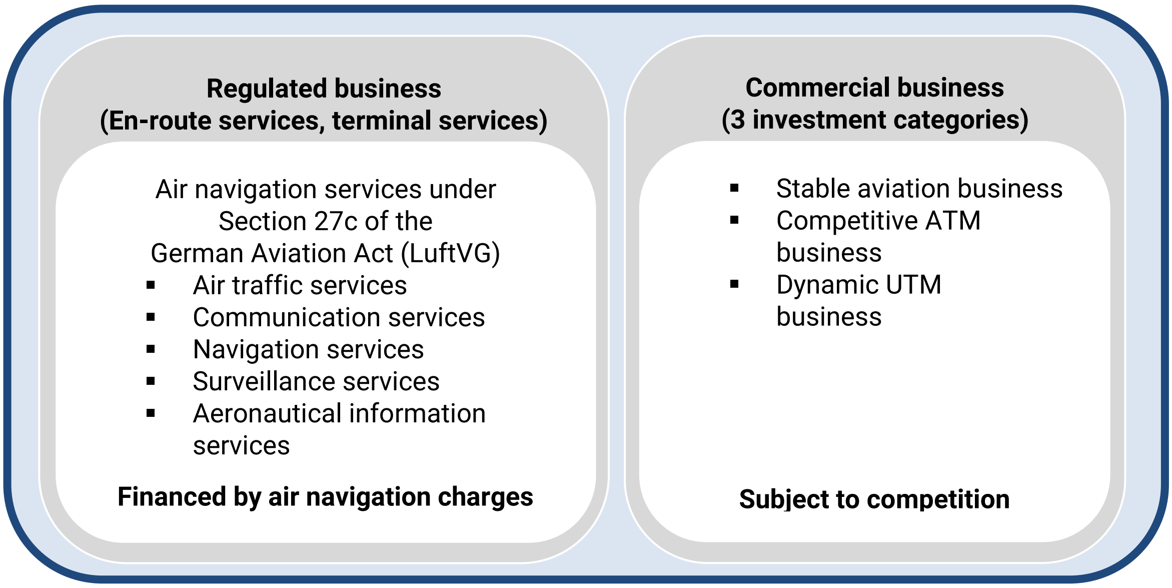
The charges for aerodrome control services are set by means of a statutory instrument of the Federal Government (FSAAKV).

1.2 Business activities

1.2.1 Overview

The DFS Group, which employs 6,079 operational and administrative staff (of which 5,584 at DFS), ensures the safety of German airspace and also offers additional products and services on the free market (the commercial business).

The DFS Group divides its business activities into two segments. One segment – the regulated business – is financed by air navigation charges, while the other segment – the commercial business – competes for business on the free market. The segment financed by air navigation charges is the main business. In the business year 2021, DFS reallocated its investments in the commercial business from five strategic business areas to three investment categories.



1.2.2 Regulated business

The regulated business – providing air navigation services – is defined by the tasks set out in Section 27c of the German Aviation Act (LuftVG). As a company entrusted to perform State functions, DFS provides air traffic services (ATS) and support services. To provide air traffic control services, DFS operates four control centres in Langen, Munich, Karlsruhe and Bremen. From there, en-route services and approach control (APP) for lower and upper airspace as well as air traffic control services at the 15 designated international airports in Germany are provided. These services also include the aeronautical information service, air traffic flow management and airspace management. For this purpose, the company develops and operates systems for air traffic management (ATM); communication, navigation and surveillance services and the administration.

For area and approach control, the charges are laid down by EUROCONTROL per calendar year on the basis of a decision of the enlarged Commission in accordance with the German Ordinance on Route Charges of the Air Navigation Services (FSStrKV).

In the case of approach control at international airports (tower services), the charges are set by means of a statutory instrument of the Federal Government (Section 1(1) FSAAKV).

1.2.3 Commercial business

The management of the Group has bundled the commercial business (see also section 3.2) in subsidiaries and investment entities primarily under the DFS International Business Services GmbH (DFS IBS) holding company to the extent legally possible and economically sensible.

The subsidiaries and investment entities support and enhance the portfolio of products and services offered by the Group on the free market. These commercial services are offered worldwide, while air navigation services are currently provided in Europe only. The commercial business is not subject to regulatory requirements (with the exception of the aerodrome control service provided by DFS Aviation

Services at German regional airports since September 2021). Intra-Group transactions are conducted at arm's length conditions and prices.

1.3 Legal framework and management organisation

In 1993, DFS was entrusted with the tasks of the Federal Administration of Air Navigation Services (BFS) by the Federal Republic of Germany. The Headquarters of DFS are located in Langen near Frankfurt at: Am DFS-Campus 10, Langen, Germany. The company is registered under HRB 34977 on the Commercial Register at the Local Court in Offenbach am Main.

The object of the company is the development, provision and execution of the air navigation services delegated to the company by the German Federal Ministry for Digital and Transport (BMDV). The company can also provide air navigation services in Europe as well as carry out related sideline activities in Germany and abroad.

The sole Shareholder is the Federal Republic of Germany.

The following distribution of responsibilities among the Members of the DFS Executive Board forms the basis for the management organisation (valid since 1 March 2020).

Chairman and Chief Executive Officer	Chief Operating Officer	Chief Technology Officer	Chief Human Resources Officer (Labour Director)
• Strategy, organisation, international affairs • Institutional and legal affairs, risk management, compliance • Export control • Safety and security management systems • Internal audit, quality management • Corporate communications, public relations, environment • Finance, including taxes and charges, insurances • General administration • Procurement • Consulting services and system deliveries • Military affairs	• Air traffic services • Airspace management • Air traffic flow management • Aeronautical information service • Capacity planning and operational training for operational ATM and AIS personnel • Product management for ATM and AIS systems • Project management for ATM and AIS systems	• Research and development • IT architecture management • Communication, navigation and surveillance (CNS) services • Product management for CNS systems • System management for technical systems • Logistics • Technical and infrastructural facility management • Business and administrative information technology • Development of software products	• Human resources strategy • Collective bargaining (strategies and policies) • Human resources management • Human resources development, initial and continuation training • Initial training for operational personnel (air traffic services) • Staff planning (excluding capacity planning of operational personnel) • Payroll accounting • Compensation and incentive systems • Occupational pensions • Social and health management • Industrial safety, accident prevention • Labour law, collective bargaining law

The Executive Board and members of the executive management level (division directors) regularly exchange information on important topics relevant to all divisions in the Executive Committee.

The Supervisory Board of DFS comprises 12 members, six appointed by the Shareholder and six elected by the employees (see Group Note 37.2 for the members of the Supervisory Board).

The subsidiaries and investment entities in the commercial business are managed primarily through the holding company DFS International Business Services (DFS IBS).

The management of the Group is responding to the continuing consolidation in the aviation industry and the resulting diversified framework conditions and regularly reviews whether further measures to adapt and realign the structure of the Group need to be taken.

1.4 Strategies and objectives

1.4.1 Strategic orientation

A new Group strategy was developed during 2021. With DFS 2030, the overarching and long-term direction for DFS and its subsidiaries was defined, including specific objectives and measures for the next ten years.

The air navigation services environment is changing. New technologies and tighter environmental requirements are changing the air transport industry. The industry is seeing increasing competition and new entrants. What is more, the COVID-19 pandemic has resulted in enormous financial losses. Air traffic volumes have plummeted, and a recovery is not expected until 2024 at the earliest. Customers are demanding that air navigation charges be reduced and that the quality of service be maintained.

The DFS Group is meeting these challenges with the aspiration to provide the highest quality of service with an excellent level of safety. We will strengthen our competitiveness with innovative solutions and, together with customers and partners, shape the air transport industry of the future.

In this context, the DFS Group is focusing on three strategic priorities in its future strategic orientation: sustainability, competitiveness and innovation.

Sustainability in the DFS Group: We act in a financially profitable, socially and ecologically ambitious manner in order to fulfil our responsibility towards our stakeholders – customers, partners, employees as well as society. Our top strategic priority is securing our sustainable business success, based on our quality standards.

We strengthen our financial sustainability by securing long-term liquidity and increasing profitability.

We take our social responsibility seriously, focus on sustainable people management and create a values-based corporate culture.

We are helping to shape the future of environmentally optimised air transport, while at the same time driving environmental sustainability within the company.

Against the background of increasing liberalisation of the European air navigation services market, **competitiveness** is becoming another important strategic priority.

We promote the further development of the air transport system by optimising our range of services. We gather ideas for customer-centric developments through intensive dialogue with customers and partners.

We increase our customer-centric flexibility in order to be able to react more dynamically to traffic and competitive developments. We develop and implement the job profiles of the future.

We achieve a continuous increase in the efficiency of internal and external services by means of effective process chains and efficient staff deployment.

The **capability to innovate** describes the third strategic priority of our Group. It is a prerequisite for the priorities already mentioned. Relevant innovations are needed for developments that are fit for the future and for long-term corporate success.

We exploit the potential of digitalisation and automation in operational core processes and technical support areas. We establish state-of-the-art data exchange with our customers and partners.

In the core systems of air traffic control, we realise a flexible architecture and shorten innovation cycles. By improving data exchange, we are creating the basis for competitive data services.

We promote internal innovation and use digital opportunities for modern worlds of work and ways of work.

In addition to the sovereign mandate to provide air navigation services in Germany, the commercial business is the second mainstay of the DFS Group. To support the core business, the commercial business is to be scaled up.

Our employees are the foundation of our long-term success. The way we work with each other is driven by common values: professionalism, trust, change, passion and teamwork.

1.4.2 STEP

The COVID-19 pandemic has led to a massive downturn in air traffic volumes. In Europe alone, traffic more than halved. In 2020, only around 5 million flights were logged, 6.1 million fewer than in the previous year. Currently, DFS does not expect the aviation sector to recover until 2024 at the earliest.

Due to the considerable revenue shortfall, the Executive Board launched the STEP programme. STEP is the **st**rategic **e**fficiency improvement **p**rogramme of DFS and aims to ensure financial sustainability through a high level of cost discipline, efficient processes and optimal use of resources. To achieve the necessary reduction in staff costs, processes and structures must be organised more efficiently and in ways that better match future needs.

STEP is designed in phases. In the first phase, the core processes were defined and initial findings for possible optimisation were obtained. The second phase of STEP has also been completed. From the results of workshop-based bottom-up idea development involving numerous employees as well as an organisational and personnel structure analysis, findings were collected, concrete proposals for measures were developed and then evaluated. A target design has been developed for the four directorates and a change concept has been submitted for co-determination.

1.4.3 Financial strategy

The financial strategy of DFS promotes the financial stability of the Group and is based on the following areas:

Good to very good credit rating

Investors, business partners and employees should be able to continue to trust in the financial stability of the company and its subsidiaries. The company secures the very good investment grade rating in combination with its Shareholder (see section 2.6.3.1).

Adequate liquidity

In the current low interest rate environment, DFS maintains its room to manoeuvre over the near term by issuing attractively priced commercial paper (short-term) and using demand deposits (short-term). This will allow the company to react flexibly to changes in its environment at all times. In the medium to long term, DFS has sufficient fund assets not protected against insolvency at its disposal.

Adequate capital structure and equity ratio

Measures are being taken to continuously monitor the capital structure and equity ratio. DFS will continue to maintain the equity ratio shown in 'adjusted equity' (see Group Note 30) of around 31 percent and to progress towards a fully funded status for occupational pensions in a step-by-step manner.

Low leverage

The infrastructure of the company is unencumbered and remains the property of the company. This creates a stable asset base that is in essence freely available.

Risk management system

A modern risk management system supports the planning and control of financial risks in a consistent manner (see section 6.2.2.1).

1.5 Planning and control

When managing the Group, the Executive Board differentiates between the regulated business and the commercial business as required by the provisions of the German Transparency Directive Implementation Act (TranspRLG).

Regulated business

The management of the regulated business is aligned with the regulatory environment, the strategic dimensions and objectives, the requirements of the regulated business and the organisational structure.

The achievement of these objectives and requirements is measured by means of planned/actual comparisons, which are carried out both on a regular basis (monthly, half-yearly and yearly) and ad hoc. Achievement is monitored and reported at corporate, divisional and product level. A system of financial indicators has been developed, which are primarily IFRS based. The performance indicator of operating costs, which is determined and laid down on the basis of the following, contains primary costs as well as income and charges from internal costs allocation:

Operating costs
Staff costs
+ Other operating expenses (e.g. material costs)
+ Depreciation and amortisation
= Primary costs
+ Charges from internal cost allocation
- Income from internal cost allocation
= Operating costs

Planning and control also uses non-monetary indicators, such as the analysis of the traffic forecast, in addition to financial metrics on cost-efficiency.

As regards non-monetary indicators, DFS constantly measures indicators for the key performance areas of safety, air traffic control (ATC) capacity and the environment, such as infringements of separation, punctuality indicators and horizontal flight efficiency.

Commercial business

The commercial business is materially influenced by the competitive environment in which it operates. Planning and control is carried out by setting targets for returns on sales, whereby a positive contribution to earnings at the EBIT or EBITDA level should be generated.

The operating subsidiaries and investment entities should generate a profit before tax typical for the industry. The return is to be raised in the medium term to 7.5 percent from revenue of around €150 million by 2030.

1.6 Research and development

German airspace demands a particularly high-performing air navigation service provider over the long term, as this airspace is extremely busy and complex in international comparison. Technological and operational innovations represent an important prerequisite for managing growing cost pressure, increasing requirements as regards environmental sustainability and the rise in air traffic predicted in all forecasts for the medium term. These issues must all be managed while maintaining an unrestricted safety level. Therefore, DFS has been involved in international and national research projects for many years. It concentrates on applied research which leads to new products, procedures and working methods and follows the path from invention to innovation.

As part of the DFS Group strategy 2030, DFS is pushing ahead with its innovations in a targeted manner. National activities focus on regional challenges, such as the optimisation of flight routes for overflights and the operation of busy airports, such as Frankfurt and Munich (including their arrival and departure procedures). DFS conducts real-time and fast-time simulations, tests new key technologies and subsequently develops air traffic control software and suitable simulators. DFS also participates in grant funding programmes of the German Federal Government, such as the aeronautical research programme and the mFUND research initiative (*Modernitätsfonds*). In the aeronautical research programme, DFS is once again managing a consortium project. The goal of grant funding projects, and of all other forms of cooperation, is to work jointly with German partners from research and industry to improve the starting basis for subsequent international activities.

DFS allocated a total of approximately €57.4 million and around 295 staff posts to research and internally generated developments. The capitalisation ratio equals roughly 49.6 percent.

DFS received grant funding payments of €34.0 million in 2021 from European research framework programmes for this purpose, including from SESAR and the German aeronautical research programme. The implementation of the R&D results also takes place within the scope of the SESAR Deployment Alliance (SDA) together with air navigation service providers (ANSP), airlines and airport operators.

2 Report on economic position

In addition to the overall economic situation, political, legal and industry-specific factors have a fundamental influence on the development of air transport. A flourishing global economy acts as a growth engine for the aviation industry. Nevertheless, there are factors which have negative effects, such as political tensions, natural disasters, negative regulatory, legal and tax issues, or even global, geographic concentrations of illnesses (pandemics). The number of flights has a material influence on the business activities of the regulated business and key elements of the commercial business.

2.1 Overall economic situation

According to the International Monetary Fund (IMF), the global economy grew by around 5.9 percent in 2021, the highest rise in 80 years. The Organisation for Economic Co-operation and Development (OECD) reported growth of global gross domestic product (GDP) of around 5.6 percent over the previous year. However, this recovery is uneven and largely reflects strong recoveries in some major economies. In many emerging and developing countries, inhibitions about vaccination continue to weigh negatively on economic activity. The rapid growth in demand as economies reopen and the fact that supply chains are stretched are driving up prices for key commodities, such as oil and metals. The global supply bottlenecks for primary products, such as computer chips and lumber, are also contributing to the rise in inflation.

In the previous year, the OECD had still been forecasting global growth of around 4.2 percent for 2021, while the World Bank expected around 4.0 percent in 2021. Numerous statistical studies have shown a correlation between economic variables, for example GDP, and air traffic volumes, such as passenger numbers or movements. With the outbreak of the COVID-19 pandemic, a far-reaching decoupling of the above-mentioned variables has been observed. The fortunes of air transport have become much more determined by the COVID-19 vaccination rates in individual countries and the associated travel restrictions. Despite an increase in global economic growth that exceeded forecasts, air transport is growing only moderately.

The EU economy grew by around 5.2 percent year on year in 2021, recovering faster than expected from the recession caused by the pandemic. Economic growth of roughly 4.1 percent had been expected for the EU. Households are responding to the improving epidemiological situation and the gradual relaxation of containment measures with more domestic purchases. The growth in private consumption is increasing across the board in the EU as a result.

The German economy recovered in 2021 from the COVID-19-related slump of the previous year, although it has not yet returned to pre-pandemic levels of economic output. According to the German Federal Statistical Office, GDP increased by roughly 2.7 percent in 2021 (as of 14 January 2022). The German Federal Government had expected growth of around 3.0 percent. The main reason for the lower rate of growth was supply bottlenecks in many companies in the automotive and electrical industries as well as in the mechanical engineering sector, which slowed down industrial value creation. Service sectors, and in particular the air transport industry, continue to be restricted by the measures taken to combat the pandemic.

2.2 Development of business

For DFS, as well as for the air transport sector as a whole, 2021 continued to be marked by the effects of the pandemic situation caused by the SARS-CoV-2 pathogen.

In the summer months, starting in June and continuing well into late autumn, air traffic volumes in Germany recovered to an intermediate level of 80 percent of 2019 levels (in November). This increase in traffic volumes despite the start of the winter flight schedule, which is generally associated with significantly lower volumes, can be explained by the catch-up effects from private holiday travel. Nevertheless, the average number of aircraft movements in 2021 only reached about 65 percent of year before the pandemic. The exponential increase in COVID-19 infection figures in Germany in November also had an impact on traffic volumes in December, again curbing volumes to the level of the year as a whole.

The persistently poor business situation caused by the consequences of the pandemic prompted the DFS Executive Board to establish a strategic efficiency improvement programme (STEP), among other measures, in the company to make processes and structures more efficient and future proof. The resulting sustainable cost reductions should provide relief to the aviation system as a whole. The STEP programme is intended to make efficiencies operational by the end of the third reference period in 2024. The programme is being established in close consultation with staff representatives.

The persistently low level of traffic led to a considerable loss in liquidity at DFS. This was partially offset by an equity injection of €300 million made to DFS by the Shareholder, the Federal Republic of Germany. Withdrawals from the available fund assets not protected against insolvency further relieved the difficult liquidity situation.

The theme of innovation is exemplified by the so-called real laboratory (sandbox) in Hamburg, Germany. In this sandbox, DFS and its subsidiary Droniq, the joint venture with Deutsche Telekom, installed, established and controlled a traffic system for drones in a protected airspace in the Port of Hamburg in July 2021. This was the first of its kind in Europe.

DFS has set up a national digital platform for unmanned aviation (dipul) for the German Federal Ministry of Transport, which was activated on 10 January 2022. It is to become an interface for data on CE class drones. This platform was designed and developed by DFS as a government website for the Ministry of Transport and contains data on weather or geographical areas as well as interfaces for Federal and State application procedures to be used by operators of unmanned aircraft systems.

In the case of ground-based navigation aids, the further decommissioning of omnidirectional radio beacons was intensified. In addition, it was possible to obtain active support from the Federal Government for navigation systems that are still necessary for safe flight. For example, the replacement of conventional beacons with Doppler omnidirectional radio beacons, which are more robust in the face of interference from wind turbines, is being directly supported with financial funding from the German Federal Ministry for Economic Affairs and Energy (BMWi). Both measures thus also make a direct contribution to the increased expansion of onshore wind energy.

2.2.1 Development of air traffic

IFR flights 2021

The development of air transport in 2021 was largely determined by the COVID-19 pandemic, vaccination rates in the individual countries and the associated entry regulations. The increase in traffic compared with the previous year was mainly driven by tourist traffic, while the recovery of business travel was slow.

The COVID-19 pandemic and the associated global travel restrictions largely dictated the fate of the air transport industry in the first half of 2021. Only about 33.0 percent of the traffic volume of 2019 was logged in the first half of 2021. Only in June 2021 did the first increase become apparent, and from July 2021 onwards traffic volumes increased significantly. The declining number of cases as well as the progress in vaccination rates, especially in the industrialised countries, accompanied by the start of the holidays, was mainly responsible for this development.

The recovery trend in air transport continued in the third quarter of 2021, which saw a return to around 62.8 percent of 2019 traffic levels. The abolition of wide-ranging travel restrictions in continental European passenger traffic was the reason for the dynamic growth. In addition to tourism, the segment of visiting friends and relatives also rose again to pre-crisis levels. Turkey and Greece were the top holiday destinations in summer 2021.

However, the severe restrictions when travelling to intercontinental destinations continued to adversely impact traffic volumes significantly. Many destinations were not accessible or only with stringent conditions. The end of the travel ban to the United States for vaccinated Europeans from November 2021 was just another step towards normalisation. By the fourth quarter of 2021, traffic volumes were at around 71.1 percent of 2019 levels. The emergence of the Omicron variant again slowed momentum.

In 2021 as a whole, traffic was about 14.3 percent higher than in 2020, with 1,669,139 IFR flights. However, this was only 50.1 percent of the 2019 level.

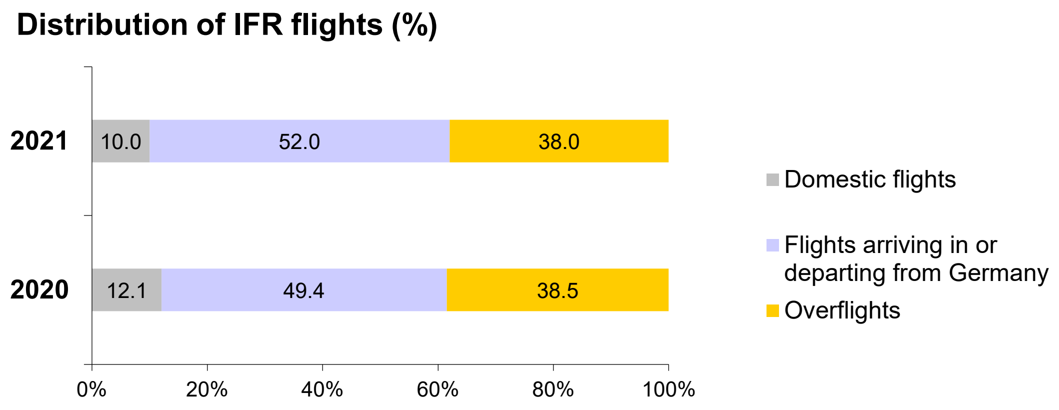
IFR flights in Germany

	2021	2020	Change
Civil flights	1,624,640	1,418,619	+14.5%
Military flights	44,499	42,149	5.6%
Total	1,669,139	1,460,768	+14.3%

The busiest day of 2021 was 8 October, with 7,456 controlled flights.

The increase in traffic was due to a rise in overflights (+12.8%) and entries and exits (+20.3%) and was rooted in the resumption of continental services predominantly. Domestic traffic fell by 5.6 percent year on year. Continued restrained intercontinental traffic and the associated low number of feeder flights were the main reasons for this development.

This is reflected in the shares of total traffic volume. The proportion of overflights as well as flights arriving in or departing from Germany increased. The share of domestic flights thus fell back to the pre-pandemic level of 10 percent.



Traffic at the airports where DFS operates

At the designated international airports in Germany, traffic rose by around 9.2 percent year-on-year to 962,111 arrivals/departures in 2021. This corresponds to around 45.1 percent of the 2019 level.

Two airports in particular, Leipzig Halle (+23.3%) and Frankfurt (+18.6%), grew, while the group of airports designated as 'international access airports 2' (Dresden, Erfurt Weimar, Münster Osnabrück, Saarbrücken, Bremen) continued to report declines in the double-digit range.

Traffic in the United Kingdom (UK)

Air Navigation Solutions Ltd. (ANSL) provides air traffic control and engineering services at Edinburgh and Gatwick airports. In addition, ANSL offers flexible and tailored air traffic management (ATM) solutions. At Gatwick Airport, prior to the pandemic, ANSL safely handled up to 60 runway movements an hour in 2019, making it the busiest single-runway airport in the world with a total of 280,681 commercial flight movements per year. The impact of the pandemic caused air traffic at Gatwick and Edinburgh airports to fall by 70 percent in 2020 and by a further 18 percent in 2021 to a final total of 98,655 commercial aircraft movements.

The impact of the global pandemic on the aviation industry in the United Kingdom led to the termination of the air traffic control contract at Gatwick Airport in 2021, with effect from 2022.

Drones – integration and detection

By carrying out the research project for U-Space in Hamburg, funded by the German Federal Ministry for Digital and Transport (BMDV), DFS, in cooperation with Droniq, demonstrated the feasibility of the European U-Space Regulation dated April 2021. The findings were made available to the German legislator as recommendations for action. They will serve as a blueprint for the mandatory implementation of U-Space in Germany from January 2023.

The threat level at Germany's designated international airports rose again. Following a decline in reported hindrances caused by illegally operated drones between 2018 and 2020, their number rose to 127 in 2021 (as at November). The coalition agreement for the new Federal Government also takes this into account with the statement "Detection and defence against drones is a sovereign task".

In accordance with the directive of the BMDV, DFS developed a proposal for implementation with alternative courses of action in 2021 based on the results of the test campaign with different drone detection solutions at Frankfurt and Munich airports. No further measures are planned until financing has been clarified with the new team at the head of the BMDV.

2.2.2 Principal legal and regulatory influencing factors

Calculation of charges and definition of profit

In accordance with the European regulations for air navigation service providers, DFS switched the cost-base for calculating charges from German Commercial Code (HGB) to IFRS issued by the International Accounting Standards Board (IASB) as at 1 January 2007.

The regulatory conditions had to be adjusted to avoid volatility in the level of charges, in particular, by the revised IAS 19 (2013). In a directive dated 12 December 2012, the Federal Supervisory Authority for Air Navigation Services (BAF) stipulated that the actual financing expense for occupational pensions should not be subject to the cost-efficiency targets of the performance plan, but is instead considered as determined cost in the performance plan and part of the cost-base. The charge takes the length of service and interest cost into account in a mutatis mutandis application of IAS 19 as part of the performance plan. Charges take the length of service and interest cost into account in a mutatis mutandis application of IAS 19 as part of the performance plan. The uniform discount rate for the third reference period (RP3) used to determine the obligation is based on the interest rate that can be earned on plan assets (2.85%, previously 3.54% in RP2). This rate reflects prudent commercial judgement. The differences between the obligation and plan assets (plan deficit / plan surplus) are allocated in a rolling fashion over the average remaining time to work of the staff (15 years) and are also taken into account in the following reference periods as a component of the charges (imputed model) and increases revenues and liquidity. Additional conservative assumptions for career, salary and inflation trends support the correct matching of the funding of occupational pensions and avoid random fluctuations in the cost-base for charges and therefore arbitrary charges for airspace users.

In addition, the regulatory authority has given DFS the right to spread the material measurement differences from the conversion from German Commercial Code (HGB) to IFRS for balance sheet items directly in equity, namely fixed assets (development costs, borrowing costs, depreciation and amortisation), pension obligations and other provisions (catch-up effects). The regulatory authority has also given DFS the right to invoice airspace users over a period of 15 years (until the end of 2021) for the ex-post financing requirements (Article 22 of Regulation (EC) No 2019/317).

There is a divergence between the commercial accounting rules and the basis for determining revenues from air navigation charges. This divergence leads to a corresponding divergence in the expense line items. Since 2013, the assessment basis for tax has been based on the charges-related result in accordance with Section 31b(3) of the German Aviation Act (LuftVG). However, a corresponding regulation to determine the basis for the payment of dividends is still not in place.

Strengthening of the equity position by the Federal Republic of Germany

On 11 December 2020, the German legislator approved a contribution of €300 million to the registered capital of DFS. This was carried out as part of a budgetary appropriation under the Law on the Approval of the Federal Budget for the Fiscal Year 2021 (*Gesetz über Feststellung des Bundeshaushaltsplans für das Haushaltsjahr 2021*, Bundestag publication 19/22600). The Federal Republic of Germany as the sole Shareholder undertook to raise the registered capital accordingly and made the corresponding payment in 2021. This measure is intended to stabilise the equity base of DFS and partially compensate for revenue shortfalls caused by COVID-19.

In close contact with the Shareholder, DFS is currently evaluating the need for further financial support for 2023.

On the basis of the international and national legal framework and regulations, a secure liquidity plan and the repeated very good credit ratings of DFS in combination with its Shareholder for 2021 in both the short and long term (AAA/Stable/A-1+) by Standard & Poor's (see section 2.6.3.1), DFS, together with the Shareholder, anticipates a positive going-concern situation (see also the Group Note 4.1).

Reference period 3

The European Commission set the third reference period (RP3) for the period from 2020 to 2024, combined with binding European targets for the key areas of safety, capacity, cost-efficiency and the environment, as well as a financial incentive system for the key area of capacity. The basis is Regulation (EU) 2019/317.

The supplementary regulation, Commission Implementing Regulation (EU) 2019/1627, adopted by the Member States in November of the previous year in the wake of the COVID-19 pandemic, is the basis for a complete revision of the current reference period, including new targets and new performance plans to be developed.

The European Commission's declared goal for this supplementary regulation is to achieve a (retroactive) cost-reduction effect stemming from the traffic-risk-sharing mechanism that continues to apply that would lead to higher charges. In deviation from Regulation (EU) 2019/317, the years 2020 and 2021 are considered as one in this new regulation.

The FABEC States have agreed to adopt the FAB / national targets derived by the Network Manager from the EU targets for the key areas of environment and capacity. Germany has also stuck to this decision despite several warnings by DFS, especially with regard to the capacity target, which is unrealistic in our view.

As regards the regulatory requirements in the key area of cost-efficiency, Germany is even below the European targets. In particular, the retrospective adjustment of the traffic forecast as a foundation for the calculation of charges on the basis of the STATFOR traffic forecast published on 15 October, which was made after the reference plan was submitted on 1 October, has led to further considerable cost pressure for DFS and increases the risk of further liquidity problems.

A final evaluation/acceptance of the performance plan by the European Commission is expected in the spring.

Uncontrollable costs – costs exempt from cost-sharing

For the third reference period (RP3) from 2020 to 2024, Article 28(3) of Regulation (EU) 2019/317 also allows for the sharing of costs with airspace users for the costs that do not lie within the control of air navigation service providers. Due to the COVID-19 pandemic, RP3 was relaunched with the adjustment regulation (EU) 2020/1627, including a new performance plan for the years 2020 to 2024, the partly retroactive adoption of which by the European Commission is not expected until spring 2022. As the revised performance plan was drawn up on the basis of the actual costs for 2020, there was no difference between the planned and actual costs last year, which are mentioned in Article 28(3) of Regulation (EU) 2019/317. For 2021, there will be a reporting of so-called uncontrollable costs.

For the first time for RP3, Article 28(3) also provides, among other things, under (a) for a sharing of costs with airspace users for unforeseen changes in the costs of new and existing investments.

European funding programme

The EU plans to provide more than €2.5 billion of grant funding for targeted investment in the ATM (air traffic management) sector through its Connecting Europe Facility (CEF) until the end of 2023. (This includes the new EU financing programme from 2021; currently in preparation.) DFS participates in this programme and currently receives grant funding of a maximum of €212.2 million until the end of 2023. However, under Article 14(2)(13) of Regulation (EU) No 409/2013 (Common Projects), such grant funding counts as 'other revenue' as set out in Article 25(3a) of Regulation (EU) 2019/317 and should be used to reduce air navigation charges.

Exemption from the levy imposed under the German Renewable Energy Sources Act (EEG)

In a letter dated 14 November 2019, Amprion GmbH (Amprion), as the responsible transmission system operator for DFS Energy, communicated its legal opinion that the prerequisites for an exemption from the EEG levy for the electricity generated decentrally and consumed by DFS and the Paul Ehrlich Institute (PEI) are not met. The legal opinion of Amprion is that there is no exempt own generation/supply of electricity and DFS Energy has no right to refuse performance under Section 104(4) EEG 2017.

A so-called action by stages (*Stufenklage*) to obtain information and payment of the EEG levy brought by the transmission system operator Amprion against DFS Energy was decided in favour of DFS Energy in the first instance by the District Court Darmstadt on 1 December 2021, as the District Court Darmstadt shares the legal opinion of DFS Energy that own generation is exempt from the EEG levy. Amprion has appealed this decision. The lawyers for DFS Energy now consider the risks of an additional charge for the EEG levy to be low.

The board of DFS Energy therefore does not consider it necessary to make accounting provisions for this situation.

2.2.3 Forecast/actual comparison

Forecast/actual comparison 2021

	Actual as at 31 Dec 2020	Forecast for 2021	Actual as at 31 Dec 2021
Service units	En-route services: 6.79 million Terminal services: 0.63 million	Slightly increasing trend	En-route services: 7.68 million Terminal services: 0.70 million
Revenues (total)	€1,111.3m	Not cost-covering	€1,375.3m
Revenues: commercial business (total operating revenues and income)	€79.8m (€80.7m)	Reduced revenues	€85.0m (€85.8m)
Depreciation and amortisation	€102.0m	Approximately at previous year's level	€103.1m
Earnings (total) (incl. minority interest)	-€94.0m	Losses in the high double-digit euro range	-€134.7m
Earnings (commercial business)	-€7.4m	Losses in the high single-digit euro range	-€5.8m
ATC training starts (of which DFS share)	116 (94)	Continued pipeline of student ATCOs	85 (72)

More information on earnings can be found in section 2.5.

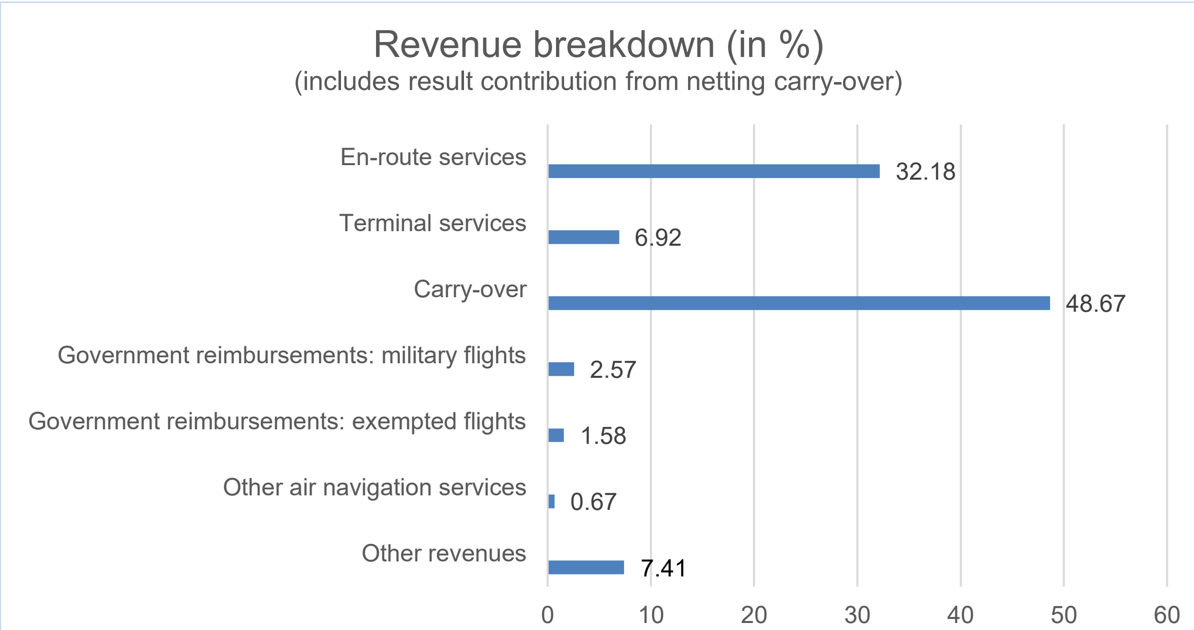
2.3 Results of operations

2.3.1 Revenues

In the business year 2021, the DFS Group generated revenues of €1,375.3 million (previous year: €1,111.3 million), 23.8 percent higher than the previous year's level.

