



# Annual Report 2018



**DFS** Deutsche Flugsicherung

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## The business year 2018

**This is a courtesy translation of the German original of the DFS Annual Report 2018. 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 2018, the Supervisory Board performed its functions as prescribed by law and the Articles of Association. It regularly advised and monitored the Board of Managing Directors and was involved in decisions of fundamental importance to the company.

In fulfilling its tasks, the Supervisory Board was supported by the personnel, audit and project committees. The committees thoroughly discussed the resolutions to be adopted and prepared recommendations for the decisions to be taken at the plenary meetings. In particular to support the development of the commercial business within the DFS Group, the committee for the commercial business held two meetings on various activities of DFS and its subsidiaries and informed the plenary meeting of the significant developments.

Mr Dirk Wendland took early retirement as at 31 May 2018 and therefore left the Supervisory Board. His elected replacement, Mr Hagen Schlütter, became a member of the Supervisory Board as at 1 June.

In August 2018, the Supervisory Board met in its new form at its scheduled meeting (104th). Ms Catja Gräber, Mr Volker Möller and Mr Hagen Schlütter left as employee representatives, while Mr Andreas Hoppe left as a representative of the Shareholder. Ms Sabrina Leitzbach, Mr André Vöcking and Mr Jörg Waldhorst were elected to the Supervisory Board as employee representatives. Mr Frank Best was appointed to the Supervisory Board by the Shareholder.

The Board of Managing Directors reported to the Supervisory Board on the basis of quarterly reports in accordance with Article 90 of the German Stock Corporation Law (AktG). The Supervisory Board was informed on important issues on an ad hoc basis. The Board of Managing Directors reported to the Supervisory Board in due form.

During the business year 2018, the Supervisory Board held four ordinary meetings to discuss the situation and development of the company. In addition, the Board of Managing Directors provided comprehensive information to the Supervisory Board on the planned founding of subsidiaries at a total of three information events. As a result of the newly formed Supervisory Board, there was also an introductory session for the new members of the Supervisory Board.

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

- the 2017 annual financial statements and consolidated financial statements, the management report, and the Group management report and the audit report on the 2017 annual financial statements and consolidated financial statements,
- the 2019 Group economic plan, with the associated investment and financial plan,
- the founding of FREQUENTIS DFS AEROSENSE GmbH,
- the founding of Droniq GmbH,

- the founding of a subsidiary for the provision of air navigation services personnel in Bahrain,
- the acquisition of a stake in Unifly NV by DFS International Business Services GmbH and
- the digitalisation strategy.

In addition, the Supervisory Board approved the following investments:

- iCAS Programme Application 3,
- the new build of the DFS Logistics Centre and
- the connection of radio and radar sites using fibre optic cables.

### **Result of the review**

The Supervisory Board observed that the course of consolidation continued to be pursued in the year under review. Even though the rise in traffic volume and other effects are forecast to lead to an increase in overall costs in the coming years, the major cost-saving measures have proved to be sustainable so that the costs could be further reduced for another year in a row. In other areas, too, the five-point programme proved to be successful.

On the basis of the audit report prepared by the auditors Mazars GmbH & Co. KG, the Supervisory Board discussed the 2017 annual financial statements and consolidated financial statements and the management report including conclusions in accordance with Article 53 of the German Budgetary Principles Act (HGrG) as well as the Group management report. The audit committee met for discussions in advance. The comprehensive control and risk management system established in the company was included in the audit. 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 report and the auditor's findings. It proposed that the Shareholder Meeting approve the annual financial statements and the consolidated financial statements. The Supervisory Board reviewed the proposal of the Board of Managing Directors on the use of profits and agreed to it.

The Supervisory Board would like to thank the Board of Managing Directors for its work in the interest of the company and the successes achieved in 2018. Moreover, without the commitment shown by all members of staff and the staff councils none of this would have been possible.

The Supervisory Board



Dr Martina Hinricher  
Chairperson



Dr Martina Hinricher

## Members of the Supervisory Board

### **Chairperson**

**Dr Martina Hinricher**

*Ministerialdirektorin* (retired)

### **Deputy Chairperson**

**Markus Siebers**

Air traffic controller

DFS Deutsche Flugsicherung GmbH

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### **Frank Best**

Colonel (G.S.)

Federal Ministry of Defence

(Supervisory Board Member from  
16 August)

### **Volker Möller**

Air traffic controller

DFS Deutsche Flugsicherung GmbH

(Supervisory Board Member until  
16 August)

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### **Carmen von Bornstaedt-Radbruch**

*Ministerialrätin*

Federal Ministry of Defence

### **Dr Carl-Stefan Neumann**

Bagus Neumann GbR

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### **Antje Geese**

*Ministerialdirigentin*

Federal Ministry of Transport and Digital  
Infrastructure

### **Peter Schaaf**

Air traffic controller

DFS Deutsche Flugsicherung GmbH

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### **Catja Gräber**

Senior expert data communication service

DFS Deutsche Flugsicherung GmbH

(Supervisory Board Member until  
16 August)

### **Hagen Schlütter**

Head of Approval Management for ATS  
systems

DFS Deutsche Flugsicherung GmbH

(Supervisory Board Member from  
1 June until 16 August)

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### **Andreas Hoppe**

Colonel (G.S.)

Federal Ministry of Defence

(Supervisory Board Member until  
16 August)

### **André Vöcking**

ANS engineer

DFS Deutsche Flugsicherung GmbH

(Supervisory Board Member from  
16 August)

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### **Dr Angelika Kreppein**

*Regierungsdirektorin*

Federal Ministry of Finance

### **Andrea Wächter**

Head of Hamburg Tower

DFS Deutsche Flugsicherung GmbH

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### **Sabrina Leitzbach**

Air traffic controller

DFS Deutsche Flugsicherung GmbH

(Supervisory Board Member from  
16 August)

### **Jörg Waldhorst**

Senior expert air navigation obstacles

(Supervisory Board Member from  
16 August)

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### **Dirk Wendland**

Systems engineer

DFS Deutsche Flugsicherung GmbH

(Supervisory Board Member until 1 June)

Correct at 31 December 2018

## Members of the Advisory Council

### **Chairperson**

#### **Steffen Bilger**

Member of the German Bundestag  
Parliamentary State Secretary

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#### **Dr Constantin Alsheimer**

Chairperson of the Management Board  
Mainova AG

#### **Michael Hoppe**

Chairperson  
Board of Airline Representatives in  
Germany e.V. (BARIG)

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#### **Frank Annuscheit**

Member of the Board of Managing Directors  
Commerzbank AG

#### **Daniela Ludwig**

Member of the German Bundestag

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#### **Dr Jürgen Bierbaum**

Alternate Member of the Boards  
ALTE LEIPZIGER – HALLESCHE Group

#### **Kirsten Lühmann**

Member of the German Bundestag

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#### **Chris Fischer Hirs**

Group Chief Executive Officer  
Allianz Global Corporate & Specialty AG

#### **Oliver Luksic**

Member of the German Bundestag

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#### **Ingo Gerhartz**

Chief of Staff, Air Force  
German Air Force Command

#### **Prof Dr Bernd Sanner**

Medical Director  
AGAPLESION BETHESDA KRANKENHAUS  
WUPPERTAL gGmbH

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#### **Prof Dr Elmar Giemulla**

President  
Aircraft Owners and Pilots Association  
(AOPA Germany)

#### **Dr Stefan Schulte**

President  
German Airports Association (ADV)  
Chairperson of the Executive Board  
Fraport AG

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#### **Winfried Hermann**

Minister  
Ministry of Transport  
Baden-Württemberg

#### **Ralf Teckentrup**

President  
German Airline Association (BDF)  
CEO of the Executive Board  
Condor Flugdienst GmbH

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#### **Harry Hohmeister**

Member of the Executive Board  
Deutsche Lufthansa AG

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#### **Klaus Thiemann**

Correct at 31 December 2018

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## Consolidated financial statements

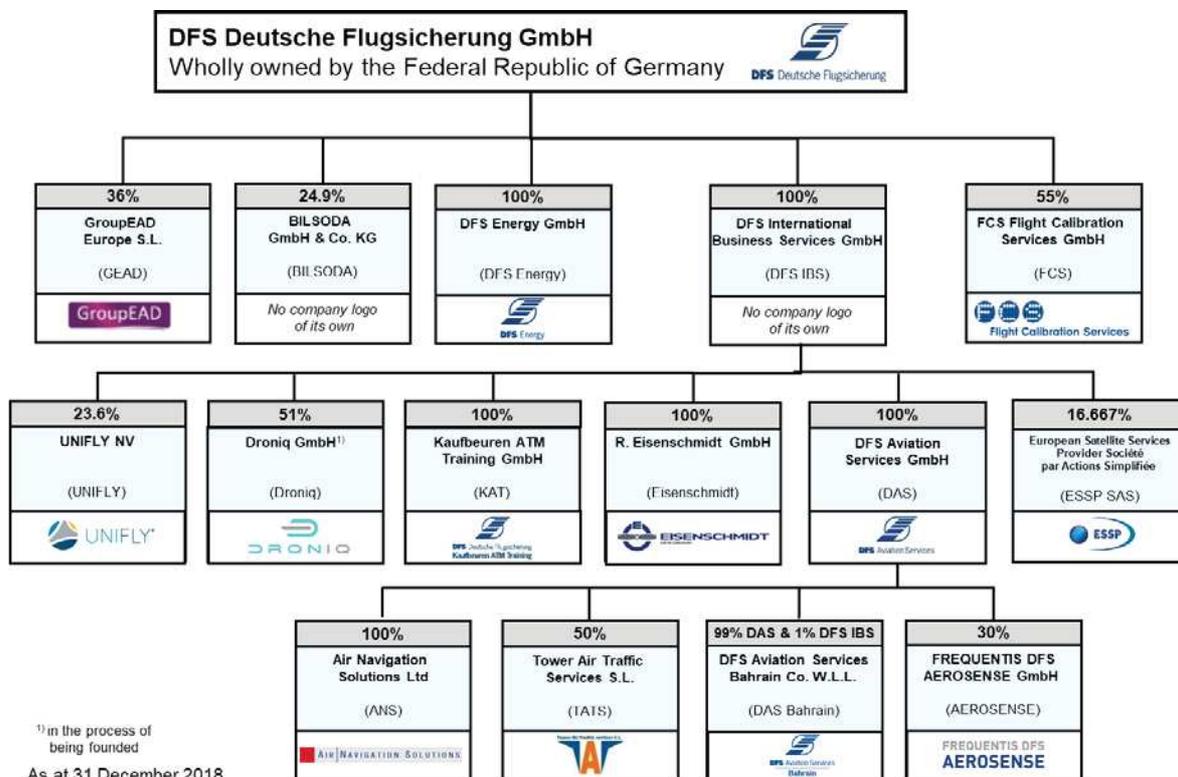
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# Group management report

for the business year 2018

# 1 Group organising principles

## 1.1 Structure of the Group



DFS Deutsche Flugsicherung GmbH (DFS) manages the Group as the ultimate parent company and carries out operational activities itself. The subsidiary and investment entities supplement the portfolio of services offered by the Group and operate in areas closely related to the aviation industry.

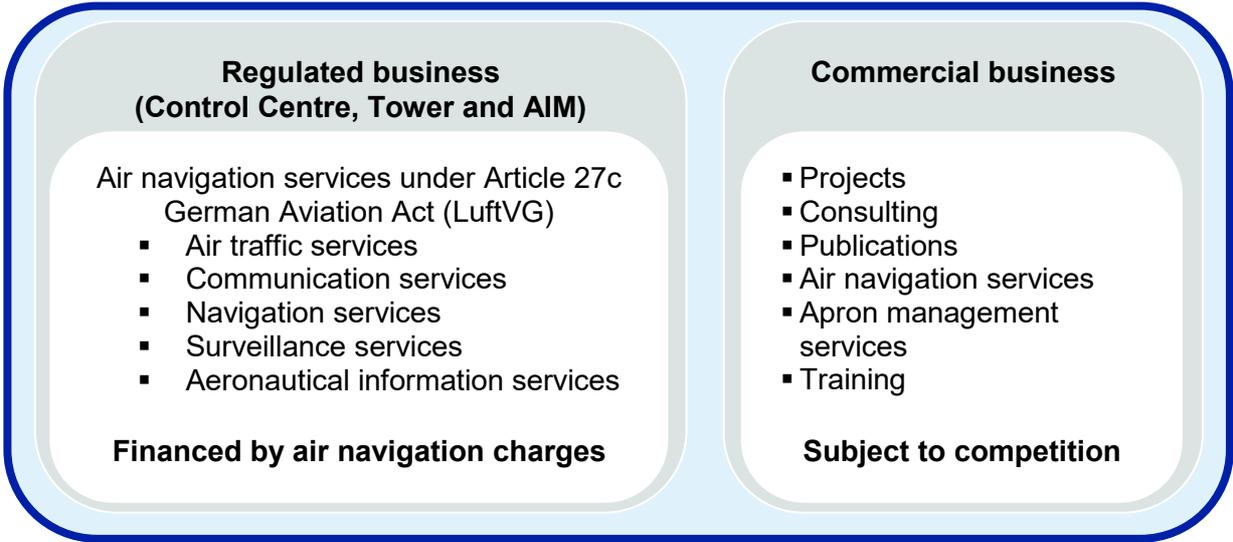
The consolidated financial statements cover seven direct and indirect investments. The results and financial position are primarily determined by the business activities of DFS. Information on the scope of consolidation can be found in Note 3.

**1.2 Business activities**

**1.2.1 Overview**

The DFS Group, which employs 5,750 operational and administrative staff (of which 5,429 at DFS), ensures the safety of German airspace and also offers additional products and services on the free market (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.



**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. It operates control centres in Langen, Bremen, Karlsruhe and Munich as well as 16 control towers at international airports in Germany. For this purpose, it develops and operates ATS systems as well as communications, navigation and surveillance systems.

The DFS Situation and Information Centre recorded a total of 3,346,448 controlled aircraft movements in German airspace in 2018, representing an increase of 4.2 percent over the previous year. DFS controlled 3,121,493 of these, which represents a new record. This traffic volume in Germany is higher than the former record of 3.21 million flights recorded in 2017.

*Control Centre division*

The Control Centre division at DFS is in charge of air traffic control in the terminal area (approach control service) and en-route (area control service), including all ATS systems, the flight information service and the alerting service.

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 (Regulation (EU) No 390/2013) and the introduction of a common charging scheme (Regulation (EU) No 391/2013). The focus is on European and national requirements covering safety, environment, capacity and cost-efficiency. As the national supervisory authority, the Federal Supervisory Authority for Air Navigation Services (BAF) determines the German contribution to the

performance plan at the level of the Functional Airspace Block Europe Central (FABEC). The charges are laid down by EUROCONTROL 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).

#### *Tower division*

The Tower division at DFS controls air traffic at Germany's designated international airports (aerodrome control service), including all ATS systems as well as the flight information service and the alerting service.

The aerodrome control service has been subject to economic regulation since 2015. As has been the case so far, the terminal charges are set by means of a statutory instrument of the Federal Government (FSAAKV).

#### *Aeronautical Information Management (AIM) division*

The AIM division at DFS provides its customers with all relevant aeronautical information and aeronautical information services for the safe conduct of flights. AIM collects, processes and publishes aeronautical data, such as flight plans and NOTAM, and publishes numerous aeronautical publications and products, such as the Aeronautical Information Publication (AIP).

### **1.2.3 Commercial business**

The management of the Group decided to bundle the commercial business (see section 3.2) in subsidiary and investment entities under the DFS International Business Services GmbH holding company to the extent legally possible and economically sensible.

The subsidiary and investment entities support and enhance the portfolio of services offered by the Group on the free market. Commercial services are offered globally. In contrast to the regulated business, the commercial business is not subject to economic regulation. Inter-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 Federal Ministry of Transport and Digital Infrastructure (BMVI). 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 distribution of responsibilities among the Managing Directors of DFS forms the basis for the management organisation (as at 1 May 2018).

Chairman and Chief Executive Officer	Managing Director Operations	Managing Director Human Resources (Labour Director)
<ul style="list-style-type: none"> <li>• Strategy, organisation, international affairs</li> <li>• Institutional and legal affairs, risk management, compliance</li> <li>• Export control</li> <li>• Safety and security management systems</li> <li>• Internal audit, quality management</li> <li>• Corporate communications, public relations, environment</li> <li>• Finance incl. taxes and charges, insurances</li> <li>• General administration</li> <li>• Procurement</li> <li>• Consulting services and system deliveries</li> <li>• Military affairs</li> </ul>	<ul style="list-style-type: none"> <li>• Air traffic services</li> <li>• Airspace management</li> <li>• Air traffic flow management</li> <li>• Aeronautical information service</li> <li>• Communications, navigation and surveillance services</li> <li>• Capacity planning and operational training for operational personnel</li> <li>• Product/system management for technical systems, logistics</li> <li>• Research and development</li> <li>• Technical and infrastructural facility management</li> <li>• Development of air traffic management (ATM) systems as well as business and administrative information technology</li> </ul>	<ul style="list-style-type: none"> <li>• Human resources strategy</li> <li>• Collective bargaining (strategies and policies)</li> <li>• Human resources management</li> <li>• Human resources development, initial and continuation training</li> <li>• Institutional training for operational personnel (air traffic services)</li> <li>• Staff planning (excluding capacity planning of operational personnel)</li> <li>• Payroll accounting</li> <li>• Compensation and incentive systems</li> <li>• Occupational pensions</li> <li>• Social and health management</li> <li>• Industrial safety, accident prevention</li> <li>• Labour law, collective bargaining law</li> </ul>

The Board of Managing Directors is supported by an Executive Committee, which is made up of the Managing Directors and the members of the executive management level (division directors). At its weekly meetings, the Executive Committee discusses important corporate issues and shares information.

The Supervisory Board of DFS comprises 12 members, six appointed by the Shareholder and six elected by the employees (see Note 45.2 for the composition of the Supervisory Board).

The subsidiary and investment entities in the commercial business are managed through the holding company DFS International Business Services. It holds, manages, administers and finances its operating investments by means of intercompany (Group) contracts, such as control agreements, profit and loss transfer agreements and cash pool agreements. It also limits the liability of DFS to the carrying amount of the investment of DFS International Business Services. The company implements the structural and operational rules laid down by the management of the Group by means of shareholder resolutions, employees of DFS taking on supervisory board membership and the contractual commitments set out in intercompany (Group) contracts. The board of DFS International Business Services consists of DFS executives, who carry out this role in addition to their normal duties.

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 direction**

To fulfil its statutory obligation, DFS is committed to delivering an outstanding level of performance at a first-class, uncompromising safety level. The services the company provides are tailored to the differing needs of its customers and are provided in a sustainable manner (see declaration of conformity with The Sustainability Code at [www.deutscher-nachhaltigkeitskodex.de](http://www.deutscher-nachhaltigkeitskodex.de)). As a recognised provider of air navigation services for complex airspaces and airports, it enhances the performance of the air transport system, while carefully taking noise abatement needs into account, and focuses on the four core strategies, namely quality leadership, innovative technologies, intelligent cost management as well as employees & culture.



### *Leadership in quality*

DFS provides its customers with a high level of service quality. Its goal is to provide the required level of capacity through the use of innovative procedures and technologies. Productivity is to be systematically raised by consistent alignment with the performance targets and the targeted use of resources.

### *Innovative technologies*

The company researches, develops and employs innovative technologies. It strives to achieve an edge in performance and knowledge over other air navigation service providers (see, for example, section 2.6.1 under *Remote Tower Control (RTC)* and 2.2.1 *Drones*).

### *Intelligent cost management*

Economic regulation exerts a material influence on the demand for products and services as well as on costs. DFS therefore supports the appropriate further development of national and European regulation and is optimising its use of resources (relative cost leadership). It thus achieves a top ranking among air navigation service providers (ANSP) that manage a comparable level of complexity in the central performance area of cost-efficiency (costs per controlled hour of flight).

### *Employees & culture*

DFS offers challenging, attractive and family-friendly jobs for aviation enthusiasts and innovative people from around the world seeking the opportunity to shape the future of air transport. The intensive work in the human resources (HR) area is strengthening both the reputation of the company as well as the feeling of identification with the company among active, former and future employees of the company (see section 4).

## **1.4.2 Five-point programme**

The Board of Managing Directors positions the Group in line with its strategic direction and defines the material objectives. It has successfully set up a five-point programme, adapted core strategies and implemented numerous projects and measures in a targeted manner. The Board of Managing Directors constantly reviews the progress of the programme and its compatibility with the market environment.

### *Energising corporate culture & HR development*

DFS is developing management structures that are fit for the future and strengthening its dependable and trust-based working relationships with its staff, managers and the staff representatives.

### *Capacity of air traffic services*

DFS optimises airspace structures and operating procedures. It harmonises ATS systems, introduces flexibility into the deployment of staff and strengthens air traffic controller training. Innovative and value-producing technological solutions, concepts and knowledge deliver a competitive edge. In its core business of en-route control services, the company is concentrating on one ATS system line (iCAS, see also section 2.6.1), which allows sectorless air traffic management. Following the successful start of aerodrome control services for Saarbrücken Airport from a remote location (Remote Tower Control (RTC), see also section 2.6.1) at the end of 2018, the modernisation of arrival and departure procedures will see the imminent implementation of remote tower control at other selected airports. The quality of all

services remains exemplary in Europe and is regularly benchmarked against the highest standards.

*Boosting productivity*

DFS aims to reduce annual operating costs by approximately 1.5 percent per year in the second reference period (2015 until the end of 2019). The company, in close dialogue with employees, staff councils and trade unions affected, is raising staff flexibility and avoiding a further increase in headcount. Staff numbers will increase if this leads to a rise in capacity. DFS is using natural staff turnover to reduce headcount. All measures are being introduced in a socially compatible manner. Compulsory redundancies are not planned.

*Strengthening our position in Europe*

DFS remains an independent air navigation service provider. It cooperates with its European partners in a reliable and predictable manner while actively shaping the European consolidation and concentration process as a strong air navigation service provider. The company supports suitable and appropriate regulations to implement the Single European Sky (SES) objectives.

*Commercial business*

DFS sees particular growth opportunities in the commercial business and operates this business to expand its room to manoeuvre and thus safeguard the company's ongoing existence.

By systematically enhancing its own potential and acquiring new markets and customers, it continuously analyses and boosts its competitiveness. The growth of the commercial business is increasingly being realised through DFS investment entities.

### 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. The very good investment grade rating requires adequate liquidity safeguarded by fund assets not protected against insolvency.

#### *Adequate capital structure and equity ratio*

Measures are being taken to continuously strengthen the capital structure and equity ratio. The Shareholder strengthened equity from 2015 to 2018 through contributions to registered equity of around €601.9 million overall (see section 2.2.2). The negative impact on the equity as defined under International Financial Reporting Standards (IFRS) stemming from the revised standard on the recognition of long-term employee benefits (see Note 27.8) from the 2013 business year will be reduced step by step over the following three reference periods by being considered in the air navigation charges. DFS will continue to maintain the equity ratio shown in 'adjusted equity' (see Note 38.1) of around 31.9 percent and to progress towards a fully funded status for occupational pensions in a step-by-step manner.

#### *Low debt and unencumbered assets*

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.

#### *Ability to pay a dividend*

The Group is currently focussing on the provision of cost-effective air navigation services that ensure the capital provided by the Shareholder earns an adequate return. As a consequence of the strict regulation that the core business is subject to, the Group lacks the classical long-term value-based indicators that would allow an alignment with long-term success and performance indicators, however. Nevertheless, the targeted expansion of the commercial business will gradually result in the increasing importance of the market value of the Group.

#### *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 Board of Managing Directors differentiates between the regulated business and the commercial business as required by the provisions of the Transparency Directive (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, the organisational structure as well as the five-point programme. The planning and control process identifies suitable measures to be taken, embeds them in the yearly rolling five-year plan and continuously monitors the divisions.

Performance and cost objectives as well as the internal requirements stemming from the five-point programme determine the demands placed on the individual divisions.

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. These indicators are primarily based on IFRS and are used for budgeting. The performance indicator of operating costs, which is determined and laid down on the basis of the following, contains primary costs and income and charges from internal costs allocation:

#### **Operating costs**

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Staff costs

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+ Other operating expenses (e.g. material costs)

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+ Depreciation and amortisation

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**= Primary costs**

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+ Charges from internal cost allocation

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- Income from internal cost allocation

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**= Operating costs**

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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 contribution margins and returns on sales, whereby a positive contribution to earnings at the EBIT or EBITDA level should be generated.

The operating subsidiary and investment entities should generate a profit before tax typical for the industry.

## 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 means of managing the growing cost pressure, the 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.

The most prominent project at the international level is the SESAR programme (Single European Sky Air Traffic Management Research), which encompasses all areas of air navigation services. It is organised within the scope of the SESAR Joint Undertaking, which DFS joined as an active member in June 2009, along with other leading organisations (air navigation service providers, airspace users, airports and manufacturers).

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. Within the scope of the German aeronautical research programme sponsored by the Federal Ministry for Economic Affairs and Energy (BMWi) with its technology line of funding for safe, efficient and sustainable aviation processes and flight guidance, DFS is once again managing a consortium project. The goal of grant 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 promotes the development of innovations. These currently include:

- The remote provision of aerodrome control services without a control tower on site (see section 2.6.1 under *Remote Tower Control (RTC)*).
- Sectorless flying: a pioneering concept that assigns aircraft in the entire controlled area to a particular air traffic controller and which promises more expeditious traffic handling with less effort (see section 7.2.1 under *Project S-ATM Robusto*).
- Surveillance systems that use all available sensors, such as various radar systems, multilateration and the positions determined by the aircraft themselves, to be able to track the aircraft seamlessly from gate to gate, on the ground as well as in the air.
- Support systems for air traffic controllers that reduce their workload by means of optimised information processing, especially through advice on conflict avoidance, and by means of step-by-step automation.
- The interoperability of European air traffic management systems that keeps pace with new developments – an important precondition for the SES initiative (Single European Sky) (see section 7.2.1).
- An advanced, cost-efficient standardisation of technical infrastructure and procedures as a precondition for further automation and innovation.
- Extensive virtualisation of air traffic control systems and establishment of data centres in the medium term.
- Comprehensive activities for a safe and fair integration of unmanned aircraft systems (see section 2.2.1 under *Drones*).

DFS allocated a total of approximately €55.2 million and around 323 staff posts to research and internally generated developments. The capitalisation ratio equals roughly 31.5 percent.

Grant funding payments of €12.7 million were received in 2018 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, 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 has been acting as a growth engine for the aviation industry. Nevertheless, there are factors which have a negative effect, such as political tensions, natural disasters, negative regulatory, legal and tax issues as well as temporary and geographic concentrations of illnesses. The number of flights has a material influence on the business activities of the regulated business. It is also a major factor for the commercial business, as DFS Aviation Services GmbH (at nine German regional airports) and Air Navigation Solutions Ltd. (at Gatwick and Edinburgh airports in the United Kingdom) provide air navigation services as well. The aviation-related consultancy projects, technical support services and specialist publications follow the general trend of the aviation sector.

### 2.1 Overall economic situation

The global economy continued to grow in 2018, although its growth had lost some of its dynamism. According to the estimates of the Organisation for Economic Cooperation and Development (OECD), global real gross domestic product (GDP) rose by 3.7 percent in 2018. The World Bank assumes an increase of 3.0 percent. These growth rates remain within expectations. Structural factors, such as the impact of technological advances, remain important, while it must be expected, on the basis of cyclical fluctuations, that inflationary forces will soon gain in strength.

The upturn in the euro area is continuing at a slower pace. Based on an initial forecast for the 2018 annual growth rate, GDP in the euro area economies rose by 1.8 percent in 2018 and 1.9 percent in the EU 28. In the year before that, GDP increased by 2.5 percent in the euro area and in the EU 28.

In Germany, GDP in 2018 rose by 1.5 percent over the previous year according to the Federal Statistical Office. The rise was the lowest in five years and came in below the expectations of the Federal Government in its Autumn Projection 2017 (2.0 percent) and the forecast of the Annual Economic Report 2018 (2.4 percent). International trade conflicts and problems in the automobile industry in particular slowed Europe's largest economy. However, there was no transition to recession at the end of the year as feared by several economists.

## 2.2 Development of business

Overall, DFS recorded a good development of the business with many positive results and developments in 2018. The robust growth in air traffic continued in 2018. The excellent safety level of the prior years was maintained even though there was a new traffic record. Unfortunately, the unexpectedly strong rise in air traffic did not strengthen the revenue side to the same extent because of risk sharing (see section 3.1). The start of remote tower technology at Saarbrücken Airport and the expansion of the commercial business were decisive steps in the strategic positioning of DFS, too. At the same time, the sustained growth in demand in European passenger and freight traffic meant that growth noticeably hit against capacity limits in the air and on the ground. The resulting bottlenecks and delays are found in varying degrees of intensity at all the system partners in the aviation industry. These structural challenges and the resulting need to act to raise capacity also impacted the business year 2018 at DFS.

A further focus was on growth in line with the company's strategic orientation. With two strong market segments for customers in the business financed by user charges and for customers in the commercial business, the DFS Group is focussing its offer even more strongly on the respective customer areas in the core business and the commercial business. DFS Aviation Services has been successfully offering DFS products and expertise internationally in the commercial business. DFS has distributed the roles among the Group companies in a way that is fit for the future and has assigned more responsibility to the individual companies to deal with customers in the competitive market. In the year gone by, DFS Aviation Services has succeeded in building up a strong market position and in continuing to grow.

In the field of integrating unmanned aircraft systems into air traffic, DFS has expanded its partnership with Deutsche Telekom and initiated the founding of the joint venture Droniq GmbH. The goal of this joint venture is to offer a functional UAS traffic management (UTM) system in a market that is strategically significant for the future. This enables the operation of unmanned aircraft systems (UAS) outside a remote pilot's line of sight and opens up possibilities for various deployment scenarios in the commercial field as well as for authorities and organisations performing safety or security missions. The Connected Drones joint project – an innovative solution for the safe and fair integration of drones in the aviation system based on the mobile telecommunications network – has already been awarded the German Mobility Prize 2018 as a flagship project for sustainable mobility.

In the area of RTC technology, DFS, through DFS Aviation Services, set up FREQUENTIS DFS AERSENSE GmbH (headquartered in Vienna, Austria) with the system partner FREQUENTIS AG to tap into the emerging international market for remote tower control. In addition, DFS, through DFS International Business Services, took a 23.6 percent stake in Unifly NV, a Belgian start-up specialised in the development of software solutions for the safe integration of drones into air traffic.

The DFS Group extended its strong market position in the Gulf region. The DFS subsidiary, DFS Aviation Services, won a tender to provide personnel to Bahrain's Ministry of Transportation and Telecommunications (MTT) and founded the company DFS Aviation Services Bahrain Co. W.L.L (headquartered in Manama, Bahrain). The service contract for the provision of staff management services concluded in the previous year covers the supportive provision of operational and administrative air navigation services personnel in Bahrain and starts on 1 January 2019. For this purpose, the personnel of the predecessor organisation was taken over so that the ongoing operation could continue smoothly.

## 2.2.1 Development of air traffic

DFS controlled a record number of flights in German airspace in 2018. Overall, 3,346,448 flights under instrument flight rules (IFR) were counted – a 4.2 percent rise over the prior year. More than 130,000 additional flights were controlled in German airspace compared with the previous year. This rise corresponds to the annual traffic volume of Stuttgart Airport. This new traffic record was achieved without jeopardising safety. DFS continued to maintain its top safety position internationally.

The number of overflights rose year-on-year by 4.6 percent. This was more than the rise in the number of take-offs and landings at the 16 designated international airports in Germany and the 21 regional German airports where DFS operates. Overall, DFS registered 2,297,425 arrivals and departures, 4 percent more than in the prior year. At the international airports in Germany, 2,129,744 arrivals and departures were recorded (+4.0%). At the regional airports in Germany, arrivals and departures amounted to 167,681 (+4.1%).

The number of flights in Germany continues to rise. The annual growth rate has come in above that of the prior year for the fifth year in a row (2014: 0.9 percent; 2015: 1.6 percent; 2016: 2.6 percent; 2017: 3.3 percent). Between 2013 and 2018, the air traffic controllers at DFS handled 13 percent more flights overall. The average annual growth rate amounted to 2.5 percent. Germany is now heading to break the 3.5-million mark for IFR flights, after cracking the 3-million mark for the first time in 2015. The forecasts assume a further rise in traffic in the coming years as well. This is associated with challenges for DFS, which will become even more demanding in the years to come.

Despite all the successes in 2018, the year did not pass completely smoothly. Capacity bottlenecks and rises in traffic that were not expected in any expert forecasts led to an above-average number of flight cancellations and delays. The rise in delays was particularly strong in the summer months. The causes included structural capacity bottlenecks and special factors, such as the integration work required as a consequence of the insolvency of Air Berlin, strikes by air traffic controllers in southern Europe and a pronounced accumulation of thunderstorms.

At the aviation summit in Hamburg on 5 October 2018, the Federal Government, the Federal States (*Laender*) and the aviation industry agreed on 24 measures to eliminate capacity bottlenecks and to meet the rising demand for air transport over the long term.

At the end of 2017, DFS had already established a capacity initiative, which now has 90 components. By raising the number of air traffic controller trainees, DFS is strengthening its performance as part of its strategic positioning to create capacity in an increasingly saturated airspace. For example, upper airspace is getting temporary relief by using lower levels. The upper area control centres in Karlsruhe and Maastricht can thus raise their punctuality.

Although the share of the overall delay attributable to air traffic control per flight is relatively low, the air navigation service providers in Europe and DFS are being criticised in public for failures for which they are not responsible. Mastering this structural change is a challenge for all. DFS sees this change as an opportunity and intends to belong to the winners produced by this change.

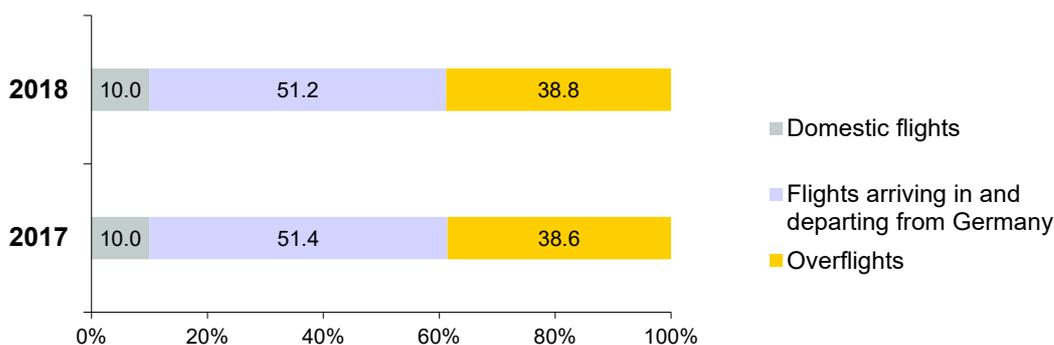
IFR flights 2018

IFR flights in Germany			
	2018	2017	Change
Civil flights	3,303,940	3,168,147	4.3%
Military flights	42,508	43,624	-2.6%
Total	3,346,448	3,211,771	4.2%

The busiest day of 2018 was 7 September, with 11,024 controlled flights.

The breakdown of domestic flights, arrivals and departures as well as overflights remained basically the same as in the previous year. Arrivals and departures decreased slightly, while overflights rose marginally.

Distribution of IFR flights (%)



Traffic at the airports where DFS operates

In 2018, traffic rose significantly by 4.0 percent over the previous year at the designated international airports in Germany. Overall, the growth in traffic at these international airports has been robust since 2017. The high level of growth stabilised at Frankfurt and Leipzig airports, while a slight turnaround can now be seen at the Berlin airports. Traffic volumes rose noticeably at Munich Airport. The considerable consequences from the cessation of Air Berlin flights are still being felt at Düsseldorf and Hamburg airports.

Overall, it can be assumed that traffic volumes will continue to recover at Düsseldorf, Berlin Tegel and Munich airports due to the catch-up effects from the take-over of routes by Eurowings and easyJet following the insolvency of Air Berlin.

<b>Traffic at the international airports</b>			
	<b>2018</b>	<b>2017</b>	<b>Change</b>
Frankfurt	511,844	475,365	7.7%
Munich	410,242	401,728	2.1%
Düsseldorf	218,204	220,904	-1.2%
Berlin Tegel	186,535	173,045	7.8%
Hamburg	148,853	153,931	-3.3%
Cologne Bonn	142,870	139,760	2.2%
Stuttgart	128,194	117,939	8.7%
Berlin Schönefeld	100,778	99,870	0.9%
Leipzig Halle	74,736	65,963	13.3%
Hannover	65,928	62,401	5.7%
Nürnberg	54,149	53,074	2.0%
Bremen	31,198	30,246	3.1%
Dresden	22,233	21,450	3.7%
Münster Osnabrück	19,359	18,223	6.2%
Saarbrücken	9,119	8,787	3.8%
Erfurt Weimar	5,502	5,455	0.9%
<b>Total</b>	<b>2,129,744</b>	<b>2,048,141</b>	<b>4.0%</b>

### *Traffic in the United Kingdom*

The United Kingdom saw its strongest year for aviation in 2018. Overall, traffic volumes rose by 2.7 percent over the previous year to 2,550,102 flights, marking the sixth year of growth in succession following the financial crisis.

### *Competition and airlines' pressure to reduce costs and restructure*

In an increasingly price-sensitive market environment, low-cost airlines in particular are setting the tone for the intense competition in the German air transport market as another player in addition to the traditional European airlines with their strong positions in their domestic markets.

The low-cost airlines continued to strengthen their position as growth engines in German airspace and at the 16 designated international airports.

EasyJet, Eurowings, Lufthansa, Ryanair (with LaudaMotion) and Condor are making up for the flights cancelled due to the insolvency of Air Berlin in 2017 and are recording the highest growth rates. For example, easyJet is operating 25 aircraft from Berlin Tegel Airport, of which 19 were taken over from the old Air Berlin fleet. The airline flies another 12 aircraft out of Berlin Schönefeld Airport. Lufthansa took over 84 aircraft from Air Berlin. A majority of these

are being operated by Eurowings, or by Luftverkehrsgesellschaft Walter, an airline that flies for Eurowings. LaudaMotion, which is under the majority control of Ryanair, obtained ten Airbus aircraft of the A320 family and flies to destinations across Europe from Vienna. Ryanair continued to expand its presence in Germany and was active at eleven bases in Germany in the summer of 2018. The airline stationed 39 aircraft at these bases. On Monday, 4 February 2019, Germania filed for insolvency at the Berlin Charlottenburg District Court and discontinued flight operations in the night from 4 to 5 February 2019. DFS assumes that Germania's route network will be served by other airlines.

#### *Climate action plan and emissions trading system*

EU Directive 2009/29/EC incorporates all aircraft that take off or land at an airport located in the EU in an emissions trading system and allocates certificates to the aviation industry (pollution rights), of which 85 percent have been assigned to the airlines involved. The remaining 15 percent are auctioned off. There is opposition – particularly from the United States, the Russian Federation, China and India – against the inclusion of airlines from non-EU States in the European emissions trading system.

#### *Grassroots movements, night curfew and the new Berlin Brandenburg Airport*

In Germany, citizens continue to react in a sensitive manner to noise disturbance caused by air traffic. The night curfew at Frankfurt Airport, the referendum against the third runway at Munich Airport and the opening of the new airport in Berlin, which is not planned until the end of 2020, are dampening the drivers of growth for the national economy.

#### *Air transport tax in Germany*

In Germany, the law introducing an air transport tax (*Luftverkehrsteuergesetz*, LuftVStG) has been in force since the beginning of 2011. This law governs the levying of a tax that has to be paid for every passenger that departs from a German airport.

Tax payment (€)	2019***	2018**	2017*
Short-haul flights	7.38	7.46	7.38
Medium-haul flights	23.05	23.31	23.05
Long-haul flights	41.49	41.97	41.49

\* applicable German ordinance: *Luftverkehrsteuer-Absenkungsverordnung (LuftVStAbsenkV) 2017*

\*\* applicable German ordinance: *LuftVStAbsenkV 2018*

\*\*\* applicable German ordinance: *LuftVStAbsenkV 2019*

This passenger-based air transport tax increases the overall costs for the entire air transport industry.

#### *Conflict of interests between renewable energy and air safety*

Within a radius of 15 kilometres, wind turbines can interfere with the proper operation of VOR and DVOR facilities and pose a hazard to air safety. (VOR is the short form of VHF omnidirectional radio range and the acronym VHF itself stands for very high frequency, while DVOR stands for Doppler VOR.) The Federal Supervisory Authority for Air Navigation Services (BAF) decides if the erection of new wind turbines can be approved within this radius based on the expert opinion submitted by DFS. Investors promoting the expansion of renewable

energy are increasingly seeking legal remedies when they see the profitability of their projects being put at risk when approval is not granted. They are contesting the expert opinions of DFS and consider smaller distances and spacings to be technically acceptable.

DFS considers large parts of the expert opinions provided by opposing parties to be unsound. Following an appeal proceeding, the Higher Administrative Court of Lower Saxony strengthened the position of DFS and the BAF in December 2014. It recognised the technical arguments as well as the forecast calculations of DFS (BAF) and agreed that the wind turbines had the potential to cause interference. The Federal Administrative Court affirmed this decision in its entirety in April 2016. The decision is therefore legally binding. In 2017 and 2018, courts again concurred with the rulings of the Federal Administrative Court and upheld the calculation method used by DFS as reasonable because no other scientific position had established itself that would make the approach used by DFS appear unreasonable.

The legal disputes are not over yet as there are still a series of cases pending before various courts.

### *Drones*

DFS has continued to intensify its activities to achieve the safe and fair integration of UAS into German airspace and has made considerable advances in this regard. DFS continues to critically examine both the rewards and risks posed by unmanned aviation.

Pilots of manned aircraft reported another sharp rise in the number of occurrences where they were impeded by drones in 2018. This underlines the justification for and necessity of this work. Overall, 158 such occurrences were reported to DFS in 2018, of which 125 cases were in the vicinity of an airport. There were 88 cases in the year before.

DFS is continuing to place a high priority on the cooperation and research project with Deutsche Telekom and founded the joint venture Droniq GmbH. The objective of DFS is the provision of a UTM system with the core components of registration, approval, mission planning and optimisation, tracking, and conflict avoidance through situational awareness. By providing the necessary connectivity and sensor systems, commercial applications beyond the visual line of sight will be enabled. As part of the development and validation of various functionalities, numerous application projects were conducted with private and public partners in 2018.

Through the development of UTM, DFS is also preparing itself for the impact of the new EU Regulation on the safe operation of UAS and the harmonisation of the operating regulations of the individual EU Member States. The draft regulation drawn up by the European Aviation Safety Agency (EASA) has been available since November 2018 and is scheduled to be adopted by the European Parliament in April 2019. Within the transitional periods set out, Germany has to implement the European provisions and adapt the valid drone regulation. This includes the registration of drone operators, the identification of devices and the definition of banned and restricted zones for UAS.

The DFS drone app released in the middle of 2017 now has around 60,000 users and is making an important contribution to providing comprehensive information on the valid rules and regulations, as well as restrictions, regarding the operation of drones.

### *DFS wins legal dispute with Ryanair*

The Hessian Higher Administrative Court has confirmed the ruling in favour of DFS, establishing the company's right to have required the Irish low-cost airline Ryanair to pay the full amount of charges following several years when the charges paid by Ryanair were too low. The Hessian Higher Administrative Court confirmed the judgement in mid-January and rejected the request for leave to appeal submitted by Ryanair. The proceedings are therefore closed.

This dispute focused on claims for additional terminal charges of around half a million euro. Ryanair had indicated to DFS that it operated all of its B 737-800s in the lowest take-off weight class (MTOW), and had entered this into the Irish aeronautical register. Spot checks by the German Federal Aviation Office (*Luftfahrt-Bundesamt*, LBA) revealed, however, that the controlled aircraft exceeded the maximum take-off weight given. The court has now confirmed the position of DFS that Ryanair had to accept the calculation based on the respective maximum take-off weight in the manufacturer's specifications, unless it presented official proof of a lower take-off weight. The maximum take-off weight is what determines the level of charges.

## **2.2.2 Principle 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. Its revision in 2013 led to considerable fluctuations in equity capital. 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 to be considered as a determined cost in the performance plan and therefore part of the cost-base. 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 second reference period used to determine the obligation is based on the interest rate that can be earned on plan assets (3.54%). 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 also taken into account in the following reference periods as a component of the charges. 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. A difference (funding deficit) between the obligation and the assets that is determined in the planning phase for the following reference period is distributed over 15 years and increases revenues and liquidity.

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 2022) for the ex-post financing requirements (Article 6 of Regulation (EC) No 1794/2006).

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.

### *Uncontrollable costs*

Article 14(2a) of Regulation (EU) No 391/2013 allows for the sharing of costs with airspace users for the costs that do not lie within the control of air navigation service providers. Despite the fact that the first reference period is over, the assessment, identification and determination of these uncontrollable costs has still not been made because the European Commission has still not supplied an unequivocal determination.

Currently, there is no application guide within the EU for uncontrollable costs (Article 14(2) of Regulation (EU) No 391/2013) to offer DFS a reliable orientation on this issue. In addition, the Federal Republic of Germany has not yet reported any uncontrollable costs for the first reference period to the European Commission.

Given the overall uncertain legal situation, which also relates to the allowable remedies and legal recourse available to dispute decisions on this issue taken by the Federal Supervisory Authority for Air Navigation Services (BAF), the Federal Ministry of Transport and Digital Infrastructure (BMVI) and the European Commission, DFS does not yet recognise those costs in the financial statements stemming from the first and second reference periods which, in its own opinion, should be borne by airspace users (as at 31 December 2018: €29.6 million). On the other hand, DFS already recognises a provision for the uncontrollable costs that probably have to be reimbursed for the first and second reference periods (as at 31 December 2018: €47.2 million).

### *Second reference period*

The European Commission decided that the second reference period (RP) would run from 2015 to 2019 and introduced mandatory European targets for the performance area safety and a financial incentive system for the performance area capacity. In the opinion of the European Commission, the performance plan submitted by the FABEC States did not meet the targets for cost-efficiency and was therefore rejected. In the opinion of the European Commission, the new performance plan which was then drawn up – which contained adjustments to charges within the course of the year – was still not adequate and this plan was also rejected in autumn 2015. At the 64th meeting of the Single Sky Committee (SSC) on 21 February 2017, the Member States and the European Commission agreed, following difficult negotiations, on the retroactive acceptance of the performance plan for the second reference period.

The targets of the revised performance plan restrict the economic performance of DFS. DFS takes a critical view of the cost-efficiency targets laid down in the FABEC performance plan. The ability of the company to act is severely restricted and determinations, such as on the return on equity, do not adequately reflect the risks under which the company operates. The focus on cost-efficiency in the performance plan for the third reference period (RP3) leaves little room for the provision of additional airspace capacity. For the third reference period (see section 7.2.1), which begins on 1 January 2020, the European Commission is urged to align the regulatory targets more closely to the capabilities and local circumstances of the air navigation service providers.