Revenues from air navigation services increased from €1,016.3 million to €1,274.5 million. Overall, they take into account the effects from the carry-over of €670.0 million (previous year: €504.4 million) recognised in the business year, which resulted from the greatly reduced traffic situation and which will only be borne by the airspace users in the future through a compensation mechanism.

Within certain limits, the DFS Group is exposed to rewards and risks resulting from the development of air traffic (see section 3.1.3).



Revenues from en-route charges (€m)					
	2021	**2020**	**2019**	**2018**	**2017**
Total	443.0	369.5	826.8	867.4	859.8
Compared with previous year (%)	**+19.9**	**-55.3**	**-4.7**	**+0.9**	**-4.4**

These revenues were exclusively generated by DFS.

Revenues from terminal charges (€m)

	2021	2020	2019	2018	2017
Gross	95.6	77.7	182.2	185.4	182.5
Reimbursements paid	(0.5)	(0.4)	(1.0)	(1.0)	(0.9)
Net	95.1	77.3	181.2	184.4	181.6
Compared with previous year (net, in %)	**+23.0**	**-57.3**	**-1.7**	**+1.5**	**-13.9**

These revenues were exclusively generated by DFS.

Revenues from government reimbursements (€m)

	2021	2020	2019	2018	2017
Military operational air traffic	35.4	38.4	38.9	44.0	43.9
Exempted flights	21.8	18.0	18.0	18.0	18.0
Total	**57.2**	**56.4**	**56.9**	**62.0**	**61.9**
Compared with previous year (%)	**+1.4**	**-0.9**	**-8.2**	**+0.2**	**-9.1**

These revenues were exclusively generated by DFS. The exempted flights relate to en-route flights under visual flight rules.

Revenues from other air navigation services (€m)

	2021	2020	2019	2018	2017
Aeronautical publications	4.7	4.4	4.4	4.3	4.3
Flight inspection services	3.8	3.6	3.5	3.6	3.8
Other air navigation services	0.7	0.8	0.7	0.7	0.5
Total	**9.2**	**8.8**	**8.6**	**8.6**	**8.6**
of which commercial business	4.7	4.4	4.4	4.3	4.2
Compared with previous year (%)	**+4.5**	**+2.3**	**0.0**	**0.0**	**+3.6**

Other revenues (€m)

	2021	2020	2019	2018	2017
Total	**100.8**	**94.9**	**102.3**	**79.4**	**71.6**
of which commercial business	74.1	75.4	82.5	60.9	62.3
Compared with previous year (%)	**+6.2**	**-7.2**	**+28.8**	**+10.9**	**+36.4**

The Group generates other revenues primarily from air traffic control services at the German regional airports where DFS Aviation Services (DAS) operates and at London Gatwick and Edinburgh airports, from consultancy and staffing services, apron management service and training services.

2.3.2 Other operating income

Other operating income (€m)	2021	2020	2019	2018	2017
Total	**35.4**	**39.5**	**52.8**	**53.4**	**59.4**
of which commercial business	1.1	0.5	5.8	1.9	1.5
Compared with previous year (%)	**-10.4**	**-25.2**	**-1.1**	**-10.1**	**+27.5**

(Material components are shown in Group Note 6).

2.4 Principal expense categories

Employee expenses (€m)	2021	2020	2019	2018	2017
Total	**1,034.7**	**973.1**	**935.2**	**878.9**	**862.8**
Wages and salaries	662.1	643.2	660.3	621.0	605.2
Social security costs and expenses for pensions and assistance	365.6	321.9	266.4	249.4	249.1
Costs of personnel belonging to the Federal Aviation Office (LBA)	7.1	7.9	8.5	8.5	8.5
of which commercial business*	63.4	63.4	62.7	46.1	40.3
Share of total expenditure (%)	80.4	78.7	77.2	76.1	75.4
Compared with previous year (%)	**+6.3**	**+4.1**	**+6.4**	**+1.9**	**+2.9**

* This item contains allocated costs.

Other operating expenses (€m)	2021	2020	2019	2018	2017
Total	**134.9**	**147.8**	**156.9**	**145.0**	**147.2**
of which commercial business*	12.5	13.0	17.7	13.8	23.9
Share of total expenditure (%)	10.5	12.0	12.9	12.6	12.9
Compared with previous year (%)	**-8.7**	**-5.8**	**8.2**	**-1.5**	**+14.2**

* This item contains allocated costs.

(Material components are shown in Group Note 8).

Depreciation and amortisation (€m)

	2021	2020	2019	2018	2017
Total	**103.1**	**102.0**	**104.1**	**117.2**	**116.3**
of which commercial business*	9.6	6.3	4.4	4.0	3.1
Share of total expenditure (%)	8.0	8.2	8.6	10.2	10.2
Compared with previous year (%)	**+1.1**	**-2.0**	**-11.2**	**+0.8**	**+6.8**

* This item contains allocated costs.

In the business year 2021, an impairment loss of €5.0 million was recognised on the Unifly investment entity.

Impairment losses on financial assets and contract assets (€m)

	2021	2020	2019	2018	2017
Total	**1.7**	**1.0**	**4.8**	**0.9**	**5.6**
of which commercial business	0.1	0.1	---	---	---
Share of total expenditure (%)	0.1	0.1	0.4	0.1	0.5
Compared with previous year (%)	**+70.0**	**-79.2**	**+433.3**	**-83.9**	**---**

The item shows the impairment losses on financial assets and contract assets previously disclosed under other operating expenses. These are mainly specific allowances and write-offs of receivables.

Income taxes (€m)

	2021	2020	2019	2018	2017
Total	**23**	**---**	**---**	**---**	**---**
of which current income taxes	22	---	---	---	---
of which deferred income taxes	1	---	---	---	
Compared with previous year (%)	**>100.0**	**---**	**---**	**---**	**---**

Effective income taxes relate to corporation taxes, including the solidarity surcharge, and German municipal trade taxes. The computation of income taxes at DFS is based on applicable tax regulations in connection with Section 31b(3)(3) of the German Aviation Act (LuftVG). For the other Group subsidiaries, the trade and corporation tax laws and regulations are of relevance. The tax ratio (tax expense/EBT) is 14.6 percent.

2.5 Group earnings

In 2021, the DFS Group generated net income of €134.7 million after a net loss of €94.0 million in the previous year.

Net income / net loss (€m)

	2021	2020	2019	2018	2017
Total	**134.7**	**-94.0**	**34.8**	**-30.1**	**30.8**
attributable to the ultimate parent company	136.0	-92.7	35.6	-30.1	30.8
of which minority interest	-1.3	-1.3	-0.8	---	---
of which commercial business	-5.8*	-7.4*	1.1*	-4.6	2.2
Compared with previous year (%)	**+243.3**	**-370.1**	**+215.6**	**-197.7**	**-64.4**

* This line item includes the result component of the minority shareholder in Droniq.

The earnings contain the costs reimbursed by airspace users for previous years of €63.0 million (previous year: €61.0 million) from the conversion of the cost-base for calculating charges from the German Commercial Code (HGB) to IFRS as at 1 January 2007 (catch-up effects). They also contain costs of €78.3 million (previous year: €78.3 million) from the application of the imputed model for occupational pension (closing the deficit, see section 2.2.2) within the scope of the introduction of regulated charges as at 1 January 2012. In addition, they contain capitalised development costs of €28.5 million (previous year: €22.8 million) as well as grant funding of €22.3 million (previous year: €20.8 million).The effects from the carry-over totalling €670.0 million (previous year: €504.4 million) recognised in the business year had a significant positive impact on earnings.

With a significant year-on-year increase in total operating revenues and income (due to higher air traffic volumes and the approval of the Federal Supervisory Authority for Air Navigation Services (BAF) of the carry-over), Group earnings moved into positive territory despite a slight rise in total costs.

DFS also took into account the reduced income from charges from 2019 to be offset in the charges for users in 2021 (see section 2.2.2).

The commercial business recorded a net loss of €5.8 million (previous year: net loss of €7.4 million).

A net loss of €1.3 million was attributable to the minority shareholder of the Droniq subsidiary (previous year: net loss of €1.3 million).

Overall, the Group earnings were impacted by material special items.

2.6 Assets and financial position

2.6.1 Capital expenditure (CAPEX)

The DFS Group invests in a targeted manner in preserving and developing the required infrastructure. Regulations and standards from ICAO, EUROCONTROL and the EU are taken into consideration. The safety of air traffic plays a decisive role when it comes to decisions on capital expenditure. Against this background, capital expenditure amounted to €106.2 million (previous year: €82.3 million) in the business year 2021.

The principal projects with the highest share of capital expenditure are:

iCAS programme (interoperability through European collaboration Centre Automation System)

The iCAS programme (iTEC Centre Automation System) consolidates all projects, sub-projects and individual measures for the procurement, development and commissioning of iCAS, the future air traffic control system at DFS control centres. The development of iCAS is carried out within the framework of multinational cooperation activities. The iCAS programme ensures that the multinational initiatives to shape the future European air traffic management system and the development of the air traffic control system iCAS are conducted in a coordinated manner and that the interests of DFS are suitably taken into account.

In addition to standardising the ATS systems used at the control centres, the aim of DFS with iCAS is to create the necessary conditions for implementing future operational concepts to improve performance (SESAR, FABEC) and to realise these in cooperation and by sharing costs with other ANSPs.

A-SMGCS Leipzig

The project comprises the implementation of a modern ground situation system (A-SMGCS), including runway incursion monitoring, at Leipzig Halle Airport, an important location for cargo traffic. The system is used to support air traffic services as well as apron services for taxiing on the ground. The implementation is expected to deliver benefits primarily in the areas of safety and maintenance of capacity under poor visibility (weather/night).

Radio Site Upgrade and Modernisation (RASUM) 8.33

DFS is equipping 95 radio stations for the 8.33 kHz channel spacing requirements in lower airspace, including all necessary structural and infrastructural measures. The project creates urgently needed radio frequencies and implements the conclusion taken by the ICAO European Air Navigation Planning Group (EANPG) 48 dated November 2006 and Regulation (EU) No 1079/2012.

Replacing VOR/DME systems

As part of its statutory obligation, DFS provides a navigation infrastructure that supports the aircraft equipment required by the German Regulation Concerning Avionics Equipment of Aircraft (FSAV). The aim of the project is the age-related replacement of the VOR/DME systems. This will ensure the long-term availability of navigation infrastructure for German airspace – independent of satellite-based systems. Further objectives of the project are the operational optimisation of the navigation infrastructure in the context of the site analyses. In the first phase of the project, 12 locations are to be replaced.

Instrument landing system

The project involves the commissioning of instrument landing systems (ILS), which also includes the cyclical ILS refurbishment. The standard plan for ILS lifecycle management assumes around two ILS refurbishments per year.

2.6.2 Balance sheet structure

In 2021, the balance sheet total increased by 11.7 percent over the previous year to €2,892.7 million (previous year: €2,590.4 million).

Assets

Non-current assets rose by 43.0 percent from €1,322.7 million to €1,891.7 million, while current assets decreased by 21.0 percent from €1,267.7 million to €1,001.0 million.

The structure of non-current assets remained almost constant overall compared with the previous year, with the exception of other receivables and assets. The significant increase in other receivables and assets by 95.9 percent from €596.8 million to €1,169.3 million was mainly related to the carry-over from the 2020 and 2021 traffic deviation as a result of the COVID-19 pandemic.

Within current assets, trade receivables increased by €2.2 million (+1.9%). Cash and cash equivalents fell by around €125.3 million (-49.7%), investments in fund assets that have not been assigned decreased by around €97.5 million (-12.3%). Tax assets fell by €63.9 million (-99.8%).

Equity and liabilities

Equity recovered noticeably by 66.2 percent from minus €2,262.3 million to minus €764.4 million. This is mainly due to the remeasurement of the net defined benefit liability (€1,063.0 million, OCI) and the carry-over from the traffic deviation of 2020 and 2021 as a result of the COVID-19 pandemic.

Non-current liabilities sank by 26.6 percent from €4,464.5 million to €3,277.2 million. The main impact here was the change in the net liability from pension obligations caused by the discount rate.

Current liabilities declined by 2.1 percent from €388.2 million to €379.8 million. The structure remained basically constant.

Balance sheet indicators			
	2021	**2020**	**2019**
Net financial indebtedness (€m)* (Financial liabilities – liquid funds)	-163.1	-388.8	-874.2
Leverage ratio (%) (Net financial indebtedness / balance sheet total)	-5.6	-15.0	-39.3
Asset intensity (%) (Non-current assets / balance sheet total)	65.4	51.1	37.1

* A minus sign means that there is overcompensation from liquid funds.

Balance sheet indicators when fully considering catch-up effects from the conversion to IFRS and the deficit			
	2021	**2020**	**2019**
Net financial indebtedness (€m)* (Financial liabilities – liquid funds)	-163.1	-388.8	-874.2
Leverage ratio (%) (Net financial indebtedness / balance sheet total)	-3.1	-6.4	-17.6
Asset intensity (%) (Non-current assets / balance sheet total)	35.7	21.9	16.6

* A minus sign means that there is overcompensation from liquid funds. In Group Note 30, a detailed reconciliation can be found of the equity as at 31 December 2021 to the charges-related equity taking consideration of catch-up effects from the conversion to IFRS and the procedure approved for the treatment of occupational pensions by the German Federal Supervisory Authority for Air Navigation Services (BAF) (see section 2.2.2).

2.6.3 Liquidity

2.6.3.1 Financial management

Financial management at the Group is responsible for securing and supporting the statutory obligation of DFS and, at the same time, fostering the competitiveness of the commercial business. DFS optimises its performance through an appropriate equity and debt structure, the economical use of equity capital, an optimised use of debt and the planning and control of cash flows.

Financing is carried out primarily by drawing on the cash inflows from operating activities and on funds from a money and capital market programme.

Group Treasury plans and controls the level of cash and cash equivalents and the procurement of funds. It incorporates subsidiaries in the flow of funds by means of intra-Group liquidity offsetting (cash pool agreements). Funds are collected and centrally controlled where legally allowed and commercially sensible. The financing requirements of subsidiaries are satisfied by intra-Group settlement accounts and loans. The DFS Group aims to achieve a balanced financing structure and holds, despite the negative interest rate environment, liquid reserves to effectively meet unexpected changes in the environment and market (see section 6.2.2).

Business dealings with a select group of core banks are conducted using uniform standards and existing reciprocal cash flows are continuously improved.

The DFS Group finances its non-current liabilities congruently with *Schuldscheindarlehen* (debenture loans). Short-term liquidity is covered by means of a multi-currency commercial paper programme. This financing form was not used in the business year. The solvency of the DFS Group is supported by fund assets not protected against insolvency.

With its money and capital market programme, the DFS Group attracts both national and international investors. These investors base their investment decisions and price fixing on the credit rating of each debtor. To support their decision-making process, DFS has its creditworthiness rated by means of standardised credit ratings from a credit rating agency according to internationally uniform and consistent procedures. The rating agency Standard & Poor's confirmed for DFS the ratings in combination with its Shareholder for both their short- and long-term ratings (AAA/Stable/A-1+).

The average weighted interest rate of the *Schuldscheindarlehen* (debenture loans) remained at 1.013 percent at the balance sheet date.

2.7 Overall assessment on the economic situation

The results and financial position were influenced primarily by the COVID-19 pandemic and the associated revenue shortfall. The resulting liquidity gap was offset by an equity injection from the Shareholder, withdrawals from the non-assigned fund assets, and cash holdings. Based on the current legal situation, the carry-over will compensate for the liquidity shortfalls of the business year in the following years within the framework of the risk-sharing mechanism. Other influencing factors are the legal framework, regulatory requirements, catch-up effects, subsidies, capitalisation of development costs, the higher interest rate for calculating pension obligations compared with the previous year, the very good development on the capital markets and the measures taken by the Executive Board on cost containment.

In the business year 2021, DFS generated revenues well above the previous year's level despite a significantly reduced number of service units (compared with the situation before COVID-19). This was due to the effects from the carry-over totalling €670.0 million recognised in the business year. DFS recorded an overall net income of €134.7 million despite a slight increase in total expenditure. This was primarily influenced by the financial result, catch-up effects and regulatory effects (carry-over as well as the imputed model for closing the deficit in occupational pensions).

The Executive Board assesses the earnings situation as critical due to traffic volumes remaining below the level of 2019, the uncertain development of the pandemic as well as the continued low interest rate environment and the resulting steadily increasing pension provisions. Most of the revenue shortfall can be recovered only in the future through the carry-over. Therefore, the financial situation in the operating business is very difficult. The withdrawals from the non-assigned fund assets can ensure solvency at all times.

3 Segment reporting

3.1 Regulated business

3.1.1 Area and approach control (en-route)

Service unit

The amount to be paid by the airspace user is calculated by multiplying the service unit by the en-route unit rate.

Definition of service unit:

En-route services: $\sqrt{\frac{\text{max.take-off weight in tonnes}}{50}} \times \frac{\text{distance in km}}{100}$

Service units – en-route services

	2021	2020
Total	7,678,785	6,792,538
Compared with previous year (%)	**+13.0**	**-55.1**

The number of service units increased by around 13.0 percent in 2021 compared with the previous year, but it was still around 49.3 percent lower than in 2019. This number was 50.9 percent lower than in the performance plan, which forecast 15,653,000 service units for 2021.

Compared with the number of aircraft movements, the service units developed at a disproportionately low rate. The main reason for this is the low number of intercontinental flights operated by heavy aircraft. Business aviation's performance was almost back to 2019 levels in 2021, however, business jets weigh much less than average aircraft do. Overall, this development increased the demand on capacity in German airspace, while the revenue per aircraft was lower.

The national en-route unit rate comprises air-traffic-related cost elements of DFS, the German Meteorological Service (DWD), EUROCONTROL, the Maastricht Upper Area Control Centre (MUAC) and other national bodies, such as the German Federal Ministry for Digital and Transport (BMDV) and the Federal Supervisory Authority for Air Navigation Services (BAF).

The national en-route unit rate is calculated by taking the determined costs for the year in question as defined in the performance plan plus the adjustments defined in Regulation (EU) 2019/317 and dividing by the service units based on the basic forecasts of EUROCONTROL's Statistics and Forecast Service (STATFOR) for the year in question.

En-route unit rate (EUR)

	2022	2021	2020	2019	2018	2017
Total	62.35	66.80	63.61	63.63	67.07	69.36
DFS share	50.31	57.68	54.39	54.63	58.09	60.10
Compared with previous year (total, in %)	**-6.7**	**+5.0**	**+/-0.0**	**-5.1**	**-3.3**	**-16.0**

The EU Regulation on the common charging scheme for air navigation services contains compensation mechanisms to partly offset losses in revenues as a consequence of deviations in traffic volumes as well as an inflation adjustment. In 2021, the unit rate increased by around 5.0 percent and the proportionate unit rate of DFS by 6.0 percent, with a share of the total unit rate of around 86 percent. In 2022, the unit rate will decrease by 6.7 percent as a result of carry-overs from previous years and a reduction in the apportionable cost-base.

3.1.2 Terminal services

Service unit

The amount to be paid by the airspace user is calculated by multiplying the service unit by the unit rate for terminal services.

Definition of service unit:

Terminal services: $\left(\frac{\text{max. take-off weight in tonnes}}{50}\right)^{0.7}$

Service units – terminal services

	2021	2020
Total	704,005	630,014
Compared with previous year (%)	**+11.7**	**-57.8**

The number of service units increased by 11.7 percent compared with the previous year and was approximately 53.0 percent below the performance plan, which projected a total of 1,496,600 service units for 2021. Unit rates were 52.8 percent lower than the 2019 unit rate total.

The unit rate for terminal services comprises air-traffic-related cost elements of DFS, the German Meteorological Service (DWD) and other national bodies, such as the German Federal Ministry for Digital and Transport (BMDV) and the Federal Supervisory Authority for Air Navigation Services (BAF), in keeping with the EU regulations concerning the provision of air navigation services. It is calculated by taking the determined costs for the year in question as defined in the performance plan plus the adjustments defined in Regulation (EU) 2019/317 and dividing by the service units based on the basic forecasts of EUROCONTROL's Statistics and Forecast Service (STATFOR) for the year in question.

Terminal unit rate (€)

	2022	2021	2020	2019	2018	2017
Total	218.05	130.50	126.29	124.34	127.87	130.59
DFS share	213.17	126.77	122.70	121.40	125.18	127.80
Compared with previous year (total, in %)	**67.1**	**+3.2**	**+1.6**	**-2.8**	**-2.1**	**-18.0**

In 2021, the unit rate increased by around 3.2 percent and the proportionate unit rate of DFS by 3.3 percent, with a share of the total unit rate of around 97 percent. In 2022, the unit rate will increase by 67 percent. The main reason for this is low carry-overs from previous periods and the lower traffic forecast as a result of travel restrictions.

3.1.3 Results of operations

Results of operations (€m)		
	2021	**2020**
Total operating revenues and income	1,353.1	1,093.3
Total expenses	-1,194.9	-1,147.8
EBIT	158.2	-54.5
Financial result	6.5	-33.8
EBT	164.7	-88.3
Income taxes	-24.2	1.8
Net loss/income	140.5	-86.5
of which DFS	140.5	-86.5
of which minority interest	---	---

More information on segment reporting can be found in Group Note 26.

For the Control Centre division (since 2012) and the Tower division (since 2015), the regulatory situation has split the risks and rewards resulting from the differences between planned and actual traffic volume between airspace users and DFS. If defined thresholds are exceeded, DFS is authorised and obliged to return or demand any over- or under-recoveries (carry-over).

Risk/reward transfer from deviation in traffic volume

Deviation in traffic volume (v)	**DFS share**	**User share**
v ≤ 2.0%	100.0%	---
2.0% < v ≤ 10.0%	30.0%	70.0%
v > 10.0%	---	100.0%

However, due to the COVID-19 pandemic, the third reference period (RP3) was redrawn, with Regulation (EU) 2020/1627 containing special regulations on traffic risk sharing, among other things (see section 2.2.2 under "Uncontrollable costs – costs exempt from cost-sharing").

3.2 Commercial business

3.2.1 Business activities

In the business year 2021, DFS reallocated its investments in the commercial business from five strategic business areas to three investment categories.

In the stable aviation business, the focus is on the sale of aviation-related products and publications as well as the training of military air traffic control personnel. The highly competitive ATM business is dominated by air traffic control at eight German regional airports and two UK airports as well as the international consulting and project business. The focus in the dynamic UTM business is on providing support services for the operation of drones.

Stable aviation business

The data collected in the Group for aeronautical charts and publications and other aeronautical information is marketed by Eisenschmidt to end customers. In addition to these products, further products and services for the training of pilots are also developed, produced and distributed. In 2021, the revenue level of the previous years was exceeded slightly. The earnings situation improved, which is reflected in the positive net income.

The training provided by Kaufbeuren ATM Training (KAT) for Bundeswehr military air traffic control personnel takes place using a special simulator and teaching infrastructure and on the basis of a comprehensive quality management system. Due to the COVID-19 pandemic, some of the courses were converted to an online format. Therefore, all courses were successfully completed in the business year. The 2021 revenues increased year on year. As of the balance sheet date, KAT generated positive income.

Competitive ATM business

DFS Aviation Services (DAS) provides aerodrome control services at eight regional airports in Germany. In addition, aerodrome flight information services (AFIS) and apron management service are provided at other German airports. With the amendment to the German Aviation Act (LuftVG) on 1 September 2021, the business model for aerodrome control services and AFIS in Germany has fundamentally changed. Now, DAS, as a certified air navigation service provider, levies terminal charges directly from airspace users. In addition to classic air traffic control from the control tower, DAS also offers aerodrome control service and AFIS as a remote service. The operational implementation and associated technology is offered through the joint venture AEROSENSE. The demand for the location-independent provision of aerodrome control service (remote tower control, RTC) and the associated new technology is ongoing and will continue to grow in the coming years.

The business activities of DAS also include the distribution of radar and position data as well as flight plan data from Germany and the worldwide system engineering (maintenance) for supplied air traffic control systems. The order situation with regard to ATS systems has developed positively in 2021 compared with the previous year, whereby the volume-dependent business with flight data has remained at a low level.

Furthermore, DAS offers training courses for external customers with a focus on measures to maintain the competence of company personnel. In addition to traditional on-site training, online courses, including online simulations, are increasingly being offered.

In the business year 2021, DAS recorded a year-on-year increase in revenues with a disproportionate increase in expenses. This relates in particular to the cost of materials against the background of significantly increased project costs. Accordingly, DAS recorded a net loss for the year.

Air Navigation Solutions Ltd. (ANSL), as a subsidiary of DAS, provides aerodrome control services at both Gatwick and Edinburgh airports. In addition, air traffic control-related project business is handled at both airports and at other UK regional airports. Against the background of the early termination of the contract at Gatwick Airport at the end of 2022, ANSL has strategically repositioned itself. Despite increased expenses due to the transition phase at Gatwick Airport, ANSL generated significant, positive earnings.

As a subsidiary of DAS, DFS Aviation Services Bahrain CO W.L.L. (DAS Bahrain) has been providing air traffic control personnel to the Bahraini air navigation service provider since 1 January 2019. In 2021, the tender for the provision of personnel was won again. As in previous years, DAS Bahrain ended the financial year with a clearly positive result.

Dynamic UTM business

Droniq was able to carry out its projects and plans according to plan in the business year. This led to the stabilisation of the existing products as well as the further expansion of the product portfolio. A major milestone was the introduction of the UTM system for locating and controlling drones via LTE and for live transmission of video, image and sensor data. Targeted market development led to further expansion of the customer base. Revenues were mainly generated from consulting services, from the sale of UTM software licences and from the rental of hardware. In addition, Droniq entered into marketing agreements with drone manufacturers and research co-operations with universities.

The 2021 revenues increased year on year. On the balance sheet date, due to the high expenses for the further development of Droniq and the initially gradually increasing revenues, there is a net loss for the year, which is, however, better than expected.

3.2.2 Results of operations

Results of operations (€m)

	2021	2020
Total operating revenues and income	85.8	80.7
Total expenses	-93.7	-88.6
EBIT	-7.9	-7.9
Financial result	1.0	-0.1
EBT	-6.9	-8.0
Income taxes	1.1	0.6
Net loss/income	-5.8	-7.4
of which DFS	-4.5	-6.1
of which minority interest	-1.3	-1.3

More information on segment reporting can be found in Group Note 26.

4 Personnel

Motivated and qualified staff are indispensable for a continuously high quality of service. This is why human resources management at DFS stresses a holistic approach from selection through attractive compensation and targeted training and development to the long-term retention of staff. Financial incentives are supported with a life-phase-oriented, family-conscious HR policy.

Employee structure

As at 31 December 2021, the DFS Group had a total of 6,079 employees. This number is made up of non-exempt staff (covered by collective agreements), exempt employees (not covered by collective agreements) and executive staff as well as assigned personnel of the Federal Aviation Office (LBA) working for DFS and soldiers released from regular service. Non-exempt employees are subject to the provisions of the company-specific collective bargaining agreements.

Executive staff and exempt employees negotiate their contracts freely on an individual basis. These employees have target agreements covering corporate goals and their area of expertise. The degree of fulfilment of these agreements determines the variable salary components.

The assigned personnel of the Federal Aviation Office (LBA) working for DFS form another employee group. These established and non-established civil servants, who have remained in an employment relationship with the Federal Government, still fall under the Federal Civil Servants' Remuneration Regulation (*Bundesbesoldungsordnung*) and the collective agreement for the public service (*Tarifvertrag für den öffentlichen Dienst* – TVöD). The collective agreements of DFS do not apply to them. DFS bears the relevant expenses.

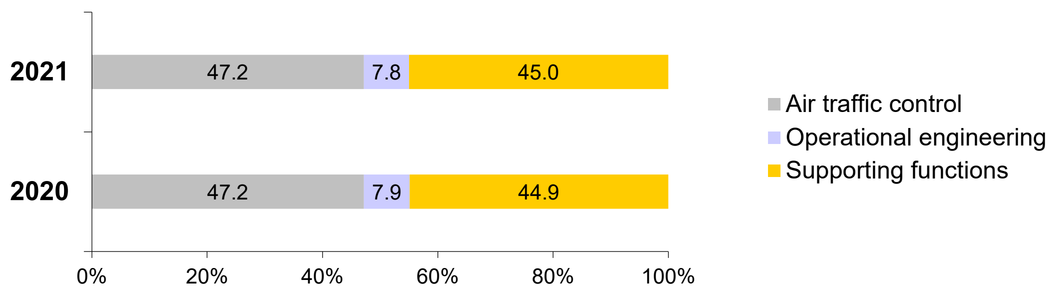
In general, air traffic controllers (from the age of 55) and flight data assistants (from the age of 59) receive transitional payments in the period before their formal retirement. This right to receive transitional payments accounts for a significant component of the pension commitment (see Group Note 22).

Information on the compensation structure of the Executive Board can be found in Group Note 37.1.

Employees (as at 31 December)

	2021	**2020**	**2019**	**2018**	**2017**
Permanent employees (total) (of which at subsidiaries)	**6,079** **(495)**	**6,139** **(480)**	**6,052** **(467)**	**5,750** **(321)**	**5,608** **(222)**
Salaried staff (of which at subsidiaries)	5,526 (454)	5,559 (426)	5,475 (421)	5,249 (321)	5,156 (222)
Soldiers released from regular service	124	130	147	157	165
Wage-earners	14	16	18	20	22
Technical/commercial students & apprentices (of which at subsidiaries)	129 (12)	124 (14)	111 (11)	70 (4)	47 ---
Trainee air traffic controllers (of which at subsidiaries)	184 (29)	192 (40)	171 (35)	138 (20)	60 ---
Personnel belonging to the Federal Aviation Office (LBA)	102	118	130	140	158
of which established civil servants	84	(99)	(106)	(112)	(126)
of which non-established employees	18	(19)	(24)	(28)	(32)
Compared with previous year (%)	-1.0	+1.4	+5.3	+2.5	-1.5
Share of female employees (%)	27.4	27.5	27.3	27.5	27.5
Share of foreign employees (%)	5.4	4.9	4.0	4.5	5.2

Employees by area of duties (%)



Of the 6,079 employees of the Group, 1,053 were part-time – 623 women and 430 men. The share of part-time employees rose by 2.6 percent over the previous year, reaching 17.3 percent. The age structure of staff is well balanced, with the average age being 42.4 years. The turnover rate was 1.1 percent in 2021.

At present, 27.4 percent of employees are women. Currently, 79 of the 503 management positions in the company are held by women, representing a share of 15.7 percent.

DFS applies the German law on the equal participation of women and men in management positions in the private sector and in public service (*FührposGleichberG*) and has laid down a target for the share of women at the first management level below the Executive Board of 5 percent and a target at the second management level of 13 percent for the period from 1 January 2017 to 31 December 2021. This target was met as at 31 December 2021 with 8 percent at the first and 18 percent at the second management level. For the reporting period from 1 January 2022 to 31 December 2026, a target for the share of women at the first management level below the Executive Board of 8.3 percent and at the second management level of 19.3 percent was set. The company is increasingly fostering in a targeted manner both family-friendly policies and equal opportunities.

The majority of foreign employees come from Spain and Austria, followed by Italy and the United Kingdom. Overall, 57 nations are represented.

Work and family

DFS is continuing to expand measures to support staff in combining work and family life and has set up HR policies aligned with the phases of life. It has been certified by the non-profit Hertie Foundation under its 'work and family audit' (*audit berufundfamilie*) since 2014. The next recertification is scheduled for 2023. During the pandemic, one focus of HR work was on supporting employees in balancing work and family life with needs-based measures, such as by making working hours more flexible, but also with the offer of (online) seminars on mental and physical health and health maintenance.

Over the course of their whole career, staff can make use of flexible working-time models, health facilities, a company sports club, seminars and further training opportunities.

Personal staff development

DFS is aware that a large part of the future success of the company is coupled to the further development of the individual strengths and abilities of its staff.

For this reason, DFS offers a wide range of initiatives to foster professional and interdisciplinary competences, which are continuously realigned with the changed needs of employees. The willingness to learn, the exchange of experience, networking and a feedback culture all play a central role in this regard.

Training

DFS is well aware of its responsibility to society and has been offering job-starters attractive trainee and university places with a career perspective for years.

Training starts

	2021	2020
Total	**141**	**170**
Air traffic controllers (of which at subsidiaries)	85 (13)	116 (22)
Dual courses of studies / apprenticeships (of which at subsidiaries)	56 10	54 ---
Compared with previous year (%)	**-17.1**	**+14.1**

On 31 December 2021, a total of 394 people (including controllers in on-the-job training – OJT) were undergoing multi-year air traffic controller training in the Group, 365 of whom (including OJT controllers) were at DFS. A total of 184 people were undergoing theoretical basic training.

In addition to the training of air traffic controllers, the portfolio of training offered at DFS also encompasses dual courses of studies in IT, air navigation technology, electrical engineering, air traffic management as well as IT-related and commercial apprenticeships. The portfolio of dual courses of studies is being supplemented by a degree course in air traffic management as a combination of a bachelor's degree in business with practical air traffic controller training.

This allows DFS to meet its demand for qualified staff. As these staff are trained internally, they will, in all likelihood, take on duties within DFS on completion of their training or degree.

Collective bargaining

In addition to specific collective bargaining issues, the collaboration between the collective bargaining parties, DFS and the German air navigation services union (GdF), was characterised by ongoing COVID-19-related work in 2021.

With regard to the workload-related compensation regulated by collective bargaining, 2021 was characterised by the fact that the pandemic and the associated reduction in traffic significantly reduced the workload on air traffic controllers at all sites. An adjustment of the categorisation and the associated working conditions within the framework of the annual workload-related compensation as set out in collective bargaining will take place due to the collective bargaining regulations only with the respective confirmation of the results of the workload-related compensation in the subsequent validation from 1 January 2023 at the earliest.

In this regard, clarifications on the collective agreement on the grading system, on the collective agreement relating to remuneration, on KapaTV (collective agreement on increasing operational capacities) and on FlexiTV (collective agreement on employment while receiving transitional benefits) have resulted, in particular, from the 11th collective clearing house, which was concluded on 4 March 2021.

In August, the collective framework agreement (MTV) and the collective agreement relating to remuneration for FCS, which had been terminated by GdF with due notice, were renewed with a minimum term until 31 December 2023. In the third quarter, the GdF terminated the collective agreements at Eisenschmidt GmbH (collective framework agreement and on remuneration) and at Droniq GmbH (collective framework agreement, MTV, remuneration and occupation pensions) in due time. Collective bargaining kick-off meetings were held for both subsidiaries in December, which were limited to the presentation of the union's demands.

5 Compliance

As a State-owned entity, DFS and the domestic subsidiaries where DFS is the majority shareholder are subject to the Public Corporate Governance Code (PCGK) of the Federal Government of Germany. Under this code, the Executive Board has to ensure adherence to and compliance with legal provisions and corporate guidelines. DFS introduced a compliance management system (CMS) on the basis of this code.

The CMS, together with the risk management system (RMS) and the safety and security management system, forms the three pillars of the corporate structure for risk management.

In addition to internal reporting channels, an external ombudsperson is also available to receive information from DFS employees on suspected compliance violations. This makes it possible for reports to be submitted to DFS without revealing the identity of the whistleblower.

Activities in 2021 focused on increased communication of compliance issues within DFS, the implementation of tax compliance structures, a realignment of the CMS by focusing on classic compliance risk areas and the implementation of an exchange of rules with other risk assurance functions in the company.

The compliance management system is constantly upgraded and expanded. Organisationally, the matter is assigned to the Institutional & Legal Affairs division. There is a direct reporting channel from the compliance officer to the Executive Board and the Supervisory Board.