### *European funding programme*

The EU plans to provide €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 received the approval for grant funding of a maximum of €35.2 million in 2018. 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 2(k) of Regulation (EU) No 1794/2006 and should be used to reduce air navigation charges. DFS supports a regulation at the European level that would provide a real monetary incentive for air navigation service providers to become involved in these programmes.

### *Strengthening of the equity position by the Federal Republic of Germany*

The German legislator approved a contribution of €50 million to the registered capital of DFS in 2015 as well as €112.5 million in each of the following four years (a total of €500 million). This was carried out as part of a budgetary appropriation under the Law on the Approval of the Federal Budget for the Fiscal Year 2015 (*Gesetz über Feststellung des Bundeshaushaltsplans für das Haushaltsjahr 2015*, BGBl. I, p. 2442). The Federal Republic of Germany as the sole Shareholder undertook to raise the registered capital accordingly.

On 25 November 2016, the German Bundestag furthermore approved an additional capital contribution of €101.9 million for 2017 in the Budget Act 2017 (printed documents of the Bundestag 18/9200, 18/9202). The Federal Republic of Germany as the sole Shareholder undertook to raise the registered capital accordingly and made the payment in the middle of 2017.

Moreover, it paid the outstanding contributions to the registered capital in the amount of €112.5 million (two times) in 2018.

All these measures should further strengthen the equity base and stabilise the charges at a level appropriate for the European setting, even in times of demanding regulatory targets.

## 2.2.3 Forecast/actual comparison

Forecast/actual comparison 2018			
	Actual as at 31 Dec 2017	Forecast for 2018	Actual as at 31 Dec 2018
Service units	En-route services: 14.30m Terminal services: 1.42 million	Moderate, but stable growth (DFS forecast)	En-route services: 14.93 million Terminal services: 1.47 million
Revenues (total)	€1,103.6m	Revenues at the prior-year level	€1,107.1m
Revenues (commercial business)* (total operating revenues and income)	€66.4m (€65.9m)	Rise	€65.2m (€66.8m)
Depreciation and amortisation	€116.3m	Depreciation and amortisation at the prior-year level	€117.2m
Earnings (total)	€30.8m	Earnings at the level of the previous year	-€30.1m
Earnings (commercial business)	€2.2m	Earnings in the single-digit million euro range	-€4.6m
Personnel	5,608	Reduction in staff numbers**	5,750

\* Prior-year value (formerly €79.7 million) included intersegment revenues of €13.3 million.

\*\* The rise in 2018 results from the increase in the number of trainee air traffic controllers and the growth in staff numbers in the subsidiaries of the commercial business (see section 4).

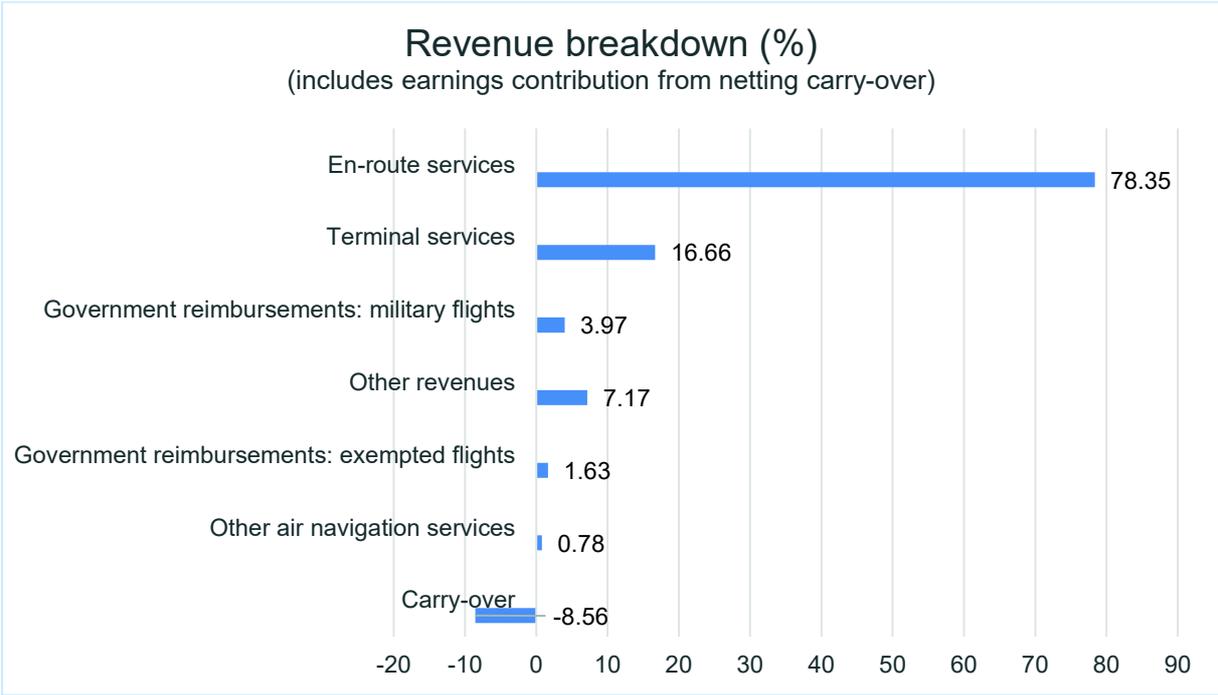
More information on earnings can be found in section 2.5.

**2.3 Results of operations**

**2.3.1 Revenues**

In the business year 2018, the DFS Group generated revenues of €1,107.1 million (previous year: €1,103.6 million), slightly above the previous year's level.

For DFS, the shift from full cost recovery to a performance-oriented charging structure for en-route and terminal services has brought with it substantial changes in the breakdown of revenues. Within certain limits, DFS is exposed to rewards and risks resulting from the development of air traffic (see section 3.1.3).



Revenues from air navigation services decreased slightly from €1,031.9 million to €1,027.7 million. This is after netting the carry-over from previous years (€34.9 million) and the carry-over 2018 (minus €129.7 million). Revenues from en-route and terminal services rose because of the higher number of flight movements. This increase was only slight due to the lower unit rates from economic regulation (see section 3.1).

<b>Revenues from en-route charges (€m)</b>					
	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>
Total	867.4	859.8	899.3	962.3	801.1
Compared with previous year (%)	<b>+0.9</b>	<b>-4.4</b>	<b>-6.5</b>	<b>+20.1</b>	<b>+0.6</b>

These revenues were exclusively generated by DFS. The new standard IFRS 15 has no material impact on the revenues from en-route charges.

Revenues from terminal charges (€m)					
	2018	2017	2016	2015	2014
Gross	185.4	182.5	211.5	233.8	232.6
Reimbursements paid	(1.0)	(0.9)	(0.7)	(0.7)	(0.6)
Net	184.4	181.6	210.8	233.1	232.0
Compared with previous year (net, in %)	+1.5	-13.9	-9.6	+0.5	+2.5

These revenues were exclusively generated by DFS. The new standard IFRS 15 has no material impact on the revenues from terminal charges.

Revenues from government reimbursements (€m)					
	2018	2017	2016	2015	2014
Military operational air traffic	44.0	43.9	61.6	61.0	59.1
Exempted flights	18.0	18.0	6.5	6.5	6.5
<b>Total</b>	<b>62.0</b>	<b>61.9</b>	<b>68.1</b>	<b>67.5</b>	<b>65.6</b>
Compared with previous year (%)	+0.2	-9.1	+0.9	+2.9	+2.7

These revenues were exclusively generated by DFS. The new standard IFRS 15 has no material impact on the revenues from government reimbursements. The exempted flights relate to en-route flights under visual flight rules.

Revenues from other air navigation services (€m)					
	2018	2017	2016	2015*	2014
Aeronautical publications	4.3	4.3	4.2	7.0**	0.3
Flight inspection services	3.6	3.8	2.7	2.2	2.0
Other air navigation services	0.7	0.5	1.4	0.9	1.2
<b>Total</b>	<b>8.6</b>	<b>8.6</b>	<b>8.3</b>	<b>10.1</b>	<b>3.5</b>
of which commercial business	4.3	4.2	4.2	3.8	---
Compared with previous year (%)	0.0	+3.6	-17.8	+188.6	-69.6

\* Figures adjusted; comparability with prior year limited

\*\* This item contains income from a technology transfer agreement (€3.0 million). This means it is neither directly comparable with previous years nor with subsequent years.

<b>Other revenues (€m)</b>					
	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015*</b>	<b>2014</b>
<b>Total</b>	<b>79.4</b>	<b>71.6</b>	<b>52.5</b>	<b>37.7</b>	<b>20.7</b>
of which commercial business	60.9	62.3	48.7	37.7	---
Compared with previous year (%)	<b>+10.9</b>	<b>+36.4</b>	<b>+39.3</b>	<b>+82.1</b>	<b>20.3</b>

\* Figures adjusted; comparability with prior year limited

The Group generates other revenues primarily from air traffic control services at nine German regional airports, and London Gatwick and Edinburgh airports, consultancy and staff services, apron management service and training services.

As at 1 January 2018, the new standard IFRS 15 led to the recognition of additional revenues from consulting contracts of €0.1 million at the expense of retained earnings.

### 2.3.2 Other operating income

<b>Other operating income (€m)</b>					
	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015*</b>	<b>2014</b>
<b>Total</b>	<b>53.4</b>	<b>59.4</b>	<b>46.6</b>	<b>33.3</b>	<b>35.3</b>
of which commercial business	1.9	1.5	0.5	0.9	---
Compared with previous year (%)	<b>-10.1</b>	<b>+27.5</b>	<b>+39.9</b>	<b>-5.7</b>	<b>+4.7</b>

\* Figures adjusted; comparability with prior year limited

Material components:

- Project-specific funding by the European Commission (€26.5 million)
- Income from the qualified technological equipment (QTE) transaction, exchange rate gain (€9.5 million)
- Derecognition of liabilities (€3.8 million)
- Reversal of provisions (€9.1 million)
- Remaining (€4.5 million)

## 2.4 Principal expense categories

Employee expenses (€m)					
	2018	2017	2016	2015*	2014
<b>Total</b>	<b>878.9</b>	<b>862.8</b>	<b>838.5</b>	<b>850.7</b>	<b>803.1</b>
Wages and salaries	621.0	605.2	609.2	593.6	593.8
Social security costs and expenses for pensions and assistance	249.4	249.1	206.4	230.0	180.2
Costs of personnel belonging to the Federal Aviation Office (LBA)**	8.5	8.5	22.9	27.0	29.1
of which commercial business***	46.1	40.3	33.1	23.7	---
Share of total costs (%)	76.1	75.4	77.1	77.2	76.9
Compared with previous year (%)	<b>+1.9</b>	<b>+2.9</b>	<b>-1.4</b>	<b>+5.9</b>	<b>-0.7</b>

\* Figures adjusted; comparability with prior year limited

\*\* Federal Aviation Office (LBA): The Federal Government had taken over the administration costs for the public service employees of the Federal Administration of Air Navigation Services still working at DFS amounting to €1 million per year.

\*\*\* This item contains allocated costs.

Interest of €83.8 million accruing from provisions for pensions and early retirement is charged to the financial result. The return on plan assets (€46.4 million) is credited to the financial result. DFS recognised the difference of €46.9 million resulting from the application of the new Heubeck-Richttafeln 2018 G (*generally accepted mortality tables used for occupational pensions in Germany*) due to the changed biometric basis directly in other comprehensive income (OCI).

Other operating expenses (€m)					
	2018**	2017**	2016	2015*	2014
<b>Total</b>	<b>145.0</b>	<b>147.2</b>	<b>128.9</b>	<b>130.8</b>	<b>132.7</b>
of which commercial business***	13.8	23.9	11.3	7.0	---
Share of total costs (%)	12.6	12.9	11.8	11.9	12.7
Compared with previous year (%)	<b>-1.5</b>	<b>+14.2</b>	<b>-1.5</b>	<b>-1.4</b>	<b>-4.0</b>

\* Figures adjusted; comparability with prior year limited

\*\* From 2018, the item no longer contains the impairment losses on financial assets and contract assets as these must be separately disclosed in accordance with IAS 1(82). The disclosures for 2017 have been adjusted. A reconciliation can be found in Note 4.6.2.

\*\*\* This item contains allocated costs.

Material components:

- Spare parts and maintenance (€52.0 million)
- Occupancy costs (€14.8 million)
- Costs of external personnel (€11.5 million)
- Rental and leasing (€4.2 million)
- Telecommunication costs (€7.3 million)
- Exchange rate losses from the QTE transaction (€9.6 million)
- Legal and consultancy costs (€6.3 million)
- Travel costs (€7.7 million)
- Other employee expenses (€9.5 million)
- Vehicle costs (€3.5 million)
- Insurance (€3.0 million)

<b>Depreciation and amortisation (€m)</b>					
	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015*</b>	<b>2014</b>
<b>Total</b>	<b>117.2</b>	<b>116.3</b>	<b>108.9</b>	<b>109.6</b>	<b>104.5</b>
of which commercial business	4.0	3.1	1.8	1.7	---
Share of total costs (%)	10.2	10.2	10.0	10.0	10.0
Compared with previous year (%)	<b>+0.8</b>	<b>+6.8</b>	<b>-0.6</b>	<b>+4.9</b>	<b>+2.1</b>

\* Figures adjusted; comparability with prior year limited

<b>Impairment losses on financial assets and contract assets (€m)</b>					
	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>
<b>Total</b>	<b>0.9</b>	<b>5.6</b>	---	---	---
of which commercial business	---	---	---	---	---
Share of total costs (%)	0.1	0.5	---	---	---
Compared with previous year (%)	<b>-83.9</b>	---	----	---	---

\* Figures adjusted; comparability with prior year limited

The item shows the impairment losses on financial assets and contract assets previously disclosed under other operating expenses.

## 2.5 Group earnings

In 2018, the DFS Group realised a net loss of €30.1 million (previous year: net income of €30.8 million).

<b>Net income (€m)</b>					
	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015*</b>	<b>2014</b>
<b>Total</b>	<b>-30.1</b>	<b>30.8</b>	<b>86.6</b>	<b>123.6</b>	<b>34.9</b>
of which commercial business	-4.6	2.2	1.2	4.7	---
Compared with previous year (%)	<b>-197.7</b>	<b>-64.4</b>	<b>-29.9</b>	<b>+254.2</b>	<b>-2.5</b>

\* Figures adjusted; comparability with prior year limited

The earnings in 2018 contain the costs reimbursed by airspace users for previous years of €57.2 million (previous year: €55.2 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 €51.7 million (previous year: €52.7 million) from the change in the charges-related parameters for expenses for occupational pensions (imputed model, 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 €17.7 million (previous year: €25.4 million) as well as grant funding of €26.5 million (previous year: €32.2 million).

<b>Earnings before taxes (€m)</b>	
<b>Net income</b>	<b>-30.1</b>
Taxes on income and gains	-0.6
<b>EBT</b>	<b>-30.7</b>

There was a positive impact on earnings from the development in service units being higher than the forecast and the impact of the five-point programme.

DFS also took into account the additional income from charges from 2016 to be offset in the charges for users in 2018 (see section 2.2.2).

Following net income of €2.2 million in the previous year, the commercial business recorded a net loss of €4.6 million in the business year 2018.

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

## 2.6 Assets and financial position

### 2.6.1 Capital expenditure

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 €109.0 million (previous year: €111.8 million) in the business year 2018.

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

#### ***iCAS programme – interoperability through European collaboration Centre Automation System***

DFS launched the iCAS programme to consolidate all projects, sub-projects and individual measures for the development of the air traffic services system iCAS, the future air traffic control system at all DFS control centres. The programme comprises both concrete procurement and development measures to provide iCAS at the DFS control centres as well as a variety of bilateral and multinational cooperation measures at a European level. The iCAS programme aims to ensure that the multinational initiatives to shape the future European air traffic management system and the development of iCAS are conducted in a coordinated manner and that the interests of DFS are suitably taken into account. The future iCAS air traffic services system for control centres will in particular meet the interoperability requirements of the SES regulations. The iCAS programme is given grant funding from the European Commission as part of the CEF – Connecting Europe Facility infrastructure fund.

Following the successful launch in the Karlsruhe control centre at the end of 2017, the programme has the following additional objectives:

- Step-by-step introduction of iCAS at the control centres for lower airspace: Munich (2020/21), Bremen (2021/22) and Langen (2022/23).
- Harmonisation of ATS systems at the DFS control centres and the creation of system and technical conditions to optimise the maintenance organisation of air traffic control centres.
- Creation of the system and technical platform to implement the operational concepts of the future with the goal of boosting performance (SESAR, FABEC), cooperation and cost splitting with other ANSPs in the iCAS realisation and use.

DFS has thus taken the first step on the path of harmonising the systems used within DFS and subsequently in Europe.

### ***Remote Tower Control (RTC)***

As part of the RTC project, DFS is bundling the provision of aerodrome control services which are independent of location in a Remote Tower Control Centre at its site in Leipzig.

After the successful start at Saarbrücken Airport at the end of 2018, Erfurt and Dresden airports will follow.

The new endorsement concept for the air traffic controllers working in the Remote Tower Control Centre will allow DFS to have significantly more flexible staff deployment in the future than is currently the case.

A sophisticated camera system that acts as a replacement for the out-of-the-window view lies behind the RTC solution from DFS. The solution has innovative functionalities which do not yet exist in this combination.

Using high-performance sensors from high-definition cameras and high-performance infrared sensors as well as the integration of position data, the multi-sensor system enables safe and efficient operations during good (VMC) and bad (IMC) meteorological conditions (such as at night and during rain and fog).

The system consists of three independent systems:

- A 360-degree video camera delivers a colour panoramic view of the airport.
- It is supplemented by a 360-degree infrared camera.
- In addition, two pan-tilt-zoom (PTZ) cameras mean the controller can zoom in on and track objects of interest ("extended binocular function").

The result is displayed on several monitors at the respective remote working position on the premises of Leipzig Tower.

DFS thus ranks in a leading position as an innovative air navigation service provider and is one of the first that has introduced this technology of the future operationally.

With the successful introduction of RTC for Saarbrücken Airport, DFS, together with its technology partner FREQUENTIS, has been shortlisted for Jane's ATC Awards. It is awarded annually at the World ATM Congress in Madrid for outstanding projects and innovations from the world of air navigation services.

### ***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. The volume of capital expenditure amounts to €100 million over the entire period.

### ***Public-private partnership Kaufbeuren – provision of military air traffic control training of the Bundeswehr in Kaufbeuren by DFS***

As part of this measure, DFS is laying the foundations for the provision of military air traffic control training of the Bundeswehr in Kaufbeuren, Germany, through its subsidiary Kaufbeuren ATM Training. This involves the purchase of land in Kaufbeuren, the first construction measures, and the investment in setting up and installing new simulator infrastructure and administrative office communications infrastructure (see section 3.2.1).

### **Ground surveillance radar station A-SMGCS in Stuttgart and Cologne Bonn**

These projects cover the implementation of a ground situation display system at Stuttgart and Cologne Bonn airports to support the provision of air traffic services and apron services. The implementation is expected to deliver benefits primarily in the areas of safety and maintenance of capacity under poor visibility.

### **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). It safeguards and optimises ground-based navigation independent of satellites in German airspace over the long term and meets the requirements of the ICAO Standards & Recommendations. In the first phase of the project, 13 locations are to be replaced.

In the business year 2018, assets under construction worth a total of €20.0 million were completed (previous year: €86.5 million). The main share was made up by the ongoing iCAS programme.

With these projects, the DFS Group secures its position as a reliable partner for aviation.

## **2.6.2 Balance sheet structure**

### *Application of the new IFRS 9 standard*

The application of the new IFRS 9 standard led to no material changes in the balance sheet structure. DFS changed the designation of two balance sheet line items:

The line item "Investments in associated companies" is now called "Financial assets accounted for using the equity method". The line item "Securities" is now called "Financial assets".

A comprehensive reconciliation regarding the classification of financial assets can be found in Note 4.6.2.

### *Application of the new IFRS 15 standard*

The application of the new IFRS 15 standard led to no material structural changes in the balance sheet except for the changed disclosure of liabilities from contracts with customers under the new balance sheet item "Contract liabilities". This line item totalling €1.4 million (previous year: €3.0 million) was previously recognised under "Other liabilities". The item "Future receivables from construction contracts" was renamed to "Contract assets" and contains receivables of €7.1 million (previous year: €6.2 million) in 2018. The initial application had a negative impact on retained earnings in favour of revenues of €0.1 million as at 1 January 2018.

A comprehensive reconciliation can be found in Note 4.6.1.

### *Balance sheet 2018*

In 2018, the balance sheet total decreased by 4.1 percent over the previous year to €2,157.9 million.

#### *Assets*

Non-current assets rose marginally by 0.9 percent, while current assets declined by 6.9 percent.

The decline in current assets was the result of counteracting effects. The Group designated a portion of the securities held amounting to around €367.2 million (previous year: €963.4 million) as additional plan assets and netted this against the corresponding pension obligations.

On the other hand, liquid funds rose by 64.3 percent to €455.1 million. Trade receivables remained basically stable. Other receivables declined by 37.9 percent primarily due to the change in creditors with debit balances.

#### *Equity and liabilities*

Shareholder's equity improved slightly by €15.8 million. While the remeasurement of the net defined benefit liability (minus €171.0 million, other comprehensive income (OCI)) and the negative earnings from the business year (minus €30.1 million) had a considerable negative effect, the rise in registered capital from the capital contribution of the Shareholder (+€225.0 million) offset this, which meant an overall decline in negative equity of 2.3 percent.

Non-current liabilities declined by 5.9 percent. This was primarily attributable to the decline in the net liability from pension obligations, chiefly from the allocation of additional plan assets, which more than offset the actuarial losses incurred.

Based on the prior-year figures, the net liability (difference between obligation and plan assets) declined to €2,016.6 million (previous year: €2,183.8 million) with a stable discount rate (1.8%) and salary trend (2.5%). A considerable proportion of the actuarial losses (€73.4 million) resulted from the application of the new Heubeck-Richttafeln 2018 G. This led to a negative one-off impact on OCI of €46.9 million.

Current liabilities rose by 17.8 percent. Other provisions rose (+€73.7 million) because of additional income from charges to be netted with airspace users from 2017 (carry-over), while financial liabilities declined primarily due to the repayment of a bond (minus €25.0 million).

Net financial indebtedness amounted to minus €895.6 million as at 31 December 2018. The leverage ratio at the balance sheet date thus amounted to minus 41.5 percent. Interest expenses, driven primarily by pension obligations, were higher than interest income by €54.1 million.