6 Risk report

6.1 Risk management system

The DFS Group has a differentiated risk management system for actively dealing with financial risks that could jeopardise the going-concern status (corporate risk management). The aim is to identify, analyse, monitor and control the risks associated with business operations. In addition, DFS has set up corresponding safety and security management systems for risks relevant to infrastructure, safety and security in accordance with the requirements of Regulation (EU) 2017/373.

Corporate risk management takes account of the changes taking place in the aviation industry and the Group, advances the risk management process methodically and therefore ensures the early identification of risks and the combating of business risks.

The areas to be assessed with regard to potential effects comprise: operations (e.g. fulfilling the statutory mandate, infrastructure); finance (e.g. costs, financial markets, customers/suppliers); management (e.g. strategy, personnel, organisation) as well as the external environment (e.g. politics and legislation, disasters, including pandemics and terrorist attacks). As part of their management duties, normally each quarter, the directors of DFS divisions identify potential/existing risks, including for these issues, and are responsible for ensuring that the statements on the risk situation in their organisational units are correct. The early identification of risks also covers the applications for approval of business plans and projects.

The corporate risk management process is supported by the Risk Management Committee (RMC) for the cross-divisional and cross-process evaluation of the reported risk situations, consisting of members in executive functions and close to the corporate decision-making process. This makes it possible to recognise company-wide interrelationships and to evaluate them.

The direct and indirect subsidiaries of DFS are systematically managed and monitored by means of in-house risk management systems using evaluation thresholds adapted to the respective company. The risk management systems of the material DFS investments are based on Group guidelines. These DFS investments inform the DFS Supervisory Board about the economic situation and the course of business (including risks) of the existing shareholdings within the scope of quarterly reporting in accordance with Section 90(1) of the German Stock Corporation Act (AktG) on managing shareholdings. Advance coordination with the DFS Executive Board ensures communication up to Group management.

Only the risks to the going-concern status are included in the risk report provided to the Executive Board and the Supervisory Board. The reporting of risks to the Executive Board takes place on a quarterly basis, while the Supervisory Board is informed on a half-yearly basis.

The integrity of the risk management system is regularly tested by Group Internal Audit and has been assessed as effective and appropriate by the auditors as part of the audit of the annual financial statements.

6.2 Material risks

6.2.1 Corporate strategy risks

Corporate strategy risks arise primarily from misjudgements of external conditions and future market developments. They can lead to an inadequate alignment of corporate activities, with negative consequences for the results and financial position of the DFS Group. This is why – in particular due to the current COVID-19 pandemic as well – DFS is paying increased attention to the analysis and forecasting of air traffic, the political environment and the European charging and performance scheme. The Executive Board regularly reviews its estimates in close cooperation with all relevant bodies, checks variances, discusses risks and derives necessary measures.

6.2.2 Financial risks

6.2.2.1 Principles of financial risk management

As part of its business activities, the DFS Group is exposed to numerous financial risks. The management of these risks is an integral component of the planning and implementation system. The Executive Board lays down the associated corporate policy. The objective of the corporate policy is to contain and/or mitigate existing risks. DFS Financial Management implements these targets and uses a system to manage financial risks that is tailored to the specific business of the Group. DFS continuously monitors and analyses the events on the financial markets in a critical dialogue with its core banks and the rating agency to reassess existing strategies or develop new strategies as necessary.

The value-at-risk analysis conducted determines the currency and interest risk, which is based on a sensitivity model used for internal planning and control. Through historical simulations of statistical time series on relevant past financial market data, scenarios are extrapolated into the future and used to compute simulated changes in market values for financial instruments. The analysis shows the absolute decline which will not be exceeded with a probability of 99.00 percent when the holding period is one, ten and twenty days.

Value-at-risk metrics			
31 Dec 2021	**1 day**	**10 days**	**20 days**
VaR 99 (%)	0.65%	2.07%	2.92%
VaR 99 (€m)	4,700	14,969	21,116
31 Dec 2020	**1 day**	**10 days**	**20 days**
VaR 99 (%)	2.44%	7.73%	10.93%
VaR 99 (€m)	20,156	63,856	90,291

In the business year, the DFS Group adjusted the presentation of its value-at-risk numbers. It is guided by the potential risk exposure resulting from its more significant investments in the ATCP-UI-FONDS.

6.2.2.2 Liquidity risk

The COVID-19 pandemic led to a shortfall in revenues and income from the decline in the service units for en-route and terminal services, jeopardising the economic viability of the company. DFS took various measures to improve the liquidity situation, such as strict cost-cutting. The strengthening of equity by the German Federal Government of €300 million in 2021 and the reallocation of fund assets not protected against insolvency also support liquidity.

Daily liquidity is monitored by the Treasury unit and is managed with liquidity planning during the year and over the medium term (see section 2.6.3.1).

DFS Aviation Services (DAS) received net reimbursements (excluding VAT) from the German Federal Ministry for Digital and Transport (BMDV) in accordance with Section 31f(2a)(2) of the German Aviation Act (LuftVG). It is currently being examined and agreed with the tax authorities whether there is a VAT liability. If the reimbursements are found to be subject to VAT, there is a risk that the BMDV will not increase the reimbursements by the corresponding VAT amount and thus DAS will be or remain liable for VAT.

6.2.2.3 Default risk

The operational activities in the regulated business, the commitments in the commercial business and financial instruments expose DFS to default risk and increasingly to collection and enforcement risk. That is why receivables are monitored constantly in the operating business and default risks considered by means of specific allowances. In addition, for terminal services, DFS demands security deposits from customers with relevant sales volumes when defined warning thresholds are exceeded.

For en-route control services, EUROCONTROL invoices all flights on the basis of the data transmitted by the individual Member States and supplementary information from the Network Manager. The invoices are issued based on the data known at that point in time (operator, weight, distance). In individual cases, agreements are reached under which third parties make partial payments of outstanding amounts for services received after consultation with the Member States and at EUROCONTROL's reasonable discretion. EUROCONTROL does not require any security to be lodged but initiates enforcement measures to collect amounts due which have not been paid within the deadlines laid down. This requires a resolution from the Member States.

DFS has no influence on the discretion applied when EUROCONTROL makes such decisions. The intergovernmental agreement entitled Multilateral Agreement relating to Route Charges dated 12 February 1981 (BGBl. 1984 II p. 109) at European level prevents it from demanding security deposits to limit imminent defaults for en-route services. Notwithstanding these restrictions, the regulatory authority currently rejects the inclusion of these collection, default and enforcement risks as uncontrollable costs. The maximum default risk is reflected in the carrying amounts of the financial assets recognised on the balance sheet.

Warranty obligations for the commercial business are demanded as part of a contract-related quality management.

6.2.2.4 Rating risk

The business and performance of DFS are monitored by an external rating agency and the German Bundesbank (eligibility of the debt instruments of DFS). Negative analyses and the downgrading of the ratings could make the take-up of external financing more difficult and negatively influence the conditions for such financing and lead to higher interest rates.

6.2.2.5 Interest rate risk

The Group is exposed to interest rate risk from financing, financial assets as well as from the measurement of obligations under occupational pensions.

The effective management of the interest rate risk is ensured through the use of derivative financial instruments with term and volume congruence between the underlying transaction and the hedge.

Variances in the present value of the pension obligations for changes in parameters of +/- 0.5 percentage points are shown in the sensitivity analysis in the Group Notes (see Group Note 22).

6.2.2.6 Currency risk

The DFS Group is exposed to transaction risks as part of cross-border procurement transactions. The majority of foreign currency purchases/liabilities results from suppliers invoicing in US dollars (USD/$). The total volume amounted to approximately $1.1 million in the reporting period (previous year: $0.7 million). Other currencies are only of minor importance.

These risks are limited by means of hedging using derivative financial instruments. Currency risks from financial transactions (foreign bonds, commercial paper) are hedged immediately on conclusion of the transaction.

DFS International Business Services (DFS IBS) granted Air Navigation Solutions Ltd. (ANSL) a flexible credit line of €3.5 million to prevent possible liquidity bottlenecks in the current COVID-19 pandemic. This can lead to exchange rate losses for ANSL. The term is two years (2020-2022). In 2021, €1.3 million was taken up.

6.2.3 Performance-related and IT risks

DFS and its subsidiaries give top priority to the safety of air traffic. For the provision of air navigation services, they therefore set up safety and security management systems in accordance with the requirements of Regulation (EU) 2017/373. In addition, air navigation services are categorised as critical infrastructure under German law (*BSI-Kritisverordnung*) in accordance with Section 27c of the German Aviation Act (LuftVG). To meet the requirements of this ordinance and to minimise the risks of cyber-attacks, DFS has established a security operations centre, which is continuously being optimised and upgraded. The risk management system of DFS and its subsidiaries has incorporated ATM-related systems and applications as well as administrative systems and applications.

A variety of measures are taken at the level of planning, implementing and operating of the infrastructure of DFS and its subsidiaries to minimise the probability of downtime of the operational infrastructure, which would endanger the safety of air traffic and impact business performance. Where necessary for the provision of air navigation services and other business processes, detailed risk analyses are carried out, taking into account the protection objectives of confidentiality, integrity and availability, to ensure the implementation of safeguarding measures commensurate with the risk.

6.2.4 Staff-related risks

The commitment and abilities of its staff are crucial for the DFS Group to maintain safety in German airspace and to ensure an efficient level of performance.

The environment for DFS has changed noticeably in the last few years through the introduction of economic regulation and increasing technological change. The Human Resources division is therefore called upon to support staff in exploiting the opportunities presented.

Against the background of the predicted decline in the labour force participation rate in Germany, demographic change and the increasing competition among companies for highly qualified staff and executives constitute a further risk that should not be underestimated. The internal demographic characteristics also present a risk as regards a balanced age structure and the long-term maintenance of professional skills.

Human Resources has set up a strategic HR and development programme as well as HR marketing and recruiting measures targeted at developing the workforce further and recruiting qualified professionals externally to meet needs.

The DFS pandemic team was highly active throughout 2021. The primary objective was and is to protect DFS employees against infection with coronavirus and to maintain the services in the operational and technical domains. With comprehensive measures (including working from home and strict hygiene rules on site), DFS has achieved this goal so far.

Therefore, DFS and all its investment entities have succeeded in keeping the rate of potentially infected employees very low or even avoiding any infection. To date, there have been no negative effects on air traffic caused by DFS. All services under Section 27c of the German Aviation Act (LuftVG) could be reliably maintained.

6.2.5 Insured risks

The insurance cover of DFS encompasses common insurable risks of DFS and its subsidiaries. It particularly includes compensation for the loss or damage of material assets and the resulting interruption of operations minus the usually agreed deductible.

It should be kept in mind when assessing the insured risks that DFS mainly performs sovereign functions on behalf of the Federal Republic of Germany in keeping with Article 87d of the German Basic Law (*Grundgesetz*) in conjunction with Sections 31b and 31d of the German Aviation Act (LuftVG). As a consequence, the Federal Republic of Germany is liable for claims brought by third parties for damages in line with the principles of State liability. In the case of damage culpably caused by DFS, aviation liability insurance covers a limit of €767 million per instance of damage, thus releasing the Federal Republic of Germany from its liability to this amount. For non-sovereign tasks, statutory public liability insurance is covered. For contractually agreed activities, such as the apron management service or the provision of air traffic services abroad through subsidiaries, the respective public liability agreed to the named amount in the contract is covered. In addition, claims for damages by third parties from employer's liability risks are covered by insurance.

6.2.6 Overall assessment of the risk situation

With the exception of liquidity and cyber risks, the Executive Board currently discerns no additional risks – occurring individually or as a group – that would pose a threat to the going-concern status of the company.

The effects of the COVID-19 pandemic, in particular the decline in air transport and the associated financial impact due to revenue shortfalls, have been addressed with countermeasures to the extent that DFS can influence them. Regulatory changes at the European level and the forecasts on the development of air traffic on which the setting of charges is based have influenced the liquidity situation of DFS. The Executive Board is in close contact with the Shareholder, the German Federal Government. Support from the Federal Government is regularly reviewed in light of the economic situation and the level of traffic.

The topic of cyber-attacks has also moved more into the public eye in recent years. Because of this, DFS has reviewed its risk landscape, reassessed risks and implemented additional risk prevention measures.

7 Outlook

7.1 Development of the economic environment and the effects on air transport

The war in Ukraine, the sanctions against Russia and the resulting consequences for the global economy, and the German economy in particular, are discernible, but cannot yet be conclusively pinpointed from an operational perspective.

Energy prices are rising to an all-time high. Both producers of goods and consumers can expect significant price increases for electricity and gas, but also for coal and oil. Prices are expected to remain at a high level. Rising energy prices make end products more expensive for consumers and additionally fuel inflation. The German Savings Banks Association (*Deutscher Sparkassen- und Giroverband*, DSGV) expects the inflation rate in Germany to rise to between 5.5 and 6.0 percent in 2022.

The supply chains for raw materials, especially for primary products, precious metals and noble gases imported from Russia, are fragile. Rapid substitution cannot be ensured. The decoupling of Russian financial markets from the international financial market is exacerbating the situation.

The following observations on the development of the economic environment and its effects on air traffic may be significantly lower than forecast for the reasons mentioned above.

The IMF assumes an increase in economic output of 4.9 percent in 2022 in its World Economic Outlook, while the OECD expects an increase of 4.5 percent for 2022 and 3.2 percent for 2023 in its OECD Economic Outlook. The EU sees growth in 2022 supported by an improving labour market and expects growth of 4.3 percent with continued favourable financing conditions.

Future economic growth in Germany is being assessed differently by the various leading economic research institutes. The range extends from a plus of 3.5 percent by the Hamburg Institute of International Economics (HWWI) to an increase of 5.1 percent by the Kiel Institute for the World Economy and the Leibniz Institute for Economic Research at the University of Munich (ifo Institute). On average, the economic research institutes assume growth of around 4.6 percent in 2022.

The global outlook remains subject to significant downside risks, including the possibility of additional COVID-19 waves and financial stresses given the high indebtedness of individual countries. Inflationary pressures are expected to ease as the bottlenecks are resolved and wage costs are expected to rise only moderately.

EUROCONTROL's Statistics and Forecast Service (STATFOR) has outlined three possible scenarios for the development of air traffic in its Five-Year Forecast Update 2021-2027 published in October 2021. These vary in their degree of optimism and are mainly driven by the availability and effectiveness of one or more vaccines. In the medium scenario (Scenario 2), STATFOR expects growth in service units of 79 percent in the en-route charges segment in 2022 relative to 2021. In 2022, STATFOR believes that around 91 percent of the 2019 service units will be reached. In the terminal charges segment, STATFOR assumes a year-on-year growth of 85 percent in Scenario 2 for 2022, or a 2019 attainment level of 86 percent. In both segments, STATFOR forecasts that 2019 levels will be exceeded in 2024.

The German Federal Ministry for Digital and Transport (BMDV) has used the aforementioned EUROCONTROL forecast as a basis for the revised performance plan for the years 2022 to 2024. For the year 2022, 13,643,500 service units are forecast in the en-route area and 1,280,000 service units for terminal services. A significantly lower estimate of traffic growth provided by DFS was not taken into account by the Ministry.

7.2 Future development

7.2.1 Regulated business

Third reference period (2020-2024)

The third reference period (RP3) began on 1 January 2020 on the basis of the Regulation on a common charging scheme (Regulation (EU) 2019/317) and the EU targets under Commission Implementing Regulation (EU) 2019/903. The European Commission's approval process for the performance plans had not been completed at the time of the COVID-19 pandemic outbreak in mid-March. The Member States advocated for a suspension of the European process and, instead, a national regulation taking into account the respective national conditions for the expected crisis years 2020 and 2021, as well as a European revision of the remaining RP3 years 2022-2024. The result of months of negotiations is a supplementary regulation, Commission Implementing Regulation (EU) 2020/1627, which meant a revision of all five years of RP3 and thus new EU targets and the development of new performance plans. These had to be submitted to the European Commission by 1 October 2021. Approval of the revised performance plans by the European Commission is not expected before the end of the first quarter 2022.

Major criteria of this supplementary regulation are:

- The unit rates for 2020 and 2021 will remain unchanged as currently provided for in the performance plans.
- The years 2020 and 2021 will be considered as one year.
- A retrospective European cost-reduction target was set for both years. On this basis, national targets were set. The actual costs of the air navigation service providers were taken into account. Together with the reduced traffic, new 'virtual' unit rates were the result.
- The rules for calculating traffic risk sharing remain unchanged.
- The carry-overs from the traffic risk sharing and the deviations between actual costs and cost-reduction targets for the years 2020 and 2021 will be spread over five years starting in 2023.

The FABEC Member States have again opted to establish the performance plan at FABEC level.

Further development of the SES framework regulations

On 22 September 2020, the European Commission published its proposal for a further development of the SES Framework Regulation. This is now being discussed in the European Parliament and Council. Due to the extensive and far-reaching amendments, a common understanding is expected at the earliest during the French Presidency of the Council of the European Union, which runs from January until the end of June 2022. In terms of content, the proposal focuses on shifts of competences between European institutions and Member States and not on the issues that, according to the European Commission's objectives, can actually drive digitalisation and emission reduction in the coming years.

iCAS programme

To minimise the risks associated with its introduction, and in response to the effects of the COVID-19 pandemic on the development progress, the previously pursued plan for the development and introduction of iCAS at the control centres for lower airspace, iCAS Phase II, was lengthened. The time windows for the introduction of the iCAS Phase II software at the control centres for lower airspace were moved to the beginning of 2023 for the Munich branch and to the beginning of 2025 for the Bremen branch. The introduction of iCAS at the Langen branch will be reviewed as part of the update of the air traffic services (ATS) system strategy.

The project to replace the iCAS Phase I software, introduced in 2017 at the Karlsruhe branch, was also postponed. The earliest possible window for the introduction of the iCAS Phase II software at the Karlsruhe branch is currently scheduled for the end of 2026 / beginning of 2027. DFS is looking into alternatives for the Karlsruhe branch, such as a possible cooperation with the Maastricht Upper Area Control Centre (MUAC).

The deadline for the introduction of Flight Object Interoperability (FO IOP) was taken out of Commission Implementing Regulation (EU) No 716/2014. The iCAS Flight Object IOP project will be suspended until the end of 2022. Until then, DFS is examining options to continue the development of Flight Object IOP within the framework of the existing iTEC cooperation.

Remote tower control (RTC)

From the second quarter of 2022 at the earliest, Erfurt Airport is planned to be the next airport to be controlled remotely. After another validation phase during which the RTC concept will be reviewed again, Dresden Airport is scheduled to follow at the end of 2023.

SESAR Deployment Manager

DFS aims to exert material influence on the SES initiative of the European Commission as part of its strategic orientation. To this end, DFS has been an active member of the SESAR Joint Undertaking (SJU) since June 2009, along with other leading organisations. Together with its partners, DFS is developing technologies and procedures that are fit for purpose (see section 1.6) and thus meets the European requirements for the modernisation of the air traffic management network.

Since 2014, the SESAR development process has led to the long-term phase of technical and operational implementation and the setting up of ATM procedures (deployment management). As part of the SESAR Deployment Alliance, DFS has been fulfilling the task awarded by the Commission to plan, coordinate and implement a comprehensive modernisation of European airspace within the scope of deployment management for the time period since 2014. This consortium is a cross-industry partnership of five airlines, twelve air navigation service providers and 25 airport operators. The task is financed out of the Connecting Europe Facility (CEF) funding programme, where a total of roughly €2.5 billion is earmarked until the end of 2023 for deployment management. DFS is thus able to influence the introduction of new technologies and procedures and benefits from the considerable funding, as well as from the avoidance of incorrect cost allocation and flawed capital expenditures.

The mandate of the SESAR Deployment Alliance as SESAR Deployment Manager (SDM) expires on 31 May 2022. The European Commission issued a call for proposals again for the function on 29 October 2021. DFS applied together with leading ANSPs, airports, airlines and, additionally, the Network Manager to continue to exercise the SDM function. A decision is expected in March/April 2022 and the function would be taken up on 1 June 2022.

7.2.2 Commercial business

The management of the Group pursues a long-term strategy of value-creating expansion of the commercial business to support the core business, provided that suitable opportunities arise on the market. The commercial business offers growth potential for the DFS Group and is therefore an essential part of the Group strategy 2030.

In the coming year as well, the focus will be on managing the commercial business further towards the pre-pandemic level.

In 2022, DFS plans to generate the largest revenue in the commercial business with the provision of aerodrome control services in Germany and the United Kingdom, the training of military air traffic controllers and apron control. The commercial business also includes the provision of air traffic control personnel to the air navigation service provider of Bahrain, programming services and contracts for ground situation displays at individual airports.

In the air traffic control business at Germany's regional airports, the establishment of a remote tower control centre is planned, subject to the contract being awarded, which will enable aerodrome control at Braunschweig Airport and aerodrome flight information services (AFIS) at Emden Airport to be carried out independently of location. The international training and consulting business continues to involve considerable uncertainties against the backdrop of the ongoing COVID-19 pandemic. In the UTM area, Droniq will continue to position itself as the one-stop shop for unmanned aviation with its leading digital platform. Through further projects and real laboratories (sandboxes), Droniq will support commercial uses of drone missions inside and outside U-Spaces. In addition, Droniq will go through the certification process as a U-Space service provider. The company will generate planned losses in the coming year.

Therefore, the DFS Executive Board forecasts negative earnings in the mid single-digit million euro range in the commercial business of the DFS Group in 2022.

The support of commercial business by DFS provides relief for the regulated business (to the tune of €19.9 million) and thus for airspace users.

7.3 Results and financial position

7.3.1 Revenues and costs

Due to the crisis caused by the COVID-19 pandemic in the aviation industry, revenues from air navigation charges in the regulated business are also expected to remain low in 2022 compared with pre-crisis levels. In 2022, the latest forecast by EUROCONTROL's Statistics and Forecast Service (STATFOR) assumes a level of 88 percent of the 2019 level. It is currently anticipated that a return of air traffic volumes to pre-crisis levels will not be possible until 2024 at the earliest.

This assessment is not shared by DFS. It assumes lower rates of growth in traffic, in particular due to the current pandemic situation.

Therefore, DFS will continue to face major financial challenges in the years to come. The Executive Board is meeting these challenges, among other things, with measures within the framework of the STEP programme, which aims to save staff costs in connection with process and structural optimisations.

Expenses in both the regulated business and the commercial business are primarily influenced by staff costs, including the cost of occupational pensions. Staff costs will continue to increase due to the pipeline of new student air traffic control staff and increases under collective bargaining agreements. Depending on the development of interest rates, the costs of occupational pension provision can also increase significantly. Within the framework of the STEP strategic efficiency improvement programme, corresponding countermeasures are to become effective.

The business opportunities in the DFS Group arise predominantly in the commercial business on the free market.

7.3.2 Capital expenditure (CAPEX)

Despite the impact of the COVID-19 pandemic in terms of revenue, DFS will continue to invest primarily in capacity-expanding and productivity-enhancing air traffic control systems. These capital expenditures, as well as those on replacement investments, will be financed from cash flow and amortised by matched depreciation/amortisation charges.

The level of depreciation and amortisation in 2022 is expected to be slightly above the 2021 level.

7.3.3 Liquidity

The financial strategy of DFS is primarily influenced by two counteracting effects from events on the capital markets. Low interest rates on the capital markets are favouring the take-up of debt and ensuring low interest expenses. At the same time, the returns that can be earned on the market make it difficult to earn substantial low-risk income. In this environment, DFS is currently paying penalty interest rates of 50-80 basis points on its demand deposits.
DFS assumes that air traffic volumes will increase moderately. This will continue to result in a tight liquidity situation. Any liquidity constraints can be offset by withdrawals from the fund assets not protected against insolvency.

In close contact with the Shareholder, DFS is currently evaluating the need for further financial support for 2023.

7.3.4 General statement and earnings forecast

The year 2022 will continue to be marked by the effects of the spread of coronavirus. The crisis is of historic proportions. Across Europe, the aviation industry continues to be particularly hard hit. The number of flights in Europe has almost halved compared with 2019. Air transport is not expected to recover to 2019 traffic levels before 2024 at the earliest. Airlines, airports and air navigation service providers are struggling with existential revenue losses and liquidity problems.

DFS formed a coronavirus team in February 2020. The primary objective is to protect DFS employees against infection with coronavirus and to maintain the provision of services in the operational and technical domains. The measures taken to date have ensured this.

In the overall view for 2021, DFS assumes, based on the latest developments, that the negative effects on air traffic will continue to be observed throughout 2022 despite the availability of vaccinations. Because many companies have also imposed travel and cost restrictions on their employees, air transport in and over Germany and the project business worldwide are being particularly affected. The effects on the demand for air travel and the services provided by DFS Aviation Services (DFS) are therefore considerable. It is true that massive monetary and fiscal policy measures have been initiated in many countries as a result. However, these will not immediately and sustainably stabilise aviation.

The Executive Board assumes that the consequences of the crisis will continue to affect the economic development of the Group in 2022 in all segments and regions. The duration of the adverse effects cannot be estimated at present, as they depend to a large extent on the further course of the crisis. Possible longer-term effects as a result of the spread of coronavirus and the associated volatility of the financial markets cannot be assessed at present and are therefore not included in the outlook.

Based on current estimates, the Executive Board expects a slight increase in traffic volumes compared with 2021. This will lead to a significant shortfall in the planned revenues from air navigation charges for 2022 again, and thus to a corresponding need for liquidity. Revenues from the commercial business are also expected to decrease.

Staff costs, the largest component of total costs, will increase, among other things due to the new collective bargaining agreement, the continued low interest rate environment and the pipeline of new air traffic controllers (trainees).

DFS intends to counteract the decline in revenues with the STEP strategic efficiency improvement programme described above.

Irrespective of the requirements of the third reference period, which have yet to be defined, DFS will have an increased financing requirement for the years 2022 and 2023 due to the decline in traffic. This can be covered for the year 2022 by fund assets not protected against insolvency. Further support from the German Federal Government is being regularly reviewed in light of the economic situation and traffic growth, and may become necessary in the coming years depending on the development of regulatory requirements.

Since the advance of Russian units into Ukrainian territory in the early morning of 24 February 2022, DFS has been taking precautionary measures in close cooperation with the German military bodies. For instance, DFS is supporting flying units of the German Air Force and NATO allies in the use of German airspace and its military training areas. Overall, DFS currently expects only limited effects on its results and financial position as long as the conflict does not spread to other regions.

Overall, the Executive Board therefore expects a slight loss (EBT) in the low double-digit million euro range for 2022.

8 Notes to the separate financial statements of DFS Deutsche Flugsicherung GmbH (HGB)

The Group management report 2021 has been combined with the management report of DFS Deutsche Flugsicherung GmbH (DFS) in accordance with Section 315(5) of the German Commercial Code (HGB) in conjunction with Section 289(2) of the HGB. In substance, the presentations contained in sections 1 to 7 correspond to those of DFS. The following information relates exclusively to the separate financial statements of DFS in accordance with the HGB.

8.1 DFS organising principles

DFS, which employs 5,584 operational and administrative staff, ensures the safety of German airspace and also offers additional products and services on the free market (the commercial business).

The organising principles of DFS essentially corresponds to those of the DFS Group (see section 1).

8.2 Report on economic position

8.2.1 Forecast/actual comparison

Forecast/actual comparison 2021

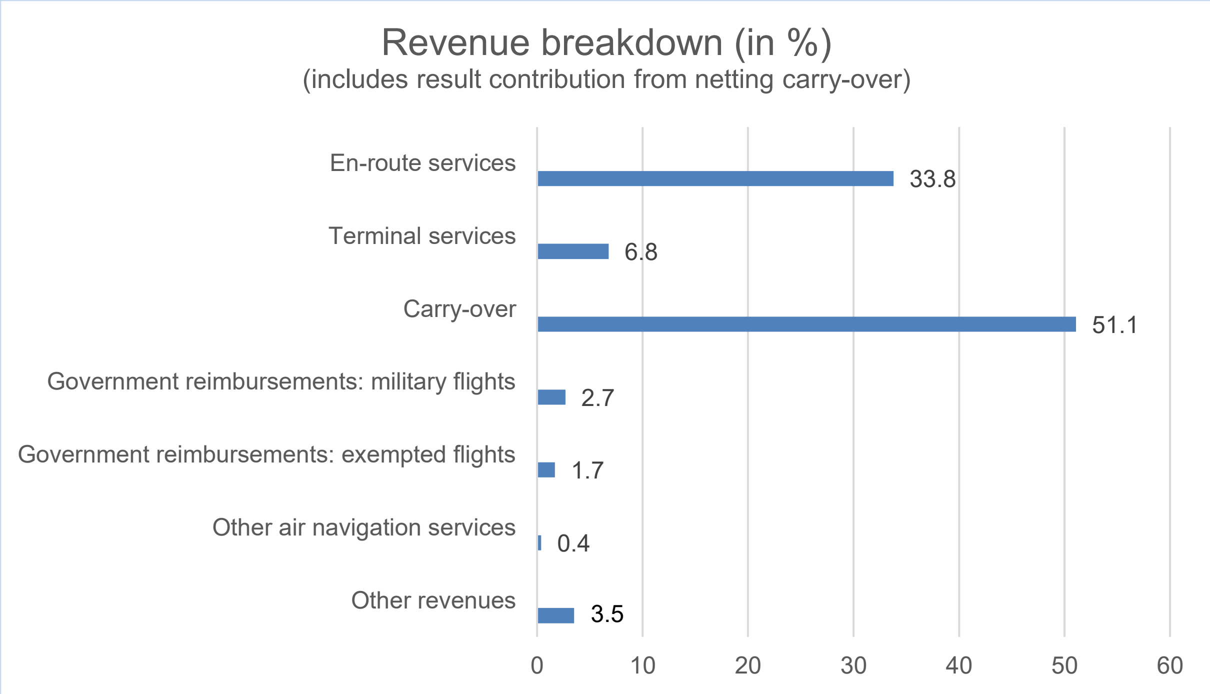
	Actual as at 31 Dec 2020	Forecast for 2021	Actual as at 31 Dec 2021
Service units	En-route services: 6.79 million Terminal services: 0.63 million	Slightly increasing trend	En-route services: 7.68 million Terminal services: 0.70 million
Revenues (total)	€1,054.7m	Not cost-covering	€1,310.1m
Depreciation and amortisation	€86.6m	Approximately at previous year's level	€80.8m
Earnings (total)	-€476.2m	Losses in the mid triple-digit euro range	-€124.3m
ATC training starts**	94	Continued pipeline of student ATCOs	72

More information on earnings can be found in section 8.2.5.

8.2.2 Revenues

In the business year 2021, DFS generated revenues of €1,310.1 million (previous year: €1,054.7 million), 24.2 percent higher than the previous year's level.

Revenues from air navigation services increased from €1,012.0 million to €1,264.0 million. Overall, they take into account the effects from the carry-over of €670.0 million (previous year: €504.4 million) recognised in the business year, which resulted from the greatly reduced traffic situation and which will only be borne by the airspace users in the future through a compensation mechanism.



Revenues from en-route charges (€m)

	2021	2020	2019	2018	2017
Total	**443.0**	**369.5**	**826.8**	**867.4**	**859.8**
Compared with previous year (%)	**+19.9**	**-55.3**	**-4.7**	**+0.9**	**-4.4**

Revenues from terminal charges (€m)

	2021	2020	2019	2018	2017
Gross	89.7	77.7	182.2	185.4	182.5
Reimbursements paid	(0.5)	(0.4)	(1.0)	(1.0)	(0.9)
Net	89.2	77.3	181.2	184.4	181.6
Compared with previous year (net, in %)	**+15.4**	**-57.3**	**-1.7**	**+1.5**	**-13.9**

Revenues from government reimbursements (€m)

	2021	2020	2019	2018	2017
Military operational air traffic	35.4	38.4	38.9	44.0	43.9
Exempted flights	21.8	18.0	18.0	18.0	18.0
Total	**57.2**	**56.4**	**56.9**	**62.0**	**61.9**
Compared with previous year (%)	**+1.4**	**-0.9**	**-8.2**	**+0.2**	**-9.1**

The exempted flights relate to en-route flights under visual flight rules.

Revenues from other air navigation services (€m)	2021	2020	2019	2018	2017
Aeronautical publications	0.2	0.0	0.2	0.1	0.2
Flight inspection services	3.8	3.6	3.5	3.6	3.8
Other air navigation services	0.7	0.8	0.7	0.6	0.5
Total	**4.7**	**4.4**	**4.4**	**4.3**	**4.5**
Compared with previous year (%)	**+6.8**	**+-0.0**	**+2.3**	**-4.4**	**+7.1**

Other revenues (€m)	2021	2020	2019	2018	2017
Total	**46.0**	**42.7**	**46.9**	**37.1**	**43.3**
Compared with previous year (%)	**+7.7**	**-9.0**	**26.4**	**-14.3**	**+93.3**

DFS generated other revenues primarily from staffing services, training services, apron management service and cost reimbursements.

Within other air navigation services and other revenues, commercial services made up around 54.4 percent, generating revenues of €28.2 million (previous year: €29.4 million).

8.2.3 Other operating income

Other operating income (€m)	2021	2020	2019	2018	2017
Total	**39.1**	**39.7**	**44.7**	**43.2**	**60.2**
Compared with previous year (%)	**-1.5**	**-11.2**	**3.5**	**-28.2**	**+33.5**

(Significant components are shown in HGB Note 4.2.)

8.2.4 Principal expense categories

Employee expenses (€m)	2021	2020	2019	2018	2017
Total	**1,366.0**	**1,181.4**	**1,285.6**	**1,125.6**	**936.3**
Wages and salaries	623.0	605.9	624.1	597.7	588.9
Social security costs and expenses for pensions and assistance	736.0	567.6	653.0	519.4*	338.9
Costs of personnel belonging to the Federal Aviation Office (LBA)	7.0	7.9	8.5	8.5	8.5
Share of total expenditure (%)	84.5	82.0	82.5	80.4	77.0
Compared with previous year (%)	**+15.6**	**-8.1**	**+14.2**	**+20.2**	**+33.0**

* includes a difference of €31.6 million from the application of the new Heubeck-Richttafeln 2018 G (mortality tables).

Other operating expenses (€m)					
	2021	**2020**	**2019**	**2018**	**2017**
Total	**158.7**	**164.3**	**173.8**	**160.1**	**164.7**
Share of total expenditure (%)	9.8	11.4	11.1	11.4	13.6
Compared with previous year (%)	**-3.4**	**-5.5**	**8.6**	**-2.8**	**+11.1**

(Significant components are shown in HGB Note 4.5.)

Depreciation and amortisation (€m)					
	2021	**2020**	**2019**	**2018**	**2017**
Total	**80.8**	**86.6**	**91.1**	**105.5**	**105.2**
Share of total expenditure (%)	5.1	6.0	5.8	7.5	8.7
Compared with previous year (%)	**-6.7**	**-4.9**	**-13.6**	**+0.3**	**+8.9**

8.2.5 Earnings

In the business year 2021, DFS realised a net loss of €124.3 million (previous year: net loss of €476.2 million).

Net income (+) / Net loss (-) (€m)					
	2021	**2020**	**2019**	**2018**	**2017**
Total	**-124.3**	**-476.2**	**-368.6**	**-481.1**	**-132.9**
Compared with previous year (%)	**+73.9**	**+29.2**	**+23.4**	**-262.0**	**-191.3**

The earnings contain the costs reimbursed by airspace users for previous years of €63.0 million (previous year: €61.0 million) from the conversion of the cost-base for calculating charges from the German Commercial Code (HGB) to IFRS as at 1 January 2007 (catch-up effects). They also contain costs of €78.3 million (previous year: €78.3 million) from the application of the imputed model for occupational pension (closing the deficit, see section 2.2.2) within the scope of the introduction of regulated charges as at 1 January 2012. In addition, they contain grant funding of €22.0 million (previous year: €20.8 million). The effects from the carry-over totalling €670.0 million (previous year: €504.4 million) recognised in the business year had a significant positive impact on earnings.

With a significant year-on-year increase in total operating revenues and income (due to higher air traffic volumes and the approval of the Federal Supervisory Authority for Air Navigation Services (BAF) of the carry-over), earnings were in the forecast loss range due to higher total costs.