<b>Current effects</b>				
	<b>2018 (€m)</b>	<b>2017 (€m)</b>	<b>Change (€m)</b>	<b>Change (in %)</b>
<b>Balance sheet total</b>	<b>2,157.9</b>	<b>2,251.2</b>	<b>-93.3</b>	<b>-4.1</b>
Intangible assets	191.8	207.3	-15.5	-7.5
Property, plant and equipment	499.9	507.2	-7.3	-1.4
Property (financial investment)	0.7	0.7	0.0	0.0
Financial assets	24.9	9.2	15.7	170.7
Other assets	75.3	61.8	13.5	21.8
Deferred tax assets	13.6	13.0	0.6	4.6
<b>Non-current assets</b>	<b>806.2</b>	<b>799.3</b>	<b>6.9</b>	<b>0.9</b>
Trade receivables	157.7	155.8	1.9	1.2
Contract assets	7.1	6.2	0.9	14.5
Other assets	23.2	37.2	-14.0	-37.6
Inventories	5.3	5.3	0.0	0.0
Financial assets	677.2	963.4	-286.2	-29.7
Cash and cash equivalents	455.1	276.9	178.2	64.4
Current tax assets	26.1	7.1	19.0	267.6
<b>Current assets</b>	<b>1,351.7</b>	<b>1,451.9</b>	<b>-100.2</b>	<b>-6.9</b>
<b>Equity</b>	<b>-665.5</b>	<b>-681.3</b>	<b>15.8</b>	<b>-2.3</b>
Pension provisions	2,016.6	2,183.8	-167.2	-7.7
Other provisions	208.6	192.5	16.1	8.4
Financial liabilities	226.7	232.5	-5.8	-2.5
Trade payables	0.6	0.8	-0.2	-25.0
Other liabilities	19.1	19.8	-0.7	-3.5
Income tax obligations	30.9	30.9	0.0	0.0
<b>Non-current liabilities</b>	<b>2,502.5</b>	<b>2,660.3</b>	<b>-157.8</b>	<b>-5.9</b>
Other provisions	183.2	109.5	73.7	67.3
Financial liabilities	9.9	34.1	-24.2	-71.0
Trade payables	30.2	36.6	-6.4	-17.5
Contract liabilities	1.4	3.0	-1.6	-53.3
Other liabilities	96.0	89.0	7.0	7.9
Income tax obligations	0.1	0.1	0.0	0.0
<b>Current liabilities</b>	<b>320.8</b>	<b>272.3</b>	<b>48.5</b>	<b>17.8</b>

<b>Balance sheet indicators</b>			
	<b>2018</b>	<b>2017</b>	<b>2016</b>
Net financial indebtedness (€m) (Financial liabilities – liquid funds)	-895.6	-973.8	-577.8
Leverage ratio (%) (Net financial indebtedness / balance sheet total)	-41.5	-43.3	-29.7
Asset intensity (%) (Non-current assets / balance sheet total)	37.4	35.5	40.6

<b>Balance sheet indicators when fully considering catch-up effects from the conversion to IFRS and the deficit</b>			
	<b>2018</b>	<b>2017</b>	<b>2016</b>
Net financial indebtedness (€m) (Financial liabilities – liquid funds)	-895.6	-973.8	-577.8
Leverage ratio (%) (Net financial indebtedness / balance sheet total)	-21.6	-23.7	-14.3
Asset intensity (%) (Non-current assets / balance sheet total)	19.4	19.5	19.6

In Note 38, a detailed reconciliation can be found of the equity as at 31 December 2018 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 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. Furthermore, there are special items impacting assets that have a temporarily favourable effect on liquidity.

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 inter-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 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. Appropriate liquidity from short-term demand deposits and fund assets not protected against insolvency ensures the solvency of the DFS Group.

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 its 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 for 2018 in combination with its Shareholder for both their short- and long-term ratings (AAA/A-1+ stable).

At year-end 2018, the issued volume had a nominal value of €197.5 million from debenture loans with a remaining term of up to five years.

The average weighted interest rate of the fixed-rate bond and debenture loans amounted to 2.618 percent at the balance sheet date.

### 2.6.3.2 Group cash flow statement

Cash and cash equivalents at year-end are made up as follows:

<b>Cash and cash equivalents (€'000)</b>			
Cash inflow (+) / cash outflow (-)	<b>2018</b>	<b>2017</b>	<b>2016</b>
Operating activities	-180,992	265,897	336,356
Investing activities	-110,907	-108,894	-81,257
Financing activities	183,793	139,111	-25,098
<b>Changes impacting cash flow</b>	<b>-108,106</b>	<b>296,114</b>	<b>230,001</b>
Cash and cash equivalents at the beginning of the year	1,240,361	944,247	714,246
<b>Cash and cash equivalents at the end of the year</b>	<b>1,132,255*</b>	<b>1,240,361*</b>	<b>944,247*</b>

\* Contains fund assets not protected against insolvency

Additional information can be found in the cash flow statement and in Note 34. No dividend was paid out to the Shareholder in the business year 2018.

## 2.7 Overall assessment on the economic situation

The results and financial position are influenced primarily by the legal environment, economic regulation, catch-up effects, grant funding, capitalisation of development costs, the stable growth in air traffic, the continuing low interest level as well as measures taken by the Board of Managing Directors to reduce costs.

In the business year 2018, revenues generated by the DFS Group came in only slightly above the previous year's level despite the increase in flight movements because the unit rates were lowered again as a result of economic regulation. This resulted in a net loss of €30.1 million. This figure was primarily influenced by catch-up effects and the change in the charges-related parameters for expenses related to occupational pensions (imputed model). DFS is strengthening the refinancing of occupational pensions through a higher commitment to asset forms with a more attractive risk/return ratio.

In 2018, Federal Government funds were additionally used to bear the cost for air navigation charges for all components of the cost-base for charges.

### 3 Segment reporting

#### 3.1 Regulated business

##### 3.1.1 Control Centre division

###### Service unit

In the Control Centre division, a service unit is computed as the square root of the weight factor multiplied by the distance factor. The economic value of each flight conducted is thus taken into account and the value of the air traffic control service performed is considered by the legislator when establishing the relevant air navigation charges.

Definition of service unit:

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

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

###### Service units – en-route services

	2018	2017
Total	14,931,581	14,303,636
Compared with previous year (%)	+4.4	+6.0

In 2018, the number of service units rose by roughly 4.4 percent over the previous year. This was 12.8 percent higher than the revised performance plan, which forecast 13,242,000 service units for 2018. The main reason for this increase in traffic is the above-average growth of low-cost carriers in Germany. In addition, Germany's overall stable economy and the improvement in the economies of neighbouring European States influenced this development.

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 of Transport and Digital Infrastructure (BMVI) and the Federal Supervisory Authority for Air Navigation Services (BAF).

###### En-route unit rate (€)

	2019	2018	2017	2016	2015	2014
Total	63.63	67.07	69.36	82.59	90.15	77.32
DFS share	54.63	58.09	60.10	66.68	74.56	62.55
Compared with previous year (total, in %)	-5.1	-3.3	-16.0	-8.4	+16.6	+1.1

The EU Regulation on the common charging scheme for air navigation services (Regulation (EU) No 391/2013) contains compensation mechanisms to partly offset losses in revenues as a consequence of deviations in traffic volumes as well as an inflation adjustment. The decrease in the unit rate in 2019 is primarily attributable to the carry-over from the above-mentioned

compensation reasons. The DFS share of the unit rate for 2018 sank by 5.1 percent over the previous year, while the share of the unit rate for en-route services was at around 86 percent.

### 3.1.2 Tower division

#### Service unit

In the Tower division at the 16 designated international airports, a service unit is the quotient obtained by dividing by 50 the maximum take-off weight, expressed as a figure taken to two decimal places, to the power of 0.7.

Definition of service unit:

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

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

Service units – terminal services		
	2018	2017
Total	1,474,074	1,424,060
Compared with previous year (%)	+3.5	+2.0

The unit rates rose by 3.5 percent over the previous year, which is roughly 7.1 percent over the revised performance plan. This is the fifth consecutive year in which German airports recorded above-average growth. In this case as well, the rise in service units was due to the above-average growth of low-cost carriers in Germany and the use of larger, and thus heavier, aircraft. 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 of Transport and Digital Infrastructure (BMVI) and the Federal Supervisory Authority for Air Navigation Services (BAF).

Terminal unit rate (€)						
	2019	2018	2017	2016	2015	2014
Total	124.34	127.87	130.59	159.23	181.62	183.87
DFS share	121.40	125.18	127.80	151.31	173.28	177.20
Compared with previous year (total, in %)	-2.8	-2.1	-18.0	-12.3	-1.2	+1.0

The decrease in the unit rate in 2019 is primarily attributable to the carry-over from over-recoveries in 2017 due to traffic deviations and inflation adjustments. The unit rate for 2019 will decrease by 2.8 percent over the previous year, while the share of the unit rate for terminal charges will amount to around 98 percent.

### 3.1.3 Results of operations

Results (€m)		
	2018	2017
Total operating revenues and income	1,111.1	1,124.8
Total expenses	1,084.8	1,077.6
EBIT	26.3	47.2
Financial result	-52.8	-23.2
Income taxes	1.0	4.5
Net income	-25.5	28.5

More information on segment reporting can be found in Note 33.

The changeover from full cost recovery to charges based on performance for the Control Centre division (since 2012) and the Tower division (since 2015) has had a material impact on cost structures. Savings or additional expenses are no longer passed on in the following periods but directly impact the earnings of DFS. Currently, there are still issues concerning interpretation and application which could influence the future development of the company's economic situation. From the point of view of DFS, there are a small number of measurement, accounting and charging issues which have still not been unequivocally resolved since the date of the transition (31 December 2011 / 1 January 2012). The regulatory authority and DFS continue to work on the contentious issue of drawing up a binding catalogue of qualifying uncontrollable costs. Such costs will have to be borne in full by airspace users.

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 the 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
$v \leq 2.0\%$	100.0%	---
$2.0\% < v \leq 10.0\%$	30.0%	70.0%
$v > 10.0\%$	---	100.0%

## 3.2 Commercial business

### 3.2.1 Business activities

The main focus of the (non-regulated) commercial business is on providing air traffic control services at nine German regional airports and two UK airports, the sale of aviation-related products and publications, the training of military air traffic control personnel and the sale of energy as well as the international consulting and project business.

#### *Air traffic at the regional airports where DFS Aviation Services operates*

The air traffic at the regional airports where DFS Aviation Services operates continued to grow, increasing by around 10 percent, due to the general rise in flight movements in Germany. While DFS Aviation Services stopped providing air traffic services at Hahn Airport as scheduled on 21 June 2018, it took over air navigation services at Friedrichshafen Airport on 1 July 2018 and has been offering the aerodrome flight information service (AFIS) at Emden Airport since 1 October 2018. The insolvency proceedings for FMC GmbH (operator of Cochstedt Airport) are continuing. Based on the insolvency plan adopted, DFS Aviation Services will continue to provide limited services until 28 February 2019.

#### *Air navigation services at Gatwick Airport*

Gatwick is the second-largest airport in the United Kingdom with more than 280,000 flight movements. It is considered the busiest single-runway airport in the world and offers connections to more than 230 destinations in 74 countries. It counts more than 50 airlines as customers, which transported more than 46 million passengers. This number continues to grow.

Air Navigation Solutions handled the traffic volume of up to 950 flight movements per day safely. This marks a new record for a single-runway airport.

#### *Air navigation services at Edinburgh Airport*

Edinburgh is the largest airport in Scotland and in 2018, it had more than 130,000 flight movements and a record number of passengers (14.3 million). It is used by 37 airlines, which fly to 157 destinations. Air Navigation Solutions has been providing air navigation services at Edinburgh Airport since 1 April 2018.

#### *Training of military air traffic control personnel*

Kaufbeuren ATM Training is currently in the integration phase of the public-private-partnership project (air traffic control training of the Bundeswehr in Kaufbeuren). The company took over responsibility for the full operational and on-schedule training of military air traffic control in Kaufbeuren. The training takes place using the contractually agreed simulator and training infrastructure. A comprehensive quality management system has been established and is actively being used.

All of the courses requested and commissioned by the Bundeswehr in the business year 2018 were carried out in accordance with the service level agreement at, or above, the expected quality level.

#### *Aviation-related products and publications, and training services*

The Group produces aeronautical charts and publications and other aeronautical information in paper and electronic form and sells them together with technical devices for flight preparation

and flight operations. Since 2017, R. Eisenschmidt has been authorised to develop, produce and market products and services for the training of pilots, including pilots of unmanned aircraft systems.

### *Consulting and project business*

DFS Aviation Services offers consulting and project services for air navigation services companies, airport operators, airlines as well as supervisory authorities and the military. The company, as a certified air navigation service provider, markets its products and services around the world in a competitive environment. The focus of the activities is Germany, Europe and the Middle East. Representative offices in Singapore and Beijing are to promote the expansion of the business.

Large contracts totalling around €36 million in Bahrain, Israel and Dubai shaped the business in the business year 2018. In Bahrain, since 1 January 2019 operational and administrative air navigation services personnel have been made available to the Bahrain Civil Aviation Affairs (BCAA) for an initial period of two years through a subsidiary founded in December 2018 (DFS Aviation Services Bahrain Co. W.L.L.).

From 1 April 2019, a training contract with a duration of five years is beginning with the Israeli air navigation service provider IAA. In addition, a system delivery contract with a duration of two years was concluded with Dubai Air Navigation Services (DANS).

In addition, DFS Aviation Services founded FREQUENTIS DFS AEROSENSE together with the high-tech company FREQUENTIS at the end of 2018. The company is headquartered in Vienna, Austria. DFS Aviation Services holds a stake of 30 percent. The object of the company is consultancy as well as the marketing, delivery, installation and maintenance of information and communication systems which are needed for the remote provision of aerodrome control services (remote tower control / RTC). Through this joint venture, customers in the emerging market for remote tower control are to be acquired. The entry in the Austrian commercial register was made on 7 November 2018.

On the other hand, the work on the contract to provide technical services to the air navigation service provider in Luxemburg, ANA, with a volume of €34.4 million and a duration of ten years, was stopped prematurely at the request of the customer in the middle of 2018. Currently, negotiations are being held with ANA on how to annul the contract.

In addition, DFS International Business Services took a stake of 23.6 percent in Unifly NV, Belgium. Unifly is a software company and one of the global leaders in UTM solutions (UAS (unmanned aircraft systems) traffic management). The investment in Unifly is the systematic continuation of the path to the future taken to integrate the UTM system into the ATM system.

DFS International Business Services is founding a joint venture called Droniq GmbH with Deutsche Telekom. The company will be headquartered in Frankfurt am Main, Germany. The purpose of the company is the provision, distribution and marketing of services for drones and other aircraft in Europe.

### 3.2.2 Results of operations

<b>Results (€m)</b>		
	<b>2018</b>	<b>2017</b>
Total operating revenues and income	66.8	65.9
Total expenses	69.7	67.3
EBIT	-2.9	-1.4
Financial result	-1.2	-0.5
Income taxes	-0.5	4.1
Net income	-4.6	2.2

More information on segment reporting can be found in Note 33.

## 4 Personnel

Motivated and qualified staff are imperative for the long-term success of the DFS Group. 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 in the Group. Financial incentives are supported by HR policies aligned to the different phases of life and family needs.

### *Employee structure*

As at 31 December 2018, the DFS Group had a total of 5,750 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 comprise 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 at 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 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.

Information on the compensation structure of the Board of Managing Directors can be found in Note 45.

<b>Employees (as at 31 December)</b>					
	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015*</b>	<b>2014</b>
<b>Permanent employees (total)</b> (of which at subsidiaries)	<b>5,750</b> <b>(321)</b>	<b>5,608</b> <b>(222)</b>	<b>5,695</b> <b>(157)</b>	<b>5,742</b> <b>(70)</b>	<b>5,879</b> <b>---</b>
Salaried staff (of which at subsidiaries)	5,249 (321)	5,156 (222)	5,210 (157)	5,214 (70)	5,316 ---
Soldiers released from regular service	157	165	202	211	219
Wage-earners	20	22	22	25	26
Technical/commercial students & apprentices	70	47	41	42	45
Trainee air traffic controllers	138	60	48	52	51
Personnel belonging to the Federal Aviation Office (LBA)	140	158	172	198	222
of which established civil servants	(112)	(126)	(134)	(152)	(171)
of which non-established employees	(28)	(32)	(38)	(46)	(51)
Compared with previous year (%)	2.5	-1.5	-0.8	-2.3	-2.8
Share of female employees (%)	27.5	27.5	27.1	27.0	26.8
Share of foreign employees (%)	4.5	5.2	4.7	3.9	4.0

\* Figures adjusted; comparability with prior year limited

The table for 2018 contains employees from the following subsidiaries:

At the end of December, DFS Aviation Services had 116 members of staff.

At the end of December, R. Eisenschmidt had 12 members of staff.

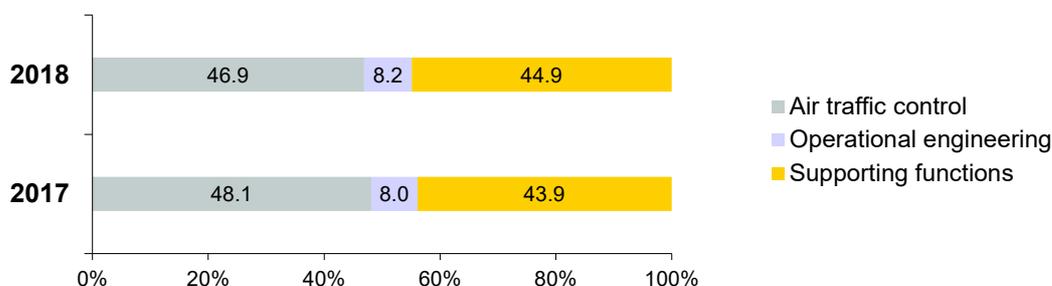
At the end of December, Kaufbeuren ATM Training had 54 members of staff.

At the end of December, Air Navigation Solutions had 139 members of staff.

DFS Energy and DFS International Business Services have no employees of their own.

The planned long-term reduction in operating costs also covers a reduction in headcount. DFS will achieve this by means of age-related separations and by adopting a conservative policy as regards filling vacancies.

### Employees by area of duties (%)



Of the 5,750 employees of the Group, 954 were part-time – 625 women and 329 men. The share of part-time employees rose by 2.6 percent over the previous year, reaching

16.6 percent. The age structure of staff is well balanced, with the average age being 43.3 years. The turnover rate was 0.97 percent in 2018.

At present, 27.5 percent of employees are women. Currently, 60 of the 496 management positions in the company are held by women, representing a share of 12.1 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 female division directors of 5 percent (previously: 0%) and the share of female department heads of 13 percent (previously: 11%) for the periods from 1 January 2017 until 31 December 2021. As part of the five-point programme (see section 1.4.2), the company is increasingly fostering in a targeted manner both family-friendly policies and equal opportunities.

Foreign employees mainly come from the United States and the United Kingdom, followed by Spain and Austria. Overall, 45 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. Recertification was achieved in 2017. Since 2011, DFS has been working with a childcare centre in Langen, where its Headquarters are located. Places are available for employees' children, and similar places are also available at childcare centres near the other DFS branches in Munich and Karlsruhe. Since 2016, DFS has also offered a programme for school-aged children during the summer holidays at the company sites in Langen, Munich, Karlsruhe and Bremen. The support for employees who are caring for dependents was and continues to be expanded, for example by the HR and health management units at DFS providing comprehensive information and advice.

Over the course of their whole career, staff can make use of flexible working-time models, health programmes, 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.

<b>Training starts</b>		
	<b>2018</b>	<b>2017</b>
<b>Total</b>	<b>179</b>	<b>84</b>
Air traffic controllers	135	65
Dual courses of studies / apprenticeships	44	19
Compared with previous year (%)	<b>+113.1</b>	<b>+47.4</b>

Currently, 221 people are undergoing air traffic controller training at DFS, which takes several years.

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

The parties to the collective agreement, DFS and the air navigation services union (GdF), conducted negotiations on collective bargaining on the following topics in 2018:

In 2018, the parties to the collective agreement renegotiated the Special Provisions for Air Navigation Services as part of the joint conclusion from the so-called validation round 2017 on workload-related compensation. In accordance with the preamble to the new collective agreement, the new regulation is guided by the desire of both sides to find a balanced compromise between the needs of staff to have a limit on their workload and plannable leisure time on the one hand and the need at DFS for flexibility and the optimal deployment of staff on the other. In particular, DFS and the GdF have laid down a joint method for the future determination of workload in the collective agreement. The Special Provisions entered into effect on 1 January 2019.

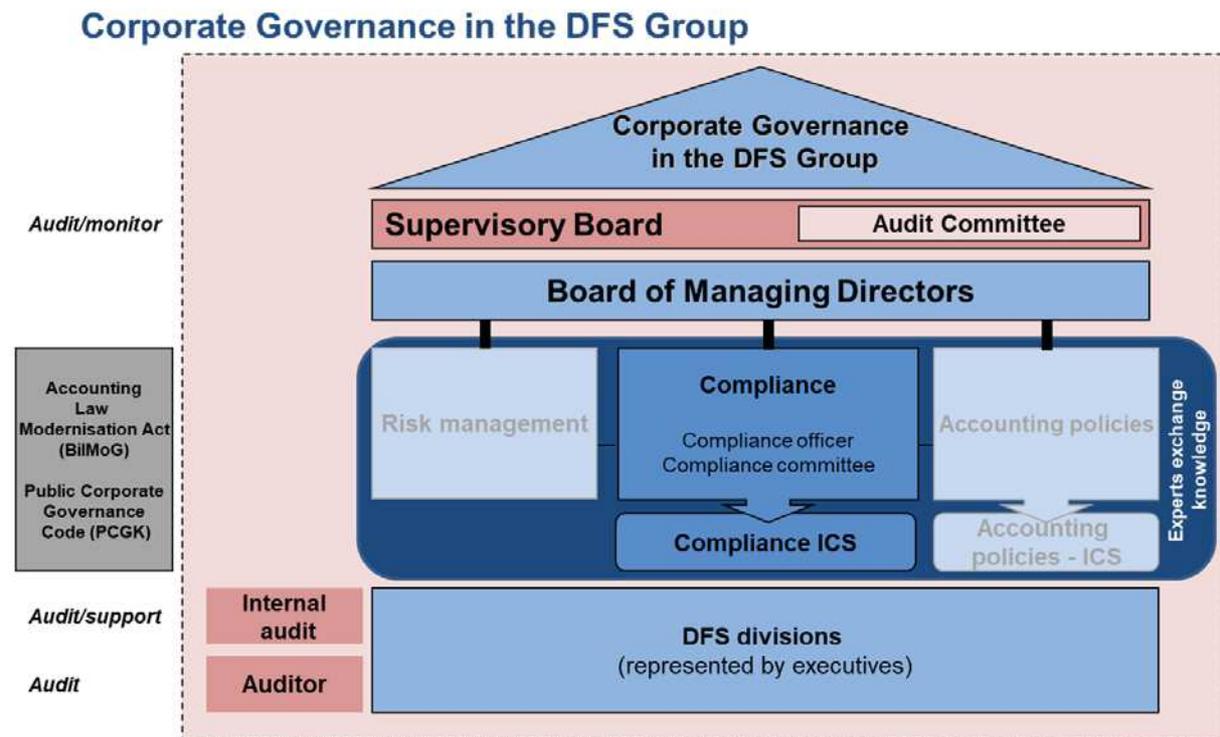
In addition, DFS and GdF signed an agreement on setting up a clearing office for collective bargaining issues in August 2018. For the parties to the collective agreements, the clearing office serves as a means to ensure the joint, legally binding and conflict-free application of the respective collective provisions.

On 14 September 2018, the parties to the collective agreements signed the Collective Framework Agreement (MTV) including special provisions for flying staff, the Collective Agreement on the Grading System (ETV) and the Collective Agreement covering Pensions (VersTV) for the employees of FCS Flight Calibration Services GmbH.

In the second half of 2018, the parties to the collective agreements started negotiations on the conclusion of a complete set of collective agreements for R. Eisenschmidt GmbH, where agreement in principle was reached in December 2018.

At the end of the year, talks started to prepare for the collective negotiations for Group EAD planned for 2019.

## 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 Board of Managing Directors 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 internal control system (ICS) for accounting and financial reporting, form the three pillars of the corporate structure for risk management.