DFS also took into account the reduced income from charges from 2019 to be offset in the charges for users in 2021 (see section 2.2.2).

Overall, net income was impacted by material special items, primarily due to COVID-19.

8.2.6 Capital expenditure (CAPEX)

Capital expenditure amounted to €70.7 million (previous year: €53.9 million) in the business year 2021.

The principal projects with the highest share of capital expenditure are found in section 2.6.1.

8.2.7 Balance sheet structure

In 2021, the balance sheet total increased by 3.9 percent over the previous year to €2,758.5 million (previous year: €2,653.6 million).

Assets

Fixed assets decreased slightly overall by 2.7 percent. The decisive factor here was mainly the level of depreciation and amortisation, which exceeded the level of capital expenditure.

Financial assets declined by 4.3 percent primarily due to a principal repayment (€3.0 million) under an existing loan contract with the subsidiary DFS Energy.
Current assets declined by 22.6 percent. Cash and cash equivalents fell by around €119.6 million (-59.7%). Investments in fund assets that have not been assigned decreased by around €116.3 million (-15.2%).

Inventories and receivables from affiliated companies remained essentially constant. Tax assets fell by €52.9 million (-100.0%).

In addition, DFS reported a difference on the asset side from the billing of charges of €1,102.4 million for 2021. This item includes amounts to be reimbursed by airspace users in the future from the high COVID-19-related traffic deviation in 2020 and 2021.

Furthermore, DFS showed a deficit of €92.3 million for 2021, which was not covered by equity, due to the renewed net loss for the year of €124.3 million.

Equity and liabilities

Equity currently remains uncovered, provisions increased by 12.3 percent and liabilities remained largely constant in their structure.

The net loss for the business year (€124.3 million) negatively impacted (the negative) equity. The Shareholder's injection (€300.0 million) into registered capital at the beginning of 2021 resulted in a total uncovered share of €92.3 million.

Pension provisions (netted against related plan assets) rose by 10.8 percent, or €149.5 million. The main impact here was the change in the net liability from pension obligations caused by the discount rate. Tax provisions rose from €7.9 million to €39.1 million due to the income tax-related earnings for air navigation charges, while other provisions remained largely constant.

The structure of liabilities remained basically constant. Trade payables were largely due to domestic suppliers.

The difference on the liabilities side from the billing of charges decreased by 24.4 percent due to the change in the carry-over amounts to be reimbursed to airspace users via future billing of charges for 2021 and previous years.

Net financial indebtedness amounted to minus €95.8 million as at 31 December 2021. The leverage ratio at the balance sheet date thus amounted to minus 3.5 percent. The financial result, driven primarily by pension obligations, was minus €162.5 million.

Balance sheet indicators			
	2021	**2020**	**2019**
Net financial indebtedness (€m)* (Financial liabilities – liquid funds)	-95.8	-333.0	-815.6
Leverage ratio (%) (Net financial indebtedness / balance sheet total)	-3.5	-12.5	-40.6
Asset intensity (%) (Fixed assets / balance sheet total)	21.9	23.4	32.8

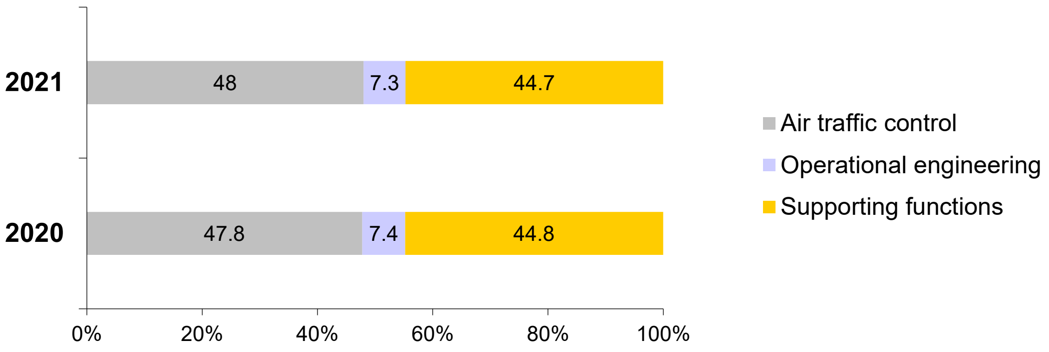
* A minus sign means that there is overcompensation from liquid funds.

8.3 Personnel

As at 31 December 2021, DFS had a total of 5,584 employees.

Employees (as at 31 December)					
	2021	**2020**	**2019**	**2018**	**2017**
Permanent employees (total)	**5,584**	**5,659**	**5,585**	**5,429**	**5,386**
Salaried staff	5,072	5,133	5,054	4,928	4,934
Soldiers released from regular service	124	130	147	157	165
Wage-earners	14	16	18	20	22
Technical/commercial students & apprentices	117	110	100	66	47
Trainee air traffic controllers	155	152	136	118	60
Personnel belonging to the Federal Aviation Office (LBA)	102	118	130	140	158
of which established civil servants	84	(99)	(106)	(112)	(126)
of which non-established employees	18	(19)	(24)	(28)	(32)
Compared with previous year (%)	-1.3	1.3	2.9	0.8	-2.7
Share of female employees (%)	27.5	27.6	27.3	27.6	27.5
Share of foreign employees (%)	4.3	4.3	3.7	3.8	3.7

Employees by area of duties (%)



Of the 5,584 employees at DFS, 947 were part-time – 596 women and 351 men. The share of part-time employees rose by 1 percent over the previous year, reaching 17.1 percent. The age structure of staff is well balanced, with the average age being 43.3 years. The turnover rate was 0.57 percent in 2020.

At present, 27.5 percent of employees are women. Currently, 69 of the 479 management positions in the company are held by women, representing a share of 14.8 percent.

DFS applies the German law on the equal participation of women and men in management positions in the private sector and in public service (*FührposGleichberG*) and has laid down a target for the share of women at the first management level below the Executive Board of 5 percent and a target at the second management level of 13 percent for the period from 1 January 2017 to 31 December 2021. This target was met as at 31 December 2021 with 8 percent at the first and 18 percent at the second management level. For the reporting period from 1 January 2022 to 31 December 2026, a target for the share of women at the first management level below the Executive Board of 8.3 percent and at the second management level of 19.3 percent was set. The company is increasingly fostering in a targeted manner both family-friendly policies and equal opportunities.

As at the reporting date, the majority of foreign employees come from Spain and Austria, followed by Italy and the United Kingdom. Overall, 46 nations are represented.

Training

Training starts

	2021	2020
Total	**118**	**142**
Air traffic controllers	72	94
Dual courses of studies / apprenticeships	46	48
Compared with previous year (%)	**-16.9**	**-22**

On 31 December 2021, 365 people (including controllers in on-the-job training – OJT) were undergoing multi-year air traffic controller training. A total of 144 people were undergoing theoretical basic training.

8.4 Compliance

The compliance regulations of DFS correspond to those of the DFS Group (see section 5).

8.5 Risk report

The risk exposure of DFS essentially corresponds to that of the DFS Group (see section 6).

8.6 Outlook

The future business development of DFS is essentially subject to the same influences and general conditions as those of the DFS Group (see section 7).

8.6.1 Capital expenditure (CAPEX)

The level of depreciation and amortisation in 2022 is expected to be slightly above the 2021 level.

8.6.2 General statement and earnings forecast

If the new regulation, which has not yet been finalised, is applied, an additional loss in the triple-digit million euro range is expected.

Langen, 11 March 2022

The Executive Board

Arndt Schoenemann **Chairperson and CEO**	**Dr Kerstin Böcker** **Chief Human Resources Officer & Labour Director**	**Dirk Mahns** **Chief Operating Officer**	**Friedrich-Wilhelm Menge** **Chief Technology Officer**

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DFS Deutsche Flugsicherung GmbH
Consolidated statement of comprehensive income
for the period 1 January 2021 to 31 December 2021

	Note	2021 €m	2020 €m
Continuing operations			
Revenues	5	1,376	1,111
Changes in inventory and other own work capitalised		28	23
Other operating income	6	35	40
Total operating revenues and income		**1,439**	**1,174**
Material expenses		-14	-12
Employee expenses	7	-1,035	-973
Other operating expenses	8	-135	-148
Earnings before interest, taxes, depreciation and amortisation (EBITDA)		**255**	**41**
Depreciation and amortisation		-103	-102
Impairment losses on financial assets and contract assets		-2	-1
Earnings before interest and taxes (EBIT)		**150**	**-62**
Financial income	9	122	155
Financial expenses	9	-114	-189
Financial result	9	**8**	**-34**
Earnings before taxes (EBT)		**158**	**-96**
Income taxes	10	-23	2
Earnings for the period (continuing operations)		**135**	**-94**
Allocation of the earnings of the period			
Shareholder of the parent company		136	-93
Earnings attributable to minority interests		-1	-1

	Note	2021 €m	2020 €m
Earnings for the period (continuing operations)		**135**	**-94**
Other comprehensive income			
Items not reclassified in profit or loss			
Remeasurement of the net defined benefit liability from the defined benefit obligation = actuarial gains (+) and losses (-) of the ongoing business year		1,063	-749
Tax effects		0	0
Items that can be reclassified in profit or loss			
Currency differences from the conversion of foreign operations or investments		0[1)]	0[1)]
Tax effects		0	0
Other comprehensive income for the period		**1,063**	**-749**
Total results for the period		**1,198**	**-843**
Allocation of the total result			
Shareholder of the parent company		1,199	-842
Income and expenses attributable to minority interests		-1	-1

[1)] Under €1 million

DFS Deutsche Flugsicherung GmbH
Consolidated balance sheet as at 31 December 2021

	Note	2021 €m	2020 €m
Assets			
Goodwill	11	0[2)]	0[2)]
Intangible assets	12	230	216
Property, plant and equipment	13	459	469
Investment property	15	1	1
Financial assets accounted for using the equity method	16	8	13
Financial assets	16	8	9
Trade receivables	17	0[2)]	0[2)]
Other receivables and assets	19	1,169	597
Deferred tax assets	10	17	18
Non-current assets		**1,892**	**1,323**
Trade receivables	17	118	116
Contract assets	18	4	5
Other receivables and assets	19	53	34
Inventories		7	6
Financial assets	20	693	790
Liquid funds		126	252
Tax assets		0[2)]	64
Current assets		**1,001**	**1,267**
Total		**2,893**	**2,590**

[2)] Under €1 million

	Note	2021 €m	2020 €m
Equity and liabilities			
Subscribed capital	21	1,055	755
Capital reserves	21	74	74
Remeasurement reserves	21	-2,032	-3,095
Retained earnings	21	137	1
Share of equity attributable to Shareholder of parent company	21	-766	-2,265
Minority interest	21	2	3
Equity	21	**-764**	**-2,262**
Provisions for pensions and similar obligations	22	2,416	3,550
Other provisions	23	196	232
Financial liabilities	24	628	648
Trade payables		0[3)]	0[3)]
Other liabilities	25	18	15
Income tax obligations	3	19	19
Non-current liabilities		**3,277**	**4,464**
Other provisions	23	177	236
Financial liabilities	24	28	5
Trade payables		32	27
Contract liabilities	18	2	3
Other liabilities	25	121	116
Income tax obligations		20	1
Current liabilities		**380**	**388**
Total		**2,893**	**2,590**

[3)] Under €1 million

DFS Deutsche Flugsicherung GmbH
Consolidated statement of changes in equity
for the period 1 January 2021 to 31 December 2021

Note 21	Subscribed capital	Capital reserves	Revaluation reserves	Retained earnings	Share of equity attributable to Shareholder of parent company	Minority interest	Total
	€m	€m	€m	€m	€m	€m	€m
As at 31 Dec 2019	**755**	**74**	**-2,346**	**94**	**-1,423**	**4**	**-1,419**
Operating result							
Net loss (-)	0	0	0	-93	-93	-1	-94
Other comprehensive income							
Remeasurement of the net defined benefit liability	0	0	-749	0	-749	0	-749
Currency differences from the conversion of foreign operations or investments	0	0	0[4)]	0	0[4)]	0	0[4)]
Tax effects	0	0	0	0	0	0	0
As at 31 Dec 2020	**755**	**74**	**-3,095**	**1**	**-2,265**	**3**	**-2,262**
Operating result							
Capital increase	300	0	0	0	300	0	300
Net income (+) / loss (-)	0	0	0	136	136	-1	135
Other comprehensive income							
Remeasurement of the net defined benefit liability	0	0	1,063	0	1,063	0	1,063
Currency differences from the conversion of foreign operations or investments	0	0	0[4)]	0	0[4)]	0	0[4)]
Tax effects	0	0	0	0	0	0	0
As at 31 Dec 2021	**1,055**	**74**	**-2,032**	**137**	**-766**	**2**	**-764**

[4)] Under €1 million

DFS Deutsche Flugsicherung GmbH
Consolidated cash flow statement
for the period 1 January 2021 to 31 December 2021

	2021 €m	2020 €m
Net income (+) / loss (-)	136	-93
of which dividend received	[1]	[1]
of which income taxes received (+)	[62]	[27]
Interest	-3	-3
Depreciation and amortisation on intangible assets and property, plant and equipment	103	102
Losses (+) from asset disposals	1	1
Other non-cash gains (+) / losses (-) from fair value changes	1,063	-749
Increase (-) / decrease (+) in trade receivables	-2	36
Decrease (+) / increase (-) in contract assets	1	-3
Increase (-) in other receivables and assets	-590	-531
Increase (-) in inventories	-1	0[5)]
Reduction (+) in current and deferred tax assets	65	14
Decrease (-) / increase (+) in provisions for pensions and similar obligations	-1,134	798
Decrease (-) / increase (+) in other provisions	-95	16
Increase (+) in trade payables	5	1
Decrease (-) / increase (+) in contract liabilities	-1	1
Increase (+) in other liabilities	7	5
Increase (+) / decrease (-) in tax liabilities	20	-11
Cash outflow from operating activities	**-425**	**-416**
Payments (-) for investments in intangible assets and property, plant and equipment	-106	-82
Proceeds (+) from disposals of intangible assets and property, plant and equipment	3	1
Proceeds (+) from disposals of financial assets	1	1
Cash outflow from investing activities	**-102**	**-80**
Equity transactions by Shareholder	300	0
Equity transaction by minority interests	-1	-1
Taking on (+) financial debt	3	500
Principal payment (-) of financial debt	0	-88
Taking on (+) lease liabilities	3	2
Principal repayment (-) of lease liabilities	-4	-3
Interest received (+)	10	9
Interest paid (-)	-7	-6
Cash inflow from financing activities	**304**	**413**
Net change in cash and cash equivalents	**-223**	**-83**
Cash and cash equivalents as at 1 Jan	1,042	1,125
Cash and cash equivalents as at 31 Dec	**819**	**1,042**

[5)] Under €1 million

Consolidated financial statements

Notes to the consolidated financial statements 2021

1 General basis

The DFS Group is an air navigation service provider (ANSP) that operates internationally. The ultimate parent company is DFS Deutsche Flugsicherung GmbH (DFS), which has its Headquarters in 63225 Langen, Am DFS-Campus 10, Germany. The company is registered on the Commercial Register (HRB 34977) at the Local Court in Offenbach am Main, Germany, as a limited liability company (GmbH). DFS is wholly owned by the Federal Republic of Germany, represented by the Federal Ministry for Digital and Transport (BMDV).

The main business of the DFS Group is defined by the tasks set out in Section 27c of the German Aviation Act (LuftVG). Under this act, it is entrusted with providing air traffic services (a sovereign task). The Group management report contains information on the business activities and the object of the Group (see sections 1.2 and 1.3 in the Group management report).

2 Application of accounting standards

The regulations...

Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards
Regulation (EC) No 550/2004 of the European Parliament and of the Council of 10 March 2004 on the provision of air navigation services in the Single European Sky (the service provision Regulation)
Regulation (EU) No 1191/2010 of 16 December 2010 amending Regulation (EC) No 1794/2006 of the Commission on the development of a common charging scheme for air navigation services
Commission Implementing Regulation (EU) 2019/317 of 11 February 2019 laying down a performance and charging scheme in the Single European Sky and repealing Commission Implementing Regulations (EU) No 390/2013 and (EU) No 391/2013
Commission Implementing Regulation (EU) 2020/1627 of 3 November 2020 on exceptional measures for the third reference period (2020-2024) of the Single European Sky performance and charging scheme due to the COVID-19 pandemic

...oblige the DFS Group to draw up its consolidated financial statements as at 31 December 2021 in line with International Financial Reporting Standards (IFRS). It applies the standards of the International Accounting Standards Board (IASB) and the interpretations of the International Financial Reporting Interpretations Committee (IFRIC) as recognised and endorsed by the European Union (EU).

These financial statements consider Regulation (EC) No 1606/2002, which is enacted in Section 315e of the German Commercial Code (HGB) by means of the Accounting Law Reform Act (BilReG) dated 4 December 2004.

These consolidated financial statements were prepared in accordance with the standards endorsed for use in the EU.

The business year of the Group corresponds to the calendar year (1 January to 31 December).

The Executive Board of DFS drew up the consolidated financial statements and approved them for submission to the Audit Committee of the Supervisory Board and the Supervisory Board on 11 March 2022. The Supervisory Board discussed the consolidated financial statements and the opinion of the Audit Committee and issued a recommendation to the Shareholder to approve the consolidated financial statements. The Shareholder may amend the consolidated financial statements released by the Executive Board. The approved consolidated financial statements will be available via the electronic German Federal Gazette in accordance with Section 325(2a)(1) of the German Commercial Code (HGB) and on our website at www.dfs.de.

3 Consolidation

3.1 Consolidation principles

On initial consolidation of Group companies, the DFS Group measures the acquired identifiable assets, liabilities, contingent liabilities and deferred taxes at fair value at the acquisition date for business combinations (acquisition method) and compares these to the acquisition costs (purchase price allocation). The non-acquired share of the fair values of assets and liabilities is accounted for as minority interest by the Group. Acquisition-related costs are expensed in the periods in which these costs are incurred.

After the purchase price allocation, the Group recognises the remaining difference between the purchase price and the newly measured proportionate net assets as goodwill. If the value of the net assets acquired exceeds the purchase price, the difference is recognised directly in profit or loss. The DFS Group recognises the differences from acquired minority interests directly in equity after the transfer of control. The acquisition costs of foreign entities acquired are translated into euro at the respective exchange rate at the date of acquisition.

The DFS Group eliminates the revenues, income and expenses as well as the receivables and liabilities stemming from transactions between the consolidated entities against each other. In addition, it eliminates the interim results from intercompany deliveries of non-current assets and inventories.

3.2 Scope of consolidation

DFS, as the ultimate parent company, presents the consolidated financial statements including all those investments where it holds a controlling interest, joint arrangements, associated companies and those investments where it holds a non-controlling interest.

The Group includes investments where it holds a controlling interest if it has existing rights that give it the current ability to direct the relevant activities of an investee. Relevant activities are activities that significantly affect the investee's returns. Within the meaning of IFRS 10, the DFS Group controls a subsidiary when it has exposure, or rights, to variable returns from its involvement with the investee and has the ability to use its power over the investee to affect the amount of these returns due to the ability to direct the relevant activities. In the absence of any other restrictive contractual arrangements, control is generally based on the direct or indirect majority of voting rights of the Group. For structured entities, control is based on contractual arrangements and not on the majority of voting rights. Subsidiaries have to be consolidated from the time that control passes to the Group. They are deconsolidated when control is no longer exercised. Non-controlling interests in earnings and equity of investments with a controlling interest are disclosed separately in the consolidated statement of comprehensive income, the consolidated balance sheet and the consolidated statement of changes in equity.

IFRS 11 differentiates as regards stakes in joint arrangements between joint ventures and joint operations. The classification depends on the contractual rights and obligations of each investor. Joint arrangements exist when the DFS Group jointly controls activities with a third-party based on a contract. For joint operations, the Group recognises its direct rights to assets, liabilities, revenues and expenses as well as its share of any assets, liabilities, revenues and expenses held or incurred jointly. Stakes in joint operations are accounted for using the equity method.

The DFS Group measures associated companies over which it exercises significant influence, but has no control or joint control, using the equity method. Significant influence is indicated when the DFS Group directly or indirectly holds between 20.00 percent and 50.00 percent of the voting rights in an investee. The annual measurement is carried out by raising or lowering the carrying amount of the investment to reflect the investor's share of the net assets.

Although the DFS Group holds more than half of the shares (55.00%), individual provisions of the articles of association as well as the rules of internal procedure for the board prevent the Group from exercising control. It therefore assigns FCS Flight Calibration Services to associated companies and measures the companies using the equity method. The Group holds 30.00 percent of the shares in FREQUENTIS DFS AEROSENSE and 22.34 percent of the shares in UNIFY. In both cases, the Group assumes material influence and accounts for the shares under the equity method.

Taken together, the investments where there is a non-controlling interest exert only an immaterial influence on total assets, revenues and net income from a Group perspective and are not material for the representation of the results and financial position of the DFS Group. A materiality threshold of 5.00 percent was set out for this. The Group does not include them in the consolidated financial statements. These entities are recognised at their fair value or, if this cannot be reliably determined for equity instruments that are not listed, at amortised cost. They are disclosed as investments under non-current financial assets.

Companies included in the consolidated financial statements of the DFS Group					
List of shareholdings under Section 313(2)(4) German Commercial Code (HGB)					
Acronym	**Company**	**Registered office**	**Percentage of shareholding**	**Equity**	**Net income**
			in %	**€'000**	**€'000**
DFS	DFS Deutsche Flugsicherung GmbH	Langen, Germany	Ultimate parent company		
Consolidated companies (controlling interest)					
DFS IBS	DFS International Business Services GmbH	Langen, Germany	100.00	44,063	-4,806
DFS Energy	DFS Energy GmbH[6)]	Langen, Germany	100.00	5,132	0
DFS Aviation Services	DFS Aviation Services GmbH[7)]	Langen, Germany	100.00	11,794	0
Eisenschmidt	R. Eisenschmidt GmbH[7)]	Egelsbach, Germany	100.00	168	0
KAT	Kaufbeuren ATM Training GmbH[7)]	Kaufbeuren, Germany	100.00	100	0
ANSL	Air Navigation Solutions Ltd.	London, United Kingdom	100.00	£974 thousand	£523 thousand
DAS Bahrain	DFS AVIATION SERVICES BAHRAIN Co. W.L.L.	Manama, Bahrain	100.00	631 thousand (Bahraini dinars)	431 thousand (Bahraini dinars)
Droniq	Droniq GmbH	Frankfurt, Germany	51.00	2,814	-2,764
Associated companies – measurement using equity method					
FCS	FCS Flight Calibration Services GmbH[8)]	Braunschweig, Germany	55.00	5,265	599
AEROSENSE	FREQUENTIS DFS AEROSENSE GmbH[8)]	Vienna, Austria	30.00	272	-22
UNIFLY	UNIFLY NV[8)]	Antwerp, Belgium	22.34	7,249	-5,363
Investments (non-controlling) – measurement using cost method					
Investment through DFS Deutsche Flugsicherung GmbH:					
GroupEAD	GroupEAD Europe S.L.[8)]	Madrid, Spain	36.00	2,194	642
BILSODA	BILSODA GmbH & Co. KG[8)]	Pullach, Germany	24.90	2,421	38
Investment through DFS International Business Services GmbH:					
ESSP SAS	European Satellite Services Provider Société par Actions Simplifiée[8)]	Toulouse, France	16.67	17,293	4,573
Investment through DFS Aviation Services GmbH:					
TATS	Tower Air Traffic Services S. L.[8)]	Madrid, Spain	50.00	1,003	--

6) There is a profit-and-loss transfer agreement with DFS

7) There is a profit-and-loss transfer agreement with DFS International Business Services

8) Values as at 31 December 2020

Changes in scope of consolidation	As at 31 Dec 2020	Consolidation/ reconciliation	Additions	Disposals	As at 31 Dec 2021
Consolidated companies (controlling interest)	9	0	0	0	9
of which domestic	7	0	0	0	7
of which foreign	2	0	0	0	2
Associated companies – measurement using equity method	3	0	0	0	3
of which domestic	1	0	0	0	1
of which foreign	2	0	0	0	2
Investments (non-controlling) – measurement using cost method	4	0	0	0	4
of which domestic	1	0	0	0	1
of which foreign	3	0	0	0	3

3.3 Other investments

Disclosures on minority shareholders

Droniq GmbH	Total	DFS Group	Telekom Innovation Pool GmbH
	€'000	€'000	€'000
Share capital	2,000	1,020	980
Shareholding	100.00%	51.00%	49.00%
Business year	1 Jan - 31 Dec		
Accounting standards	HGB		
Income from investments (previous year)	0 (-)	0 (-)	0 (-)
Current assets	5,766	2,941	2,825
Non-current assets	283	144	139
Current liabilities	471	240	231
Non-current liabilities	0	0	0
Equity	5,578	2,845	2,733
Net income	-2,692	-1,373	-1,319
Revenues	525	268	257

Disclosures on associated companies	FCS[9]	AEROSENSE[9]	UNIFLY[9]
	€'000	€'000	€'000
Total registered capital	205	35	12,612
Shareholding	55.00%	30.00%	22.34%
Additional shareholders	SKYNAV S.A., Belgium, 25.00% AUSTRO CONTROL, Austria, 20.00%	FREQUENTIS AG, Austria, 70.00%	Five individual persons: VITO, Terra Drone, PMV, QBIC Arkiv, QBIC Feeder
Business year	1 Jan - 31 Dec	1 Jan - 31 Dec	1 Jan - 31 Dec
Accounting standards	HGB	Austrian Commercial Code	Belgian Commercial Code
Income from investments (previous year)	0 (0)	0 (0)	0 (0)
Current assets	3,456	1,145	5,694
Non-current assets	12,320	16	2,275
Current liabilities	2,118	889	720
Non-current liabilities	8,393	0	0
Equity	5,265	272	7,249
Net income	599	-22	-5,363
Revenues	10,425	1,532	893

Disclosures on investments (non-controlling)	GroupEAD[9]	BILSODA[9]	ESSP SAS[9]	TATS[9]
	€'000	€'000	€'000	€'000
Total registered capital	1,000	10	1,000	1,000
Shareholding	36.00%	24.90%	16.67%	50.00%
Additional shareholders	Entidad Pública Empresarial Aeropuertos Españoles y Navegación Aérea, Spain, 36.00%; FREQUENTIS AG, Austria, 28.00%	AD Grundstücks-gesellschaft mbH & Co. KG, Germany, 75.10%; BILSODA Beteiligungs GmbH, general partner, Germany, 0.00%	ANSPs from Spain, Italy, United Kingdom and France each hold 16.67%; Portugal and Switzerland, 8.33 % each	INDRA Sistemas S.A., Spain, 50.00%
Business year	1 Jan - 31 Dec	1 Jan - 31 Dec	1 Jan - 31 Dec	1 Jan - 31 Dec
Accounting standards	Spanish Commercial Code	HGB	French Commercial Code	Spanish Commercial Code
Income from investments (previous year)	231 (186)	0 (0)	667 (417)	0 (0)
Current assets	2,870	376	32,477	1,003
Non-current assets	264	6,083	2,002	--
Current liabilities	940	581	16,295	--
Non-current liabilities	0	3,457	891	--
Equity	2,194	2,421	17,293	1,003
Net income	642	38	4,573	--
Revenues	7,159	539	58,356	--

[9] Values as at 31 December 2020

4 Accounting policies

The DFS Group carries out accounting and measurement using uniform standards. The consolidated financial statements were drawn up using historical costs unless IFRS prescribed an alternative measurement method. The associated disclosure is made with the respective accounting policy.

4.1 Going concern basis of accounting

On the basis of the current corporate plan and due to the financing measures initiated, the Executive Board maintains its realistic expectation that the DFS Group will have sufficient resources to continue its business activities for at least another twelve months. Accordingly, the consolidated financial statements were prepared on a going concern basis.

The air navigation services provided by the DFS Group count as so-called critical infrastructure. The Group is therefore obliged to maintain certain fundamental functions which ensure the safe handling of air traffic (in particular during airborne emergency missions and air cargo deliveries). This rules out the option of a complete closure or suspension of business operations.

The outbreak of the COVID-19 pandemic and the subsequent government restrictions taken to contain the virus in Germany had a negative impact on the results and financial position of the Group. As a result of these developments, the Executive Board decided to take appropriate measures to ensure the best possible protection of staff while at the same time maintaining operational effectiveness and financial liquidity. As a result, the Group made savings in staff and non-staff costs, ordered holidays to be taken in the business year and excess hours reduced and/or the accumulation of reduced (negative) working hours, used the option of short-time work (furloughing) and cut back or postponed planned investments.

The DFS Group reported net income of €135 million for the business year ending 31 December 2021. Liquid assets fell by €126 million, amounting to €126 million at the end of the year.

The DFS Group does not expect air traffic to recover quickly and does not anticipate a return to pre-crisis levels before 2024. At an extraordinary shareholder meeting in January 2021, the Shareholder of DFS decided to increase the share capital by €300 million in return for the issue of three million shares to ensure the necessary liquidity of the Group. This measure is intended to stabilise the equity base of DFS and partially compensate for revenue shortfalls caused by COVID-19. In addition, the DFS Group is currently evaluating the need for a potential further equity injection for the year 2023 in close cooperation with the Shareholder. In addition, the carry-over from traffic risk sharing will have a positive effect on liquidity from 2023.

The Executive Board decided on further measures for 2021 to reduce costs, optimise cash flows and maintain liquidity:

- Investment projects are being carried out restrictively. Non-essential investments are being reduced and expenditures postponed or cancelled.
- An efficiency improvement programme is being set up for the human resources area.
- Natural separations are to be utilised and the hiring of new staff is to be suspended for the time being.
- New technologies, innovation and digitalisation are being promoted within the framework of the newly introduced Sprint2024 programme (such as strengthening and expanding the use of cloud technology, realignment of the system strategy, targeted and cost-conscious investments in new technologies).

- The Executive Board and the air navigation services union GdF agreed on a comprehensive package of collective bargaining agreements. Thus, a new collective agreement relating to remuneration was concluded for the years 2021 to 2024, the expired corona collective agreement was extended with slight modifications, an additional partial retirement model was introduced and the training obligation from the collective agreement on capacity planning (KapaTV) was adjusted to reflect current developments in air transport for the period 2021 to 2023.

Based on these factors and the commitment of the German Federal Government to provide further financial resources as necessary, the Executive Board maintains the realistic expectation that the DFS Group has adequate resources and sufficient room for manoeuvre in terms of the required liquidity.

4.2 New and amended International Financial Reporting Standards and Interpretations

Revisions to accounting policies resulting from new and revised standards and interpretations are applied retrospectively, unless otherwise regulated. The prior-year statement of comprehensive income and the opening balance sheet for the prior-year period are adjusted as if the new accounting policies had always been applied.

4.2.1 Mandatory standards and interpretations

The DFS Group used the following revised standards that were mandatory for the first time for the business year 2021. The endorsement by the European Union was made with the publication of the standard in the Official Journal of the European Union.

Standard	Title	EU endorsement	Mandatory application for financial years beginning on or after
Amendments to existing standards			
IFRS 4	Insurance contracts	15 Dec 2020	1 Jan 2021
IFRS 9 / IAS 39 / IFRS 7 / IFRS 4 / IFRS 16	Financial instruments / Financial instruments: Recognition and measurement / Financial instrument: Disclosures / Insurance contracts / Leases (reform of the reference interest rate – phase 2)	13 Jan 2021	1 Jan 2021
IFRS 16	Leases (COVID-19-related rent concessions after 30 June 2021)	30 Aug 2021	1 Apr 2021

The standards that were mandatory for the first time from 1 January 2021 had no impact on the results and financial position of the Group. Thus, there was no need for retroactive adjustments.

The EU adopted the amendments to IFRS 4 on 15 December 2020. It allows insurance groups to defer the first-time application of the standard IFRS 9 by another year to 1 January 2023. This exemption was granted to insurance companies in order to prevent distortions between the asset and liability sides of their balance sheets.

The amendments to the standards IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 provide for certain relief in accounting for contractual cash flows and hedge accounting in connection with the reform of interest rate benchmarks (IBOR reform). These amendments allow the changes in the value of financial instruments or leases caused by the replacement of an interest rate benchmark to be spread over a certain period of time. In this way, sudden effects on profit or loss as well as the unnecessary termination of hedging relationships can be avoided.

The amendments to IFRS 16 allow the lessee temporary relief in accounting for rent concessions granted (such as deferrals of payments or payment holidays) that are directly related to the COVID-19 pandemic. This allows the lessee to forego a reassessment of whether the lease concession qualifies as a lease modification. However, the relief now only applies to reduced lease payments due until 30 June 2022. Another prerequisite is that no other substantial changes to the contract have been agreed.

4.2.2 Voluntary standards and interpretations

The IASB published the following revised standards. The standards have already been incorporated into European law as part of the endorsement procedure. They become effective from the point in time given and early application is permitted.

The Group is currently examining the impact of the amended standards on the Group's results and financial position. However, it assumes that there will be no significant impact. The DFS Group applies the standards when they become effective and early voluntary application will not be availed of.

Standard	Title	EU endorsement	Mandatory application for financial years beginning on or after
New standard			
IFRS 17	Insurance contracts, including changes	19 Nov 2021	1 Jan 2023
Amendments to existing standards			
IFRS 3	Business combinations	28 Jun 2021	1 Jan 2022
IAS 16	Property, plant and equipment	28 Jun 2021	1 Jan 2022
IAS 37	Provisions, contingent liabilities and contingent assets	28 Jun 2021	1 Jan 2022
Catalogue	Improvements to International Financial Reporting Standards (2018-2020 cycle)	28 Jun 2021	1 Jan 2022

4.2.3 Published, though not yet mandatory, standards and interpretations

The IASB has issued the following standards which are not yet mandatory. Before these can be applied, they have to be recognised and endorsed by the EU. They become effective from the point of time given.

The Group is currently examining the possible impact on the consolidated financial statements. The DFS Group does not avail itself of the right of early application of new or amended standards.

Standard	Title	Anticipated impact	Mandatory application for financial years beginning on or after
Amendments to existing standards and interpretations			
IAS 1	Presentation of the financial statements (classification of liabilities as current or non-current)	No material impact	1 Jan 2023
IAS 1	Presentation of financial statements (disclosure of accounting policies)	No material impact	1 Jan 2023
IAS 8	Accounting policies, changes in accounting estimates and errors (definition of accounting estimates)	No material impact	1 Jan 2023
IAS 12	Income taxes (deferred taxes in connection with the initial recognition of an asset or liability)	No material impact	1 Jan 2023
IFRS 17	Insurance contracts (first-time application of IFRS 17 and IFRS 19 - comparative information)	None	1 Jan 2023

4.3 Use of estimates and discretionary decisions

At the balance sheet date, the DFS Group makes annual forecasts of future developments for accounting and measurement purposes. The comprehensive set of assumptions, estimates as well as judgements and discretionary decisions made may have a considerable influence on the representation of the results and financial position of the DFS Group. They are based on historical experience and expectations about the occurrence of future events which appear commercially reasonable in the given circumstances. The Group continuously verifies its estimates and forecasts. If external conditions develop differently than expected, the actual amounts may vary from the estimates. Any variances from the actual circumstances are recognised in profit or loss when they occur. The discretionary decisions on assumptions concerning the future and other key sources of estimation uncertainty at the balance sheet date which have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next business year are described in the respective accounting policies.

In addition to the impairment tests for individual assets, an impairment test was carried out at the level of the cash-generating unit due to the existence of a triggering event for one business unit. The updated business plans formed the basis for this. These assume discernible liquidity bottlenecks and a business environment that is only slowly growing in the coming years. The result was an impairment loss of five million euro being recognised on the investment in UNIFLY.

4.4 Items in the statement of comprehensive income

4.4.1 Revenues

The DFS Group recognises revenues if it satisfies its performance obligations through the transfer of the contracted goods and contracted services to the customer. Assets are deemed to have been transferred when the customers have obtained control over the goods or services either at a point in time or over time. Revenue is recognised over time if the customer obtains control or receives the benefits as the asset is created or provided, or the asset created does not have an alternative use and there is an enforceable right to payment for performance.

The amount to be recognised is based on the transaction price which can be allocated to the performance obligation. The transaction price can have fixed and/or variable elements and is the consideration to which the DFS Group expects to be entitled in exchange for the transfer of the contracted goods and services to the customer. In the case of multiple performance obligations, the Group allocates the transaction price to the performance obligations in the contract by reference to their relative standalone selling prices. The standalone selling prices are estimated at contract inception on the basis of observable prices of promised products and services supplied under similar circumstances and to similar customers.

The DFS Group determines the level of revenue for revenues recognised over time and fixed-price contracts based on the degree of progress. The Group determines the degree of progress using input methods and uses the cost-to-cost method, by which the costs incurred are compared to the total estimated costs required to satisfy the performance obligation. To determine performance progress, estimates are required of the material influencing factors, such as the overall costs incurred, contract income or contract risks. The expert departments responsible constantly review all the estimates and make any necessary adjustments. The resulting increase or decrease in the estimated revenues and costs are recognised by the Group in the period in which the correction becomes known.

4.4.2 Impairments

At each balance sheet date, the DFS Group uses the general approach to recognise a risk provision for expected credit losses either on the basis of a 12-month expected credit loss or a lifetime expected credit loss. The general approach has to be applied to financial assets which are either measured at amortised cost or at fair value through other comprehensive income (debt instruments). The expected credit losses are determined from the probability-weighted estimates of the present value of the defaults and are to be discounted at the effective interest rate for financial assets.

Measurement stages of the general approach	
Stage 1	**12-month expected credit losses**
	To be used for all financial assets whose credit quality has not significantly deteriorated since initial recognition. 12-month expected credit losses are the expected credit losses that result from default events that are possible within 12 months.
Stages 2/3	**Lifetime expected credit losses**
	These stages are to be used if there has been a significant increase in credit risk for individual financial instruments or for a group of same. Lifetime expected credit losses result from all possible default events over the expected lifetime.

The Group assumes that the credit risk of a financial asset has increased significantly or there is objective evidence of impairment if the debtor has significant financial difficulties, there is a possibility of payments being in default or arrears or the assets of the debtor are subject to insolvency proceedings. If there is such evidence on initial recognition, these assets are allocated to stage 3 from the beginning. The DFS Group views the assets measured at amortised cost or at fair value through other comprehensive income as having a low credit risk as it considers the risk of non-performance to be low and the debtor is always in a position to meet its contractual payment obligations at short notice.

Under the simplified approach, the DFS Group recognises a loss allowance based on lifetime expected credit losses both on initial recognition and at each reporting date. The Group uses this approach for trade receivables, contract assets and lease receivables. The determination is based on the analyses of the age structure and due dates, information on insolvencies or the use of a provision matrix based on historically observed default rates. As further security, the Group demands security deposits from customers with relevant sales volumes when defined warning thresholds are exceeded. The Group recognises the allowances for doubtful accounts in a separate allowance account. Such allowances are reversed through the income statement should the reasons for the impairment no longer apply in subsequent periods. The Group views a receivable as being in default if, in its reasonable opinion, it will no longer be paid and the debtor is unlikely to be able to settle its credit obligations in full.

All other assets (goodwill; intangible assets; property, plant and equipment; and investment property; financial assets) are reviewed on each balance sheet date to see if there are indications for an impairment under IAS 36. This involves comparing the carrying amount with the recoverable amount of the asset.

An impairment loss is recognised for the amount by which the recoverable amount exceeds the carrying amount of the asset. The recoverable amount is the higher of the net realisable value and the value in use. The net realisable value is equal to the fair value less costs to sell. Value in use is the present value of the future cash flows expected to be derived from the continuing use of an asset. The Group calculates the present value with a discount rate before tax that reflects market conditions, calculated using the estimated zero-coupon curves of the German Bundesbank (the Svensson method is used). No risk premium in accordance with IAS 36.55(b) is used, as the assets are not exposed to any special risks. If a recoverable amount cannot be determined for an individual asset, the Group brings together the assets into cash-generating units, the smallest identifiable group of assets.

If, at a later date, the reasons for impairments made in previous years no longer apply, either in full or in part, the impairment loss is reversed accordingly. The reversal is limited to the carrying amount which would have applied if the impairments from the past were excluded and it is recognised in the income statement. A reversal of impaired goodwill is not permitted.

4.4.3 Operating expenses

Operating expenses are recognised in the income statement when the service is used or at the time the expenses are incurred.

4.4.4 Interest income and expenses

Interest income and expenses are recognised on an accrual basis using the effective interest rate method.

4.5 Items in the balance sheet

4.5.1 Goodwill

The DFS Group recognises goodwill from business combinations in accordance with IFRS 3 as an asset at cost at the acquisition date. Cost is the difference between the purchase price for the shares and the proportionate net assets acquired. The net assets are the difference between the fair values of the identifiable assets acquired and the liabilities assumed as well as the contingent liabilities. Acquisition-related costs are expensed.

There is no scheduled amortisation for goodwill. Goodwill is reviewed at every balance sheet date to determine if there are indications of impairment. Impairment testing involves comparing the carrying amount with the recoverable amount of the asset. The tests are conducted at the level of the cash-generating unit. The recoverable amount is determined using recognised discounted cash flow methods. If the recoverable amount is lower than the carrying amount, an impairment loss is recognised down to the recoverable amount in accordance with IAS 36. Once goodwill has been impaired, it is not permitted to reverse the impairment in subsequent periods.

4.5.2 Intangible assets

Assets acquired for valuable consideration are capitalised at cost when it is probable that the asset will generate future economic benefits for the company and the costs can be measured reliably.

Intangible assets that arose from own development activities are capitalised at cost. This presupposes that future economic benefits will be generated from the products. Production costs comprise all direct costs and an appropriate share of development-related overhead. Borrowing costs are capitalised as part of production costs in accordance with the requirements of IAS 23. Impairment tests are carried out on internally generated intangible assets to determine the present value of expected future cash flows if there are objective indications of impairment. The Group evaluates current requirements due to changing market conditions as well as the progress of new intangible assets that are already in the development process.

Prepayments are measured at cost. The prepayments are allocated to the respective intangible assets at the time of commissioning and written off over their useful life.

Intangible assets have a limited useful life. They are written off on a straight-line basis from the beginning of use as follows:

Intangible assets	Useful life
Concessions, industrial and similar property rights and assets as well as licences in such rights and assets	3 to 8 years
Internally generated intangible assets	8 years
Prepayments	Only after commissioning

Research expenses and associated government grants are recognised in profit or loss. Grants from airports, other air navigation service providers or the Paul Ehrlich Institute are deducted from cost. EU grant funding from the Connecting Europe Facility (CEF) programme is recognised as accruals and recorded in profit or loss over the useful lives of the underlying intangible assets.

4.5.3 Property, plant and equipment

Tangible assets acquired for valuable consideration are capitalised at cost when it is probable that the asset will generate future economic benefits for the company and the costs can be measured reliably.

Costs include the purchase price as well as all directly attributable costs required to bring the asset to the site and get it into the working condition as intended by management.

The DFS Group divides property, plant and equipment (in particular buildings) into the material economic components and reports them separately. Costs for the replacement of components and general overhaul are capitalised separately.

Production costs for internally generated property, plant and equipment comprise all direct production costs (prime costs), an appropriate share of manufacturing overhead as well as the borrowing costs that are directly attributable up to the time of completion in accordance with IAS 23.

Government grants are deducted from the carrying amount of the grant-funded asset. Grants from airports, other air navigation service providers or the Paul Ehrlich Institute are deducted from cost. EU grants from the CEF programme are recognised as accruals and recorded in profit or loss over the useful lives of the underlying property, plant and equipment.

All assets (except for land) have a limited useful life and are written off on a straight-line basis from the beginning of use. The DFS Group estimates the useful lives of property, plant and equipment based on their probable usability. As an orientation, it uses the official tax depreciation table (*AfA-Tabelle*) for general purpose assets (see letter from the German Federal Ministry of Finance (BMF) dated 15 December 2000 in the Federal Tax Gazette (*Bundessteuerblatt*) I 2000, p. 1,532). Adjustments are made, as necessary, based on historical experience.

Property, plant and equipment	Useful life
Building – structure	40 years
Building – façade	25 to 30 years
Building – interior finishing	25 years
Building – heating, ventilation, water	15 years
Building – electronics	15 years
Outside facilities	5 to 19 years
Technical equipment	3 to 20 years
Operating and office equipment	3 to 15 years

Costs for repairs and ongoing maintenance of property, plant and equipment that have not led to an extension or material improvement are recognised under other operating expenses in the income statement.

When property, plant and equipment are sold, decommissioned or scrapped, any gains or losses from the difference between the net disposal proceeds and the amortised cost are recognised in other operating income or expenses.

4.5.4 Financial assets accounted for using the equity method

The DFS Group recognises associated companies at cost at the acquisition date using the equity method. In subsequent periods, the carrying amount is adjusted to account for the associated changes in equity in profit or loss, or in other comprehensive income. The dividends received from associated companies are accounted for by lowering the carrying amount of the investment. If there are indications for an impairment of investments, the lower recoverable amount is used for the carrying amount as required by the regulations of IAS 36.

4.5.5 Leases

As a lessee, the DFS Group measures the rights of use granted to it for leased assets at cost on initial recognition on the commencement date. These are calculated as the present value of future lease payments. Subsequently, the rights of use are measured using the cost method and amortised on a straight-line basis over the shorter of the useful life and the expected term of the lease agreement. If there is a remeasurement of the lease liabilities, the rights of use are adjusted accordingly. Rights of use are reviewed at every balance sheet date to determine if there are indications of impairment under IAS 36.

As a lessee, the Group determines the lease liabilities on initial recognition on the commencement date from the present value of the lease payments not yet made at that date. These payments primarily comprise fixed and variable payments, expected residual value payments and exercise payments for purchase options. The lease payments are discounted at an incremental borrowing rate. This discount rate is based on the yields on debt securities outstanding issued by residents, public debt securities and listed Federal securities corresponding to their remaining term as published by the German Bundesbank. An internal company credit risk premium of 0.25 percent is added. On subsequent measurement, the lease liabilities are increased by the interest expense passed through the income statement and reduced by the principal repayment portion, which does not pass through the income statement. Each lease payment is divided into principal repayment and financing expenses. If there are changes in the lease payments (e.g. due to index-linked charges, changes in the term of the lease or reassessments of contractual options), the DFS Group remeasures the lease liabilities. Adjustments to the new carrying amounts are generally made without going through profit and loss by making corresponding corrections to the capitalised rights of use.

As a lessee, the Group shows the rights of use under "Property, plant and equipment" and the lease liabilities under "Financial liabilities". The rights of use and associated depreciation, as well as lease liabilities and corresponding interest expenses, are presented in a separate item in the Notes.

Lease transactions where the DFS Group, as lessor, transfers basically all the risks and rewards of ownership of a leased asset to the lessee are treated as finance leases. At the beginning of the lease, the group derecognises the leased asset. At the same time, as lessor, it recognises a lease receivable in the amount of the net investment in the lease on the commencement date. The net investment comprises the present value of the lease payments, the present value of the expected residual value at the end of the lease and the initial direct costs. Subsequently, finance income is recognised over the lease term as a constant periodic rate of return on the net investment. The lease payments received reduce the lease receivable.

All other lease agreements where the Group is a lessor are treated as operating leases. The lease instalments received and the depreciation of the leased asset are recognised in the income statement on a straight-line basis over the term of the lease.

The DFS Group makes use of simplifications and waives the application of IFRS 16 for short-term leases and for leases where the underlying asset is of minor value. The Group set a threshold of five thousand euro. The lease payments for these transactions continue to be recognised in the income statement on a straight-line basis over the term of the lease. In addition, the Group generally separates leasing and non-leasing components and recognises the latter in the income statement.

The DFS Group applied IFRS 16 retrospectively, but decided not to adjust the prior-year figures. Until 1 January 2019, the Group valued the rental and lease agreements in accordance with IAS 17 and assessed them as regards their accounting treatment (finance leases through the balance sheet and operating leases through the income statement).

4.5.6 Investment property

Property and buildings that the DFS Group does not use operationally and are exclusively held either for rental income or capital gains are classified as investment property. The amortised cost is used for measurement. Buildings are depreciated using the straight-line method.

4.5.7 Financial instruments – financial assets

The DFS Group determines the classification and measurement of financial assets based on the business model by which the portfolio of financial assets is managed and on the characteristics of the contractual terms of the cash flows.

- Category: Amortised cost

  The Group classifies financial assets under this category when the objective is to hold the assets to maturity and collect the contractual cash flows. The cash flows occur at fixed points in time and represent exclusively repayments of principal and interest on the outstanding principal amount. Initial recognition occurs at fair value at the time of settlement (plus direct transaction costs). Receivables denominated in a foreign currency are translated using the rate at the reporting date and recognised in the income statement. Subsequently, the assets are carried at amortised cost using the effective interest rate method. Due to the predominantly short-term nature of trade receivables, other receivables and assets as well as liquid funds, the carrying amounts at the balance sheet date do not differ significantly from their fair values. The Group therefore assumes that these assets can be sold for at least their carrying amounts in the short term and sets their fair values at the same level. Interest income and exchange rate gains and losses are presented in the financial result. Gains and losses from impairments, derecognitions and modifications are recognised in the operating result.

- Category: Debt instruments at fair value through other comprehensive income

  For debt instruments in this category, the Group's objective is either to hold the asset to maturity and collect the contractual cash flows, or to sell. The cash flows occur at fixed points in time and represent exclusively repayments of principal and interest on the outstanding principal amount. At the time of settlement, initial recognition occurs at fair value (plus direct transaction costs). Subsequently, the DFS Group measures the financial assets at fair value through other comprehensive income, with changes to the carrying amount being booked in other comprehensive income. On disposal, accumulated other comprehensive income is reclassified to profit or loss. Interest income and exchange rate gains and losses calculated using the effective interest rate method are recognised directly in the financial result, while impairment losses are recognised in a separate item in the operating result.

- Category: Equity instruments at fair value through other comprehensive income

  For investments in equity instruments, the Group's objective is also either to hold these to maturity and collect the contractual cash flows, or to sell. The cash flows occur at fixed points in time and represent exclusively repayments of principal and interest on the outstanding capital amount. On initial recognition of an equity investment that is not held for trading, the Group may irrevocably elect to measure it at fair value through other comprehensive income. This choice is made on a case-by-case basis for each investment. Initial recognition occurs at fair value (plus direct transaction costs). Subsequently, the investment is measured at fair value. The Group recognises all changes to the fair value directly in other comprehensive income. On derecognition of the investment, there is no reclassification of the cumulative other comprehensive income in the operating result. Dividends are considered in the financial result.

- Category: Assets at fair value through profit or loss

  The DFS Group recognises all financial assets at fair value through profit or loss (excluding transaction costs) on initial recognition as long as they are not measured at amortised cost or at fair value through other comprehensive income. Subsequently, these assets are measured at fair value through profit or loss. All net gains and losses are recognised directly in other comprehensive income. Interest and dividend income are considered in the financial result.

  Derivatives also belong to this category unless they qualify as hedging instruments. The DFS Group exclusively employs effective derivatives to hedge existing and future interest rate and currency risks under a hedging policy defined by the Executive Board and monitored by the Treasury department. While interest rate swaps are used to manage interest risk, cross-currency interest rate swaps hedge both interest rate risk and currency risk from financing in foreign currencies.

A reclassification is only carried out if the business model objective for the financial assets is changed.

The Group recognises expected credit losses under IFRS 9. The impairment method depends on whether there is a significant rise in the credit risk. The simplified approach is used for trade receivables, contract assets and lease receivables.

The Group derecognises financial assets as soon as the contractual right to the cash flows expires or the asset is transferred as part of a qualified transfer.

4.5.8 Fair value

The fair value of financial instruments is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (exit price). The fair value is measured based on the assumptions that knowledgeable market participants who are independent of each other and who are willing and able to enter into a transaction would make while acting in their economic best interest. Fair value is a market-based measurement, not an entity-specific measurement.

The fair value measurement assumes that the transaction is made in the principal market for the asset or liability. In the absence of such a market, the most advantageous market is to be used. This is the market that would maximise the amount that would be received to sell an asset or minimise the amount that would be paid to transfer a liability, taking into consideration transport and transaction costs. However, fair value measurements are not adjusted for transaction costs.

The DFS Group uses valuation techniques to determine fair value that are appropriate under the given circumstances and for which sufficient data are available. The techniques maximise the use of relevant observable inputs and minimise the use of unobservable inputs.

Inputs	
Level 1	**Directly observable inputs** Observable (unadjusted) quoted prices in accessible active markets for identical assets or liabilities.
Level 2	**Indirectly observable inputs** Inputs that are observable for assets or liabilities either directly or indirectly. a) Quoted prices for similar assets or liabilities in active markets. b) Quoted prices for identical or similar assets or liabilities in markets that are not active. c) Inputs other than quoted market prices that are observable. d) Market-corroborated inputs (values derived from market data using statistical methods).
Level 3	**Unobservable inputs** Entity's own assumptions on the behaviour of a typical market participant.
The DFS Group undertakes reclassifications within the hierarchy at the end of the business year in which the changes took place.	
Valuation techniques	
Market approach	
This approach derives market multiples from a set of identical or comparable assets (matrix pricing).	
Cost approach	
This approach is based on the amount required to replace the service capacity of an asset (the current replacement cost).	
Income approach	
This method discounts future cash flows to a current amount (present value techniques, option pricing models, residual income method).	

Further information on the determination of the fair value can be found in Notes 15 and 28.

4.5.9 Trade receivables

Initial recognition occurs at fair value at the time of settlement (plus direct transaction costs). The transaction price is the consideration to which the DFS Group expects to be entitled in exchange for the transfer of the contracted goods and services to the customer. Subsequently, trade receivables are measured at amortised cost using the effective interest rate method taking impairments into consideration. Due to their predominantly short-term nature, the carrying amounts at the balance sheet date do not differ significantly from their fair values. The DFS Group therefore assumes that trade receivables can be sold for at least their carrying amounts in the short term and sets the fair value at the same level.

Trade receivables denominated in a foreign currency are translated using the rate at the reporting date and recognised in the income statement.

The DFS Group does not pledge any of the receivables as loan collateral or as security for other liabilities.

4.5.10 Contractual net values

Contract assets relate to a right that the Group has to consideration in exchange for goods or services that, at the balance sheet date, have been transferred but not invoiced for contracts over time.

The Group capitalises the additional costs for obtaining contracts with a customer as an asset when it can assume that the costs will be recovered. The costs of fulfilling contracts are also capitalised under certain conditions.

Contract liabilities relate to customer payments already made (security deposits of airspace users) where the DFS Group still has to provide the contracted good or service. The DFS Group presents amounts received or that will be received that are expected to be refunded to the customer (expected volume discounts or product returns) as refund liabilities. This is based on empirical values relating to return percentages and periods.

4.5.11 Other receivables and assets

Initial recognition occurs at fair value at the time of settlement (plus direct transaction costs). The transaction price is the consideration to which the DFS Group expects to be entitled in exchange for the transfer of the contracted goods and services to the customer. Subsequently, other receivables and assets are measured at amortised cost using the effective interest rate method taking impairments into consideration. Due to their predominantly short-term nature, the carrying amounts at the balance sheet date do not differ significantly from their fair values. The DFS Group therefore assumes that the receivables can be sold for at least their carrying amounts in the short term and sets the fair value at the same level.

Other receivables and assets in foreign currencies are measured at the reporting date and recognised in the income statement.

The DFS Group does not pledge any of the receivables as loan collateral or as security for other liabilities.

4.5.12 Deferred taxes

IAS 12 regulates the treatment of deferred taxes using the liability method. Deferred tax assets and liabilities are recognised by the DFS Group for all temporary differences between the tax base of assets and liabilities and their carrying amounts in the Group balance sheet according to IFRS as well as for consolidation adjustments recognised in profit or loss. The differences are limited to those items whose changes influence taxable earnings.

Issues related to the calculation of charges are excluded (see Section 31b(3)(3) of the German Aviation Act (LuftVG)).

Deferred tax assets are also recognised for future claims to tax reductions resulting from tax loss carryforwards. Deferred tax assets for all deductible temporary differences and for tax loss carryforwards are only recognised to the extent that there are future taxable profits which either the temporary differences or unused taxable losses can offset.

The computation of deferred taxes is based on the existing or applicable income tax rates in each country at the date of valuation. The income tax rate of 29.80 percent (previous year: 29.80%) is made up of a corporate income tax of 15.00 percent, a solidarity surcharge of 5.50 percent and a weighted average German municipal trade tax multiplier rate of 400.00 percent on a tax rate (*Steuermessbetrag*) of 3.50 percent. The effect of changes in tax rates on deferred tax assets and liabilities is reflected in the income tax expense for the period in which the law was changed.
Deferred tax assets and liabilities are netted if permitted under law and the receivables and payables are against the same tax authority.

Deferred tax assets and liabilities are not discounted.

4.5.13 Liquid funds

Liquid funds include cash, cash accounts as well as short-term money market investments and certificates of deposit at credit institutions. Initial recognition occurs at fair value at the time of settlement (plus direct transaction costs). Subsequently, liquid funds are measured at amortised cost. Due to the predominantly short-term nature of cash and cash equivalents, they are only subject to immaterial changes in value. The Group therefore sets the fair values at the same level as the carrying amounts.

Liquid funds in foreign currencies are converted at the closing rate.

4.5.14 Inventories

Inventories are carried at cost based on the weighted average method or at production cost.

Production costs comprise direct production costs (especially direct materials and direct labour) as well as an appropriate share of the necessary material and manufacturing overhead. Administrative expenses and costs of employee assistance programmes are included to the extent they can be allocated to production. Financing costs are not recognised as part of production costs.

Subsequent measurement occurs at the lower of deemed cost and net realisable value. Inventory risks resulting from the duration of storage or impaired usability led to write-downs upon determination of the net realisable value. If the reasons for a write-down no longer apply, the write-down is reversed. Lower values at the reporting date due to lower prices on sales and purchase markets were taken into account.

4.5.15 Other comprehensive income

This item relates to changes recognised directly in equity, provided they are not based on capital transactions with the Shareholder. This includes remeasurement components of the net defined benefit liability, unrealised gains and losses from the fair valuation of available-for-sale financial assets, measurement differences from currency translation and the associated tax effects. In equity, these items are disclosed under revaluation reserves.

4.5.16 Provisions for pensions and similar obligations

Defined benefit plans are measured in accordance with IAS 19 using the projected unit credit method on the basis of actuarial reports at the balance sheet date. This requires, in particular, assumptions to be made about long-term salary trends and average life expectancy, which are made at the beginning of the business year. The premises on salary trends are based on applicable collective agreements and historical trends and take into account country-specific interest and inflation levels. Biometric data serve as the basis for the estimates of average life expectancy (mortality tables taken from Heubeck-Richttafeln 2018 G).

The discount rate is an actuarial assumption and is set at the beginning of each business year. The rate used to discount pension obligations is determined by reference to market yields at the end of the reporting period on high-quality fixed-rate corporate and treasury bonds with good creditworthiness and an average rating of AA using the standardised approach. The DFS Group used bonds that are measured in euro. The term of the corporate bonds corresponds to the term of the obligation. With the help of the interest rate, the Group calculates the net interest result, for which the net pension obligation or net defined benefit liability is multiplied by the interest rate. The net pension obligation results from the deduction of plan assets with their fair value from the gross pension obligation and is therefore a net amount. In the event of an asset surplus, a corresponding procedure is applied. The interest rate for the expected return on plan assets therefore corresponds to the discount rate. Before offsetting, the DFS Group reports the net interest result in the financial result under financial income and financial expenses.

Remeasurements of the net defined benefit liability are recognised directly in equity in other comprehensive income. This includes in particular the actuarial gains and losses resulting from changes in expectations as regards the estimates made at the beginning of the year compared with the actual development during the business year. In addition, a portion of the actual return on plan assets at the end of the year in excess of the expected return on plan assets at the beginning of the year is recognised directly in equity. The remeasurements recognised in equity cannot be recognised in profit or loss in the following periods.

The service cost is made up of the current and past service costs. The latter reflects the change in pension obligations as a consequence of plan adjustments and plan curtailments. It is recognised directly in profit or loss when incurred in the statement of comprehensive income and reported under employee expenses.

Plan assets invested to cover fund-financed defined benefit obligations are measured at fair value using published market prices. If such market prices are not available, the fair values are determined using standard market valuation approaches and generally accessible data (such as yield curves). Asset surpluses to be recognised are reported as other receivables.

No provisions are recognised for defined contribution plans. The level of contributions at the DFS Group is dependent on the income relevant to pension calculations. The payments for defined contribution plans are expensed when due and reported as part of employee expenses.

4.5.17 Other provisions

The DFS Group recognises other provisions for past events that result in present obligations to third parties. These provisions must be capable of being estimated reliably and must lead to an outflow of resources with economic benefits in the future with a probability of at least 50.00 percent. The provisions are recognised with the settlement amount, which represents the highest probability of occurrence based on best estimates and under consideration of all discernible risks. In addition, the measurement of other provisions requires judgements on estimated costs, expected cash flows and their maturities. The provisions relate primarily to contracts, collective agreements, legal provisions or other obligations. They are recognised based on financial and actuarial calculations or historical experience using prudent commercial judgement. The premises underlying other provisions are reviewed annually and adjusted to current circumstances as necessary.

The DFS Group expects the majority of the other provisions to fall due in the next one to five years. Some of the individual provisions may involve a time period up to 2041. Therefore, uncertainties remain as to the timing and concrete amount of the expenses. Nevertheless, the Group expects to utilise the full amount of the provisions (100.00%) and expects that the outflow of economic benefits will equal the amount set aside in the provisions.

Provisions for obligations which in all probability will not lead to a reduction in assets in the subsequent year are discounted at prevailing market rates and carried at the present value of the expected outflow of resources, provided the interest effect is material. The discount rates are based on the yields on debt securities outstanding issued by residents, public debt securities and listed Federal securities corresponding to their remaining term as published by the German Bundesbank. In addition to these yields, a company-internal risk premium of 0.25 percent is added. The discount rates for non-current provisions are adjusted to the development of interest rates in the business year.

If a change in an estimate results in a reduction of the obligation, then the provision is reversed proportionally and the income reported under other operating income.

4.5.18 Financial instruments – financial liabilities

Financial liabilities generally give rise to a claim for repayment in cash or in the form of another financial asset.

- Category: Liabilities at fair value through profit or loss

  The DFS Group recognises derivative financial instruments with negative market values and financial liabilities at fair value on initial recognition if they are held for trading with the intention of sale in the short term. Subsequently, financial debt is measured at fair value. All gains and losses are directly included in the operating result and interest expenses in the financial result.

- Category: Amortised cost

  The category contains all financial liabilities which cannot be allocated to another category. Initial recognition occurs at fair value (plus direct transaction costs). Subsequently, the DFS Group measures financial liabilities at amortised cost using the effective interest rate method. Interest income and exchange rate gains and losses are presented in the financial result. Gains and losses from derecognitions are recognised in the operating result.

For financial liabilities with maturities up to one year, the carrying amounts at the balance sheet date do not differ significantly from their fair values. If the maturity is longer than one year, the fair value is calculated by discounting the settlement value at a risk-free rate using the effective interest rate method.

The Group derecognises financial liabilities when they are discharged or when the contractual obligations are met, cancelled or they expire.

Liabilities denominated in a foreign currency are converted using the rate at the reporting date.

The DFS Group did not receive collateral for the financial assets nor did it provide collateral for the financial liabilities. Trade payables are regularly secured by means of reservation of title clauses until payment is made in full.

4.6 Currency translation

The DFS Group presents its consolidated financial statements in the reporting currency euro. Unless otherwise stated, all amounts are given in millions of euro (€'000m) and rounded using the common method.

The Group translates foreign currency transactions into the functional currency of the individual unit using the rate prevailing at the date of the transaction. After initial recognition, foreign currency fluctuations for monetary items (liquid funds, receivables, liabilities) are recorded in profit or loss and non-monetary items (intangible assets; property, plant and equipment; inventories) are carried at historical cost using the exchange rate at the date of the transaction.

At the balance sheet date, there were no trade receivables in foreign currencies (previous year: none). Trade payables in foreign currencies amounted to €68 thousand (previous year: €267 thousand) at the balance sheet date. Due to the low impact on the results (less than €1 thousand), there was no currency valuation.

The DFS Group translates the financial statements of foreign subsidiaries (as well as the hidden reserves and obligations identified in purchase price allocations) using the concept of a functional currency under IAS 21. The current rate method (mean exchange rate at the balance sheet date) is used to translate assets, liabilities, contingent liabilities and other financial obligations. The translation of items for the income statement, however, uses a rate that approximates the exchange rate at the date of the transaction (average exchange rate). The exchange difference from the translation of equity and the differences from the translation into the presentation currency are recognised directly in other comprehensive income by the DFS Group.

Currencies	ISO code 1 euro =	Standard conversion Mean exchange rate 31 Dec 2021	EMU conversion Asked price 31 Dec 2021	Standard conversion Mean exchange rate 31 Dec 2020	EMU conversion Asked price 31 Dec 2020
US dollar	USD ($)	1.1326	1.1356	1.2271	1.2301
Pound sterling	GBP (£)	0.8403	0.8423	0.8990	0.9010
Bahraini dinar	BHD	0.4268	0.4398	0.4628	0.4758
Swiss franc	CHF	1.0331	1.0351	1.0802	1.0822

Notes to the statement of comprehensive income

5 Revenues

	2021 €m	2020 €m
Revenues from air navigation services	1,275	1,016
Other revenues	101	95
	1,376	**1,111**

Breakdown of revenues from contracts with customers			
	Regulated business	**Commercial business**	**Total**
31 Dec 2021	**€m**	**€m**	**€m**
Revenues from contracts with customers	**1,291**	**85**	**1,376**
Time point of revenue recognition			
Recognised at a specific point in time	1,289	83	1,372
Recognised over a period of time	2	2	4
31 Dec 2020	**€m**	**€m**	**€m**
Revenues from contracts with customers	**1,031**	**80**	**1,111**
Time point of revenue recognition			
Recognised at a specific point in time	1,029	78	1,107
Recognised over a period of time	2	2	4

Transaction price assigned to performance obligations not (or only partially) satisfied at the year end		
	2021 €m	**2020 €m**
Outstanding transaction price	16	17
of which expected to be recognised as revenue in 2022 (2021)	11	9
of which expected to be recognised as revenue in 2023 (2022)	5	5
of which expected to be recognised as revenue in 2024 (2023)	0[10)]	3
of which expected to be recognised as revenue in 2025 (2024)	0[10)]	0[10)]
of which expected to be recognised as revenue in 2026 (2025)	0[10)]	0[10)]

[10)] Under €1 million

Type of service	Type and time of satisfying the performance obligation and material payment conditions	Revenue recognition under IFRS 15
Air navigation services		
	The air navigation services and the directly associated support activities derive from the sovereign task under Section 27c of the German Aviation Act (LuftVG). Airspace users obtain control in the accounting sense of the air navigation services as soon as they enter the airspace controlled by DFS and make use of the associated services. For terminal services, the Group issues statutory notifications of charges (*Gebührenbescheide*) to airspace users three times per month, for short cycles. The notifications are immediately due in full within five days of the due date. However, the Group grants airspace users a period of one month to appeal against notifications. For en-route services, the invoices are issued by EUROCONTROL in arrears in the middle of the subsequent month. The notifications are due within 30 days. Airspace users are granted a period of one month to appeal.	Revenue is recognised when the airspace users make use of the air navigation services.
Production and service contracts		
	In the commercial business, the Group markets air navigation services and air traffic control systems that are often offered in combination with hardware and software, consultancy, training as well as analysis, simulation and project management activities worldwide. Therefore, these contracts contain several performance components. The DFS Group views the contracts as one performance obligation each as it is responsible for the complete project management and has contractually promised to provide the goods or services to the customer. The development, installation and maintenance of the customer-specific air traffic control software can only be carried out by the Group. Some of the projects extend over a longer period of time. Some customers make advance payments. The final invoice is issued on acceptance and the associated transfer of control to the customer. The production and service contracts do not contain a significant financing component as the customary 30-day payment period for invoices and advance payments has been agreed.	The revenues from consultancy services are recognised in the period in which the services are rendered. For fixed-price contracts and the recognition of revenue over time, the amount is calculated using the cost-to-cost method. The degree of progress is determined by comparing the costs incurred to the total estimated costs required to satisfy the performance obligation. Estimates of revenues, costs and contract progress are corrected when conditions change. The resulting increase or decrease in the estimated revenues and costs are recognised by the Group in the period in which the correction becomes known. Fixed-price contracts have a payment plan with fixed deadlines and amounts. If the services rendered exceed the payment amount, the Group recognises a contract asset, or a contract liability in the opposite case. Advance payments received are presented as contract liabilities. The costs are expensed as they occur.

6 Other operating income

	2021 €m	2020 €m
R&D project funding by the European Commission and German Federal and *Länder* ministries recognised in the income statement	22	21
Income from QTE transaction (exchange rate gains)	3	11
Remaining	10	8
	35	**40**

7 Employee expenses[11)]

	2021 €m	2020 €m
Wages and salaries[12)]	662	643
Expenses for IFRS pensions	289	248
Social security costs and expenses for assistance	77	74
Cost of personnel belonging to the Federal Aviation Office (LBA)	7	8
	1,035	**973**

[11)] In addition to the usual outlays for wages, salaries and social security expenses for DFS personnel, this item also includes the costs charged by the Federal Aviation Office (LBA) for personnel belonging to the LBA.

[12)] See Note 37.1 for the remuneration of the Executive Board.

Average annual number of employees

	2021	2020
Salaried staff	5,524	5,521
Soldiers released from regular service	129	142
Wage-earners	15	16
Technical and commercial students and apprentices	335	312
DFS Group staff	**6,003**	**5,991**
Employees covered by the collective agreement for the public service (TVöD)	18	20
Established civil servants	90	101
Personnel belonging to the Federal Aviation Office (LBA), Directorate Air Navigation Services	**108**	**121**
	6,111	**6,112**

8 Other operating expenses

	2021 €m	2020 €m
Spare parts and maintenance	54	55
Occupancy costs	15	15
Costs of external personnel	14	13
Other employee expenses	8	7
Telecommunication	8	10
Consultancy costs	7	6
Expenses from QTE transaction (exchange rate losses)	3	10
Remaining	26	32
	135	**148**

9 Financial result

	2021 €m	2020 €m
Gains from the financial assets of the investment entity	98	117
Income from fund assets to finance retirement obligations	21	36
Interest income from QTE transaction	1	1
Income from investments	1	1
Interest income of the investments accounted for using the equity method	0[13)]	0[13)]
Other interest income	1	0[13)]
Interest income from operating taxes	0[13)]	0[13)]
Financial income	**122**	**155**
Expenses from the financial assets of the investment entity	-68	-119
Expenses from discounting provisions	-41	-65
Other interest expense	-5	-4
Interest expense from QTE transaction	0[13)]	-1
Financial expenses	**-114**	**-189**
Financial result	**8**	**-34**
[13)] Under €1 million		

Additional disclosures on the financial result

	2021 €m	2020 €m
Interest result from financial instruments determined using the effective interest rate method not classified in the category "At fair value through profit or loss"	5	5
Interest income from impaired financial assets	0[13)]	0[13)]
Losses recognised directly in equity (-) / gains (+) from the measurement of financial assets	0	0

10 Income taxes

	2021	2020
	€m	€m
Current income taxes	22	0
Deferred income taxes	1	-2
	23	**-2**

Effective income taxes relate to corporation taxes, including the solidarity surcharge, and German municipal trade taxes. The computation of income taxes at DFS is based on applicable tax regulations in connection with Section 31b(3)(3) of the German Aviation Act (LuftVG). For the other Group subsidiaries, the trade and corporation tax laws and regulations are of relevance.