The compliance committee advises the compliance officer. The committee is made up of members of the first management level from the following divisions: Group Data Protection & Quality Management, Safety & Security Management, Controlling as well as HR Management Headquarters & Strategy. In addition, at the beginning of 2018, the issues of compliance and risk management were consolidated into a new department to reflect the increased importance of both areas and to leverage potential synergies. The head of Compliance and Risk Management has been a member of the Compliance Committee since then as well.

To ensure the connection of the compliance management system to the internal control system, the directors of Financial Management and Group Internal Audit are permanent guests of the committee. In 2018, the compliance committee had four scheduled meetings.

DFS employees can also turn to an external ombudsman if they suspect a compliance infringement.

The focus of the activities in 2018 was on setting up the new Compliance and Risk Management department, the review and reorientation of the consolidated tasks and the implementation of a Group Code of Conduct.

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

## 6 Risk report

### 6.1 Risk management system

The DFS Group uses a comprehensive set of instruments to identify, analyse, monitor and manage the risks associated with its business. The risk management process is managed centrally by the independent Compliance and Risk Management department. This department is supported by the risk management committee (RMC) when conducting evaluations that span several organisational divisions and processes. As a rule, the members of this body belong to the executive management level and are closely involved in the business decision-making processes, understand company-wide interrelationships and are hence in a position to contribute to forming a comprehensive overview.

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 direct DFS investments (from a stake of 50%) are based on the Group guidelines. These DFS investments report to DFS Risk Management through investment management at DFS and thus ensure the communication up to Group management.

Risk Management takes account of the changes taking place in the aviation industry and the company, advances risk management methodically and therefore ensures the early identification of risks and the combatting of business risks.

This specialist department uses an operational instruction to lay down standards for the ongoing company-wide recognition, assessment, documentation and reporting of business risks. The early identification of risks begins with the applications for approval of business plans and projects. The following 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 and terrorist attacks).

As part of their management duties, the directors of DFS divisions identify potential/existing risks, including for the issues mentioned above, and are responsible for ensuring that the statements on the risk situation in their organisational units are correct. They report quarterly unless an ad hoc report is required. A risk announcement contains a description and an assessment of the risk as well as the causes and countermeasures. In general, the forecast period is one year.

Risks are assessed across all segments and are based on an evaluation of the probability of occurrence and the possible level of damage of the hazards under consideration as reported by the organisational units concerned. The goal is a quantified assessment; in well-founded cases a qualified assessment is permissible. Criteria for a qualified assessment have been laid down centrally in an assessment matrix. Only the risks to the going-concern status are included in the risk report to the Board of Managing Directors and the Supervisory Board.

The reporting of risks to the Board of Managing Directors takes place on a quarterly basis, while the Supervisory Board is informed on a half-yearly basis. Both reports include an overview of changes to the prior period and all notifications that were no longer judged to be business risks in the period under review.

The integrity of the risk management system is regularly tested by Group Internal Audit as well as in the course of the audit of the annual financial statements by the external auditors.

## 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 DFS devotes special attention to the analysis and forecasting of air traffic, the political environment and the European charging and performance scheme. The Board of Managing Directors regularly reviews its estimates in close cooperation with all relevant bodies, checks variances and discusses risks. The DFS Board of Managing Directors therefore sees only a slight corporate strategy risk.

### 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 Board of Managing Directors 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. Particularly since the beginning of the global financial market crisis, DFS has been continuously following and analysing the developments on the financial markets in a critical dialogue with its core banks and the rating agency to reassess existing strategies and develop new strategies as necessary.

As part of its overall risk management system, DFS performs Value-at-Risk (VaR) analyses to manage market price risks (interest, currencies). The risk position is assessed by the Treasury unit based on market price risks. The VaR indicates the absolute loss for a company of a defined risk position which will not be exceeded with a previously defined probability over a given period of time. The calculation of the VaR at DFS is based on a holding period of ten days and a probability of 95 percent. On 31 December 2018, the cumulative loss at a confidence level of 95 percent amounted to under €250 thousand (previous year: €1,121 thousand).

The VaR is determined with the help of statistical time series on the relevant financial market data (interest rates, exchange rates). Historical simulations are computed by extrapolating scenarios from the past to the future using simulated changes in market values for financial instruments.

This market risk analysis includes all money market transactions of DFS, issued debenture loans, currency hedges as well as all associated risk positions (foreign currency purchases and foreign currency receivables/liabilities). Quantitative information on VaR values for risks from currency and interest rate changes is summarised in Note 37.3.

Clearly defined external conditions support the planning and control of risks based on the reporting. Speculative transactions with derivative instruments where there is no underlying transaction are forbidden. As regards financial investing, transactions are only entered into with counterparties who either have a long-term rating of at least A+/A1, short-term A-2/P-2, or a correspondingly high creditworthiness or other form of collateral.

### 6.2.2.2 Liquidity risk

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).

### 6.2.2.3 Default risk

DFS is exposed to default risk and, increasingly, collection and enforcement risk from the operating business in the Control Centre and Tower divisions, from the commercial business as well as from financial instruments. 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 the Control Centre division, 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 Deutsche 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.

DFS concluded a US lease-in/lease-out transaction (five tranches) with two US investors (QTE transaction) for a portion of its air navigation systems under non-current assets in 2002 and 2003.

This transaction was basically terminated in the second quarter of 2012. The remaining German shell structure with a remaining term up to the start of 2022 is restricted to a receivable to Nord/LB bank (the borrower) and a liability to KfW Bank (the lender). The associated cash flows match as regards amount, term and currency. Over its term, DFS bears the default risk of Nord/LB bank to the amount of €37.0 million as of the balance sheet date (previous year: €42.2 million).

KfW Bank is authorised to extraordinarily terminate the loan if the rating of DFS falls under AA- (Standard & Poor's) or Aa3 (Moody's). In such a case, DFS would have to name a third party within a period of thirty days that will acquire the receivable of KfW against DFS to the amount of €37.5 million (previous year: €42.8 million).

#### **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. DFS monitors the impact of regulations to be able to react with appropriate measures to changes in the area of occupational pensions.

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 Notes (see Note 27.3).

#### **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 \$2.0 million in the reporting period (previous year: \$0.6 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.

A bullet euro loan of €3.5 million with a remaining term until 2020 made by DFS International Business Services to Air Navigation Solutions (UK) may lead to negative effects for Air Navigation Solutions from currency fluctuations.

#### **6.2.3 Performance-related and IT risks**

The top priority for DFS and its subsidiaries is to ensure the safety of air traffic, which is why DFS has set up safety and security management systems for the provision of air traffic control services that correspond to the provisions of Regulation (EU) No 1035/2011. 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 of DFS which would endanger the safety of air traffic and impact the business performance. Where required for the provision of air navigation services, such measures include, for example, redundancy, diversification and spatial separation of critical systems, the extensive storage of data on separate data carriers as well as the SAP backup computer centre.

#### 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 offered by change.

An additional risk that cannot be underestimated stems from demographic change and increasing competition among companies for highly qualified staff and managers. This risk takes on particular significance when one considers the approximately ten percent decline in the labour force participation rate in Germany forecast by 2030. 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.

DFS has a comprehensive in-house health management programme to ensure that staff remain healthy and maintain their ability to perform.

#### 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.

### 6.3 Overall assessment of the risk situation

The Board of Managing Directors currently discerns no risks, except for abstract terror and catastrophe scenarios, which – occurring individually or as a group – would pose a threat to the going-concern status of the company.

## 7 Outlook

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

The leading economic institutes and organisations expect growth for 2019 and 2020 to be lower than in previous years. The difficult Brexit negotiations, the budget conflict between Italy and the European Union, the global trade conflict and the gradual departure of central banks from their loose monetary policy are some of the serious issues impacting future economic developments. In addition, there are concerns about the low trend growth in the industrialised countries as well as fears as regards a possible recession in the United States and the large fluctuations on the capital markets. In the overall picture, the OECD expects global growth of 3.5 percent each in 2019 and in 2020, while the World Bank forecasts 2.9 percent in 2019 and 2.8 percent in 2020.

For Germany, leading indicators are pointing to growth but with a degree measure of economic slowdown. The forecasts of the economic organisations continue to assume that growth in Germany will be positive for 2019, although it is forecast across the board that growth will come in slightly below the previous year. The leading economic institutes in Germany (including DIW, ifo, IfW) expect growth between 1.1 percent and 1.8 percent for 2019. The Federal Government anticipates growth for 2019 of 1.0 percent and 1.6 percent for 2020 in its Annual Economic Forecast 2019. In its Autumn Projection 2018, the Federal Government had forecast an expansion in real GDP of 1.8 percent for both years. For the following years until 2023, the Federal Government forecasts growth of 1.3 percent per year.

The International Air Transport Association (IATA) expects that airlines across the globe will have to live with declining profits for 2019 after the record profits earned in 2018. IATA gave higher fuel prices and staff costs as the prime reasons for its pessimistic profit forecast. Airlines will have no choice but to pass on some of the cost increases to their customers. The supply of flights offered is also reaching its limits according to IATA.

Continued positive growth in air traffic is expected due to the stable overall economic situation in Europe, and especially in Germany, as well as the continued low oil price, even if the growth rates of the previous years will probably not be reached.

Based on the EUROCONTROL STATFOR baseline scenario, DFS forecasts that the volume of service units in Germany will grow by roughly 2.4 percent in 2019 over 2018. For the Tower division, DFS expects a rise in service units of approximately 2.0 percent. These are significantly above the targets from the revised performance plan for the second reference period.

## 7.2 Future development

### 7.2.1 Regulated business

#### ***Preparation for the third reference period***

The third reference period begins in 2020 (see section 2.2.2 under *Second reference period*). In preparation, the European Commission submitted a draft of the legal framework for this period in the course of 2018. This was adopted by the Single Sky Committee (SSC) on 17 December 2018. With the new Regulation, the European Commission is trying to address deficits in the current regulation and incorporate several changes for the handling of the performance plan and system of charges. Final targets for the upcoming reference period will probably be communicated in the course of 2019. The Member States have to submit the performance plans to the European Commission for evaluation by 1 October 2019.

#### ***European Aviation Safety Agency (EASA)***

The revision of the EASA Basic Regulation was published in the Official Journal of the EU as Regulation (EU) No 2018/1139 on 22 August and entered into force on 11 September 2018. This Regulation significantly expanded the competence of EASA as the agency for aviation safety, for example in the areas of the environment, research and international cooperation. In addition, the Agency has been assigned a role as coordinator for cybersecurity in the aviation sector. Within this new legal framework, two regulations on drone registration and operations were passed, among other things, in the EASA Committee in February 2019. In 2019, as a follow-on to these revisions, a considerably amended Regulation on the registration and certification of ATM/ANS service providers is expected, which should come into force in January 2022.

#### ***Further development of the SES framework regulations***

In 2018, the European Commission started numerous initiatives to prepare for the planned further development of the SES framework regulation. This included the commissioning of a study to analyse the potential for optimisation in European airspace architecture through the appointment of a so-called wise persons group. This group's task is in particular to develop recommendations for the management of aviation in Europe considering the current capacity bottlenecks. Results and the next steps are expected in 2019.

#### ***iCAS programme***

The iCAS programme has been expanded to include the iCAS Flight Object Interoperability (IOP) project. Following the completion of the planning phase, the implementation of the project starts in 2019. The iCAS Flight Object IOP project aims to adapt the ATS system iCAS to the requirements under Commission Implementing Regulation (EU) No 716/2014. The goal is cost-sharing procurement and development of an iCAS ATS system extended to include Flight Object IOP within the scope of the existing iTEC and iCAS cooperation initiatives and in cooperation with Maastricht UAC. A further goal is the coordinated planning to synchronise the introduction of Flight Object IOP at all European control centres of the affected European air navigation service providers, EUROCONTROL and the SESAR Deployment Manager under the SESAR Deployment Programme.

### ***Remote Tower Control***

Erfurt Airport will be the next airport to be controlled remotely. Subsequently, after another validation phase during which the RTC concept will be reviewed again, Dresden Airport will follow.

In addition, it is intended to provide more airports with remote tower services in a future project.

At the European level, research is currently being carried out as part of SESAR 2020 on air traffic controllers handling several smaller airports at the same time and not just one. DFS is involved in these research projects to safeguard verified and validated results at an early stage that can be incorporated in its own projects if the results are positive.

### ***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 meet 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 in 2014 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 four airlines, eleven air navigation service providers and 25 airport operators. The task is financed out of the European CEF funding programme, where a total of roughly €2.5 billion is earmarked until the end of 2020 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.

### ***Project S-ATM Robusto (sectorless air traffic control in upper airspace)***

The objective of the S-ATM Robusto project is the implementation of the first step in sectorless air traffic control at the Karlsruhe control centre. In 2018, the planning phase of the first step of S-ATM Robusto was carried out.

Sectorless ATM (S-ATM) means that specific parts of airspace are no longer divided into sectors or sector families but viewed as a whole. Each air traffic controller is assigned a defined number of aircraft in this large airspace. These aircraft could be anywhere in their area of responsibility. By establishing a sectorless airspace, aircraft no longer need to be transferred to other air traffic controllers at sector boundaries. Instead, they are handled by one air traffic controller while flying in this airspace.

The project aims to raise air traffic controller productivity in S-ATM airspace and establish an airspace with the highest level of air traffic controller productivity in Europe. This project will also allow air traffic controllers to be deployed more flexibly.

### ***Consequence of the uncoordinated withdrawal of the United Kingdom from the EU***

Various expert media and papers published by airlines assume air traffic will be interrupted from two days to a maximum of three weeks in the case of a hard Brexit. This would lead to a reduction in charges for DFS of between one to eight million euro. Most airlines have already taken countermeasures, such as founding EU subsidiaries, transferring aircraft, changing the ownership structure and taking similar initiatives. Further consequences – such as currency risks, duty and tax provisions, and issues concerning the secondment of individual employees to the UK subsidiary Air Navigation Solutions – are considered as low.

### ***Capacity initiative***

DFS continues to pursue the measures already passed to be able to continuously provide the capacity demanded in airspace against a background of rising traffic volumes. Safety is the number one priority. In the Centre Initiative, DFS has established 90 projects to ensure the market is provided with the capacity demanded.

An important focus is the training of new air traffic controllers, with numbers rising from currently 122 to 146 next year; relieving the pressure on upper airspace; working with the party to the collective agreements on boosting staff flexibility; recruiting fully trained air traffic controllers (known as ready entries) as well as investing in new technologies and projects of strategic importance.

Sufficient financial resources are required to be able to implement these initiatives, even in times of economic regulation. The targets for the third reference period are currently being negotiated.

### **7.2.2 Commercial business**

The management of the Group plans a further expansion of the commercial business when opportunities arise on the market. Marketing and consulting activities are being expanded worldwide. This expansion is being supported by setting up representative offices close to customers in the particularly promising markets of Southeast Asia and China.

For 2019, the management of the Group expects a rise in revenues in the double-digit million euro range, including through the take-up of activities of DFS Aviation Services Bahrain. Droniq – a joint venture with Deutsche Telekom – will generate planned losses at first from the setting up of the company structure and the development of products.

This will lead to a disproportionate rise in costs in the commercial business in the coming reporting year when compared to revenues. For this reason, the Board of Managing Directors forecasts negative earnings in the single-digit million euro range in the commercial business in 2019.

## **7.3 Results and financial position**

### **7.3.1 Revenues and costs**

Expenses in the regulated business are primarily influenced by the economic regulation of unit rates and staff costs (through the discount rate for occupational pensions).

Staff costs will continue to rise considerably due to the rise in recruitment of air traffic control staff and the increase in costs for occupational pensions because of the continued decline in the discount rate. That is why DFS will face considerable financial challenges in 2019 and in the following years of the third reference period.

The Board of Managing Directors is counteracting these challenges by using collective bargaining measures and the targeted reduction of costs under the five-point programme. It focuses on boosting productivity and is responding to the dynamic demand with increased staff flexibility and a targeted rise in staff recruitment. Airspace structures and procedures are being optimised and capital expenditure on recoverable, high-performance and harmonised ATM systems is being stepped up. Project and general costs are being reduced in this manner.

It is expected that growth rate in traffic will be higher than assumed in the second reference period.

The determination of the performance plan for air navigation services, and the associated economic regulation of air navigation charges, leads to the continued splitting of the traffic risk and revenue risk between airspace users and air navigation service providers. Due to the wide fluctuations in the traffic forecasts issued by the national supervisory authorities and the long period covered by the forecast period, these risks can only be estimated with a high degree of uncertainty.

The Board of Managing Directors also sees the potential for negative consequences for earnings from the incentive system (capacity) that has been introduced. Due to the current splitting of traffic risk and cost risk, air navigation service providers are being burdened with the consequences stemming from the changes in certain factors over which they have no control, such as shifts in traffic streams, deviations from traffic forecasts, weather conditions or strikes by air traffic services personnel in neighbouring countries. The Board of Managing Directors calls for national circumstances to be better taken into account in economic regulation in the future than has been the case so far.

### **7.3.2 Capital expenditure**

Capital expenditure on air navigation systems to expand capacity and on infrastructure, as well as on replacement investments, will be financed from cash flow or loans and amortised by matched depreciation/amortisation charges.

Through the application of the new IFRS 16 (Leasing), DFS expects assets in the low double-digit million euro range to be capitalised as at 1 January 2019, which will lead to depreciation in the low single-digit million euro range in 2019.

Overall, the level of depreciation in 2019 is scheduled to come in below the level of 2018.

### 7.3.3 Liquidity

The financial strategy of DFS is primarily being 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 mean that the pension plan assets are not yielding substantial low-risk income. In this environment, DFS is currently paying penalty interest rates of 30 - 40 basis points on its demand deposits. The development of earnings and the maturity of two debenture loans in the coming reference period will have a material effect on liquidity.

### 7.3.4 General statement and earnings forecast

Overall, the Board of Managing Directors expects stable growth in air traffic in Germany. Based on current estimates, it is assumed that the growth in traffic will come in slightly below the high level of the previous years.

In 2019, revenues will remain at the level of 2018 due to the strictly regulated, and therefore declining, unit rates, despite the growth in traffic volumes.

The Board of Managing Directors is therefore discussing the regulatory environment with all stakeholders and is reviewing legal measures against the determinations set out in the performance plans and the non-recognition of uncontrollable costs.

It expects that the Federal Republic of Germany will continue to assume cost components of air navigation charges by the Federal budget to strengthen the German air transport industry over the long term. A continuation of the strengthening of the equity of DFS through funds provided from the Federal budget beyond 2019 is not planned.

DFS is continuing to pursue its package of measures to boost capacity and improve the plannability of air traffic (see section 2.2.1) in a demanding environment.

In 2019, the Board of Managing Directors expects the Group to record negative earnings at the level of the previous year.

**Langen, 20 March 2019**

**The Board of Managing Directors**

**Prof Klaus-Dieter Scheurle**

**Robert Schickling**

**Dr Michael Hann**

**DFS Deutsche Flugsicherung GmbH**  
**Consolidated statement of comprehensive income**  
**for the period 1 January 2018 to 31 December 2018**

	Note	2018 €'000	2017 <sup>1)</sup> €'000
<b>Continuing operations</b>			
Revenues	5	1,107,053	1,103,553
Changes in inventory and other own work capitalised	6	17,448	27,799
Other operating income	7	53,419	59,399
<b>Total operating revenues and income</b>		<b>1,177,920</b>	<b>1,190,751</b>
Cost of materials and services	8	-12,492	-13,083
Employee expenses	9	-878,863	-862,784
Other operating expenses <sup>1)</sup>	12	-145,018	-147,191
<b>Earnings before interest, taxes, depreciation and amortisation (EBITDA)</b>		<b>141,547</b>	<b>167,693</b>
Depreciation and amortisation	10	-117,226	-116,260
Impairment losses on financial assets and contract assets	11	-934	-5,636
<b>Earnings before interest and taxes (EBIT)</b>		<b>23,387</b>	<b>45,797</b>
Financial income	13	119,649	107,641
Financial expenses	13	-173,708	-131,361
<b>Financial result</b>	13	<b>-54,059</b>	<b>-23,720</b>
<b>Profit (loss) before income taxes</b>		<b>-30,672</b>	<b>22,077</b>
Income taxes	14	577	8,695
<b>Earnings for the period (continuing operations)</b>		<b>-30,095</b>	<b>30,772</b>
<b>Allocation of the earnings of the period</b>			
Shareholder of the parent company		-30,095	30,772
Non-controlling interests		0	0

<sup>1)</sup> Prior-year figures adjusted

	Note	2018 €'000	2017 <sup>2)</sup> €'000
<b>Earnings for the period (continuing operations)</b>		<b>-30,095</b>	<b>30,772</b>
<b>Other comprehensive income</b>			
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	26	-171,042	196,191
Tax effects		0	0
Items that can be reclassified in profit or loss			
Changes in the fair value of debt instruments at fair value through other comprehensive income	26	-15,284	0
Changes in the fair value of available-for-sale financial assets <sup>2)</sup>	26	0	19,660
Currency differences from the conversion of foreign operations or investments <sup>2)</sup>	26	7,362	-14,702
Tax effects		0	0
<b>Other comprehensive income for the period</b>	26	<b>-178,964</b>	<b>201,149</b>
<b>Total results for the period</b>		<b>-209,059</b>	<b>231,921</b>
<b>Allocation of the total result</b>			
Shareholder of the parent company		-209,059	231,921
Non-controlling interests		0	0

<sup>2)</sup> Prior-year figures adjusted

## DFS Deutsche Flugsicherung GmbH

### Consolidated balance sheet as at 31 December 2018

	Note	31 Dec 2018 €'000	31 Dec 2017 €'000
<b>Assets</b>			
Goodwill	15	80	80
Intangible assets	16	191,682	207,280
Property, plant and equipment	17	499,858	507,216
Investment property	18	692	722
Financial assets accounted for using the equity method	19	14,359	1,348
Financial assets	19	10,586	5,533
Derivative financial instruments	19	0	2,306
Other receivables and assets	22	75,292	61,821
Deferred tax assets	14	13,639	12,986
<b>Non-current assets</b>		<b>806,188</b>	<b>799,292</b>
Trade receivables	20	157,741	155,796
Contract assets	21	7,146	6,185
Other receivables and assets	22	23,134	37,201
Inventories	23	5,267	5,305
Financial assets	24	677,166	963,440
Liquid funds	25	455,089	276,921
Tax assets	32	26,135	7,088
<b>Current assets</b>		<b>1,351,678</b>	<b>1,451,936</b>
<b>Balance sheet total (assets)</b>		<b>2,157,866</b>	<b>2,251,228</b>

## DFS Deutsche Flugsicherung GmbH

### Consolidated balance sheet as at 31 December 2018

	Note	31 Dec 2018 €'000	31 Dec 2017 €'000
<b>Equity and liabilities</b>			
Subscribed capital	26	755,288	530,288
Capital reserve	26	74,296	74,296
Remeasurement reserves	26	-1,552,537	-1,373,573
Retained earnings	26	57,446	87,685
<b>Equity</b>		<b>-665,507</b>	<b>-681,304</b>
Provisions for pensions and similar obligations	27	2,016,601	2,183,795
Other provisions	28	208,640	192,526
Financial liabilities	29	226,723	232,454
Trade payables	30	570	758
Other liabilities	31	19,135	19,873
Income tax obligations	32	30,869	30,869
<b>Non-current liabilities</b>		<b>2,502,538</b>	<b>2,660,275</b>
Other provisions	28	183,219	109,546
Financial liabilities	29	9,927	34,072
Trade payables	30	30,238	36,623
Contract liabilities	21	1,408	2,972
Other liabilities	31	95,943	88,944
Income tax obligations	32	100	100
<b>Current liabilities</b>		<b>320,835</b>	<b>272,257</b>
<b>Balance sheet total (equity and liabilities)</b>		<b>2,157,866</b>	<b>2,251,228</b>

# DFS Deutsche Flugsicherung GmbH

## Consolidated statement of changes in equity

### for the period 1 January 2018 to 31 December 2018

Note	Subscribed capital	Capital reserves	Revaluation reserves	Retained earnings	Total	Of which attributable to the Shareholder of the parent company
26	€'000	€'000	€'000	€'000	€'000	€'000
<b>As at 1 Jan 2017</b>	<b>315,888</b>	<b>74,296</b>	<b>-1,574,722</b>	<b>56,913</b>	<b>-1,127,625</b>	<b>-1,127,625</b>
Capital increase	214,400	0	0	0	214,400	214,400
Payment of dividend to Shareholder	0	0	0	0	0	0
<b>Operating result</b>						
Net income	0	0	0	30,772	30,772	30,772
<b>Other comprehensive income</b>						
Remeasurement of the net defined benefit liability	0	0	196,191	0	196,191	196,191
Changes in the fair value of available-for-sale financial assets <sup>3)</sup>	0	0	19,660	0	19,660	19,660
Currency differences from the conversion of foreign operations or investments <sup>3)</sup>	0	0	-14,702	0	-14,702	-14,702
Tax effects	0	0	0	0	0	0
<b>As at 31 Dec 2018</b>	<b>530,288</b>	<b>74,296</b>	<b>-1,373,573</b>	<b>87,685</b>	<b>-681,304</b>	<b>-681,304</b>
Adjustments from the initial application of IFRS 15	0	0	0	-144	-144	-144
<b>Adjusted as at 1 Jan 2018</b>	<b>530,288</b>	<b>74,296</b>	<b>-1,373,573</b>	<b>87,541</b>	<b>-681,448</b>	<b>-681,448</b>
Capital increase	225,000	0	0	0	225,000	225,000
Payment of dividend to Shareholder	0	0	0	0	0	0
<b>Operating result</b>						
Net loss	0	0	0	-30,095	-30,095	-30,095
<b>Other comprehensive income</b>						
Remeasurement of the net defined benefit liability	0	0	-171,042	0	-171,042	-171,042
Changes in the fair value of debt instruments at fair value through other comprehensive income	0	0	-15,284	0	-15,284	-15,284
Changes in the fair value of available-for-sale financial assets	0	0	0	0	0	0
Currency differences from the conversion of foreign operations or investments	0	0	7,362	0	7,362	7,362
Tax effects	0	0	0	0	0	0
<b>As at 31 Dec 2018</b>	<b>755,288</b>	<b>74,296</b>	<b>-1,552,537</b>	<b>57,446</b>	<b>-665,507</b>	<b>-665,507</b>

<sup>3)</sup> Prior-year figures adjusted

## DFS Deutsche Flugsicherung GmbH

### Consolidated cash flow statement

#### for the period 1 January 2018 to 31 December 2018

Note	2018	2017
34	€'000	€'000
Net loss (-) / income (+)	-30,095	30,772
of which interest	16,568	-11,441
of which dividend received	721	603
of which deferred income taxes	76	945
of which income taxes paid (-)	-18,773	-7,076
Depreciation and amortisation on intangible assets and property plant and equipment	117,227	116,260
Income (-) from asset disposals	-82	-123
Losses (+) from asset disposals	994	2,213
Other non-cash income (-) / expenses (+) from remeasurement	-179,112	201,149
Increase (-) / decrease (+) in trade receivables	-1,945	11,352
Increase (-) / decrease (+) in contract assets	-960	588
Increase (-) in other receivables and assets	-4,442	-29,197
Decrease (+) / increase (-) in inventories	37	-261
Increase (-) in current tax assets	-19,047	-6,027
Increase (-) in deferred tax assets	-653	-9,641
Decrease (-) in provisions for pensions and similar obligations	-167,194	-129,479
Increase (+) in other provisions	89,787	76,991
Decrease (-) / increase (+) in trade payables	-6,573	6,067
Decrease (+) in contract liabilities	-1,563	0
Increase (+) in other liabilities	6,261	7,081
Decrease (-) from the QTE transaction	-200	-407
<b>Cash outflow/inflow from operating activities</b>	<b>-180,992</b>	<b>265,897</b>
Payments (-) for investments in intangible assets and property, plant and equipment	-96,961	-111,257
Payments (-) for investments in financial assets	-18,570	-540
Proceeds (+) from disposal of intangible assets and property, plant and equipment	1,811	2,077
Proceeds (+) from disposals of financial assets	2,813	826
<b>Cash outflow from investing activities</b>	<b>-110,907</b>	<b>-108,894</b>
Principal payment (-) on financial debt	-25,000	-87,500
Taking on (+) financial debt	361	785
Payments (-) for finance leases	0	-15
Amounts paid in by Shareholder	225,000	214,400
Financial result	-17,334	11,521
Interest received	8,341	8,591
Interest paid	-7,575	-8,671
<b>Cash inflow from financing activities</b>	<b>183,793</b>	<b>139,111</b>
<b>Net change in cash and cash equivalents</b>	<b>-108,106</b>	<b>296,114</b>
Cash and cash equivalents at the beginning of the year	1,240,361	944,247
<b>Cash and cash equivalents at the end of the year</b>	<b>1,132,255</b>	<b>1,240,361</b>

# Notes to the consolidated financial statements 2018

## 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 of Transport and Digital Infrastructure (BMVI).

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 navigation 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:

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Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards

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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)

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Regulation (EC) No 1794/2006 of the Commission of 6 December 2006 laying down a common charging scheme for air navigation services

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Regulation (EU) No 1191/2010 of 16 December 2010 amending Regulation (EU) No 1794/2006 of the Commission on the development of a common charging scheme for air navigation services

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Regulation (EU) No 390/2013 of the Commission of 3 May 2013 laying down a performance scheme for air navigation services and network functions

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Regulation (EU) No 391/2013 of the Commission of 3 May 2013 laying down a common charging scheme for air navigation services

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oblige the DFS Group to draw up its consolidated financial statements as at 31 December 2018 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 Board of Managing Directors 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 20 March 2019. 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 Board of Managing Directors. 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](http://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 the 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 (see Note 4.3.4).

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 assumption of influence can be reversed through a clear demonstration to the contrary. 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.

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.

Changes in scope of consolidation						
	As at 31 Dec 2017	Consolidation/ reconciliation	Additions	Disposals		As at 31 Dec 2018
<b>Consolidated companies (controlling interest)</b>	7	0	1	0		8
of which domestic	6	0	0	0		6
of which foreign	1	0	1	0		2
<b>Associated companies – measurement using equity method</b>	1	0	2	0		3
of which domestic	1	0	0	0		1
of which foreign	0	0	2	0		2
<b>Investments (non-controlling) – measurement using cost method</b>	4	0	0	0		4
of which domestic	1	0	0	0		1
of which foreign	3	0	0	0		3

On 12 September 2018, DFS Aviation Services founded FREQUENTIS DFS AEROSENSE GmbH together with FREQUENTIS AG. With a capital contribution of €10,500.00, DFS Aviation Services holds 30.00 percent of FREQUENTIS DFS AEROSENSE. The company consults, supplies and maintains information and communication facilities for air navigation services.

On 17 December 2018, DFS International Business Services acquired 23.60 percent of the shares in Unifly NV, headquartered in Antwerp, Belgium. It paid €12,999,945.00 in cash for 217,791 new preference shares. Unifly develops software for the safe integration of drones into air traffic.

On 20 December 2018, DFS Aviation Services, together with DFS International Business Services, founded DFS AVIATION SERVICES BAHRAIN Co. W.L.L., headquartered in Manama, Bahrain. Legal stipulations in Bahrain require at least two parties to be involved in each company. Therefore, DFS Aviation Services holds 99.00 percent (43,065.00 Bahraini dinars) and DFS International Business Services holds 1.00 percent (435.00 Bahraini dinars) of the capital in the company. The object of the company is the supportive provision of operational and administrative personnel in Bahrain.

Droniq GmbH, Frankfurt am Main, Germany, is in the process of being founded. DFS International Business Services intends to take a stake of 51.00 percent of the registered capital in exchange for a cash payment of €1,020,000.00. The other 49.00 percent will be held by Telekom Innovation Pool GmbH. The object of the company is the provision, distribution and marketing of services for drones and other aircraft in Europe. The DFS Group will recognise Droniq as a consolidated company with a minority interest because DFS International Business Services holds a casting vote in the supervisory board and can, if needed, materially determine the business and financial activities.

**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		
<b>Consolidated companies (controlling interest)</b>					
DFS IBS	DFS International Business Services GmbH	Langen, Germany	100.00	47,007	-811
DFS Energy	DFS Energy GmbH	Langen, Germany	100.00	5,132	0 <sup>4)</sup>
DAS	DFS Aviation Services GmbH	Langen, Germany	100.00	11,794	0 <sup>5)</sup>
Eisenschmidt	R. Eisenschmidt GmbH	Egelsbach, Germany	100.00	168	0 <sup>5)</sup>
KAT	Kaufbeuren ATM Training GmbH	Kaufbeuren, Germany	100.00	100	0 <sup>5)</sup>
ANS	Air Navigation Solutions Ltd.	London, United Kingdom	100.00	£288 thousand	-£1,572 thousand
DAS Bahrain	DFS AVIATION SERVICES BAHRAIN Co. W.L.L.	Manama, Bahrain	100.00	42 thousand (Bahraini dinars)	-2 thousand (Bahraini dinars)
Droniq	Droniq GmbH (in the process of being founded)	Frankfurt, Germany	51.00	--	--
<b>Associated companies – measurement using equity method</b>					
FCS	FCS Flight Calibration Services GmbH	Braunschweig, Germany	55.00	4,122 <sup>6)</sup>	514 <sup>6)</sup>
AEROSENSE	FREQUENTIS DFS AEROSENSE GmbH	Vienna, Austria	30.00	32	-3
Unify	Unify NV	Antwerp, Belgium	23.60	2,996 <sup>6)</sup>	-2,066 <sup>6)</sup>
<b>Investments (non-controlling) – measurement using cost method</b>					
Investment through DFS Deutsche Flugsicherung GmbH:					
GroupEAD	GroupEAD Europe S.L.	Madrid, Spain	36.00	2,165 <sup>6)</sup>	651 <sup>6)</sup>
BILSODA	BILSODA GmbH & Co. KG	Pullach, Germany	24.90	2,692 <sup>6)</sup>	-81 <sup>6)</sup>
Investment through DFS International Business Services GmbH:					
ESSP SAS	European Satellite Services Provider Société par Actions Simplifiée	Toulouse, France	16.67	12,077 <sup>6)</sup>	3,329 <sup>6)</sup>
Investment through DFS Aviation Services GmbH:					
TATS	Tower Air Traffic Services S.L.	Madrid, Spain	50.00	1,003 <sup>6)</sup>	--

<sup>4)</sup> There is a profit-and-loss transfer agreement with DFS

<sup>5)</sup> There is a profit-and-loss transfer agreement with DFS International Business Services

<sup>6)</sup> Values as at 31 December 2017

### 3.3 Other investments

Disclosures on associated companies			
	FCS	AEROSENSE	Unify
	€'000	€'000	€'000
Total registered capital	205 <sup>8)</sup>	35	6,290 <sup>8)</sup>
Shareholding in %	55.00	30.00	23.60
Additional shareholders	SKYNAV S.A., Belgium, 25.00% AUSTRO CONTROL, Austria, 20.00%	FREQUENTIS AG, Austria, 70.00%	Five managing directors, 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 --
Current assets	2,989 <sup>8)</sup>	35	2,778 <sup>8)</sup>
Non-current assets	4,974 <sup>8)</sup>	0	716 <sup>8)</sup>
Current liabilities	1,307 <sup>8)</sup>	3	498 <sup>8)</sup>
Non-current liabilities	2,534 <sup>8)</sup>	0	0 <sup>8)</sup>
Equity	4,122 <sup>8)</sup>	32	2,996 <sup>8)</sup>
Net income	514 <sup>8)</sup>	-3	-2,066 <sup>8)</sup>
Revenues	9,278 <sup>8)</sup>	0	150 <sup>8)</sup>

<sup>8)</sup> Values as at 31 December 2017

<b>Disclosures on investments (non-controlling)</b>				
	<b>GroupEAD</b>	<b>BILSODA</b>	<b>ESSP SAS</b>	<b>TATS</b>
	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Total registered capital	1,000 <sup>9)</sup>	10 <sup>9)</sup>	1,000 <sup>9)</sup>	1,000 <sup>10)</sup>
Shareholding in %	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 Grundstücksgesellschaft 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)	186 (46)	0 (0)	417 (250)	0 (0)
Current assets	3,076 <sup>9)</sup>	465 <sup>9)</sup>	33,176 <sup>9)</sup>	1,003 <sup>9)</sup>
Non-current assets	220 <sup>9)</sup>	6,762 <sup>9)</sup>	1,083 <sup>9)</sup>	--
Current liabilities	1,131 <sup>9)</sup>	555 <sup>9)</sup>	20,631 <sup>9)</sup>	--
Non-current liabilities	0 <sup>9)</sup>	3,980 <sup>9)</sup>	1,551 <sup>9)</sup>	--
Equity	2,165 <sup>9)</sup>	2,692 <sup>9)</sup>	12,077 <sup>9)</sup>	1,003 <sup>9)</sup>
Net income	651 <sup>9)</sup>	-81 <sup>9)</sup>	3,329 <sup>9)</sup>	--
Revenues	7,012 <sup>9)</sup>	597 <sup>9)</sup>	58,323 <sup>9)</sup>	--

<sup>9)</sup> Values as at 31 December 2017

## 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 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 applied.

#### 4.1.1 Mandatory standards and interpretations

The DFS Group used the following revised and new standards and interpretations that were mandatory for the first time for the business year 2018. The endorsement by the European Union was made with the publication of the standard in the Official Journal of the European Union.

Standard	Title	Publication IASB	EU endorsement	Effective date
<b>New standards and interpretations</b>				
IFRS 15	Revenues from contracts with customers	28 May 2014	22 Sep 2016	1 Jan 2018
IFRS 9	Financial instruments	24 Jul 2014	22 Nov 2016	1 Jan 2018
IFRIC 22	Foreign currency transactions and advance consideration	8 Dec 2016	28 Mar 2018	1 Jan 2018
<b>Amendments to existing standards and interpretations</b>				
IFRS 15	Amendments to revenues from contracts with customers (postponement of date of first application)	11 Sep 2015	22 Sep 2016	1 Jan 2018
IFRS 15	Revenue from contracts with customers (Clarifications)	12 Apr 2016	31 Oct 2017	1 Jan 2018
IFRS 4	Insurance contracts (applying IFRS 9 with IFRS 4)	12 Sep 2016	3 Nov 2017	1 Jan 2018
Catalogue	Improvements to International Financial Reporting Standards IAS 28 and IFRS 1 (2014-2016 cycle)	8 Dec 2016	7 Feb 2018	1 Jan 2018
IFRS 2	Share-based payment (Classification and measurement of share-based transactions)	20 Jun 2016	26 Feb 2018	1 Jan 2018
IAS 40	Investment property (Transfers of investment property)	8 Dec 2016	14 Mar 2018	1 Jan 2018

The interpretation IFRIC 22 and the amendments to the standards IAS 40, IFRS 2 and 4 had no impact on the DFS consolidated financial statements.

The new standard IFRS 15 (including amendments and clarifications) governs the recognition of revenues as soon as the contracted goods or services have been transferred to the customer or control has passed and the benefits can be obtained. Revenue is recognised based on a five-step model. The customer contract and the distinct performance obligations contained therein have to be identified, the transaction price has to be determined, the price has to be allocated to the individual performance obligations and, then, revenue for the allocated proportionate transaction price has to be recognised. The new standard also requires comprehensive disclosures.

IFRS 9 contains comprehensive changes to the recognition, measurement and presentation of financial instruments and the related disclosures. The classification and measurement of financial assets are based on the business model of the entity and on the characteristics of the contractual terms of the cash flows. The new impairment model provides for expected losses on initial recognition depending on the default risk. The rules on hedge accounting provide for a more appropriate reflection of risk management activities for managing non-financial risks.

As part of the annual improvement cycle, the European Union carried out non-urgent adjustments and clarifications to existing standards. For the 2014-2016 cycle, these corrections encompassed IAS 28 (Investment in associates and joint ventures) and IFRS 1 (First-time adoption of international financial reporting standards). These smaller adjustments did not impact the consolidated financial statements.

#### 4.1.2 Voluntary standards and interpretations

The IASB has published the following revised or new standards and interpretations. 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 new and amended standards on the Group's results and financial position. The Group applies the standards when they become effective and early voluntary application will not be availed of.

Standard	Title	Publication IASB	EU endorsement	Effective date
<b>New standards and interpretations</b>				
IFRS 16	Leases	13 Jan 2016	31 Oct 2017	1 Jan 2019
IFRIC 23	Uncertainty over income tax treatments	7 Jun 2017	23 Oct 2018	1 Jan 2019
<b>Amendments to existing standards and interpretations</b>				
IFRS 9	Financial instruments (Prepayment features with negative compensation)	12 Oct 2017	22 Mar 2018	1 Jan 2019

On 31 October 2017, the EU endorsed IFRS 16 into European law. The new standard introduces a single model for leases for lessees. This encompasses a right-of-use asset and a corresponding lease liability at the present value of the lease payments under lease contracts with a term of more than 12 months. Recognition exemptions are available for short-term leases and leases where the underlying asset has a low value. Lessor accounting remains largely unchanged. IFRS 16 supersedes the existing lease standard IAS 17 and the associated interpretations and is mandatory retrospectively from 1 January 2019. Earlier application is permitted under certain conditions, with certain practical expedients being available for the transition. The DFS Group has applied the modified retrospective approach to IFRS 16 from 1 January 2019 for the first time. Comparative information will not be adjusted. Any cumulative effects incurred from the first application are recognised as adjustments to the opening balance sheet values in retained earnings as at 1 January 2019. Based on currently available information, the Group estimates that the new standard will lead to additional lease liabilities and corresponding right-of-use assets in the low double-digit euro range. The actual impact from the application of IFRS 16 might be different. The DFS Group applies the exemption option for company vehicles due to the short lease term and does not capitalise them. The former straight-line expenses under other operating leases are replaced with the depreciation of the right-of-use assets and interest expenses for the lease liabilities.

The interpretation IFRIC 23 has applied since 23 October 2018. The tax treatment of certain issues and transactions can depend on the future recognition or acceptance by the taxation authority or tax courts. IFRIC 23 contains, supplemented by IAS 12, recognition and measurement rules for tax risk balances and uncertainties for the tax treatment of certain issues and transactions. The interpretation is mandatory for the first time for business years beginning on or after 1 January 2019. Earlier application is permitted. The DFS Group sees no need to adjust the consolidated financial statements and will not apply it early.

On 22 March 2018, the European Union endorsed the amendments to IFRS 9. The amendments govern measurement at amortised cost or at fair value through other comprehensive income for certain financial assets with an early prepayment option where a party that chooses to terminate the contract early may receive or pay a reasonable additional compensation for doing so. The adjustments are to be applied to business years beginning on or after 1 January 2019. Earlier application is permitted. The amendments to IFRS 9 have no impact on the consolidated financial statements.

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

Standard	Title	Publication IASB	Expected effective date	Relevant to DFS
<b>New standards and interpretations</b>				
IFRS 14	Regulatory deferral accounts	30 Jan 2014	Not endorsed by EU	Yes
IFRS 17	Insurance contracts	18 May 2017	1 Jan 2021	No
<b>Amendments to existing standards and interpretations</b>				
IFRS 10 / IAS 28	Consolidated financial statements / investments in associates and joint ventures (Sale or contribution of assets between an investor and its associate or joint venture)	11 Sep 2014	Deferred indefinitely	Yes
IAS 28	Investments in associates and joint ventures (Long-term interests in associates and joint ventures)	12 Oct 2017	1 Jan 2019	Yes
Catalogue	Improvements to International Financial Reporting Standards (2015-2017 cycle)	12 Dec 2017	1 Jan 2019	Yes
IAS 19	Employee benefits (Plan adjustments, curtailments and settlements)	7 Feb 2018	1 Jan 2019	Yes
Conceptual framework	Amendments to the IFRS conceptual framework	29 Mar 2018	1 Jan 2020	Yes
IFRS 3	Business combinations	22 Oct 2018	1 Jan 2020	Yes
IAS 1 / IAS 8	Presentation of financial statements / Accounting policies, changes in accounting estimates and errors (Definition of 'material')	31 Oct 2018	1 Jan 2020	Yes

## 4.2 Items in the statement of comprehensive income

### 4.2.1 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 good or service 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 is required.

#### 4.2.2 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.

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##### 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.

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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.

#### **4.2.3 Operating expenses**

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

#### **4.2.4 Interest income and expenses**

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

## 4.3 Items in the balance sheet

### 4.3.1 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.

### 4.3.2 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:

<b>Intangible assets</b>	<b>Useful life</b>
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 property, plant and equipment.

### **4.3.3 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 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.

#### 4.3.4 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.

#### 4.3.5 Leases

The DFS Group concludes rental, tenancy and lease contracts with limited or unlimited terms to maintain flexibility as regards liquidity. It examines the contracts in accordance with IAS 17 to establish whether they are finance leases that have to be capitalised or operating leases to be expensed.

Lease transactions where the DFS Group, as lessee, bears basically all the risks and rewards of ownership of a leased asset are treated as finance leases. The Group therefore capitalises the leased object at the lower of the fair value or the present value of the minimum lease payments. Subsequently, the leased asset is written off over the shorter of the term of the lease or the estimated useful life. The DFS Group recognises the payment obligations resulting from future lease instalments under financial liabilities at the corresponding value of the leased asset. The minimum lease payments are split between a principal component and an interest component, with the interest being calculated using the effective interest rate method.

All other lease agreements where the Group is a lessee are treated as operating leases. The lease payments are expensed over the term of the lease arrangement on a straight-line basis.

#### 4.3.6 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.

#### 4.3.7 Financial instruments – Financial assets

Since 1 January 2018, the DFS Group has determined 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 asset 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 Board of Managing Directors 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 (see Note 4.2.2). 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.

The DFS Group applied IFRS 9 retrospectively, but decided not to adjust the prior-year figures. As at 1 January 2018, it splits financial assets between the categories "At fair value through profit or loss", "Held-to-maturity", "Loans and receivables" and "Available-for-sale".

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### **Measurement of financial assets until 1 January 2018**

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The category "At fair value through profit or loss" comprised financial assets that were held for trading. Financial assets were assigned to this category if they were acquired with the intention to sell in the short term. Derivatives also belonged to this category unless they qualified as hedging instruments. The DFS Group exclusively employed effective derivatives to hedge existing and future interest rate and currency risks under a hedging policy defined by the Board of Managing Directors and monitored by the Treasury department. While interest rate swaps were used to manage interest risk, cross-currency interest rate swaps hedged both interest rate risk and currency risk from financing in foreign currencies. Initial recognition as at the time of settlement and subsequent measurement occurred at fair value. Financial instruments were deemed current if their realisation was expected within 12 months. Otherwise, they were disclosed as non-current. Derivative financial instruments with positive fair values were reported as receivables; those with negative fair values were reported as liabilities. All derivative financial instruments were accounted for without the creation of designated hedging relationships. The changes in the fair value between the reporting dates were recognised in profit or loss in the financial result.