In addition to the tax liabilities from the current business year, possible estimated additional tax demands are also included to the extent that they might result from the current tax audit.

DFS owes taxes as the dominant enterprise for the dependent enterprise DFS Energy. Therefore, the deferred taxes of the dependent enterprise are reflected in the dominant enterprise. The spin-off of the energy plant, which is assigned to the areas relevant to air navigation charges, into DFS Energy led to a continuation of the tax measurement for this legal entity. Therefore, in determining taxes, the special situation as regards air navigation charges at DFS is also taken into consideration at DFS Energy. This does not lead to taxable temporary differences in value between the IFRS and the tax accounts.

In the Group, the tax groups are DFS, DFS International Business Services (DFS IBS) and Air Navigation Solutions (ANSL). DFS IBS is the dominant enterprise for the dependent enterprises DFS Aviation Services, R. Eisenschmidt and Kaufbeuren ATM Training, and therefore owes the taxes. Hence, the deferred taxes of the subordinated companies are reflected in the dominant enterprise (DFS IBS). The sum of the results of the two groups and ANSL differ from the consolidated Group result as the expenses and income among the individual Group companies are eliminated in a different manner than that used for the groups for tax purposes.

Reconciliation from expected to effective income tax expense		
	2021	2020
	€m	€m
Net income before income taxes	158	-96
Expected tax rate (in %)	29.83	29.83
Expected income tax expense	47	0
Tax expense not relating to the period under review	0[14)]	0
Reduction in the tax base under Section 31b German Aviation Act (LuftVG)	6	0
Correction due to loss carryforward / minimum taxation	-32	0
Deferred tax expenses (+) / income (-)	1	-2
Effective income tax expense (+) / income (-)	**22**	**-2**
Effective tax rate (in %)	**13.54**	**2.40**

Consolidated financial statements

Deferred taxes by balance sheet item				
	Deferred tax assets		Deferred tax liabilities	
	2021	2020	2021	2020
	€m	€m	€m	€m
Intangible assets	0	0	33	27
Property, plant and equipment	0[14)]	0[14)]	3	3
Financial assets	2	1	23	18
Receivables and other assets	1	0[14)]	330	156
Provisions for pensions and similar obligations	1,093	1,314	0	0
Other provisions	20	21	1	1
Liabilities	9	8	1	1
	1,125	1,344	391	206
Impact of Section 31b LuftVG				
Intangible assets	0	0	-33	-27
Property, plant and equipment	0	0	-2	-3
Financial assets	0	0	-23	-18
Receivables and other assets	0	0	-329	-156
Provisions for pensions and similar obligations	-1,065	-1,277	0	0
Other provisions	-20	-20	-1	-1
Liabilities	-4	-4	-1	0[14)]
	-1,089	-1,301	-389	-205
Other allowances	-18	-25	0	0
Netting	-2	-1	-2	-1
Air Navigation Solutions	0	0	0	0
Kaufbeuren ATM Training	0[14)]	0[14)]	0	0
DFS Aviation Services	1	1	0	0
	17	**18**	**0**	**0**

[14)] Under €1 million

The DFS Group does not recognise any deferred tax assets for tax loss carryforwards as there is no potential to offset them in the foreseeable future. In addition, there are no issues which result in deferred tax assets not being recognised.

Notes to the balance sheet

11 Goodwill

	Cost				
	As at 1 Jan	Additions	Disposals	Transfers	As at 31 Dec
2021	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
R. Eisenschmidt GmbH	80	0	0	0	80
	80	**0**	**0**	**0**	**80**
2020	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
R. Eisenschmidt GmbH	80	0	0	0	80
	80	**0**	**0**	**0**	**80**

	Amortisation					Carrying amount
	As at 1 Jan	Additions	Disposals	Transfers	As at 31 Dec	As at 31 Dec
2021	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
R. Eisenschmidt GmbH	0	0	0	0	0	80
	0	**0**	**0**	**0**	**0**	**80**
2020	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
R. Eisenschmidt GmbH	0	0	0	0	0	80
	0	**0**	**0**	**0**	**0**	**80**

The goodwill from the acquisition of R. Eisenschmidt GmbH results from the difference between the purchase price and the fair value of the net assets at the acquisition date.

The regular impairment tests of goodwill showed no indications that an impairment loss under IAS 36 had to be recognised.

12 Intangible assets

	Cost				
	As at 1 Jan	Additions	Disposals	Transfers	As at 31 Dec
2021	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Concessions, rights and licences	699,705	6,373	-64	30,215	736,229
Internally generated intangible assets	142,620	29,411	0	0	172,031
Assets under construction (AUC)	40,814	8,910	0	-30,162	19,562
	883,139	**44,694**	**-64**	**53**	**927,822**
2020	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Concessions, rights and licences	693,115	5,431	-268	1,427	699,705
Internally generated intangible assets	119,272	23,914	-566	0	142,620
Assets under construction (AUC)	33,129	8,923	0	-1,238	40,814
	845,516	**38,268**	**-834**	**189**	**883,139**

	Amortisation						Carrying amount
	As at 1 Jan	Additions	Disposals	Transfers	Currency differences	As at 31 Dec	As at 31 Dec
2021	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Concessions, rights and licences	608,560	23,365	-52	0	1	631,874	104,355
Internally generated intangible assets	58,657	7,760	0	0	0	66,417	105,614
Assets under construction (AUC)	0	0	0	0	0	0	19,562
	667,217	**31,125**	**-52**	**0**	**1**	**698,291**	**229,531**
2020	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Concessions, rights and licences	586,809	21,959	-208	0	0	608,560	91,145
Internally generated intangible assets	52,408	6,249	0	0	0	58,657	83,963
Assets under construction (AUC)	0	0	0	0	0	0	40,814
	639,217	**28,208**	**-208**	**0**	**0**	**667,217**	**215,922**

The result from carrying out impairment tests led to an impairment of less than one million euro for internally generated intangible assets. Beyond that, there were no further indications of a need to impair as required by IAS 36.

Intangible assets for which there is a contractual obligation to accept but which have not yet come under the economic power of disposition of the DFS Group are shown in Note 31.2.

The DFS Group has not assigned any intangible assets nor pledged them as collateral. It freely controls these assets.

Individual material intangible assets			
	Carrying amount	Remaining useful life	Share of total carrying amount
31 Dec 2021	**€'000**	**in years**	**in percent**
iCAS software	64,075	4-8	27.92
P1/ATCAS software including release	12,333	3	05:37
PSS software	1,229	3	0.54
Total carrying amount of intangible assets	**229,531**		**100.00**

Capitalisation of borrowing costs for intangible assets		
	31 Dec 2021	**31 Dec 2020**
Borrowing costs in €'000	1,492	2,021
Capitalisation rate in %	1.59	2.62

13 Property, plant and equipment

	Cost					
	As at 1 Jan	**Additions**	**Disposals**	**Transfers**	**Currency differences**	**As at 31 Dec**
2021	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Land and buildings	700,477	7,785	-4,563	10,454	0	714,153
Technical equipment (plant) and machinery	1,080,667	30,202	-24,422	3,032	0	1,089,479
Operating and office equipment	89,907	5,241	-1,809	81	0	93,420
Assets under construction (AUC)	19,323	18,020	0	-13,620	0	23,723
	1,890,374	**61,248**	**-30,794**	**-53**	**0**	**1,920,775**
2020	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Land and buildings	698,947	2,317	-987	200	0	700,477
Technical equipment (plant) and machinery	1,073,353	25,372	-22,751	4,702	-9	1,080,667
Operating and office equipment	87,878	4,201	-2,177	5	0	89,907
Assets under construction (AUC)	12,339	12,080	0	-5,096	0	19,323
	1,872,517	**43,970**	**-25,915**	**-189**	**-9**	**1,890,374**

	Depreciation						Carrying amount
	As at 1 Jan	Additions	Disposals	Transfers	Currency differences	As at 31 Dec	As at 31 Dec
2021	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Land and buildings	455,877	17,752	-4,035	0	7	469,601	244,552
Technical equipment (plant) and machinery	893,645	42,967	-21,082	0	11	915,541	173,938
Operating and office equipment	71,764	6,233	-1,677	0	33	76,353	17,067
Assets under construction	0	0	0	0	0	0	23,723
	1,421,286	**66,952**	**-26,794**	**0**	**51**	**1,461,495**	**459,280**
2020	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Land and buildings	438,489	18,041	-651	3	-5	455,877	244,600
Technical equipment (plant) and machinery	866,034	48,930	-21,311	0	-8	893,645	187,022
Operating and office equipment	68,680	5,240	-2,147	-3	-6	71,764	18,143
Assets under construction	0	0	0	0	0	0	19,323
	1,373,203	**72,211**	**-24,109**	**0**	**-19**	**1,421,286**	**469,088**

Capitalisation of borrowing costs for property, plant and equipment		
	31 Dec 2021	**31 Dec 2020**
Borrowing costs in €'000	211	254
Capitalisation rate in %	1.59	2.62

Research and development costs		
	31 Dec 2021	**31 Dec 2020**
	€'000	**€'000**
Expenses for research and development	57,391	50,803
- of which research costs recognised in the income statement	28,903	27,985
- of which capitalised additions in assets under construction	28,488	22,818
Total capitalised borrowing costs on development costs as at 31 Dec	923	1,096
Development costs in assets under construction as at 31 December	55,943	53,528
Scheduled depreciation of development costs based on the degree of completion notified	7,587	6,249
Impairment of development costs under IAS 36	172	0
R&D project funding by the European Commission and German federal and *Länder* ministries deducted from cost	0	0

Property, plant and equipment for which there is a contractual obligation to accept but which do not yet come under the economic power of disposition of the Group are shown in Note 31.2.

The DFS Group has not assigned any property, plant and equipment nor pledged them as collateral. It freely controls these assets.

The regular impairment tests of property, plant and equipment showed no indications that an impairment loss under IAS 36 had to be recognised.

Compensation of €8 thousand (previous year: €44 thousand) for third parties for property, plant and equipment that was impaired, irrecoverably lost or decommissioned was recognised in the income statement.

14 Leases

The leases entered into by the DFS Group as lessee only have a supporting function for business operations. They mainly relate to the rental of land, office space and vehicles for selected employees.

Disclosures on rights of use

	Cost				
	As at 1 Jan	**Additions**	**Disposals**	**Transfers**	**As at 31 Dec**
2021	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Buildings	13,726	1,323	-761	0	14,288
Vehicles	1,504	2,214	-289	0	3,429
	15,230	**3,537**	**-1,050**	**0**	**17,717**
2020	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Buildings	13,336	540	-150	0	13,726
Vehicles	236	1,268	0	0	1,504
	13,572	**1,808**	**-150**	**0**	**15,230**

	Depreciation						Carrying amount
	As at 1 Jan	**Additions**	**Disposals**	**Transfers**	**Currency differences**	**As at 31 Dec**	**As at 31 Dec**
2021	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Buildings	3,830	1,864	-361	0	0	5,333	8,955
Vehicles	462	1,523	-244	0	0	1,741	1,688
	4,292	**3,387**	**-605**	**0**	**0**	**7,074**	**10,643**
2020	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Buildings	1,914	1,936	-15	0	-5	3,830	9,896
Vehicles	155	307	0	0	0	462	1,042
	2,069	**2,243**	**-15**	**0**	**-5**	**4,292**	**10,938**

Disclosures on lease liabilities	31 Dec 2021	31 Dec 2020
	€'000	€'000
As at 1 Jan	22,062	23,053
Increase due to index adjustments	742	512
Additions	2,751	1,304
Disposals	-468	-137
Principal repayments	-3,930	-2,829
Interest expense	160	162
Currency translation	1	-3
As at 31 Dec	**21,318**	**22,062**

Aged list of lease liabilities	Up to 1 year	2 to 5 years	More than 5 years	Total
31 Dec 2021	€'000	€'000	€'000	€'000
Undiscounted lease liabilities	3,478	6,045	14,434	23,957
Discounted lease liabilities	3,339	5,508	13,385	22,232
Interest component	139	537	1,049	1,725
31 Dec 2020	€'000	€'000	€'000	€'000
Undiscounted lease liabilities	3,034	6,304	14,478	23,816
Discounted lease liabilities	2,826	5,787	13,449	22,062
Interest component	208	517	1,029	1,754

Aged list of expected payments for short-term leases and leases on low-value assets	Up to 1 year	2 to 5 years	More than 5 years	Total
31 Dec 2021	€'000	€'000	€'000	€'000
Non-discounted lease payments	2,092	1,685	986	4,763
31 Dec 2020	€'000	€'000	€'000	€'000
Non-discounted lease payments	1,822	1,285	143	3,250

Amounts for leases recognised in the statement of comprehensive income		
	2021	**2020**
	€'000	**€'000**
Depreciation	3,376	2,244
Interest expense	160	162
Expense for short-term leases	205	449
Expenses for leases on low-value assets	2,821	2,160

Total cash outflows for leases recognised in the cash flow statement		
	2021	**2020**
	€'000	**€'000**
Payments for short-term leases and leases on low-value assets	3,026	2,609
Taking on lease liabilities	3,493	1,816
Disposals and currency translation from lease liabilities	467	140
Principal repayment of lease liabilities	3,930	2,829
Interest expense	160	162

The DFS Group also acts as lessor. In this context, it leases air traffic control systems, areas and land and provides connections and air navigation services data. The Group classified the property with a heritable building right (*Erbbaurechtsgrundstück*) in Braunschweig as "Investment property". Additional information can be found in Note 15.

In the case of all other lettings, provisions or transfers of use, essentially all risks and rewards associated with the economic ownership remain with the DFS Group. Options were not transferred to the respective lessees. The Group classified these leases as operating leases and recognised the corresponding income in the income statement.

Amounts for operating leases recognised in the statement of comprehensive income		
	2021	**2020**
	€'000	**€'000**
Leasing income from operating leases	4,293	3,748

Breakdown between owned and leased property, plant and equipment for operating leases		
	2021	**2020**
Buildings	**€'000**	**€'000**
Owned property, plant and equipment	244,552	244,600
Leased property, plant and equipment (property with a heritable building right, *Erbbaurechtsgrundstück*, in Berlin)	0[17)]	0[17)]
	244,552	**244,600**
[17)] Under €1 thousand		

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15 Investment property

	Cost				
	As at 1 Jan	Additions	Disposals	Transfers	As at 31 Dec
2021	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Property in Braunschweig	1,210	0	0	0	1,210
	1,210	**0**	**0**	**0**	**1,210**
2020	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Property in Braunschweig	1,210	0	0	0	1,210
	1,210	**0**	**0**	**0**	**1,210**

	Depreciation					Carrying amount
	As at 1 Jan	Additions	Disposals	Transfers	As at 31 Dec	As at 31 Dec
2021	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Property in Braunschweig	578	30	0	0	608	602
	578	**30**	**0**	**0**	**608**	**602**
2020	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Property in Braunschweig	548	30	0	0	578	632
	548	**30**	**0**	**0**	**578**	**632**

The DFS Group rents a building, including the land, in Braunschweig, Germany, to FCS Flight Calibration Services, which uses this land for its own operational purposes.

The DFS Group is not contractually obliged to conduct repairs, maintenance or improvements. However, it is authorised to make material changes to the premises and the rental object as well as necessary repairs and maintenance without the approval of FCS Flight Calibration Services. There are no other contractual obligations or restraints on disposition.

Expenses and income recognised in the statement of comprehensive income		
	2021	**2020**
	€'000	**€'000**
Rental income	122	122
Depreciation	30	30
Repairs	0	0

The property is depreciated over the useful life of 40 years using the straight-line method. The land reference value for the district in question is currently €130.00 per square metre, whereas the 2017 appraisal was still based on a value of €110.00 per square metre. There were no indications of a need to impair as required by IAS 36. In the opinion of the DFS Group, the results of the appraisal dated 10 October 2017 are still usable and demonstrate the recoverability of the carrying amounts.

Appraisal on the value of the property		
Date of appraisal	10 October 2017	3 December 2012
Date to which appraisal applies	1 October 2017	1 December 2012
Procedure	DCF method	DCF method
Market value / fair value	€815 thousand	€980 thousand
Property yield (*Liegenschaftszinssatz*) of the city of Braunschweig	5.60 %	7.60%
Initial discount rate	7.50%	8.25%

The fair value of investment property is determined by an external independent property valuer who possesses the relevant professional qualification and up-to-date experience with the location and type of property to be valued.

Valuation technique

Discounted cash flow (DCF) method: The calculation of the fair value is based on current rental rates considering various factors such as the land reference value, property yield, other operating expenses, risk of default on rents, remaining useful life of the building, maintenance risk as well as current property developments.

Unobservable inputs

Discount rate, risk of default on rents, other operating expenses

Level

3

Relationship between inputs and fair value

The estimated fair value would increase if

- the risk-adjusted discount rate was lower
- the risk of default on rents was lower
- other operating costs were lower

16 Financial assets

	Cost				
	As at 1 Jan	Additions	Disposals	Remea-surement	As at 31 Dec
2021	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Financial assets accounted for using the equity method	14,462	0	0	0	14,462
Investments	2,604	0	-57	0	2,547
Loans to associated companies	6,501	300	-903	0	5,898
	23,567	**300**	**-960**	**0**	**22,907**
2020	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Financial assets accounted for using the equity method	14,438	24	0	0	14,462
Investments	2,660	0	-56	0	2,604
Loans to associated companies	7,338	0	-837	0	6,501
	24,436	**24**	**-893**	**0**	**23,567**

	Impairments					Carrying amount
	As at 1 Jan	Additions	Disposals	Transfers	As at 31 Dec	As at 31 Dec
2021	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Financial assets accounted for using the equity method	1,579	4,966	0	0	6,545	7,917
Investments	0	0	0	0	0	2,547
Loans to associated companies	0	0	0	0	0	5,898
	1,579	**4,966**	**0**	**0**	**6,545**	**16,362**
2020	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Financial assets accounted for using the equity method	0	1,579	0	0	1,579	12,883
Investments	0	0	0	0	0	2,604
Loans to associated companies	0	0	0	0	0	6,501
	0	**1,579**	**0**	**0**	**1,579**	**21,988**

The result of carrying out an impairment test led to an impairment of five million euro in the carrying amount of the investment in UNIFLY. Beyond that, there were no further indications of a need to impair as required by IAS 36.

Associated companies accounted for using the equity method

	31 Dec 2021 €'000	31 Dec 2020 €'000
As at 1 Jan	12,883	14,438
Additions	0	24
Impairments	-4,966	-1,579
Proportionate net income	0	0
Dividends received	0	0
As at 31 Dec	**7,917**	**12,883**

Investments

	GroupEAD €'000	BILSODA €'000	ESSP SAS €'000	TATS €'000	Total €'000
Shareholding in %	36.00	24.90	16.67	50.00	
Share capital	360	0	167	500	1,027
Liable capital (*Hafteinlagen*)	0	2	0	0	2
Other contributions	0	1,518	0	0	1,518
As at 31 Dec 2021	**360**	**1,520**	**167**	**500**	**2,547**

Loans to associated companies

	Terms	Nominal value €'000	Nominal interest rate in %	31 Dec 2021 €'000	31 Dec 2020 €'000
FCS					
Loan: Hawker Beechcraft Super King Air FL-626 D-CFME	2009-2025	4,300	5.25	1,381	1,686
Loan: Hawker Beechcraft Super King Air FL-1156	2018-2033	5,560	2.10	4,217	4,815
UNIFLY					
Loan	2021-2024	300	5.00	300	0
		10,160		**5,898**	**6,501**

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17 Trade receivables

Due dates of trade receivables

	Up to 1 year	2 to 5 years	More than 5 years	Total
	€m	€m	€m	€m
2021	118	0[18)]	0	118
2020	116	0[18)]	0	116

18) Under €1 million

Aged list

	31 Dec 2021	31 Dec 2020
	€m	€m
Carrying amount	118	116
of which not impaired and		
- not yet overdue	112	57
- up to 30 days overdue	3	5
- 31 to 60 days overdue	1	1
- 61 to 180 days overdue	1	10
- more than 180 days overdue	1	43[19)]
of which impaired	0	0

19) These were mainly receivables from the en-route area for the flight months February to May 2020, which were deferred by EUROCONTROL and settled in the business year 2021.

Trade receivables were written down to the amount that could be recovered as soon as information on the insolvency of customers was available. There are no indications that the debtors whose receivables were overdue will not be able to fulfil their obligations.

Development of allowances

	31 Dec 2021	31 Dec 2020
	€m	€m
As at 1 Jan	14	14
Additions	2	2
Utilisation	0	0
Reversal	-1	-2
As at 31 Dec	**15**	**14**

Expenses (-) and income (+) recognised in the statement of comprehensive income

	2021	2020
	€m	€m
Derecognition and write-off of receivables	-1	-1
Additions to specific allowances	-2	-2
Income from reversal of specific allowances	1	2
Income from the receipt of derecognised receivables and from other derecognitions	0[20)]	0[20)]

20) Under €1 million

18 Contractual net values

Contract assets	31 Dec 2021 Total €m	31 Dec 2021 Remaining term more than 1 year €m	31 Dec 2020 Total €m	31 Dec 2020 Remaining term more than 1 year €m
Consulting services and service contracts	3	0	2	0
Software developments	0[20)]	0	1	0
Miscellaneous	1	0	2	0
	4	**0**	**5**	**0**

Revenues and costs from contracts with customers	2021 €m	2020 €m
Contract revenue recognised	8	9
Depreciation, amortisation and impairments	0	0[20)]
Costs incurred	6	7
Capitalised costs	0	0
Profit earned for ongoing projects	2	2

Development of contract liabilities	2021 €m	2020 €m
As at 1 Jan	3	2
Additions	7	4
Revenues recognised in the business year that were included under contract liabilities at the beginning of the period	-1	0[20)]
Revenues recognised in the business year that were not included under contract liabilities at the beginning of the period	-7	-3
As at 31 Dec	**2**	**3**

Contract liabilities result from security deposits of airspace users for air navigation services and customer advance payments for air traffic control systems and further services.

19 Other receivables and assets

	31 Dec 2021 Total €m	31 Dec 2021 Remaining term more than 1 year €m	31 Dec 2020 Total €m	31 Dec 2020 Remaining term more than 1 year €m
Under-recovery	1,102	1,102	521	521
Receivables from EU grant funding	48	48	51	51
Receivables from employees[21)]	24	12	19	0
QTE transaction	21	0	20	19
Trusteeship *(Treuhandverein)*	8	0	7	0[22)]
Capitalised value	7	7	6	6
Interest receivables	1	0	1	0
Remaining	11	0	6	0
	1,222	**1,169**	**631**	**597**

[21)] Receivables from employees result from the corona collective agreement and include the shortfall in working hours built up in the corona time account during the business year.

[22)] Under €1 million

Aged list

	31 Dec 2021 €m	31 Dec 2020 €m
Carrying amount	1,222	631
of which not impaired and		
- not yet overdue	1,222	631
- up to 30 days overdue	0	0
- 31 to 60 days overdue	0	0
- 61 to 180 days overdue	0	0
- more than 180 days overdue	0	0
of which impaired	0	0

The qualified technological equipment (QTE) transaction with foreign investors was basically terminated in 2012. The DFS Group agreed with the remaining contracting parties to keep up the domestic cash flows. The restructuring of the contractual relationships allowed financial drawbacks to be avoided. The remaining purely inner-German shell structure comprises a claim against NORD/LB and a liability against KfW Kreditanstalt für Wiederaufbau (see Note 24). The new loan contracts concluded have fixed interest and principal repayments and a term until 2 January 2022. The Group receives the claims from the ongoing rent from NORD/LB without having to provide a consideration. The Group bears the default risk of NORD/LB during the term. For the liability, temporally limited collateral was pledged to KfW in the form of the assignment of the receivables against NORD/LB. This hedge was dissolved in 2013 after a one-off payment. The termination of the QTE transaction led to a significant improvement in the risk position for the creditors of the DFS Group.

20 Financial assets

	31 Dec 2021	31 Dec 2020
	€m	€m
Securities (at fair value through profit or loss)	692	784
Derivatives (at fair value through profit or loss)	1	6
	693	**790**

The DFS Group invested in a fund (legal name: ATCP-UI-FONDS) through an investment entity whose sole shareholder is DFS. Management decided to hold the financial assets for trading to actively realise cash flows from the purchase and sale of assets. The capital investments relate primarily to securities, which the Group measured at fair value through profit or loss. There are active markets with published market prices. The capital investments made were distributed in the consolidated financial statements over the corresponding financial assets and liabilities.

The Group's overall investment goal is to reduce the risk of loss on a yearly basis compared with the strategic asset allocation while earning a return consistent with the allocation over the market cycle. The DFS Group expects an annual return on the whole portfolio of 0.90 percent on average over the investment horizon of three to five years.

The DFS Group defined asset allocation bands for the minimum and maximum acceptable exposure for each asset class: cash, government bonds, corporate bonds and equities.

The Group also classified various risk categories:

- Market risk (beta risk) is defined as the loss in value from the change in value of the asset class.
- Hedge error is defined as the loss resulting if the benchmark assigned to the asset class cannot be replicated exactly.
- Tracking error is the risk that there might be a divergence between the behaviour of the underlying portfolio and the behaviour of the benchmark.

The risk manager reviews these risks constantly. The exposures are adjusted at least once a month as needed and managed using derivatives, futures or options.

21 Equity

	31 Dec 2021	31 Dec 2020
	€m	€m
Subscribed capital	1,055	755
Capital reserve	74	74
Remeasurement reserves	-2,032	-3,095
Retained earnings	137	1
Equity attributable to Shareholder of parent company	**-766**	**-2,265**
Minority interest	2	3
	-764	**-2,262**

On 22 January 2021, the Shareholder of DFS decided to raise the registered capital by €300 million in return for the issue of three million shares with a nominal value of €100.00 each. The entry on the Commercial Register B of the Local Court in Offenbach am Main was made on 05 March 2021. Thus, the registered capital of the DFS Group amounts to €1,055,287,500.00. There are 10,552,875 shares with a nominal value of €100.00 each held by the sole Shareholder, the Federal Republic of Germany, represented by the Federal Ministry for Digital and Transport (BMDV). The shares may not be sold or encumbered. Additional shareholders may not be admitted.

The capital reserves consist of other payments of the Shareholder (Section 272(2)(4) German Commercial Code, HGB) and serve to strengthen the share capital.

Other reserves are used for changes recognised directly in equity that are not based on capital transactions with the Shareholder.

By resolution no. 176 dated 5 May 2021, the shareholder' meeting adopted the consolidated financial statements and the annual financial statements as at 31 December 2020 and resolved not to distribute a dividend to the Shareholder.

22 Provisions for pensions and similar obligations

Provisions for pensions are recognised exclusively for defined benefit plans for active and former employees.

The level of detail presented in the numbers reported in the following sections is based on the collective agreements and individual contracts relevant to the DFS Group:

Acronym	Contents
VersTV (Pensions)[23)]	This collective agreement relates to the pensions for the staff employed at the DFS Group.
ÜVersTV (Transitional payments)	This collective agreement relates to the transitional payments for air traffic controllers and flight data assistants employed at the DFS Group.
KTV (Insurance)	This collective agreement covers the health and long-term care insurance for the staff employed at the DFS Group.
Miscellaneous	The accessory obligations for death grants and the deferred compensation scheme for pensions (old) are grouped under "Miscellaneous".

[23)] In Note 22.6, the defined benefit obligations under the VersTV are further split between final salary benefits and benefits linked to average career earnings.

22.1 Pension plans

There are various forms of pension provision available to the employees of the DFS Group, which are largely governed by collective agreements.

Under the collective agreement covering pensions (VersTV), employees who began employment at the company by 31 December 2004 receive old-age, disability and surviving dependant's benefits (defined benefit plans) linked to the respective final salary of the employee (Plan A). However, employees who entered service after 1 January 2005 receive benefits under the collective agreement covering pensions which are linked to average career earnings (Plan B). Thereafter, a pension component is calculated annually depending on the respective income. Thus, the retirement benefit is calculated from the sum of the annual components.

Air traffic controllers and flight data assistants receive a transitional retirement benefit linked to their final salary (ÜVersTV). This is to cover the period from the end of their active duty at DFS until they can draw the retirement pension from the statutory pension scheme.

DFS pays an increased employer contribution for health insurance for the employees who were previously employed as established civil servants with the former Federal Administration of Air Navigation Services (BFS) and the Federal Aviation Office (LBA). This is regulated in the collective agreement relating to health and long-term care insurance (KTV).

The DFS Group pays death grants to qualifying next of kin of active employees. The grants are equal to the previous remuneration and are paid for two and half months from the month following the month in which the employee passed away.

In addition, there are individual contractual benefits approved in 2005 which are based on the salary conversion model for exempt employees. The amount of the pension capital underlying the benefit is based on the converted salary with a return of 6.00 percent.

The plan assets comprise a matched reinsurance contract and a special fund with DFS. The development of the plan assets is made up of the disbursements and income of both assets as well as the payments of DFS into the special fund (PEGASUS-UI-FONDS). The previous financing of pension obligations in the form of insurance-like reinsurance solution is gradually being phased out and will in future only be refinanced using a fund solution. For this purpose, the DFS Group transferred the fund (PEGASUS-UI-FONDS) from the insurance consortium to the *Treuhandverein* (trusteeship). In the future, the DFS Group will cover claims from the still existing reinsurance policies and plan assets. The plan assets can be allocated to the obligations from the collective agreement relating to pensions and the transitional retirement. After its assignment, the PEGASUS-UI-FONDS serves to finance the pension obligations, while the ATCP-UI-FONDS was separated out for the long-term financing of the Group.

In addition to defined benefit benefits, the DFS Group also grants defined contribution benefits.

There were no changes, curtailments or settlements to the pension plans in the business year.

22.2 Actuarial assumptions

In %	31 Dec 2021	31 Dec 2020
Discount rate	1.20	0.60
Projected return on plan assets	1.20	0.60
Salary trend (including career trend)	2.50	2.50
Projected increase in benefits[24)]	1.25 to 2.00	1.25 to 2.00

[24)] 1.25 percent for the guaranteed adjustment for staff with benefits under VersTV 2009.
2.00 percent for staff with benefits under VersTV 1993 (static reference)

22.3 Sensitivity analysis

The sensitivity analysis takes into account the respective change of one individual assumption compared to the reference value, which is made up of the sum of the individual present values of the pension obligations from the VersTV (Pensions), ÜVersTV (Transitional payments) and KTV (Insurance). The remaining parameters of the original calculations remain unchanged. This ensures that potential correlation effects are excluded.

	Changes to the actuarial assumptions	Impact on the defined benefit obligations	
		€m	In %
Present value of defined benefit obligations at 31 Dec 2021		**6,121**	
Discount rate	Increase by 0.50 percentage points	-614	-10.04
	Decrease by 0.50 percentage points	726	11.86
Salary trend	Increase by 0.50 percentage points	245	4.01
	Decrease by 0.50 percentage points	-228	-3.72
Present value of defined benefit obligations at 31 Dec 2020		**6,761**	
Discount rate	Increase by 0.50 percentage points	-731	-10.81
	Decrease by 0.50 percentage points	871	12.88
Salary trend	Increase by 0.50 percentage points	292	4.33
	Decrease by 0.50 percentage points	-271	-4.00

The VersTV dated 21 August 2009 sets out a fixed annual adjustment of 1.25 percent. This means there is no sensitivity calculation for the pension progression.

For a specific group of people, the adjustment logic is in line with VersTV 2005. This collective agreement has an adjustment of 2.00 percent per year as well as, if necessary, a lagging correction for inflation that follows a three-year rhythm. As this represents an immaterial portion of the overall obligation, the DFS Group does not conduct a sensitivity calculation for the pension progression.

22.4 Risks

The pension obligations and the plan assets are subject to fluctuations over time. The reasons for these fluctuations and the associated risks arise from the usual actuarial risks and the financial risks in connection with the plan assets.

22.4.1 Demographic risks

As a large part of the defined benefit obligations are paid for the whole life and also include survivor's pensions, earlier entitlement and longer periods of benefit payment can lead to higher pension obligations, expenses and higher retirement benefits than expected.

22.4.2 Market price risks

The amount of the net obligation from occupational pensions is exposed to interest rate risk and is particularly influenced by the discount rate. The rate is determined by reference to market yields at the reporting date on high-quality fixed-rate corporate and treasury bonds. The current low level of interest rates has resulted in a comparatively high obligation. Potential fluctuations in the pension obligations are also considered when managing the plan assets. However, the rise in the pension obligations can only be partly offset by the rise in the market values of plan assets. The low interest rate level makes it difficult to earn substantial returns, which reduces the speed at which the assets for occupational pensions may grow.

The investment form chosen by DFS Aviation Services (DAS) for the transitional retirement obligations offers a balanced mix of risk and return. The insurance contracts have a guaranteed rate of 2.25 percent for old contracts and 0.90 percent for new contracts, including the grant of a terminal bonus. However, DFS Aviation Services expects a reduction in the overall return as interest rates remain low.

22.4.3 Liquidity risks

The daily liquidity of the DFS Group is monitored by the Treasury department and is managed with the help of short-term (< year) and medium-term liquidity plans.

22.4.4 Inflation risks

The Group distinguishes in its pension plans between benefits that are based on the respective final salary of the employee and benefits based on the career average plan. The pension component is directly tied to the respective income. A rise in salaries tied to inflation would therefore lead to a rise in the pension obligations.

22.5 Duration and expected pension and contribution payments

Expected due date of undiscounted payments	Up to 1 year	2 to 5 years	6 to 15 years
	€m	€m	€m
Estimated pension payments[25)]	144	663	1,921
- of which reinsured with the insurance consortium	134	625	1,840
Expected employer contributions to plan assets	395	909	1,947

25) From the H²B detailed forecast 2021 to 2036 dated 29 June 2021.

The weighted duration of the pension obligations amounts to 22.1 years (previous year: 23.7 years) as at 31 December 2021.