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The category "Held-to-maturity" contained non-derivative financial assets with fixed or determinable payments, and a fixed term. The company had to have the intention and ability to hold the financial instruments until maturity. Initial recognition occurred at fair value as at the time of settlement (plus direct transaction costs). Receivables denominated in a foreign currency were translated using the rate at the reporting date and recognised in the income statement. Subsequently, financial instruments were carried at amortised cost using the effective interest method. If there were doubts about the collectibility of receivables, they were written down to the lower recoverable amount based on the estimated probability of default. If the amount of the write-down declined in the following periods, the required reversals were made through the income statement. Interest income was considered in the financial result.

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The category "Loans and receivables" consisted of financial assets with fixed or determinable terms of payment which were not traded on an active market. The assets were broken down into non-current and current remaining terms. Initial recognition occurred at fair value as at the time of settlement (plus direct transaction costs). Receivables denominated in a foreign currency were measured at the balance sheet date and recognised in the income statement. Subsequent measurement was at amortised cost using the effective interest rate method for interest-bearing and non-interest-bearing loans and receivables. If there were doubts about the collectibility of receivables, they were written down to the lower recoverable amount based on the estimated probability of default and the impairment loss is recognised. If the amount of the write-down declined in the following periods, the required reversals were made through the income statement. Interest income was reported in the financial result.

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The category "Available-for-sale" included all other financial assets which cannot be allocated to any other category (such as financial assets or securities). Initial recognition occurred at fair value at the time of settlement (plus direct transaction costs). Subsequent measurement of this category occurred at fair value to the extent this can be reliably determined at the balance sheet date. Unrealised gains and losses from changes in fair value between the reporting dates were recognised directly in equity in other reserves. Upon the sale of financial assets or a permanent impairment of the market value below the carrying amount, other reserves were reversed and the cumulative gains and losses were recognised in profit or loss.

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Financial assets were reviewed at every balance sheet date to determine if there were indications of impairment under IAS 36. This involved comparing the carrying amount with the recoverable amount of the asset. If the recoverable amount of an asset was less than the carrying amount, an impairment was made to the recoverable amount.

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4.3.8 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.

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<b>Inputs</b>	
<b>Stage 1</b>	<b>Directly observable inputs</b>
	Observable (unadjusted) quoted prices in accessible active markets for identical assets or liabilities.
<b>Stage 2</b>	<b>Indirectly observable inputs</b>
	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).
<b>Stage 3</b>	<b>Unobservable inputs</b>
	Entity's own assumptions on the behaviour of a typical market participant.

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## **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).

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The DFS Group undertakes reclassifications within the hierarchy at the end of the business year in which the changes took place.

Further information on the determination of the fair value can be found in Notes 18 and 35.

#### **4.3.9 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 (see Note 4.2.2). 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.

#### **4.3.10 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 contacted 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.

#### 4.3.11 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 (see Note 4.2.2). 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.

#### 4.3.12 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 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 29.83 percent (previous year: 29.83%) 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.

#### **4.3.13 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.

Overdrafts taken up are reported by the DFS Group in the balance sheet as liabilities to credit institutions under current financial liabilities.

#### **4.3.14 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.

#### **4.3.15 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.

#### 4.3.16 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 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 (i.e. a net defined benefit asset), 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.

The development of plan assets is made up of the contributions, payments and income from a matched reinsurance contract. The reinsurance contract requires an investment in line with the investment guidelines under the general cover fund of the insurer as well as a separate fund-based investment. This fund-based investment allows the DFS Group's contract with the insurer to have a higher equity ratio to gain a long-term increase in return compared with the return provided by the general cover fund of the insurance consortium. The fund investment is restricted to a maximum of half of the whole capital reserve of the reinsurance contract. The expectations placed on the fund investment are formulated by a strategy commission. It considers the latest expectations for the capital markets and risk issues. Pension obligations for which there are plan assets are netted against the fair value of these plan assets.

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.

#### **4.3.17 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.

#### 4.3.18 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 expire.

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

#### 4.4 Currency translation

The DFS Group presents its consolidated financial statements in the reporting currency euro. Unless otherwise stated, all amounts are given in thousands of euro (€'000) 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.

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	Standard conversion	EMU conversion	Standard conversion	EMU conversion
		Mean exchange rate 31 Dec 2018	Asked price 31 Dec 2018	Mean exchange rate 31 Dec 2017	Asked price 31 Dec 2017
1 euro =					
US dollar	USD (\$)	1.14500	1.14800	1.19930	1.20230
Pound sterling	GBP (£)	0.89453	0.89653	0.88723	0.88923
Swiss franc	CHF	1.12690	1.12890	1.17020	1.17220

#### 4.5 Use of assumptions 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 and judgements 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 prognoses. 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 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.

## 4.6 Accounting policies, changes in accounting estimates and errors

### 4.6.1 IFRS 15 Revenues from contracts with customers

The DFS Group applied IFRS 15 for the first time as at 1 January 2018 on the basis of the modified retrospective method and recognised contract assets of €7.15 million and contract liabilities of €1.41 million. The adjustment amounts of €0.14 million from the first-time application were recognised cumulatively in retained earnings. They related to contract assets as at 1 January 2018 that would have had to be written off in sum. Under the modified retrospective method for the transition, the Group only applied IFRS 15 retroactively to contracts that had not been satisfied on the date of first-time application. The prior-year figures were not adjusted and are presented in accordance with the former rules. In addition, the Group did not apply in general the disclosure requirements under IFRS 15 to the comparative information.

Note 5 contains information on the type and time of satisfaction of the performance obligations as well as on revenue recognition.

There were no additional costs for obtaining contracts that would have had to be capitalised. As regards investment property, the Group does not provide the tenant with any ancillary services that would have required the separation of lease and non-lease components on first-time application of IFRS 15.

Accounting changes as at 1 January 2018 under IFRS 15				
Balance sheet items	Carrying amount as at 31 Dec 2017 before accounting changes	Adjustments from the initial application	Changes to presentation in the balance sheet	Carrying amount as at 1 Jan 2018 after accounting changes
	€'000	€'000	€'000	€'000
Future receivables from production contracts	6,185		-6,185	0
Contract assets	0		6,185	6,185
Retained earnings	87,685	-144		87,541
Contract liabilities	0		2,972	2,972
Other liabilities	111,789		-2,972	108,817

### 4.6.2 IFRS 9 Financial instruments

The first-time application of IFRS 9 was made retrospectively as at 1 January 2018. However, the prior-year figures were not adjusted within the meaning of IFRS 9.7.2.15. The Group kept the financial instruments that had been measured at amortised cost in this category. The Group classified all other financial instruments in the category "At fair value through profit or loss". Overall, there was no earnings impact on the consolidated financial statements. The resulting changes in presentation are shown in the following tables. The Group used the simplified approach to impairment, recognising lifetime expected credit losses on trade receivables, contract assets and lease receivables.

The DFS Group decided to present changes in the fair value of all equity instrument that had been classified as "Available-for-sale" in other comprehensive income as these investments are held as long-term strategic investments, whose sale is not expected in the short to medium term.

<b>Reclassifications of financial assets on the first-time application of IFRS 9</b>				
<b>Financial assets</b>	<b>Measurement category under IAS 39</b>	<b>Measurement category under IFRS 9</b>	<b>Carrying amount under IAS 39 as at 31 Dec 2017</b>	<b>Carrying amount under IFRS 9 as at 31 Jan 2018</b>
			<b>€'000</b>	<b>€'000</b>
Financial assets (loans)	Loans and receivables	Amortised cost	2,760	2,760
Financial assets (investments)	Available-for-sale	At fair value through other comprehensive income (equity instruments)	4,121	4,121
Derivative financial instruments	Available-for-sale	At fair value through profit or loss	2,306	2,306
Trade receivables	Loans and receivables	Amortised cost	155,796	155,796
Future receivables from production contracts	Loans and receivables	Amortised cost	6,185	6,185
QTE transaction	Held-to-maturity	Amortised cost	41,042	41,042
Capitalised value	Available-for-sale	Amortised cost	3,046	3,046
Other financial receivables and assets	Loans and receivables	Amortised cost	49,210	49,210
Securities	Available-for-sale	At fair value through profit or loss	963,440	963,440
Liquid funds	Loans and receivables	Amortised cost	276,921	276,921
			1,504,827	1,504,827
<b>Financial liabilities</b>	<b>Measurement category under IAS 39</b>	<b>Measurement category under IFRS 9</b>	<b>Carrying amount under IAS 39 as at 31 Dec 2017</b>	<b>Carrying amount under IFRS 9 as at 31 Jan 2018</b>
			<b>€'000</b>	<b>€'000</b>
Derivative financial instruments	At fair value through profit or loss	At fair value through profit or loss	1,320	1,320
Financial liabilities	Amortised cost	Amortised cost	265,206	265,206
Trade payables	Amortised cost	Amortised cost	37,381	37,381
Other financial liabilities	Amortised cost	Amortised cost	48,513	48,513
			352,420	352,420

Effect of reclassifications of financial assets on the measurement categories				
	At fair value through profit or loss	At fair value through other comprehensive income (until 2017: available-for-sale)	Amortised cost (until 2017: loans and receivables)	Held-to-maturity
	€'000	€'000	€'000	€'000
<b>31 Dec 2017</b>	<b>0</b>	<b>972,913</b>	<b>490,872</b>	<b>41,042</b>
Reclassification of financial investments (equity instruments not held for trading) from "Available-for-sale" to "At fair value through other comprehensive income"	--	--	--	--
Reclassification of derivative financial instruments and securities from "Available-for-sale" to "At fair value through profit or loss"	965,746	-965,746		
Reclassification of the capitalised value from "Available-for-sale" to "Amortised cost"		-3,046	3,046	
Reclassification of the QTE receivable from "Held-to-maturity" to "Amortised cost"			41,042	-41,042
<b>1 Jan 2018</b>	<b>965,746</b>	<b>4,121</b>	<b>534,960</b>	<b>0</b>

Effects of reclassifications of financial assets on the revaluation reserves					
	Remeasurement of the net defined benefit liability	Change in the fair value of available-for-sale financial assets	Changes in the fair value of financial assets at fair value through profit or loss	Changes in the fair value of financial assets at fair value through other comprehensive income	Currency differences from the conversion of foreign operations or investments
	€'000	€'000	€'000	€'000	€'000
<b>31 Dec 2017</b>	<b>-1,389,148</b>	<b>29,317</b>	<b>0</b>	<b>0</b>	<b>-13,742</b>
Reclassification of financial investments (equity instruments not held for trading) from "Available-for-sale" to "At fair value through profit or loss"		0		0	
Reclassification of derivative financial instruments and securities from "Available-for-sale" to "At fair value through profit or loss"	29,317	-29,317			
<b>1 Jan 2018</b>	<b>-1,359,831</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-13,742</b>

<b>Reconciliation of the consolidated statement of comprehensive income and consolidated balance sheet</b>			
<b>Items</b>	<b>Carrying amount as at 31 Dec 2017</b>	<b>Changes to presentation in the balance sheet</b>	<b>Carrying amount as at 1 Jan 2018</b>
	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Other operating expenses	152,827	-5,636	147,191
Impairment losses on financial assets and contract assets	0	5,636	5,636
Securities	963,440	-963,440	0
Financial assets	0	963,440	963,440
Revaluation reserves – change in the fair value of available-for-sale financial assets	5,063	14,597	19,660
Revaluation reserves – currency differences from the conversion of foreign operations or investments	-105	-14,597	-14,702
	<b>1,127,410</b>	<b>0</b>	<b>1,127,410</b>

#### **4.6.3 Other changes to accounting policies**

The provisions for recuperation cures for air traffic controllers were expanded in the business year to include specific groups of people. The people affected gained their recuperation cure entitlement for the first time in the new version of the Special Provisions for Employees in the Operational Air Navigation Services 2018. This led to a rise in provisions for recuperation cures of approximately €0.89 million.

The DFS Group applied the new Heubeck-Richttafeln 2018 G (mortality tables) for the first time in the business year 2018. The actuarial losses of €46.90 million from the amended biometric accounting basis were recognised directly in other comprehensive income.

The prime costs that the DFS Group has to reimburse to the airport operators under Section 27d of the German Aviation Act (LuftVG) for installations and facilities for the air navigation services are not classified as lease expenses. Therefore, the Group adjusted the prior-year figures of €8.52 million to €4.14 million (see Note 12 and 17).

In the business year, the Group adjusted the depreciation on the capitalised obligation to dismantle the old control tower at Berlin Schönefeld Airport to the start of the demolition and shortened the useful life. Contrary to previous assumptions, the control tower had an additional depreciation charge of €0.53 million.

## Notes to the statement of comprehensive income

### 5 Revenues

	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Revenues from air navigation services	1,027,652	1,031,940
Other revenues	79,401	71,613
	<b>1,107,053</b>	<b>1,103,553</b>

#### Breakdown of revenues from contracts with customers

31 Dec 2018	Regulated business	Commercial business	Total
	€'000	€'000	€'000
<b>Revenues from contracts with customers</b>	1,041,814	65,239	1,107,053
<b>Time point of revenue recognition</b>			
Recognised at a specific point in time	1,040,501	60,622	1,101,123
Recognised over a period of time	1,313	4,617	5,930

#### Transaction price assigned to performance obligations not (or only partially) satisfied at the year end

	<b>2018</b>
	<b>€'000</b>
Outstanding transaction price	16,197
of which expected to be recognised as revenue in 2019	10,420
of which expected to be recognised as revenue in 2020	3,059
of which expected to be recognised as revenue in 2021	1,709
of which expected to be recognised as revenue in 2022	780
of which expected to be recognised as revenue in 2023	76
of which expected to be recognised as revenue in 2024	76
of which expected to be recognised as revenue in 2025	77

Type of service	Type and time of satisfying the performance obligation and material payment conditions	Revenue recognition under IFRS 15
Air navigation services	<p>The air navigation services and the directly associated support activities derive from the sovereign task from Section 27c of the German Aviation Act (LuftVG). Airspace users obtain control of the air navigation services in the accounting sense as soon as they enter the airspace controlled by DFS and make use of the associated services.</p> <p>For terminal services, the Group issues statutory notifications of charges (<i>Gebührenbescheide</i>) to airspace users three times per month for each short cycle. 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.</p> <p>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.</p>	Revenue is recognised when the airspace users make use of the air navigation services.
Production and service contracts	<p>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.</p> <p>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.</p>	<p>The revenues from consultancy services are recognised in the period in which the services are rendered.</p> <p>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.</p> <p>The costs are expensed as they occur.</p>

**6 Changes in inventory and other own work capitalised**

	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Changes in inventory of finished goods and work in progress	-297	2,364
Other own work capitalised (primarily internally generated IT systems)	17,745	25,435
	<b>17,448</b>	<b>27,799</b>

**7 Other operating income**

	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Income from QTE transaction (exchange rate gains)	9,535	14,663
R&D project funding by the EU Commission and German Federal and regional ministries recognised in the income statement	26,462	32,240
Income from derecognition of liabilities	3,846	7,009
Income from reversal of provisions	9,061	674
Remaining	4,515	4,813
	<b>53,419</b>	<b>59,399</b>

**8 Cost of materials and services**

	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Raw materials, consumables used and purchased goods	4,000	4,723
Purchased services (flight inspection and consulting services)	8,492	8,360
	<b>12,492</b>	<b>13,083</b>

## 9 Employee expenses

	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Wages and salaries <sup>11)</sup>	620,960	605,223
Expenses for IFRS pensions	182,671	183,136
Social security costs and expenses for assistance	66,749	65,970
Cost of personnel belonging to the Federal Aviation Office (LBA)	8,483	8,455
	<b>878,863</b>	<b>862,784</b>

<sup>11)</sup> See Note 45.1 for the remuneration of the Board of Managing Directors

Besides 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.

<b>Average annual number of employees</b>		
	<b>2018</b>	<b>2017</b>
Salaried staff	5,197	5,180
Soldiers released from regular service	161	171
Wage-earners	21	22
Technical and commercial students and apprentices	148	98
<b>DFS Group staff</b>	<b>5,527</b>	<b>5,471</b>
Employees covered by the collective agreement for the public service (TVöD)	29	35
Established civil servants	114	131
<b>Personnel belonging to the Federal Aviation Office (LBA), Directorate Air Navigation Services</b>	<b>143</b>	<b>166</b>
	<b>5,670</b>	<b>5,637</b>

## 10 Depreciation and amortisation

	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Intangible assets	47,577	46,936
Property, plant and equipment	69,619	69,294
Investment property	30	30
	<b>117,226</b>	<b>116,260</b>

The impairment tests carried out in the business year resulted in no impairment charges being recognised for intangible assets; property, plant and equipment; investment property and financial assets.

**11 Impairment losses on financial assets and contract assets**

	<b>2018</b>	<b>2017<sup>12)</sup></b>
	<b>€'000</b>	<b>€'000</b>
Financial assets	934	5,636
Contract assets	0	0
	<b>934</b>	<b>5,636</b>

**12 Other operating expenses**

	<b>2018</b>	<b>2017<sup>12)</sup></b>
	<b>€'000</b>	<b>€'000</b>
Spare parts and maintenance	52,016	53,546
Occupancy costs	14,793	15,744
Rent and leasing costs <sup>12)</sup>	4,208	4,143
Reimbursement of expenses at cost price	4,304	4,372
Costs of external personnel	11,452	9,035
Other employee expenses	9,526	9,051
Legal and consultancy costs	6,382	4,496
Travel costs	7,689	6,919
Telecommunication	7,339	6,857
Costs from previous years	2,115	1,261
Vehicle costs	3,511	3,354
Asset disposals	1,007	2,848
Insurance policies	2,994	2,770
Magazines, journals, stationery	1,075	1,010
Advertising costs	2,518	1,562
Entertainment expenses	1,155	1,028
Costs of monetary transactions	1,956	2,783
Expenses from QTE transaction (exchange rate losses)	9,554	14,583
Remaining	1,424	1,829
	<b>145,018</b>	<b>147,191</b>

<sup>12)</sup> Prior-year figures adjusted

### 13 Financial result

	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Income from fund assets to finance retirement obligations	46,362	38,919
Gains from the financial assets of the investment entity	71,014	66,135
Interest income from QTE transaction	997	1,354
Other interest income	549	630
Income from foreign currency translation	6	0
Income from investments	721	603
Interest income from operating taxes	0	0
<b>Financial income</b>	<b>119,649</b>	<b>107,641</b>
Expenses from discounting provisions	-83,787	-74,725
Expenses from the financial assets of the investment entity	-84,482	-48,894
Other interest expense	-3,795	-6,601
Interest expense from QTE transaction	-804	-1,095
Interest expense from operating taxes	-814	-7
Result from fair value adjustment of derivatives	0	0
Expenses from securities	-26	-39
<b>Financial expenses</b>	<b>-173,708</b>	<b>-131,361</b>
<b>Financial result</b>	<b>-54,059</b>	<b>-23,720</b>

#### Additional disclosures on the financial result

	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Interest result from financial instruments determined using the effective interest rate method not classified in the category "At fair value through profit or loss"	3,823	-6,638
Interest income from impaired financial assets	367	386
Losses recognised directly in equity (-) / gains (+) from the measurement of financial assets	-15,284	19,660

**14 Income taxes**

	<b>2018</b>	<b>2017</b>
		<b>€'000</b>
Current income taxes	76	945
Deferred income taxes	-653	-9,640
	<b>-577</b>	<b>-8,695</b>

Current 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.

<b>Breakdown of effective income taxes</b>		
	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Corporation tax	38	417
Corporation tax from previous years	0	61
Solidarity surcharge	2	23
Solidarity surcharge from previous years	0	4
Municipal trade tax	36	389
Municipal trade tax from previous years	0	51
Foreign taxes	0	0
	<b>76</b>	<b>945</b>

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 and Air Navigation Solutions. DFS International Business Services 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 International Business Services). The sum of the results of the two groups and Air Navigation Solutions 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.

<b>Reconciliation from expected to current income tax expense</b>		
	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Net income before income taxes	-30,672	22,076
Expected tax rate (in %)	29.83	29.83
Expected income tax expense	0	6,585
Tax expense not relating to the period under review	0	116
Reduction in the tax base under Section 31b German Aviation Act (LuftVG)	0	-6,891
Deferred tax expense	-653	-9,640
Variances from consolidation	76	1,135
<b>Current income tax expense</b>	<b>-577</b>	<b>-8,695</b>
<b>Effective tax rate (in %)</b>	<b>1.88</b>	<b>-39.39</b>

Deferred taxes by balance sheet item

	Deferred tax assets		Deferred tax liabilities	
	2018 €'000	2017 €'000	2018 €'000	2017 €'000
Intangible assets	0	0	17,834	14,490
Property, plant and equipment	2,158	2,415	651	948
Financial assets	0	0	2,384	11,619
Receivables and other assets	382	337	2,028	2,054
Provisions for pensions and similar obligations	826,480	784,628	0	0
Other provisions	24,571	24,239	0	0
Liabilities	3,402	3,398	904	417
	<b>856,993</b>	<b>815,017</b>	<b>23,801</b>	<b>29,528</b>
Impact due to Section 31b LuftVG (until 2012: methodology n + 2 used)				
Intangible assets	0	0	-17,737	-14,490
Property, plant and equipment	-1,303	-1,632	-729	-761
Financial assets	0	0	-2,384	-11,619
Provisions for pensions and similar obligations	-804,356	-764,577	0	0
Other provisions	-19,977	-19,538	0	0
Liabilities	-876	-787	-528	0
	<b>-826,512</b>	<b>-786,534</b>	<b>-21,378</b>	<b>-26,870</b>
Other allowances	-14,762	-13,670	0	0
Netting	-2,423	-2,658	-2,423	-2,658
Air Navigation Solutions	-13	-14	0	0
Kaufbeuren ATM Training	28	16	0	0
DFS Aviation Services	328	829	0	0
	<b>13,639</b>	<b>12,986</b>	<b>0</b>	<b>0</b>

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

### 15 Goodwill

	Cost				As at 31 Dec
	As at 1 Jan	Additions	Disposals	Transfers	
2017	€'000	€'000	€'000	€'000	€'000
R. Eisenschmidt GmbH	80	0	0	0	80
	<b>80</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>80</b>
2018	€'000	€'000	€'000	€'000	€'000
R. Eisenschmidt GmbH	80	0	0	0	80
	<b>80</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>80</b>

	Amortisation					Carrying amount As at 31 Dec
	As at 1 Jan	Additions	Disposals	Transfers	As at 31 Dec	
2017	€'000	€'000	€'000	€'000	€'000	€'000
R. Eisenschmidt GmbH	0	0	0	0	0	80
	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>80</b>
2018	€'000	€'000	€'000	€'000	€'000	€'000
R. Eisenschmidt GmbH	0	0	0	0	0	80
	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>80</b>

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.