22.6 Defined benefit obligations

31 Dec 2021	VersTV (Pensions) €m	ÜVersTV (Transitional payments) €m	KTV (Insurance) €m	Other €m	Total €m
As at 1 Jan 2021	5,067	1,498	196	5	6,766
Current service cost	196	73	1	0[26]	270
Interest expense	30	9	1	0[26]	40
Retirement benefits paid	-60	-58	-8	-1	-127
Acquisitions of businesses	0	0[26]	0	0	0[26]
Actuarial gains (-) and losses (+)	-733	-78	-12	0[26]	-823
- of which changed parameters	-756	-116	-15	0[26]	-887
- of which experience-based adjustments	23	38	3	0[26]	64
Present value of defined benefit obligations	**4,500**	**1,444**	**178**	**4**	**6,126**
- of which benefits based on final salary					
Retirement payments	3,537				
One-time payments	91				
- of which benefits based on career average plan					
Retirement payments	872				
One-time payments	0				

31 Dec 2020	VersTV (Pensions) €m	ÜVersTV (Transitional payments) €m	KTV (Insurance) €m	Other €m	Total €m
As at 1 Jan 2020	4,319	1,392	181	5	5,897
Current service cost	157	67	1	0[26]	225
Interest expense	47	15	2	0[26]	64
Retirement benefits paid	-62	-54	-8	0[26]	-124
Actuarial gains (-) and losses (+)	606	78	20	0[26]	704
- of which changed parameters	623	95	14	0[26]	732
- of which experience-based adjustments	-17	-17	6	0[26]	-28
Present value of defined benefit obligations	**5,067**	**1,498**	**196**	**5**	**6,766**
- of which benefits based on final salary					
Retirement payments	4,000				
One-time payments	75				
- of which benefits based on career average plan					
Retirement payments	992				
One-time payments	0				

[26] Under €1 million

22.7 Plan assets

	31 Dec 2021 €m	31 Dec 2020 €m
As at 1 Jan	3,216	3,145
Projected return on plan assets	19	36
Employer contributions and payments	326	180
Retirement benefits paid	-91	-100
Actuarial gains (+) and losses (-)	240	-45
Market values of plan assets	**3,710**	**3,216**
Actual return on plan assets	259	-9

Composition of plan assets	31 Dec 2021 €m	31 Dec 2020 €m
Capital investment in the general cover fund of the insurer	1,335	1,399
Capital investment in PEGASUS-UI-FONDS	2,375	1,817
Market value of plan assets	**3,710**	**3,216**

22.8 Net defined benefit liability

	Fund assets	VersTV (Pensions)	ÜVersTV (Transitional payments)	KTV (Insurance)	Other	Total
2021	**€m**	**€m**	**€m**	**€m**	**€m**	**€m**
As at 1 Jan	-3,199	5,067	1,498	179	5	3,550
Expenses in income statement	-19	226	82	2	0[27)]	291
Retirement benefits paid	90	-60	-58	-7	-1	-36
Employer contributions	-326	0	0	0	0	-326
Remeasurement of the net liability in equity = actuarial gains (-) and losses (+) of the ongoing business year	-240	-733	-78	-12	0[27)]	-1,063
Transfers	0	0	0[27)]	0	0	0[27)]
As at 31 Dec	**-3,694**	**4,500**	**1,444**	**162**	**4**	**2,416**
2020	**€m**	**€m**	**€m**	**€m**	**€m**	**€m**
As at 1 Jan	-3,127	4,319	1,392	163	5	2,752
Expenses in income statement	-35	204	82	3	0[27)]	254
Retirement benefits paid	99	-62	-54	-7	0[27)]	-24
Employer contributions	-180	0	0	0	0	-180
Remeasurement of the net liability in equity = actuarial gains (-) and losses (+) of the ongoing business year	44	606	78	20	0[27)]	748
As at 31 Dec	**-3,199**	**5,067**	**1,498**	**179**	**5**	**3,550**

[27)] Under €1 million

22.9 Balance sheet amounts

	Fund assets	VersTV (Pensions)	ÜVersTV (Transitional payments)	KTV (Insurance)	Other	Total
31 Dec 2021	**€m**	**€m**	**€m**	**€m**	**€m**	**€m**
Present value of defined benefit obligations	0	4,500	1,444	178	4	6,126
Fair value of plan assets	-3,694	0	0	-16	0	-3,710
Funding status obligation (+) and asset (-)	-3,694	4,500	1,444	162	4	2,416
Amount not recognised as assets	0	0	0	0	0	0
Net amount of debt items (+) and asset items (-) in the balance sheet	**-3,694**	**4,500**	**1,444**	**162**	**4**	**2,416**
31 Dec 2020	**€m**	**€m**	**€m**	**€m**	**€m**	**€m**
Present value of defined benefit obligations	0	5,067	1,498	196	5	6,766
Fair value of plan assets	-3,199	0	0	-17	0	-3,216
Funding status obligation (+) and asset (-)	-3,199	5,067	1,498	179	5	3,550
Amount not recognised as assets	0	0	0	0	0	0
Net amount of debt items (+) and asset items (-) in the balance sheet	**-3,199**	**5,067**	**1,498**	**179**	**45**	**3,550**

22.10 Expenses and income recognised in the statement of comprehensive income

	Fund assets	VersTV (Pensions)	ÜVersTV (Transitional payments)	KTV (Insurance)	Other	Total
31 Dec 2021	**€m**	**€m**	**€m**	**€m**	**€m**	**€m**
Interest expense	0	30	9	1	0[28)]	40
Projected return on plan assets	-19	0	0	0[28)]	0	-19
Net interest expense	-19	30	9	1	0[28)]	21
Current service cost	0	196	73	1	0[28)]	270
Expenses in income statement	-19	226	82	2	0[28)]	291
Reversal of the provision for past service cost						-6
Interest income from capitalised value						0[28)]
Contributions to the German mutual insurance association						1
Payments to defined contribution plans						41
- of which contributions to pension insurance						38
						327
31 Dec 2020	**€m**	**€m**	**€m**	**€m**	**€m**	**€m**
Interest expense	0	47	15	2	0[28)]	64
Projected return on plan assets	-35	0	0	0[28)]	0	-35
Net interest expense	-35	47	15	2	0[28)]	29
Current service cost	0	157	67	1	0[28)]	225
Expenses in income statement	-35	204	82	3	0[28)]	254
Reversal of the provision for past service cost						-6
Interest income from capitalised value						0[28)]
Contributions to the German mutual insurance association						6
Payments to defined contribution plans						40
- of which contributions to pension insurance						38
						294

[28)] Under €1 million

23 Other provisions

	As at 1 Jan 2021	Utilisation	Reversal	Discounting	Additions	As at 31 Dec 2021	Remaining term more than 1 year
	€m	€m	€m	€m	€m	€m	€m
Over-recovery of charges[29]	369	-251	0	0	157	275	119
Personnel[30]	67	-11	0	-2	16	70	54
Re-conversion of buildings	19	-1	-3	0[31]	0	15	15
Preserving records	9	-1	1	0[31]	0	9	8
Miscellaneous	4	-3	0[31]	0	3	4	0
	468	**-267**	**-2**	**-2**	**176**	**373**	**196**

[29] For the calculation method in the regulated procedure for determining charges, see section 3.1 in the Group management report.

[30] The obligations comprise provisions for early retirement, partial retirement, anniversary payments and recuperation cures (treatments) for air traffic controllers. Actuarial reports are the basis for the early retirement, partial retirement and anniversary obligations.

[31] Under €1 million

Due dates of future non-discounted settlement values

	2022	2023	2024	2025	2026	From 2027
	€m	€m	€m	€m	€m	€m
Over-recovery of charges	156	79	39	0	0[31]	1
Personnel	16	7	4	2	1	40
Re-conversion of buildings	0[31]	0	0	0	0	15
Preserving records	1	1	1	1	1	4
Miscellaneous	4	0	0	0	0	0
	177	**87**	**44**	**3**	**2**	**60**

Discount rates (in %) distributed over the respective remaining terms in years

	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7
2021	-0.41	-0.35	-0.24	-0.17	-0.11	-0.12
2020	-0.44	-0.46	-0.46	-0.42	-0.40	-0.41
	7 to 8	**8 to 9**	**9 to 10**	**10 to 15**	**15 to 30**	
2021	-0.02	0.03	0.04	0.01	0.24	
2020	-0.37	-0.34	-0.27	-0.31	-0.04	

Effects of the changes to the discount rate	Computation with the interest rate as at 31 Dec 2021	Computation with the interest rate as at 31 Dec 2020	Effects
	€m	€m	€m
Discounted provisions	54	54	0[31)]
Interest income (+) / expenses (-)	0[31)]	0[31)]	0[31)]

24 Financial liabilities

	31 Dec 2021 Total	31 Dec 2021 Remaining term more than 1 year	31 Dec 2020 Total	31 Dec 2020 Remaining term more than 1 year
	€m	€m	€m	€m
Schuldscheindarlehen (debenture loans)	610	610	610	610
Lease liabilities	21	18	22	19
QTE transaction	21	0	20	19
Derivative financial instruments	3	0	1	0
Financial debt from the capital investments of the investment entity	1	0	0[32)]	0
	656	**628**	**653**	**648**
[32)] Under €1 million				

***Schuldscheindarlehen* (debenture loans)** Terms	Nominal value	Nominal interest rate	31 Dec 2021	31 Dec 2020
	€m		€m	€m
2013 to 2023	110	2.31%	110	110
2020 to 2025	86	0.50%	86	86
2020 to 2027	78	0.65%	78	78
2020 to 2030	249	0.85%	249	249
2020 to 2025	14	0.50%	14	14
2020 to 2027	53	0.65%	53	53
2020 to 2030	20	0.85%	20	20
	610		**610**	**610**

The QTE transaction with foreign investors was basically terminated. DFS agreed with the remaining contracting parties to keep up the domestic cash flows (for additional disclosures on the QTE transaction, see Note 19).

25 Other liabilities

	31 Dec 2021 Total	31 Dec 2021 Remaining term more than 1 year	31 Dec 2020 Total	31 Dec 2020 Remaining term more than 1 year
	€m	€m	€m	€m
Staff costs	59	0	59	0
Amounts owed to tax authorities	16	0	16	0
Outstanding invoices	12	0	8	0
Amounts owed to Shareholder	5	0	7	0
Interest payable	4	0	4	0
Remaining	43	18	37	15
	139	**18**	**131**	**15**

Offsetting of financial assets and liabilities

	Financial assets (+)	Financial liabilities (-)	Assets (+) and liabilities (-) as reported on the balance sheet
31 Dec 2021	€m	€m	€m
Shareholder	3	-8	-5
Associated companies			
FCS	0[33)]	-1	-1
AEROSENSE	0[33)]	0	0[33)]
UNIFLY	0[33)]	0	0[33)]
Investments			
GroupEAD	0[33)]	0	0[33)]
31 Dec 2020	€m	€m	€m
Shareholder	1	-8	-7
Associated companies			
FCS	0[33)]	-1	-1
UNIFLY	0[33)]	0	0[33)]
Investments			
GroupEAD	0	0[33)]	0[33)]

[33)] Under €1 million

The fair values of the offset financial assets and liabilities correspond to their carrying amounts.

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Additional disclosures

26 Segment reporting

Segment reporting is based on the internal management and reporting systems. Commercial management and reporting have been based on cost units and contribution margins since the start of economic regulation. This enhances the transparency as well as the planning and control of the individual divisions.

Within the scope of segment reporting, the Executive Board as the chief operating decision-maker allocates company funds and assesses the performance of the operating segments. The operating result (operating EBIT) is an important performance indicator for the DFS Group. EBIT alone is used for resource allocation and to measure the profitability of the segments. Further data are neither collected nor communicated to the chief operating decision-makers.

Regulated business

The main business of the DFS Group (see section 1.2 in the Group management report) is the provision of air navigation services and the directly associated support activities. The DFS Group defines these activities as the 'regulated business'. This is divided into the Control Centre and Tower divisions.

Commercial business

The commercial business comprises all Group activities that are not allocated to the regulated business. The focus is on products and services offered internationally on the free market, namely air navigation services, consultancy services, the sale of air traffic control systems, as well as analysis, simulation and project management activities, and the sale of publications and energy. DFS International Business Services bundles the commercial business and ensures its successive expansion through its investments where it holds a controlling interest directly or indirectly, namely DFS Aviation Services, Air Navigation Solutions, R. Eisenschmidt, Kaufbeuren ATM Training and Droniq.

The determination of segment data is based on the following premises:

- The assets and liabilities of DFS Energy are included as part of the operating assets in the cost-base for determining charges. Consequently, in the reconciliation to the Group results, the expenses and income of DFS Energy are disclosed separately.

- Financial indicators (IFRS and HGB) are used for the planning and control of the commercial business.

Information on business segments by cost type			
	Regulated business	Commercial business	Group earnings
2021	**€m**	**€m**	**€m**
Revenues	1,291	85	1,376
Changes in inventory and other own work capitalised	28	0	28
Other operating income	34	1	35
Total operating revenues and income	**1,353**	**86**	**1,439**
Material expenses	-6	-8	-14
Employee expenses	-972	-63	-1,035
Other operating expenses	-122	-13	-135
Depreciation, amortisation and impairments	-95	-10	-105
Total costs	**-1,195**	**-94**	**-1,289**
Earnings before interest and taxes (EBIT)	**158**	**-8**	**150**
Financial income	121	1	122
Of which interest income of the investments accounted for using the equity method	[0]	[0[34)]]	[0[34)]]
Financial expenses	-114	0[34)]	-114
Financial result	**7**	**1**	**8**
Profit (loss) before income taxes	**165**	**-7**	**158**
Income taxes	-24	1	-23
Earnings for the period (continuing operations)	**141**	**-6**	**135**
Shareholder of the parent company	141	-5	136
Earnings attributable to minority interests	0	-1	-1

34) Under €1 million

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Information on business segments by cost type

2020	Regulated business €m	Commercial business €m	Group earnings €m
Revenues	1,031	80	1,111
Changes in inventory and other own work capitalised	23	0[35)]	23
Other operating income	39	1	40
Total operating revenues and income	**1,093**	**81**	**1,174**
Material expenses	-6	-6	-12
Employee expenses	-910	-63	-973
Other operating expenses	-135	-13	-148
Depreciation, amortisation and impairments	-96	-7	-103
Total costs	**-1,147**	**-89**	**-1,236**
Earnings before interest and taxes (EBIT)	**-54**	**-8**	**-62**
Financial income	155	0[35)]	155
Of which interest income of the investments accounted for using the equity method	[0]	[0[35)]]	[0[35)]]
Financial expenses	-189	0[35)]	-189
Financial result	**-34**	**0**[35)]	**-34**
Profit (loss) before income taxes	**-88**	**-8**	**-96**
Income taxes	1	1	2
Earnings for the period (continuing operations)	**-87**	**-7**	**-94**
Shareholder of the parent company	-87	-6	-93
Earnings attributable to minority interests	0	-1	-1

[35)] Under €1 million

Reconciliation from charges-related result before interest and taxes to IFRS Group earnings before interest and taxes	31 Dec 2021	31 Dec 2020
	€m	€m
Products financed by charges	223	-32
Commercial business	-1	-3
Other products financed by charges and other products	3	4
Charges-related earnings before interest and taxes (EBIT)	**225**	**-31**
Occupational pensions from a charges-related perspective	190	576
Occupational pensions under IFRS	-272	-229
Change in equity relevant to charges (closing deficit)	13	-374
Minority interest	-4	-2
Consolidation/reconciliation	-2	-2
Group earnings before interest and taxes under IFRS	**150**	**-62**

Information on important external customers	2021	2021	2020	2020
	€m	In %	€m	In %
DFS total revenues[36)]	607	100.00	519	100.00
Deutsche Lufthansa	68	11.28	57	10.99
Federal Ministry of Defence (BMVg)	49	8.15	52	10.01
Ryanair	36	5.96	27	5.29
Federal Ministry for Digital and Transport (BMDV)	28	4.54	22	4.32
Eurowings	24	4.01	24	4.59
KLM Royal Dutch Airlines	22	3.55	16	3.04
Turkish Airlines	20	3.22	13	2.44
EAT Leipzig	19	3.08	16	3.17
Wizz Air Hungary	15	2.48	15	2.87
Qatar Airways	14	2.31	14	2.68

[36)] Comprising terminal and en-route revenues as well as revenues from military operational air traffic

27 Cash flow statement

The cash flow statement shows the change in liquid funds between two balance sheet dates to show the movements in cash and cash equivalents for the DFS Group. Cash inflows and outflows are divided into operating, investing and financing activities and only show cash flows from continuing operations. There are no discontinued operations.

Cash inflow from operating activities was calculated using the indirect method by adjusting net income for changes in inventory, receivables, other assets and borrowings as well as depreciation and amortisation and other non-cash income and expenses. The cash flows from income taxes relate to all three of the above areas of activity. However, owing to the disproportionate time that would be involved in assigning the cash flows from income taxes to the individual activities, for the purpose of the cash flow statement they are allocated to operating activities.

The DFS Group does not present the cash flows from operating activities according to the direct method (IAS 7.19).

Cash outflows from investing and financing activities are presented using the direct method.

28 Financial instruments

Financial assets by measurement category

31 Dec 2021	Carrying amount €m	Amortised cost €m	Assets at fair value through profit or loss €m	Equity instruments at fair value through other comprehen-sive income €m	Fair value €m	Level
Financial assets at fair value						
Financial assets	693		693		693	2
Investments	10			10	10	3
Financial assets not at fair value						
Loans	6	6			6	3
Trade receivables	118	118			118	3
Under-recovery	1,102	1,102			1,102	3
Receivables from EU grant funding	48	48			48	3
QTE transaction	21	21			21	2
Trusteeship *(Treuhandverein)*	8	8			8	2
Capitalised value	7	7			7	2
Interest receivables	1	1			1	2
Liquid funds	126	126			126	2
Other financial assets – Level 3	2	2			2	3
	2,142	**1,439**	**693**	**10**	**2,142**	

Financial assets by measurement category						
	Carrying amount	Amortised cost	Assets at fair value through profit or loss	Equity instruments at fair value through other comprehen-sive income	Fair value	Level
31 Dec 2020	**€m**	**€m**	**€m**	**€m**	**€m**	
Financial assets at fair value						
Financial assets	790		790		790	2
Investments	15			15	15	3
Financial assets not at fair value						
Loans	7	7			7	3
Trade receivables	116	116			116	3
Under-recovery	521	521			521	3
Receivables from EU grant funding	51	51			51	3
QTE transaction	20	20			20	2
Trusteeship *(Treuhandverein)*	7	7			7	2
Capitalised value	6	6			6	2
Interest receivables	1	1			1	2
Liquid funds	252	252			252	2
Other financial assets – Level 3	1	1			1	3
	1,787	**982**	**790**	**15**	**1,787**	

Valuation technique

Cost approach: For loans to investments, the DFS Group assumes they can be sold for at least their carrying amounts in the short term and sets their fair values at the same level. The fair values of the investments can be calculated reliably and backed up with financial calculations. The Group values the stake in FCS Flight Calibration Services using the equity method, with the total carrying amount reflecting the proportionate changes in equity.

Due to the predominantly short-term nature of trade receivables, other receivables and assets as well as of liquid funds, the carrying amounts at the balance sheet date do not differ significantly from their fair values. The Group therefore assumes that these assets can be sold for at least their carrying amounts in the short term and sets their fair values at the same level.

Market approach: The fair values of securities and financial assets are determined completely or partially using recognised valuation models or the valuations of third parties based on the market conditions prevailing at the balance sheet date (interest and exchange rates) using external sources or market prices. In determining the fair value of derivatives, compensating effects from the primary transaction (pending business or anticipated transactions) are excluded.

Present value method: The fair value of the QTE transaction is determined based on discounting future expected cash flows.

Unobservable inputs

Discount rate, nominal value of investments as well as other receivables and assets

Observable inputs

Security prices, market interest rates

Relationship between inputs and fair value

The estimated fair value would increase if

- the risk-adjusted discount rate was lower
- the nominal values were higher
- the security prices were higher
- the market interest rates were higher

Reconciliation of the fair values of level 2 and 3

	Level 2 31 Dec 2021 €m	Level 3 31 Dec 2021 €m	Level 2 31 Dec 2020 €m	Level 3 31 Dec 2020 €m
As at 1 Jan	1,076	711	1,176	228
Ongoing gains (+) and losses (-)	29	-2	-9	-3
Gains (+) and losses (-) recognised in other comprehensive income	0	0	0	0
Additions (+) and disposals (-)	-249	577	-91	486
Transfers in and out of levels	0	0	0	0
As at 31 Dec	**856**	**1,286**	**1,076**	**711**

Financial liabilities by measurement category	Carrying amount	Amortised cost	Liabilities at fair value through profit or loss	Fair value	Level
31 Dec 2021	**€m**	**€m**	**€m**	**€m**	
Financial liabilities at fair value					
Derivative financial instruments	3		3	3	2
Financial liabilities not at fair value					
Schuldscheindarlehen (debenture loans)	610	610		635	2
Finance lease liabilities	21	21		21	3
QTE transaction	21	21		21	2
Financial debt from the capital investments of the investment entity	1	1		1	2
Trade payables	32	32		32	3
Outstanding invoices	12	12		12	3
Amounts owed to Shareholder	5	5		5	3
Interest payable	4	4		4	2
Other financial liabilities – Level 3	5	5		5	3
	714	**711**	**3**	**739**	
31 Dec 2020	**€m**	**€m**	**€m**	**€m**	
Financial liabilities at fair value					
Derivative financial instruments	1		1	1	2
Financial liabilities not at fair value					
Schuldscheindarlehen (debenture loans)	610	610		662	2
Finance lease liabilities	22	22		22	3
QTE transaction	20	20		20	2
Financial debt from the capital investments of the investment entity	0[34)]	0[34)]		0[34)]	2
Trade payables	27	27		27	3
Outstanding invoices	8	8		8	3
Amounts owed to Shareholder	7	7		7	3
Interest payable	4	4		4	2
Other financial liabilities – Level 3	4	4		4	3
	703	**702**	**1**	**755**	

Valuation technique

Cost approach: Due to the predominantly short-term nature of trade payables and other liabilities, the carrying amounts at the balance sheet date do not differ significantly from their fair values. The DFS Group assumes that the fair values of these liabilities are at least equal to the settlement value from a current obligation.

Market approach: The fair values of debenture loans and financial debt are determined completely or partially using recognised valuation models or the valuations of third parties based on the market conditions prevailing at the balance sheet date (interest and exchange rates) using external sources or market prices. In determining the fair value of derivatives, compensating effects from the primary transaction (pending business or anticipated transactions) are excluded. The fair value of the bonds is determined using market listings on public markets.

Present value method: The fair value of finance leases and the QTE transaction is determined by discounting future expected cash flows using prevailing market interest rates.

Unobservable inputs

Discount rate, settlement value of other liabilities and liabilities

Observable inputs

Exchange prices, exchange rates, market interest rates

Relationship between inputs and fair value

The estimated fair value would increase if

- the risk-adjusted discount rate was lower
- the settlement values were higher
- the exchange prices were higher
- the exchange rates were higher
- the market interest rates were higher

Reconciliation of the fair values of level 2 and 3

	Level 2 31 Dec 2021 €m	Level 3 31 Dec 2021 €m	Level 2 31 Dec 2020 €m	Level 3 31 Dec 2020 €m
As at 1 Jan	687	68	243	96
Ongoing gains (+) and losses (-)	0[34)]	0[34)]	0	0
Gains (+) and losses (-) recognised in other comprehensive income	0	0	0	0
Additions (+) and disposals (-)	-23	7	444	-28
Transfers in and out of levels	0	0	0	0
As at 31 Dec	**664**	**75**	**687**	**68**

Net results of financial instruments by measurement category				
	Financial assets			Financial liabilities
	Amortised cost	At fair value through profit or loss	At fair value through other comprehensive income	Amortised cost
31 Dec 2021	**€m**	**€m**	**€m**	**€m**
Income (+) from investments			1	
Gains (+) from foreign currency translation	1	16		
Gains (+) from remeasurement	0[37)]	4		
Expenses (-) from impairments	-3			
Interest income (+)	1	9		
Interest expense (-)	0[37)]			-7
Other financial expenses (-)	-2	-1		0[37)]
Gains (+) and losses (-)	**-3**	**28**	**1**	**-7**
Recognised directly in other comprehensive income	0	0	0	0
31 Dec 2020	**€m**	**€m**	**€m**	**€m**
Income (+) from investments			1	
Losses (-) from foreign currency translation	-1	-16		
Gains (+) from remeasurement	0[37)]	7		
Expenses (-) from impairments	-2			
Interest income (+)	1	8		
Interest expense (-)	0[37)]	-1		-7
Other financial expenses (-)	-3	-1		0[37)]
Gains (+) and losses (-)	**-5**	**-3**	**1**	**-7**
Recognised directly in other comprehensive income	0	0	0	0

[37)] Under €1 million

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29 Financial risks

Financial risks arise in the form of liquidity risks, default risks and market price risks. The DFS Group provides disclosures in the Group management report in section 6.2.2 on the required qualitative disclosures under IFRS 7 about the type and means by which risks from financial instruments arise as well as the procedures for the management of these risks. The objective is to avoid new, and minimise existing, risks. The Group continuously monitors and analyses the events on the financial markets in a critical dialogue with its core banks and the rating agency to reassess existing strategies and develop new strategies.

29.1 Liquidity risks

Liquidity risk describes the risk that the DFS Group may not be in the position to settle its financial liabilities as contractually required through the delivery of cash or other financial assets. The Group's objective in managing liquidity is to ensure that, under both normal and adverse conditions, sufficient cash and cash equivalents are available to meet payment obligations as they fall due without incurring unacceptable losses or damaging the reputation of the Group.

The DFS Group aims to maintain a level of cash and cash equivalents that exceeds the expected cash outflows from financial liabilities over the next 90 days. At the end of the business year, the Group had cash and cash equivalents of €127 million and short-term investments in the ATCP-UI-FONDS of €693 million, which it can use to service short-term financial liabilities. The DFS Group also regularly monitors the expected cash inflows from trade receivables together with the expected cash outflows from trade payables over the next 90 days.

At an extraordinary shareholder meeting in January 2021, the Shareholder of DFS decided to increase the share capital by €300 million in return for the issue of three million shares. This measure is intended to stabilise the equity base of DFS and partially compensate for revenue shortfalls caused by COVID-19. In addition, the DFS Group is currently evaluating the need for a potential further equity injection for the year 2023 in close cooperation with the Shareholder.

The Standard & Poor's rating remains unchanged with a rating of AAA (long term) and A-1+ (short term). Accordingly, the DFS Group assumes that, if necessary, it will be able to obtain additional financing from existing lenders at market interest rates comparable to those of loans already taken out.

Maturities of undiscounted principal and interest payments from financial liabilities					
	Up to 3 months	4 to 12 months	2 to 5 years	More than 5 years	Total
31 Dec 2021	**€m**	**€m**	**€m**	**€m**	**€m**
Non-derivative financial liabilities					
Schuldscheindarlehen (debenture loans)	0	0	210	400	610
Interest	2	4	17	15	38
Finance lease liabilities	3	0	0	18	21
QTE transaction	21	0	0	0	21
Financial debt from the capital investments of the investment entity	1	0	0	0	1
Trade payables	31	1	0[38]	0	32
Other liabilities	26	0	0	0	26
Derivative financial liabilities					
Derivatives	3	0	0	0	3
	87	**5**	**227**	**433**	**752**
31 Dec 2020	**€m**	**€m**	**€m**	**€m**	**€m**
Non-derivative financial liabilities					
Schuldscheindarlehen (debenture loans)	0	0	210	400	610
Interest	2	4	23	15	44
Finance lease liabilities	3	0	0	19	22
QTE transaction	1	0	19	0	20
Financial debt from the capital investments of the investment entity	0[38]	0	0	0	0[38]
Trade payables	27	0[38]	0[38]	0[38]	27
Other liabilities	23	0	0	0	23
Derivative financial liabilities					
Derivatives	1	0	0	0	1
	57	**4**	**252**	**434**	**747**

[38] Under €1 million

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29.2 Default risks

The DFS Group is exposed to default risks from financial receivables that result from the possible default on the obligations of a party to a contract. The maximum value equals the positive fair value or market value of the financial instrument.

Default risk by category

	31 Dec 2021	31 Dec 2020
	€m	€m
Amortised cost	1,439	982
At fair value through profit or loss	693	790
At fair value through other comprehensive income	10	15
	2,142	**1,787**

With the exception of trade receivables, there are no financial assets that were overdue or impaired. Trade receivables are continuously monitored and are written down as necessary to the amount that could be recovered as soon as information on the insolvency of customers became available. The Group demands security deposits from customers with relevant sales volumes when defined warning thresholds are exceeded. In addition, there are no indications that the debtors whose receivables are overdue will not be able to fulfil their obligations.

As regards financial investing, the Group only enters into transactions with counterparties who either have a long-term rating of at least A+ (Standard & Poor's) or A1 (Moody's), short-term A-2 (Standard & Poor's) or P-2 (Moody's), or a correspondingly high creditworthiness or other form of collateral.

Business dealings with a select group of core banks are conducted using uniform standards and existing reciprocal cash flows are continuously improved.

29.3 Market risks

Market risk is defined as the risk that the fair values or future cash flows of a primary or derivative financial instrument change due to fluctuations in market prices (interest rate risk and currency risk). Interest rate risk arises primarily when refinancing with variable rates. Currency risks result from exchange rate fluctuations for transactions in foreign currencies.

Interest rate risk results mainly from the sensitivity of financial instruments. Liquidity is ensured by means of the money market and capital market programme with short maturities and fixed and variable interest rates as well as from fund assets not protected against insolvency. The use of derivative financial instruments, such as interest rate swaps and cross-currency interest rate swaps, secures fixed interest rates and thus limits interest rate risk. The changes in interest rates therefore have no material impact on the result or equity. Speculative transactions with derivative instruments where there is no underlying transaction are forbidden.

The obligation and plan assets for DFS Group occupational pensions are exposed to interest rate risk. The discount rate for pensions and similar obligations is based on the market yields for high-quality fixed-rate corporate bonds. The continued decline in the level of interest rates would lead to a further increase in the obligation. The low returns that can currently be earned on the market mean that the pension plan assets cannot yield substantial income, which reduces the speed at which the assets for occupational pensions may grow.

Interest rate risk for financial liabilities		
	31 Dec 2021	**31 Dec 2020**
	€m	**€m**
Fixed-rate *Schuldscheindarlehen* (debenture loans)	610	610
	610	**610**

Foreign exchange risks that impact the balance sheet arise due to monetary items that are not in the functional currency. As the primary monetary financial instruments are held mainly in the functional currency or primarily converted into the functional currency by means of derivatives, changes in exchange rates therefore have no material impact on the result or equity.

For the following liabilities in foreign currencies, neither derivative financial instruments were concluded nor planned hedging transactions were carried out due to the insignificant amount.

Net risk by currency				
	31 Dec 2021	**31 Dec 2021**	**31 Dec 2020**	**31 Dec 2020**
	Nominal value	**Value at reporting date**	**Nominal value**	**Value at reporting date**
	$'000	**€'000**	**$'000**	**€'000**
Primary transactions	127	112	430	352
	£'000	**£'000**	**£'000**	**£'000**
Primary transactions	56	66	0	0
	S$'000	**€'000**	**S$'000**	**€'000**
Primary transactions	0[39)]	0[39)]	0[39)]	0[39)]
[39)] Under S$1 thousand or €1 thousand				

The value-at-risk analysis conducted determines the currency and interest risk, which is based on a sensitivity model used for internal planning and control. Through historical simulations of statistical time series on relevant past financial market data, scenarios are extrapolated into the future and used to compute simulated changes in market values for financial instruments. The analysis shows the absolute decline which will not be exceeded with a probability of 99.00 percent when the holding period is one, ten and twenty days.

Value-at-risk metrics			
31 Dec 2021	**1 day**	**10 days**	**20 days**
VaR 99 (%)	0.65%	2.07%	2.92%
VaR 99 (€m)	4,700	14,969	21,116
31 Dec 2020	**1 day**	**10 days**	**20 days**
VaR 99 (%)	2.44%	7.73%	10.93%
VaR 99 (€m)	20,156	63,856	90,291

In the business year, the DFS Group adjusted the presentation of its value-at-risk numbers. It is guided by the potential risk exposure resulting from its more significant investments in the ATCP-UI-FONDS.

30 Capital management

As regards commercial considerations, the capital of the Group is managed first of all from a charges-related/regulatory perspective. This perspective takes additional elements into account when contrasted with the accounting principles under IFRS:

- Consideration of the catch-up effects from the conversion to IFRS not included in the financial statements
- Inclusion of the model to finance occupational pensions approved by the regulatory authority
- Law on the Implementation of the Mutual Assistance Directive as well as on the Change to Tax Regulations (*Amtshilferichtlinie-Umsetzungsgesetz*)
- Integration of DFS Energy
- Integration of the commercial business
- Consideration of uncontrollable costs

The integration of the commercial business improves the quality of the information about intra-Group relationships and allows a transparent separation between the regulated and commercial business. The commercial business should make an above-average contribution to net income as its profits are not subject to regulation.

The DFS Group bases its planning and control on the regulatory requirements of the European Commission. The 'regulated' perspective includes the future flow of charges approved by the supervisory authorities and delivers a clear picture of the capital structure, debts and cash flows. Assets and liabilities that are subject in full or in part to economic regulation are transferred to a regulatory asset base, i.e. an accounting of the results and financial position from the perspective of economic regulation.

This view of the DFS Group is supported by the supplement to Section 31b(3) of the German Aviation Act (LuftVG). This regulation obliges the Group to determine its taxes based on the charges-related result.

Reconciliation from balance sheet equity to regulated equity capital

	31 Dec 2021	**31 Dec 2020**
	€m	**€m**
Group equity recognised on the balance sheet	-764	-2,262
Catch-up effects not yet accounted for	0	69
Deferred taxes on this amount	-4	-7
Occupational pensions from a charges-related perspective	1,709	2,524
Change in equity relevant to charges (closing deficit)	719	889
Consolidation/reconciliation	-11	-14
Regulated equity	**1,649**	**1,199**

Metrics based on regulated equity		
	31 Dec 2021	**31 Dec 2020**
	€m	**€m**
Equity ratio	31.08%	19.81%
Return on equity	8.17%	-7.84%
Net income/loss	135	-94
EBIT	150	-62
Borrowings	3,657	4,852
Debt ratio	68.92%	80.19%
Return on total assets	2.54%	-1.55%
Leverage ratio[40)]	-3.07%	-6.43%
Liquid funds	126	252
Financial assets	693	790
Non-current financial liabilities	628	648
of which QTE transaction	[0]	[19]
Current financial liabilities	28	5
of which QTE transaction	[21]	[1]
Financial net assets (+)	163	389

[40)] If the sign is negative, there is overcompensation by liquid funds.

The DFS Group pursues a conservative investment and debt policy geared towards flexibility with a balanced investment and financing portfolio. The aims of capital management are to maintain operational effectiveness, maintain financial liquidity and, in connection with this, to build up or stabilise equity. Measures to achieve these aims are the optimisation of the capital structure, equity measures and the long-term reduction of debt. The DFS-Group coordinates its capital requirements and the raising of capital in such a way that the requirements for income, liquidity, security and independence are taken into account.

The DFS Group currently covers its short-term financing requirements through fixed-interest *Schuldscheindarlehen* (SSD, debenture loans). In the process, its creditworthiness is regularly reviewed by the Standard & Poor's rating agency.

Ratings			
	Long-term	**Short-term**	**Outlook**
Standard & Poor's	AAA	A-1+	Stable

31 Contingent liabilities and other financial obligations

31.1 Contingent liabilities

Maturities of sureties	Up to 1 year	2 to 5 years	More than 5 years	Indefinite term	Total
	€m	€m	€m	€m	€m
2021	1	0[41)]	0	2	3
2020	2	0[41)]	0	2	4

[41)] Under €1 million

No provisions were recognised for the obligations shown because the risk of use was deemed to have a low probability. There are no uncertainties as regards the amount or maturity of the contingent liabilities.

Sureties relate to guarantees for prepayments, warranties, contract fulfilment and tender guarantees for simulation, radar data and air navigation facilities. At the end of the business year, there were no obligations for the issuance or endorsement of guarantees covering bills of exchange and cheques.

31.2 Other financial obligations

Due dates of other financial obligations	Up to 1 year	2 to 5 years	More than 5 years	Total
31 Dec 2021	**€m**	**€m**	**€m**	**€m**
Intercompany credit lines to associated companies	1	0	0	1
of which taken up	0	0	0	0
Capital expenditure commitments for				
- intangible assets	16	7	0	23
- property, plant and equipment	23	5	2	30
- material costs	54	60	0[41)]	114
- rental, leasing, tenancy	2	2	1	5
Bank guarantee	0	10	0	10
	96	**84**	**3**	**183**

Due dates of other financial obligations				
	Up to 1 year	**2 to 5 years**	**More than 5 years**	**Total**
31 Dec 2020	**€m**	**€m**	**€m**	**€m**
Intercompany credit lines to associated companies	1	0	0	1
of which taken up	0	0	0	0
Capital expenditure commitments for				
- intangible assets	17	20	0	37
- property, plant and equipment	48	19	3	70
- material costs	62	45	0[42)]	107
- rental, leasing, tenancy	2	1	0[42)]	3
Bank guarantee	0	10	0	10
	130	**95**	**3**	**228**

42) Under €1 million

No provisions were recognised for the obligations shown because the risk of use was deemed to have a low probability. No uncertainties exist as regards the amount or maturity of the other financial obligations.

To cover liquidity needs, the associated company was granted an intercompany credit line which can be taken up daily as part of the cash pool. By doing so, the Group optimises its conditions for cash investments and loans and exploits the advantages of a central, systematic financial planning.

Capital expenditure obligations relate to the contractual obligations for the purchase of intangible assets as well as property, plant and equipment.

32 Contingent assets

There are two separate abstract acknowledgements of debt (*abstrakte Schuldanerkenntnisse* – a standard German law acknowledgement of a borrower's indebtedness) between DFS and FCS:		
Effective from	29 September 2008 / 6 October 2008, respectively	21 August 2018 / 24 September 2018, respectively
Collateral	Registration of a charge	Registration of a charge
Legal basis	Section 1 LuftFzgG (Law on Rights regarding Aircraft – Gesetz über Rechte an Luftfahrzeugen)	Section 1 LuftFzgG (Law on Rights regarding Aircraft – Gesetz über Rechte an Luftfahrzeugen)
Beneficiary	DFS	DFS
Object	Hawker Beechcraft Super King Air	Hawker Beechcraft Super King Air
Serial number	FL-626 D-CFME	FL-1156 D-CFMF
Local Court	Braunschweig	Braunschweig
Registration	16 September 2009	29 October 2019
Basis	Loan agreement dated September 2008 / October 2008	Loan agreement dated August 2018 / September 2018
Parties to the contract	DFS IBS and FCS	DFS IBS and FCS
Loan	The loan of €4.30 million for the aeroplane FL-626 D-CFME with a term until 31 December 2025 was fully taken up.	The loan of €5.56 million for the aeroplane FL-1156 with a term until 31 December 2033 was fully taken up.
Miscellaneous	The loan is collateralised over its entire maturity by an abstract acknowledgement of debt in favour of DFS by means of a liability of €6.00 million.	The loan is collateralised over its entire maturity by an abstract acknowledgement of debt in favour of DFS by means of a liability of €5.56 million.

33 Post-balance-sheet-date events

- At the beginning of 2022, the QTE transaction that had existed until then was terminated in accordance with the contract.
- Since the advance of Russian units into Ukrainian territory in the early morning of 24 February 2022, the DFS Group has been taking precautionary measures in close cooperation with the military bodies in Germany. For instance, DFS is supporting flying units of the German Air Force and NATO allies in the use of German airspace and its military training areas. Overall, the Executive Board currently expects only minor effects on results and financial position of operations of the Group.

The DFS Group saw no additional post-balance-sheet-date events of material importance, whether individually or as a group, which impact the results and financial position of the Group.

34 Independent auditor's fees

Total fees of the auditor under Section 314(1)(9) of the German Commercial Code (HGB)	31 Dec 2021 €'000	31 Dec 2020 €'000
Audit of the annual financial statements	168	165
Other assurance services	36	97
Tax advice	0	9
Other services	0	8
	204	**279**

35 Service concession arrangements

Under Section 27c of the German Aviation Act (LuftVG), the DFS Group is obliged to perform its sovereign tasks (see section 1.2 and 1.3 in the Group management report). The details of these tasks are regulated by an indefinite framework agreement with the Federal Republic of Germany.

The law and the framework agreement authorise the Group as the current entrusted air navigation service provider to require the airport operators under Section 27d of the German Aviation Act (LuftVG) to:

- establish and maintain the necessary facilities and take the necessary structural measures in these facilities; make the necessary facilities available and allow cables to be laid, connected and maintained on the premises.
- enable the air navigation services personnel to use the infrastructure at aerodromes.
- ensure that the buildings and rooms made available by the aerodrome operator are provided with power, thermal energy, heating and air-conditioning as well as perform other utility services and ensure that waste disposal services are rendered.

In return, the Group reimburses the airport operators for these costs.

Under Section 31b(1) of the German Aviation Act (LuftVG), the DFS Group alone is entrusted with the performance of the services outlined in Section 27c(2)(1)(1) LuftVG (supplemented by the German Ordinance on Terminal Charges of the Air Navigation Services (FSAAKV)). If another air navigation service provider is entrusted with the services outlined in Section 27c(2)(1)(2)-(5) LuftVG, the legal and contractual rights and obligations would transfer to this air navigation service provider.

Charges levied are the main source of revenues at the DFS Group and they should cover the planned costs.

35.1 Control Centre division

Since 1 January 2012, the European Commission has regulated en-route services by means of a performance scheme for air navigation services and network functions. It has laid down performance targets and alert thresholds for the whole European Union for the areas of safety, environment, capacity and cost-efficiency for one reference period. Each reference period comprises five years. To gather experience in the introductory phase, the first reference period was limited to three years (2012-2014).

The national supervisory authority, the Federal Supervisory Authority for Air Navigation Services (BAF), then draws up a performance plan at the national or functional airspace block level that is aligned with the performance targets of the European Union. Upon proposal of the national supervisory authorities, Member States adopt their performance plans and communicate them to the Commission. The Commission evaluates the performance plans and suggests, or takes, corrective measures.

With the start of economic regulation, the business risk for the DFS Group has risen. The cost risks that arise within a reference period impact the profits of the Group directly. However, the traffic risk is spread between the Group and the airspace users. Section 3.1 in the Group management report contains information on the split of risks stemming from variances in traffic volume.

The variances are determined by the Federal Supervisory Authority for Air Navigation Services (BAF) and reported to the European Commission and EUROCONTROL. EUROCONTROL checks the differences and submits the adjustments to the representatives of the Member States in the Enlarged Committee for Route Charges. This Committee prepares the adjusted unit rates for en-route services after consultation with the airspace users. These are submitted to the enlarged Commission for final approval.

The Federal Ministry for Digital and Transport (BMDV) publishes the unit rate for en-route services in the Federal Law Gazette on the basis of the German Ordinance on Route Charges of the Air Navigation Services (FSStrKV) and taking into consideration the EU Regulations on a common charging scheme for air navigation services.

35.2 Tower division

Since 2015, terminal services have also been subject to a regime of economic regulation. The Federal Ministry for Digital and Transport (BMDV) lays down a unit rate each year on the basis of the German Ordinance on Terminal Charges of the Air Navigation Services (FSAAKV) and taking into consideration the EU Regulations on a common charging scheme for air navigation services.

To this end, the DFS Group sends the national supervisory authority, the Federal Supervisory Authority for Air Navigation Services (BAF), a preliminary cost estimate for the coming year. The cost estimate is based on the costs of the last business year and the estimates of the cost development in the current and following business year. The unit rate is calculated from the quotient between the planned costs and the planned traffic volume.

With effect from 1 September 2021, the German Aviation Act (LuftVG) was amended and DFS Aviation Services (DAS) has been charging airspace users since that date (Section 31b(3) LuftVG). Air navigation services costs not covered by revenues from air navigation charges are covered by an injection of funds by the Federal Government. The profit margin is set at 6.30 percent of the costs incurred by regulation.

36 Related party disclosures

36.1 Related parties – entities

In the normal course of business, services are also rendered to related entities. Group companies also render services to the DFS Group. Within the Group, there are some billing agreements with reciprocal service provision charged as cost allocations. These extensive delivery and service relationships are conducted at market prices or using the cost-plus method and are no different from the business relationships with other companies.

During consolidation, the DFS Group eliminates the balances and transactions between the ultimate parent company and the consolidated subsidiaries (related parties). These are not disclosed in the Notes.

The DFS Group maintains business relations with the sole controlling Shareholder, the Federal Republic of Germany, and with other companies controlled by it as part of the entrusted sovereign functions for air navigation services. These transactions are conducted at arm’s length and are no different from the delivery and service relationships with other companies. DFS avails itself of the exemption in IAS 24.25 and does not disclose information on outstanding balances and transactions with government-related entities.

The DFS Group aims to exert material influence on the Single European Sky (SES) initiative of the European Commission as part of its strategic orientation. To this end, the Group has been an active member of the SESAR Joint Undertaking (SJU) since June 2009, along with other leading organisations. This initiative developed and updated the requirements on air traffic management networks, the most suitable technologies and procedures. Since 2014, the SESAR development process has moved to the long-term phase of technical implementation and the setting up of air traffic management (ATM) procedures (deployment management). As part of a cross-industry partnership, the DFS Group won the contract to plan, coordinate and implement a comprehensive modernisation of European airspace within the scope of the deployment management for the time period 2014 to 2020. The task is financed out of the European funding programme, where a total of roughly €3 billion is earmarked for deployment management. The Group is thus able to influence the introduction of new technologies and benefits from considerable funding, as well as from the avoidance of incorrect cost allocation and flawed capital expenditures.

Income (+) and expenses (-)

	Shareholder	Associated companies	Investments
2021	**€m**	**€m**	**€m**
Revenues	74	0[43)]	0[43)]
Purchased services		-4	
Employee expenses	-7		
Other operating expenses		-3	0[43)]
Interest income		0[43)]	
Income from investments			1
2020	**€'000**	**€'000**	**€'000**
Revenues	73	0[43)]	0[43)]
Purchased services		-4	
Employee expenses	-8		
Other operating expenses		-4	0[43)]
Interest income		0[43)]	
Income from investments			1

[43)] Under €1 million

Outstanding balances

	Shareholder	Associated companies	Investments
2021	**€m**	**€m**	**€m**
Financial assets		14	2
Other assets	3	0[43)]	0[43)]
Other liabilities	-8	-1	0
2020	**€'000**	**€'000**	**€'000**
Financial assets		19	3
Other assets	1	0[43)]	0
Other liabilities	-8	-1	0[43)]

36.2 Related parties – persons

Related parties (persons) cover primarily the Executive Board, Level 1 managers, the Supervisory Board and their family members. There were no material or, in their form or character, atypical reportable transactions between the DFS Group and people in key positions of management and their close families that go beyond existing employment, service or purchasing relationships and their contractual compensation. The following contains disclosures on the emoluments of the Executive Board and the Supervisory Board.

37 Organs of the parent company

37.1 Executive Board

Arndt Schoenemann
Chairman and CEO (from 1 April 2021)

Dr Kerstin Böcker
Chief Human Resources Officer & Labour Director

Dirk Mahns
Chief Operating Officer

Friedrich-Wilhelm Menge
Chief Technology Officer

See section 1.3 in the Group management report for the distribution of responsibilities of the Executive Board.

Payments due in the short term for members of the Executive Board

	Fixed components (including benefits in kind)	Performance-related components	Total emoluments
2021	**€'000**	**€'000**	**€'000**
Arndt Schoenemann (Chairman)	264	0	**264**
Dr Kerstin Böcker	272	35	**307**
Dirk Mahns	267	87	**354**
Friedrich-Wilhelm Menge	249	78	**327**
Former Managing Directors	0	208	**208**
	1,052	**408**	**1,460**
2020	**€'000**	**€'000**	**€'000**
Prof Klaus-Dieter Scheurle (Chairman)	343	166	509
Dirk Mahns	233	0	233
Friedrich-Wilhelm Menge	210	0	210
Dr Kerstin Böcker	104	0	104
Robert Schickling	24	145	169
Dr Michael Hann	37	0	37
	951	**311**	**1,262**

Post-employment benefits	Pension benefits	Pension payments	Expenses for pension benefits earned in the current year[44)]
2021	**€'000**	**€'000**	**€'000**
Arndt Schoenemann (Chairman)	110	0	0
Dr Kerstin Böcker	203	0	166
Dirk Mahns	2,073	0	249
Friedrich-Wilhelm Menge	428	0	251
Former Managing Directors	22,547	1,115	147
	25,361	**1,115**	**813**
2020	**€'000**	**€'000**	**€'000**
Prof Klaus-Dieter Scheurle (Chairman)	2,704	0	345
Dirk Mahns	1,949	0	0
Friedrich-Wilhelm Menge	209	0	0
Dr Kerstin Böcker	62	0	0
Former Managing Directors	22,322	1,003	616
	27,246	**1,003**	**961**

[44)] Service cost and interest cost

The DFS Group did not grant any advance payments, loans or benefits to members of the Executive Board or former Managing Directors on their termination. In addition, it paid no remuneration from consultancy or service contracts. There were no other long-term benefits due or share-based compensation.

37.2 Supervisory Board

Shareholder representatives	
Antje Geese Chairperson of the Supervisory Board (from 29 September 2021) *Ministerialdirigentin* Federal Ministry for Digital and Transport	**Dr Angelika Kreppein** *Regierungsdirektorin* Federal Ministry of Finance (Member of Supervisory Board until 30 April 2021)
Dr Tamara Zieschang Chairperson and Supervisory Board member (until 16 September 2021) State Secretary Federal Ministry for Digital and Transport	**Dr Carl-Stefan Neumann** Managing Director Carl-Stefan Neumann Advisory & Investments GmbH
Carmen von Bornstaedt-Radbruch *Ministerialrätin* (retired) Federal Ministry of Defence	**Iris Reimold** *Ministerialrätin* Federal Ministry for Digital and Transport (member of Supervisory Board from 22 September 2021)
Armin Havenith Colonel (G.S.) Federal Ministry of Defence	**Torsten Ruge** *Ministerialrat* Federal Ministry of Finance (Member of Supervisory Board from 6 May 2021)
Staff representatives	
Sabrina Leitzbach Deputy Chairperson of the Supervisory Board Air traffic controller (control centre)	**André Vöcking** Air navigation services engineer
Oktay Kaya Chairperson of the Central Staff Council Air traffic controller (tower)	**Andrea Wächter** Director Operations Tower
Markus Siebers Supervisor tower (in transitional retirement)	**Jörg Waldhorst** Senior expert air navigation obstacles

In the business year, there were four scheduled ordinary meetings and two extraordinary meetings.

The remuneration of the members of the Supervisory Board is regulated by shareholder resolutions. The members of the Supervisory Board receive an annual remuneration of €4,000.00. This annual remuneration amounts to €5,000.00 for the chairpersons of the committees and the deputy chairperson of the Supervisory Board and €6,000.00 for the chairperson of the Supervisory Board.

The members of the Supervisory Board received no advances, loans or remuneration from consultancy or service contracts.

Remuneration of the Supervisory Board

	31 Dec 2021 €'000	31 Dec 2020 €'000
Carmen von Bornstaedt-Radbruch	4.00	4.00
Antje Geese	5.44	5.10
Armin Havenith	5.18	4.30
Oktay Kaya	4.00	4.00
Dr Angelika Kreppein	1.36	4.20
Sabrina Leitzbach	5.08	4.10
Dr Carl-Stefan Neumann	5.18	5.20
Iris Reimold	1.39	0.00
Torsten Ruge	2.69	0.00
Markus Siebers	4.34	5.00
André Vöcking	4.13	4.10
Andrea Wächter	4.03	4.20
Jörg Waldhorst	4.02	4.10
Dr Tamara Zieschang[45)]	4.50	4.50
Former members of the Supervisory Board	1.25	1.30
	56.59	**54.10**

[45)] The payment was made directly to the Federal Ministry for Digital and Transport (BMDV).

38 Disclosures on the Public Corporate Governance Code (PCGK)

The DFS Group is subject to the Public Corporate Governance Code of the Federation (PCGK). The Executive Board and the Supervisory Board jointly issue a compliance statement each year and publish the corporate governance report on the website of the company.

Langen, 11 March 2022

Arndt Schoenemann
Chairman and Chief Executive Officer

Dr Kerstin Böcker
Chief Human Resources Officer & Labour Director

Dirk Mahns
Chief Operating Officer

Friedrich-Wilhelm Menge
Chief Technology Officer

We issue this unqualified auditor's report as follows:

Independent Auditor's Report*

To DFS Deutsche Flugsicherung GmbH, Langen

Opinions

We have audited the consolidated financial statements of DFS Deutsche Flugsicherung GmbH, Langen, and its subsidiaries (the Group), comprising the consolidated balance sheet as at 31 December 2021, the statement of comprehensive income from 1 January to 31 December 2021, the consolidated statement of changes in equity and the consolidated cash flow statement for the business year from 1 January to 31 December 2021 and the Notes to the consolidated financial statements including a summary of significant accounting policies. In addition, we have audited the group management report of DFS Deutsche Flugsicherung GmbH for the business year from 1 January to 31 December 2021.

In accordance with German legal requirements, we have not audited the contents of the declaration of the legal representatives (Executive Board) under Section 289(f)(4) of the German Commercial Code (HGB) on the proportion of women in the upper executive levels.

In our opinion, on the basis of the findings obtained in the audit,

- the attached consolidated financial statements comply, in all material respects, with IFRS as endorsed by the EU, the additional legal requirements of the German Commercial Code under Section 315(e)(1) and, in compliance with these requirements, give a true and fair view of the results and financial position of the Group as at 31 December 2021 and the earnings for the business year from 1 January to 31 December 2021 and

- the attached group management report as a whole provides an appropriate view of the Group's position. This group management report is consistent in all material respects with the consolidated financial statements, complies with German legal requirements and suitably presents the opportunities and risks of future development. Our audit opinion on the group management report does not cover the non-financial group statement and the group governance declaration (including any other statements) as well as the following disclosures not related to the management report.

Pursuant to Section 322(3)(1) HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the audit opinions

We have conducted our audit of the consolidated financial statements and the group management report in accordance with Section 317 HGB and German generally accepted standards for the audit of financial statements promulgated by the *Institut der Wirtschaftsprüfer* [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the section entitled "Auditor's responsibilities for the audit of the consolidated financial statements and of the group management report" of our Auditor's Report. We are independent of the Group companies in accordance with the requirements of German commercial and professional law and have satisfied our other German professional responsibilities in accordance with these requirements. We believe the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions on the consolidated financial statements and on the group management report.

* Courtesy translation; see page 3

Other information

The Executive Board is responsible for the other information. The other information comprises the German Sustainability Code (www.deutscher-nachhaltigkeitskodex.de) provided before the date of this Auditor's Report and the Corporate Governance Report under No. 7.1 of the German Public Corporate Governance Code of the Federation (PCGK).

Our audit opinions on the consolidated financial statements and the group management report do not extend to the other information and, accordingly, we do not express either an audit opinion or any other form of audit conclusion on them.

In connection with our audit, we have the responsibility to read the other information and to assess whether the other information:

- displays material discrepancies with the consolidated financial statements, the group management report or the findings obtained during the audit.
- or otherwise appears to be materially misrepresented.

Should we conclude that there is a material misrepresentation in this other information on the basis of our work, we are required to report on this fact. We have nothing to report in this regard.

Responsibility of the Executive Board and the Supervisory Board for the consolidated financial statements and the group management report

The Executive Board is responsible for preparing consolidated financial statements that comply in all material respects with IFRS as adopted by the EU, and with the additional requirements of German law under Section 315(e)(1) HGB, as well as for ensuring that the consolidated financial statements give a true and fair view of the results and financial position of the Group while observing the German principles of proper accounting (GoB). In addition, the Executive Board is responsible for the internal controls it has deemed necessary under the German principles of proper accounting to enable the preparation of consolidated financial statements that are free from material misstatements, whether intentional or unintentional.

In preparing the consolidated financial statements, the Executive Board is responsible for assessing the Group's ability to continue as a going concern. Furthermore, it is responsible for disclosing matters relating to the going concern status, if relevant. In addition, it is responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the Executive Board is responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the Executive Board is responsible for the arrangements and measures (systems) it has deemed necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient, appropriate evidence for the assertions in the group management report.

The Supervisory Board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's responsibilities for the audit of the consolidated financial statements and of the group management report

Our objective is to obtain reasonable assurance on whether the consolidated financial statements as a whole are free from material misstatements – whether intentional or unintentional – and whether the group management report as a whole provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements and the findings obtained in the audit, complies with German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our audit opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high degree of assurance, but it is not a guarantee that an audit conducted in accordance with Section 317 HGB and German generally accepted standards for the audit of financial statements promulgated by the *Institut der Wirtschaftsprüfer* (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of addressees taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgement and maintain an attitude of professional scepticism during the audit. In addition:

- We identify and assess the risks of material misstatements in the consolidated financial statements and in the group management report, whether intentional or unintentional, design and perform audit procedures in response to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinions. The risk of non-detection of material misstatements resulting from fraud is higher than one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the overriding of internal controls.

- We obtain an understanding of the internal control system relevant to the audit of the consolidated financial statements and of the arrangements and measures relevant to the audit of the group management report in order to design audit procedures that are appropriate in the given circumstances, but not for the objective of expressing an audit opinion on the effectiveness of the company's systems.

- We evaluate the appropriateness of accounting policies used by the Executive Board and the reasonableness of estimates and related disclosures made by the Executive Board.

- We draw conclusions on the appropriateness of the Executive Board's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the Auditor's Report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our audit opinion. Our conclusions are based on the audit evidence obtained up to the date of our Auditor's Report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.

- We evaluate the overall presentation, structure and contents of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in such a way that the consolidated financial statements give a true and fair view of the results and financial position of the Group while observing the German principles of proper accounting.

- We obtain sufficient appropriate audit evidence regarding the financial information of the companies or business activities within the Group to express audit opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.

- We evaluate the consistency of the group management report with the consolidated financial statements, its compliance with the law, and the view of the Group's position it provides.

- We perform audit procedures on the forward-looking information presented by the Executive Board in the group management report. On the basis of sufficient, appropriate audit evidence we evaluate, in particular, the significant assumptions used by the Executive Board as a basis for the forward-looking information, and evaluate the proper derivation of the forward-looking information from these assumptions. We do not express a separate audit opinion on the forward-looking information and on the assumptions used as a basis for such. There is a substantial, unavoidable risk that future events will differ materially from the forward-looking information.

We communicate with those responsible for monitoring regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in the internal control system that we identify during our audit.

Frankfurt am Main, 11 March 2022

Mazars GmbH & Co. KG
Wirtschaftsprüfungsgesellschaft
Steuerberatungsgesellschaft

Susanne Schorse Auditor	Dr Jonas van Elten Auditor

DFS Deutsche Flugsicherung GmbH
Acronyms and abbreviations

AEROSENSE	FREQUENTIS DFS AEROSENSE GmbH, Vienna, Austria
AfA	Official German Schedule for Deductions for Depreciation – *Absetzung für Abnutzung*
AFIS	Aerodrome Flight Information Service
AG	Public Limited Company – *Aktiengesellschaft*
AktG	German Stock Corporation Act – *Aktiengesetz*
AIM	Aeronautical Information Management
AIP	Aeronautical Information Publication
AIS	Aeronautical Information Service
AmtshilfeRLUmsG	German Law on the Implementation of the Mutual Assistance Directive as well as on the Change to Tax Regulations – *Amtshilferichtlinie-Umsetzungsgesetz*
ANA	Luxembourg air navigation service provider, Findel, Luxembourg – *L'Administration de la Navigation Aérienne du Luxembourg*
ANSL	Air Navigation Solutions Limited, West Sussex, United Kingdom
ANS	Air Navigation Services
ANSP	Air Navigation Service Provider
AS	Aeronautical Solutions (former division of DFS)
ATC	Air Traffic Control
ATCAS	Air Traffic Control Automation System
ATM	Air Traffic Management
ATS	Air Traffic Services
ATZ-TV	Collective Agreement on Partial Retirement at DFS – *Altersteilzeit-Tarifvertrag*
AUC	Assets under Construction
AUSTRO CONTROL	Austrian air navigation service provider Vienna, Austria – *Austro Control Österreichische Gesellschaft für Zivilluftfahrt mbH*
BAF	Federal Supervisory Authority for Air Navigation Services, Langen, Germany – *Bundesaufsichtsamt für Flugsicherung*
BARIG	Board of Airline Representatives in Germany, Frankfurt, Germany
BDF	German Airline Association, Berlin, Germany – *Bundesverband der Deutschen Fluggesellschaften*
BDL	German Aviation Association, Berlin, Germany – *Bundesverband der Deutschen Luftverkehrswirtschaft*
BFS	Federal Administration of Air Navigation Services – *Bundesanstalt für Flugsicherung* (predecessor organisation to DFS)
BGBl	German Federal Law Gazette – *Bundesgesetzblatt*
BHD	Bahraini Dinar
BilReG	German Accounting Law Reform Act – *Bilanzrechtsreformgesetz*
BILSODA	BILSODA GmbH & Co. KG, Pullach, Germany
BMF	Federal Ministry of Finance, Berlin, Germany – *Bundesministerium der Finanzen*
BMVg	Federal Ministry of Defence, Bonn, Germany – *Bundesministerium der Verteidigung*
BMDV	Federal Ministry for Digital and Transport, Berlin, Germany – *Bundesministeriums für Digitales und Verkehr*
BMVI	Federal Ministry of Transport and Digital Infrastructure, Berlin, Germany – *Bundesministerium für Verkehr und digitale Infrastruktur*
BMWi	Federal Ministry for Economic Affairs and Energy, Berlin, Germany – *Bundesministerium für Wirtschaft und Energie*
BSI	Federal Office for Information Security, Bonn, Germany – *Bundesamt für Sicherheit in der Informationstechnik*

BSI KritisV	German Ordinance defining Critical Infrastructures pursuant to the Act on the Federal Office for Information Security – *Verordnung zur Bestimmung Kritischer Infrastrukturen nach dem BSI-Gesetz*
CEF	Connecting Europe Facility
CEO	Chief Executive Officer
CHF	Swiss Franc
CHRO	Chief Human Resources Officer
CMS	Compliance Management System
CNS	Communications, Navigation and Surveillance
Co.	Compagnie
COO	Chief Operating Officer
Corona collective agreement	Collective agreement on the demand-oriented deployment of staff during the COVID-19 pandemic for the staff employed by DFS Deutsche Flugsicherung GmbH
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
Co. W. L. L.	Company with Limited Liability
CTO	Chief Technology Officer
DAIO	Departures, Arrivals, Internals and Overflights
DANS	Dubai Air Navigation Services, Dubai, UAE
DAS	DFS Aviation Services GmbH, Langen, Germany
DAS Bahrain	DFS Aviation Services Bahrain Co. W.L.L., Manama, Bahrain
DCF	Discounted Cash Flow
de	Country Code Domain for Germany
DFS	DFS Deutsche Flugsicherung GmbH, Langen, Germany
DFS Energy	DFS Energy GmbH, Langen, Germany
DFS IBS	DFS International Business Services GmbH, Langen, Germany
DFS U-Kasse	*DFS Unterstützungskasse GmbH*, Langen, Germany (benevolent fund)
DIW	German Institute for Economic Research, Berlin, Germany – *Deutsches Institut für Wirtschaftsforschung*
DLR	German Aerospace Centre, Cologne, Germany – *Deutsches Zentrum für Luft- und Raumfahrt e.V.*
DM	Deutschmark – German Mark
DRS	Dresden International Airport
DSNA	French air navigation service provider, Paris, France – *Direction des Services de la Navigation Aérienne*
Droniq	Droniq GmbH, Frankfurt, Germany
DVOR	Doppler VHF (Very High Frequency) Omnidirectional Radio Range
DWD	German Meteorological Service, Offenbach, Germany – *Deutscher Wetterdienst*
EAD	European AIS Database
EAL	Edinburgh Airport Ltd, Edinburgh, Scotland
EANPG	European Air Navigation Planning Group
EASA	European Aviation Safety Agency, Cologne, Germany
EBIT	Earnings before Interest and Taxes
EBITDA	Earnings before Interest, Taxes, Depreciation & Amortisation
EBT	Earnings before Taxes
EC	European Community
EEG	Energy Sources Act – *Erneuerbare-Energien-Gesetz*
EGNOS	European Geostationary Navigation Overlay Service
Eisenschmidt	R. Eisenschmidt GmbH, Egelsbach, Germany
EMU	Economic and Monetary Union
eNM/S19	Enhanced NM/ANSPs Network Measures for Summer 2019
ESSP SAS	*European Satellite Services Provider Société par Actions Simplifiée*, Toulouse, France
ETV	Collective Agreement on the Grading System at DFS – *Eingruppierungstarifvertrag*

EU	European Union
EUR	Euro
EUROCONTROL	European Organisation for the Safety of Air Navigation, Brussels, Belgium
EUROSTAT	Statistical Office of the European Union, Luxembourg
e.V.	Registered Association – *eingetragener Verein*
FAB(EC)	Functional Airspace Block (Europe Central)
FCS	FCS Flight Calibration Services GmbH, Braunschweig, Germany
FIR	Flight Information Region
FMC	Flughafen Magdeburg-Cochstedt GmbH, Hecklingen, Germany
FO IOP	Flight Object Interoperability
FSAAKV	German Ordinance on Terminal Charges of the Air Navigation Services – *Flugsicherungs-An- und Abflug-Kostenverordnung*
FS-AuftragsV	German Regulation concerning the Commissioning of an Air Navigation Services Enterprise – *Verordnung zur Beauftragung eines Flugsicherungsunternehmens*
FS-DiensteVO	German Service Provision Regulation – *Flugsicherungsdienste-Verordnung*
FS-DurchführungsV	German Air Navigation Services Regulation – *Verordnung über die Durchführung der Flugsicherung*
FSStrKV	German Regulation on Route Charges – *Flugsicherungs-Streckenkostenverordnung*
FührposGleichberG	German Law on the Equal Participation of Women and Men in Management Positions in the Private Sector and in Public Service – *Gesetz für die gleichberechtigte Teilhabe von Frauen und Männern an Führungspositionen in der Privatwirtschaft und im öffentlichen Dienst*
GBP	Pound Sterling (£)
GdF	Air Navigation Services Union – *Gewerkschaft der Flugsicherung*
GDP	Gross Domestic Product
GmbH	Limited Liability Company – *Gesellschaft mit beschränkter Haftung*
GmbHG	Act concerning Limited Liability Companies – *Gesetz betreffend die Gesellschaften mit beschränkter Haftung*
GoB	German Principles of Proper Accounting – *Grundsätze ordnungsmäßiger Buchführung*
GPS	Global Positioning System
GroupEAD	GroupEAD Europe S.L., Madrid, Spain
GS2 VCS	Intercom System 2 Voice Communication System
HGB	German Commercial Code – *Handelsgesetzbuch*
HRB	Commercial Register B – *Handelsregister Abteilung B*
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
iCAS	iTEC (interoperability Through European Collaboration) Centre Automation System
ICS	Internal Control System
IDW	Institute of Public Auditors in Germany, Düsseldorf, Germany – *Institut der Wirtschaftsprüfer in Deutschland e.V.*
IDW PS	Auditing Standards (*Prüfungsstandards*) laid down by the Institute of Public Auditors in Germany (IDW)
ifo	Leibniz Institute for Economic Research at the University of Munich e.V., Munich, Germany – *Leibniz-Institut für Wirtschaftsforschung an der Universität München e.V.*
IFR	Instrument Flight Rules
IFRIC	International Financial Reporting Interpretations Committee
IFRS	International Financial Reporting Standards
IfW Kiel	Kiel Institute for the World Economy; Kiel, Germany – *Institut für Weltwirtschaft Kiel*
IMC	Instrument Meteorological Conditions
ISIS-XM	Improved Speech Integrated System

ISO	International Organisation for Standardisation
IWH	Halle Institute for Economic Research, Halle, Germany – *Leibniz-Institut für Wirtschaftsforschung Halle*
KapaTV	Collective agreement on increasing operational capacities in the air traffic control service and future initiative in operational training for staff employed in operational services at DFS Deutsche Flugsicherung GmbH
KAT	Kaufbeuren ATM Training GmbH, Kaufbeuren, Germany
KfW	*Kreditanstalt für Wiederaufbau*, Frankfurt, Germany (German government-owned development bank)
KG	Partnership – *Kommanditgesellschaft*
KPA	Key Performance Area
KTV	Collective Agreement on Health and Long-term Care Insurance at DFS – *Kranken- und Pflegeversicherungstarifvertrag*
LBA	Federal Aviation Office, Braunschweig, Germany – *Luftfahrt-Bundesamt*
Ltd.	Limited
LTE	Long Term Evolution – a standard for wireless broadband communication
LufABw	German Military Aviation Authority, Cologne Wahn, Germany – *Luftfahrtamt der Bundeswehr*
LuftfzgG	German Law on Rights regarding Aircraft – *Gesetz über Rechte an Luftfahrzeugen*
LuftVG	German Aviation Act – *Luftverkehrsgesetz*
LuftVStAbsenkV	German Ordinance on Decreasing the Air Transport Tax – *Luftverkehrsteuer-Absenkungsverordnung*
LuftVStFestV	German Law Laying Down German Air Transport Tax – *Luftverkehrsteuer-Festlegungsverordnung*
LuftVStG	German Air Transport Tax – *Luftverkehrsteuergesetz*
LZK-TV	Collective Agreement governing Long-term Time Accounts at DFS – *Langzeitkontentarifvertrag*
MaRS	Modernisation and Replacement of Surveillance Infrastructure at DFS
mFUND	Research Initiative of the German Ministry of Transport and Digital Infrastructure – *Modernitätsfonds*
MTV	Collective Framework Agreement at DFS – *Manteltarifvertrag*
MUAC	Maastricht Upper Area Control Centre, Maastricht, Netherlands
n	Represents the Current Business Year
NM	Network Manager
No.	Number
NATS	National Air Traffic Services, Whiteley, Fareham, United Kingdom (UK air navigation service provider)
NORD/LB	Landesbank of Lower Saxony and Saxony-Anhalt – *Norddeutsche Landesbank Girozentrale*, Hannover, Germany
NOTAM	Notice to Airmen
NV	*Naamloze Vennootschap* (Belgian public limited company)
OAT	Operational Air Traffic
OCI	Other Comprehensive Income
OECD	Organisation for Economic Co-operation and Development, Paris, France
OJT	On-the-Job Training
P.	Page
P1	Project 1
PCGK	German Public Corporate Governance Code – *Public Corporate Governance Kodex*
PEI	Paul Ehrlich Institute, Langen, Germany
PMV	*Participatiemaatschappij Vlaanderen NV*, Brussels, Belgium
QBIC Arkiv	QBIC Arkiv FUND NV, Ghent, Belgium
QBIC Feeder	QBIC FEEDER FUND NV, Ghent, Belgium
QTE	Qualified Technological Equipment (cross-border)
RASUM	Radio Site Upgrade and Modernisation at DFS
RMC	Risk Management Committee

RMS	Risk Management System
RP	Reference Period
RTC	Remote Tower Control
RWI	RWI-Leibniz Institute for Economic Research, Essen, Germany – *Leibniz-Institut für Wirtschaftsforschung e.V.*
S.A.	*Société Anonyme* (type of public company)
S-ATM	Sectorless Air Traffic Management
SDA	SESAR Deployment Alliance
SES	Single European Sky
SESAR	Single European Sky Air Traffic Management Research
SGD	Singapore Dollar (S$)
SJU	SESAR Joint Undertaking
SKYNAV S.A.	SKYNAV Société Anonyme, Awans, Belgium
S. L.	*Sociedad de Responsabilidad Limitada*
SSC	Single Sky Committee
STATFOR	Statistics and Forecast Service (at EUROCONTROL)
StrukturTV	Collective Agreement on Structural Measures and Early Retirement at DFS – *Tarifvertrag über Strukturmaßnahmen und Vorruhestand*
TATS	Tower Air Traffic Services S.L., Madrid, Spain
Terra Drone	Terra Drone Corporation, Tokyo, Japan
TranspRLG	Transparency Directive Implementation Act – *Transparenzrichtlinie-Umsetzungsgesetz*
TVöD	Collective Agreement for the Public Service – *Tarifvertrag für den öffentlichen Dienst*
UAS	Unmanned Aircraft System
UAV	Unmanned Aerial Vehicle
UIR	Upper Flight Information Region
Unifly	Unifly NV, Antwerp, Belgium
USD	United States Dollar ($)
UTM	UAS Traffic Management
ÜVersTV	Collective Agreement on Pensions and Transitional Payments at DFS – *Übergangsversorgungstarifvertrag*
VAFORIT	Very Advanced Flight Data Processing Operational Requirements Implementation
VaR	Value at Risk
VersTV	Collective Agreement on Pensions at DFS – *Versorgungstarifvertrag*
VFR	Visual Flight Rules
VHF	Very High Frequency
VITO	Flemish Institute for Technological Research – *Vlaamse Instelling Voor Technologisch Onderzoek*, Mol, Belgium
VMC	Visual Meteorological Conditions
VTV	Collective Agreement covering Remuneration at DFS – *Vergütungstarifvertrag*
VTV-A	Collective Agreement covering Remuneration for Apprentices at DFS – *Vergütungstarifvertrag der Auszubildenden*
WACC	Weighted Average Cost of Capital
WpHG	German Securities Trading Act – *Wertpapierhandelsgesetz*
ZTV	Collective Agreement covering Allowances at DFS – *Zulagentarifvertrag*

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