#### Underlying assumptions for the conduct of impairment tests for goodwill

	31 Dec 2018	31 Dec 2017
<b>R. Eisenschmidt GmbH</b>		
Planning period	2019 to 2023 <sup>13)</sup>	2018 to 2022 <sup>14)</sup>
Planned revenues in €'000	4,826 to 7,076	4,548 to 7,521
Revenue growth in %	+5.20 to +13.47	+7.43 to +27.62
EBT development in %	+11.24 to +47.33	+10.87 to +257.44
Investment ratio in %	+18.74 to +63.81	0.00

<sup>13)</sup> From Annual Plan 2019 of the shareholder meeting on 7 August 2018

<sup>14)</sup> From Annual Plan 2018 of the shareholder meeting on 11 December 2017

## 16 Intangible assets

	Cost				As at 31 Dec €'000
	As at 1 Jan €'000	Additions €'000	Disposals €'000	Transfers €'000	
<b>2017</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Concessions, rights and licences	590,784	15,588	-5,098	70,275	671,549
Internally generated intangible assets	54,912	25,627	0	0	80,539
Assets under construction (AUC)	80,846	7,701	0	-70,229	18,318
	<b>726,542</b>	<b>48,916</b>	<b>-5,098</b>	<b>46</b>	<b>770,406</b>
<b>2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Concessions, rights and licences	671,549	10,204	-1,668	3,489	683,574
Internally generated intangible assets	80,539	17,973	0	0	98,512
Assets under construction (AUC)	18,318	4,801	0	-3,347	19,772
	<b>770,406</b>	<b>32,978</b>	<b>-1,668</b>	<b>142</b>	<b>801,858</b>

	Amortisation				As at 31 Dec €'000	Carrying amount As at 31 Dec €'000
	As at 1 Jan €'000	Additions €'000	Disposals €'000	Transfers €'000		
<b>2017</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Concessions, rights and licences	481,897	43,238	-3,719	15	521,431	150,118
Internally generated intangible assets	37,997	3,698	0	0	41,695	38,844
Assets under construction (AUC)	0	0	0	0	0	18,318
	<b>519,894</b>	<b>46,936</b>	<b>-3,719</b>	<b>15</b>	<b>563,126</b>	<b>207,280</b>
<b>2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Concessions, rights and licences	521,431	43,054	-528	0	563,957	119,617
Internally generated intangible assets	41,695	4,524	0	0	46,219	52,293
Assets under construction (AUC)	0	0	0	0	0	19,772
	<b>563,126</b>	<b>47,578</b>	<b>-528</b>	<b>0</b>	<b>610,176</b>	<b>191,682</b>

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

Intangible assets for which there is a contractual obligation to accept but which do not yet come under the economic power of disposition of the DFS Group are shown in Note 39.2.

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

### Individually material intangible assets

	Carrying amount	Remaining useful life	Share of total carrying amount
	31 Dec 2018		31 Dec 2018
	€'000	in years	in %
iCAS software	90,357	1 - 8	47.14
P1/ATCAS software including release	32,244	6	16.82
PSS software	3,708	3 - 6	1.93
Realisation of iCWP	3,130	7	1.63
	<b>129,439</b>		67.53
<b>Total carrying amount</b>	<b>191,682</b>		100.00

### Capitalisation of borrowing costs for intangible assets

	31 Dec 2018	31 Dec 2017
Borrowing costs in €'000	1,104	1,091
Capitalisation rate in %	2.81	2.88

## 17 Property, plant and equipment

	Cost					As at 31 Dec
	As at 1 Jan	Additions	Disposals	Transfers	Currency differences	
2017	€'000	€'000	€'000	€'000	€'000	€'000
Land and buildings	698,842	4,678	-35,662	6,058	0	673,916
Technical equipment (plant) and machinery	1,085,258	42,840	-88,655	10,213	-4	1,049,652
Operating and office equipment	84,265	3,510	-4,097	286	0	83,964
Assets under construction (AUC)	19,486	11,313	0	-16,603	0	14,196
	<b>1,887,851</b>	<b>62,341</b>	<b>-128,414</b>	<b>-46</b>	<b>-4</b>	<b>1,821,728</b>
2018	€'000	€'000	€'000	€'000	€'000	€'000
Land and buildings	673,916	2,268	-2,512	296	0	673,968
Technical equipment (plant) and machinery	1,049,652	40,036	-36,810	7,519	0	1,060,397
Operating and office equipment	83,964	4,585	-2,712	105	0	85,942
Assets under construction (AUC)	14,196	17,094	0	-8,062	0	23,228
	<b>1,821,728</b>	<b>63,983</b>	<b>-42,034</b>	<b>-142</b>	<b>0</b>	<b>1,843,535</b>

	Depreciation					Carrying amount	
	As at 1 Jan	Additions	Disposals	Transfers	Currency differences	As at 31 Dec	As at 31 Dec
	€'000	€'000	€'000	€'000	€'000	€'000	€'000
<b>2017</b>							
Land and buildings	429,234	17,559	-33,808	0	0	412,985	260,931
Technical equipment (plant) and machinery	878,876	46,696	-87,791	-21	-1	837,759	211,893
Operating and office equipment	62,748	5,039	-4,023	6	-2	63,768	20,196
Assets under construction (AUC)	0	0	0	0	0	0	14,196
	<b>1,370,858</b>	<b>69,294</b>	<b>-125,622</b>	<b>-15</b>	<b>-3</b>	<b>1,314,512</b>	<b>507,216</b>
<b>2018</b>							
Land and buildings	412,985	17,185	-2,264	0	0	427,906	246,062
Technical equipment (plant) and machinery	837,759	47,132	-35,525	0	-1	849,365	211,032
Operating and office equipment	63,768	5,302	-2,661	0	-3	66,406	19,536
Assets under construction (AUC)	0	0	0	0	0	0	23,228
	<b>1,314,512</b>	<b>69,619</b>	<b>-40,450</b>	<b>0</b>	<b>-4</b>	<b>1,343,677</b>	<b>499,858</b>

**Capitalisation of borrowing costs for property, plant and equipment**

	31 Dec 2018	31 Dec 2017
Borrowing costs in €'000	375	434
Capitalisation rate in %	2.81	2.88

**Research and development costs**

	31 Dec 2018	31 Dec 2017
	€'000	€'000
Expenses for research and development	55,235	65,492
- of which research costs recognised in the income statement	37,819	40,289
- of which capitalised additions in assets under construction	17,416	25,203
Capitalised borrowing costs on development costs	557	423
Development costs in assets under construction as at 31 December	11,421	13,456
Scheduled depreciation of development costs based on the degree of completion notified	4,524	3,698
R&D project funding by the EU Commission and German Federal and regional ministries deducted from cost	0	0

The DFS Group concludes rental and lease contracts for land and buildings, technical facilities and machines as well as vehicles. The material rewards and risks are borne by the respective contracting party. There are no additional risks from these contracts for the Group. It does not make use of purchase price options, rather the items are transferred when the lease matures. Vehicles are leased for one year without an option to extend.

<b>Future minimum lease payments for operating leases</b>		
	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Up to 1 year	1,432	7,257
1 to 5 years	1,942	9,492
More than 5 years	611	4,895
	3,985	21,644

<b>Amounts for operating leases recognised in the statement of comprehensive income</b>		
	<b>2018</b>	<b>2017<sup>15)</sup></b>
	<b>€'000</b>	<b>€'000</b>
Minimum lease payments	4,208	4,143

<sup>15)</sup> Prior-year figures adjusted

The carrying amount of property, plant and equipment which the Group does not freely control (finance leases) amounts to €0 thousand (previous year: €0 thousand).

The qualified technological equipment (QTE) transaction was terminated except for the remaining shell structure (for additional disclosures see Note 22).

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 39.2.

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 €36 thousand (previous year: €6 thousand) for third parties for property, plant and equipment that was impaired, irrecoverably lost or decommissioned was recognised in the income statement.

## 18 Investment property

	Cost				As at 31 Dec €'000
	As at 1 Jan €'000	Additions €'000	Disposals €'000	Transfers €'000	
	2017 Property in Braunschweig	1,210	0	0	
2018 Property in Braunschweig	1,210	0	0	0	1,210

	Depreciation					Carrying amount
	As at 1 Jan €'000	Additions €'000	Disposals €'000	Transfers €'000	As at 31 Dec €'000	As at 31 Dec €'000
	2017 Property in Braunschweig	458	30	0	0	488
2018 Property in Braunschweig	488	30	0	0	518	692

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		
	2018 €'000	2017 €'000
Rental income	126	116
Depreciation	30	30
Repairs	0	0

The property is depreciated over the useful life of 40 years using the straight-line method. The latest review of the rental and land values revealed no indications of an impairment under IAS 36. The appraisal dated 10 October 2017 demonstrates the recoverability of the carrying amounts.

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<b>Appraisal on the value of the property</b>		
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 ( <i>Liegenschaftszinssatz</i> ) of the city of Braunschweig	5.60%	7.60%
Initial discount rate	7.50%	8.25%

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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.

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#### **Valuation technique**

Discounted cash flow method: The calculation of the fair value is based on current rental rates considering various factors such as the standard land values, 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
-

## 19 Financial assets

	Cost				As at 31 Dec €'000
	As at 1 Jan €'000	Additions €'000	Disposals €'000	Remea- surement €'000	
<b>2017</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Financial assets accounted for using the equity method	1,348	0	0	0	1,348
Investments	2,830	0	-57	0	2,773
Loans to associated companies	3,524	0	-764	0	2,760
Derivative financial instruments	1,765	541	0	0	2,306
	<b>9,467</b>	<b>541</b>	<b>-821</b>	<b>0</b>	<b>9,187</b>
<b>2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Financial assets accounted for using the equity method	1,348	13,011	0	0	14,359
Investments	2,773	0	-56	0	2,717
Loans to associated companies	2,760	5,560	-451	0	7,869
Derivative financial instruments	2,306	0	-2,306	0	0
	<b>9,187</b>	<b>18,571</b>	<b>-2,813</b>	<b>0</b>	<b>24,945</b>

	Impairments					Carrying amount As at 31 Dec €'000
	As at 1 Jan €'000	Additions €'000	Disposals €'000	Transfers €'000	As at 31 Dec €'000	
<b>2017</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Financial assets accounted for using the equity method	0	0	0	0	0	1,348
Investments	0	0	0	0	0	2,773
Loans to associated companies	0	0	0	0	0	2,760
Derivative financial instruments	0	0	0	0	0	2,306
	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9,187</b>
<b>2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Financial assets accounted for using the equity method	0	0	0	0	0	14,359
Investments	0	0	0	0	0	2,717
Loans to associated companies	0	0	0	0	0	7,869
Derivative financial instruments	0	0	0	0	0	0
	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>24,945</b>

There were no indications of a need to impair as required by IAS 36.

<b>Associated companies accounted for using the equity method</b>		
	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>€'000</b>	<b>€'000</b>
As at 1 Jan	1,348	1,348
Additions	13,011	0
Proportionate net income	0	0
Dividends received	0	0
<b>As at 31 Dec</b>	<b>14,359</b>	<b>1,348</b>

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 acquired 30.00 percent of the shares in FREQUENTIS DFS AEROSENSE and 23.60 percent of the shares in Unify. In both cases, the Group assumes material influence and accounts for the shares under the equity method (further disclosures in Note 3.3).

<b>Investments</b>					
	<b>GroupEAD</b>	<b>BILSODA</b>	<b>ESSP SAS</b>	<b>TATS</b>	<b>Total</b>
	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Shareholding in %	36.00	24.90	16.67	50.00	
Share capital	360	0	167	500	1,027
Liable capital ( <i>Haft einlagen</i> )	0	2	0	0	2
Other contributions	0	1,688	0	0	1,688
<b>As at 31 Dec 2018</b>	<b>360</b>	<b>1,690</b>	<b>167</b>	<b>500</b>	<b>2,717</b>

<b>Loans to associated companies</b>					
	<b>Term</b>	<b>Nominal value</b>	<b>Nominal interest rate</b>	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
		<b>€'000</b>	<b>in %</b>	<b>€'000</b>	<b>€'000</b>
<b>FCS</b>					
Loan: Hawker Beechcraft Super King Air FL-473 D-CFMD	2006 - 2017	5,000	4.00	0	94
Loan: Flight instrument system	2009 - 2019	900	5.25	58	154
Loan: Hawker Beechcraft Super King Air FL-626 D-CFME	2009 - 2025	4,300	5.25	2,251	2,512
Loan: Hawker Beechcraft Super King Air FL-1156	2018 - 2033	5,560	2.10	5,560	0
		<b>15,760</b>		<b>7,869</b>	<b>2,760</b>

With effect of 30 September 2018, DFS International Business Services granted FCS Flight Calibration Services a loan of €5.56 million to finance a calibration aircraft (Beechcraft Super King 350). Interest and principal payments are due in arrears at the end of every quarter. The term of the loan ends on 31 December 2033. To secure the loan, FCS Flight Calibration Services concluded an abstract acknowledgement of debt with, and in favour of, DFS.

## 20 Trade receivables

<b>Due dates of trade receivables</b>				
	<b>Up to 1 year</b>	<b>1 to 5 years</b>	<b>More than 5 years</b>	<b>Total</b>
	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
2018	157,741	0	0	157,726
2017	155,796	0	0	155,796

<b>Aged-list</b>		
	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>€'000</b>	<b>€'000</b>
Carrying amount	157,741	155,796
of which not impaired and		
- not yet overdue	149,423	149,609
- up to 30 days overdue	4,458	3,294
- 31 to 60 days overdue	2,382	1,515
- 61 to 180 days overdue	839	646
- more than 180 days overdue	639	732
of which impaired	0	0

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.

<b>Development of allowances</b>		
	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>€'000</b>	<b>€'000</b>
As at 1 Jan	11,553	6,034
Additions	1,053	7,700
Utilisation	0	0
Reversal	-2,213	-2,181
<b>As at 31 Dec</b>	<b>10,393</b>	<b>11,553</b>

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

	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Derecognition and write-off of receivables	-2,121	-254
Income from payment of receivables previously written off	7	134
Income from other derecognitions	20	3
Additions to specific allowances	-1,053	-7,700
Income from reversal of specific allowances	2,213	2,181

At the balance sheet date, there were no trade receivables in foreign currencies (previous year: none).

The DFS Group did not pledge any receivables as securities for loans.

**21 Contractual net values****Contract assets**

	<b>31 Dec 2018</b>	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>	<b>31 Dec 2017</b>
	<b>Total</b>	<b>Remaining term more than 1 year</b>	<b>Total</b>	<b>Remaining term more than 1 year</b>
	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Consulting services and service contracts	4,485	0	4,463	0
Software developments	1,497	0	0	0
Miscellaneous	1,163	0	1,722	0
	7,146	0	6,185	0

**Revenues and costs from contracts with customers**

	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Contract revenue recognised	7,533	2,075
Depreciation, amortisation and impairments	0	0
Costs incurred	7,186	1,865
Capitalised costs	0	0
Profit earned for ongoing projects	347	210

<b>Development of contract liabilities</b>		<b>2018</b>
		<b>€'000</b>
As at 1 Jan 2018		2,972
Additions		2,708
Revenues recognised in the business year that were included under contract liabilities at the beginning of the period		-1,834
Revenues recognised in the business year that were not included under contract liabilities at the beginning of the period		-2,438
<b>Contract liabilities</b>		<b>1,408</b>

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

## 22 Other receivables and assets

	<b>31 Dec 2018</b>	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>	<b>31 Dec 2017</b>
	<b>Total</b>	<b>Remaining term more than 1 year</b>	<b>Total</b>	<b>Remaining term more than 1 year</b>
	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
QTE transaction	36,004	28,817	41,042	34,374
Capitalised value	3,856	3,856	3,046	3,046
Receivables from EU grant funding	42,564	42,564	24,341	24,341
Interest receivables	1,341	0	1,463	0
Receivables from investments	72	0	0	0
Trusteeship ( <i>Treuhandverein</i> )	6,168	50	5,918	50
Creditors with debit balances	0	0	16,666	0
Remaining	1,451	5	822	10
Other receivables and assets (financial)	91,456	75,292	93,298	61,821
Remaining other receivables and assets (non-financial)	6,838	0	5,363	0
Prepayments	132	0	361	0
	<b>98,426</b>	<b>75,292</b>	<b>99,022</b>	<b>61,821</b>

<b>Aged-list</b>	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>€'000</b>	<b>€'000</b>
Carrying amount	98,426	99,022
of which not impaired and		
- not yet overdue	98,426	99,022
- 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

No receivables served as securities for loans or as collateral for other liabilities.

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 29). The new loan contracts concluded have fixed interest and principal payments 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.

## 23 Inventories

	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>€'000</b>	<b>€'000</b>
Goods in stock	4,986	4,956
Emission rights	281	349
	<b>5,267</b>	<b>5,305</b>

<b>Expenses and income recognised in the statement of comprehensive income</b>		
	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Raw materials and consumables used	2,602	2,336
Cost of purchased products	1,398	2,387
Impairment of raw materials and consumables used	31	7
Impairment of finished goods and goods for resale	0	0

## 24 Financial assets

	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>€'000</b>	<b>€'000</b>
Securities (at fair value through profit or loss)	<b>676,262</b>	<b>0</b>
Derivatives (at fair value through profit or loss)	<b>904</b>	<b>0</b>
Securities (available-for-sale)	<b>0</b>	<b>963,440</b>
	<b>677,166</b>	<b>963,440</b>

The DFS Group invested in a fund (legal name: ATCP-UI-FONDS) through an investment entity. 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. In the reporting year, the capital investments included the share that did not qualify as plan assets and which was therefore transferred to DFS Treuhandverein (trusteeship).

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 a long-term return on the whole portfolio of 1.50 percent per year on average over the investment horizon of three to five years.

The DFS Group defined asset allocation bands for the minimum and maximum 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 assigned benchmark cannot be replicated exactly in the asset class.
- 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 entity reviews these risks constantly. The exposures are adjusted at least once a month as needed and managed using derivatives, futures or options.

## 25 Liquid funds

	31 Dec 2018	31 Dec 2017
	€'000	€'000
Cash in hand and cheques	35	40
Cash at bank	455,054	276,881
	<b>455,089</b>	<b>276,921</b>

## 26 Equity

	31 Dec 2018	31 Dec 2017
	€'000	€'000
Subscribed capital	755,288	530,288
Capital reserve	74,296	74,296
Remeasurement reserves	-1,552,537	-1,373,573
Retained earnings	57,446	87,685
	<b>-665,507</b>	<b>-681,304</b>

The registered capital of the DFS Group amounts to €755,287,500.00 (seven hundred and fifty-five million two hundred and eighty-seven thousand five hundred euro). There are 7,552,875 shares with a nominal value of €100.00 each held by the sole Shareholder, the Federal Republic of Germany, represented by the Federal Ministry of Transport and Digital Infrastructure (BMVI). 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.

The Shareholder approved the consolidated financial statements, the Group management report and the financial statements as at 31 December 2017 under the German Commercial Code (HGB) in resolution number 160 dated 27 April 2018 and decided to carry forward the net loss 2017 under HGB:

Uses of net income as at	31 Dec 2017	31 Dec 2016
	€'000	€'000
Net loss (-) / profit (+)	-132,901	145,570
Gross dividend to the Shareholder	0	0
Carryforward	-132,901	145,570

<b>Other comprehensive income after taxes contained in the reserves</b>			
	<b>Remeasurement reserves</b>	<b>Other reserves</b>	<b>Other comprehensive income</b>
<b>31 Dec 2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Remeasurement of the net defined benefit liability	-171,042	0	-171,042
Changes in the fair value of debt instruments at fair value through other comprehensive income	-15,284	0	-15,284
Currency differences from the conversion of foreign operations or investments	7,362	0	7,362
	<b>-178,964</b>	<b>0</b>	<b>-178,964</b>
<b>31 Dec 2017</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Remeasurement of the net defined benefit liability	196,191	0	196,191
Changes in the fair value of available-for-sale financial assets <sup>16)</sup>	19,660	0	19,660
Currency differences from the conversion of foreign operations or investments <sup>16)</sup>	-14,702	0	-14,702
	<b>201,149</b>	<b>0</b>	<b>201,149</b>

<sup>16)</sup> Prior-year figures adjusted

## 27 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) <sup>17)</sup>	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".

<sup>17)</sup> In Note 27.6, the defined benefit obligations under the VersTV are further split between final salary benefits and benefits linked to average career earnings.

### 27.1 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 from 1 January 2005 receive benefits under the collective agreement covering pensions which are linked to average career earnings (Plan B). Under this system, a pension component is calculated each year based on the respective income and the old-age pension is determined based on the sum of the annual pension 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 operational activity until the earliest possible receipt of the statutory pension.

Both plans (VersTV and ÜVersTV) are financed by reinsurance policies that are recognised as plan assets within the meaning of IAS 19.8. The reinsurance contract requires an investment in line with the investment guidelines under the general cover fund of the insurer and a separate fund-based investment created for part of the assets. The latter, however, is limited to a maximum of half of the actuarial reserve.

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 compensates over the entire active period of employment and in retirement for the fact that these staff are no longer covered by the German civil service welfare provisions for healthcare.

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.

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.

## 27.2 Actuarial assumptions

In %	31 Dec 2018	31 Dec 2017
Discount rate	1.80	1.80
Projected return on plan assets	1.80	1.80
Salary trend	2.50	2.50
Projected increase in benefits <sup>18)</sup>	1.00 - 4.00	1.00 - 4.00

<sup>18)</sup> 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)

## 27.3 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	
		€'000	In %
Present value of defined benefit obligations at 31 Dec 2017		4,601,231	
Discount rate	Increase by 0.5 percentage points	-447,130	-9.72
	Decrease by 0.5 percentage points	524,648	11.40
Salary trend	Increase by 0.5 percentage points	210,823	4.58
	Decrease by 0.5 percentage points	-194,147	-4.22
Present value of defined benefit obligations at 31 Dec 2018		4,824,659	
Discount rate	Increase by 0.5 percentage points	-466,342	-9.67
	Decrease by 0.5 percentage points	547,183	11.34
Salary trend	Increase by 0.5 percentage points	214,936	4.45
	Decrease by 0.5 percentage points	-198,327	-4.11

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 set out in the VersTV 2005. This collective agreement has an adjustment of 2.00 percent per year as well as 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.

## **27.4 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.

### **27.4.1 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.

### **27.4.2 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 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 means that substantial returns cannot be earned, which reduces the speed at which the assets for occupational pensions may grow.

The investment form chosen by DFS Aviation Services offers a balanced mix of risk and return. The insurance contracts offer a guaranteed rate of 2.25 percent for old contracts and 0.90 percent for new contracts, including the grant of a terminal bonus.

### **27.4.3 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.

#### 27.4.4 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. With the latter, 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.

#### 27.5 Duration and expected pension and contribution payments

The DFS Group has concluded reinsurance policies with an insurance consortium consisting of four life insurance companies to secure its obligations from the collective agreement on pensions and transitional payments. This ensures that the benefits payable can actually be paid when the insured event arises. The capital investment of the consortium is made under the provisions of the German Insurance Supervision Act (VAG), which requires a separate investment in a fund-based pension insurance policy. All the consortium members to the group insurance policy are also members of the guarantee fund of the Protektor Lebensversicherungs-Aktiengesellschaft, ensuring that the interests of the insured are protected in the event of an insolvency of one of the companies (additional information can be found at [www.protektor-ag.de](http://www.protektor-ag.de)).

Expected due date of undiscounted payments	Up to 1 year	2 to 5 years	6 to 15 years
	€'000	€'000	€'000
Estimated pension payments <sup>19)</sup>	112,872	531,366	1,705,685
- of which reinsured with the insurance consortium	104,393	494,297	1,604,513
Expected employer contributions to plan assets	229,809	1,198,325	2,481,493

<sup>19)</sup> From the Aon-Hewitt detailed forecast 2018 to 2033 dated 29 May 2018

The weighted duration of the pension obligations amounts to 21.3 years (previous year: 21.4 years) as at 31 December 2018.

## 27.6 Defined benefit obligations

	VersTV (Pensions)	ÜVersTV (Transitional payments)	KTV (Insurance)	Other	Total
	€'000	€'000	€'000	€'000	€'000
<b>31 Dec 2017</b>					
As at 1 Jan 2017	3,222,410	1,096,877	240,744	5,558	4,565,589
Current service cost	118,297	55,807	2,128	117	176,349
Interest expense	54,386	18,308	4,029	92	76,815
Retirement benefits paid	-47,497	-40,626	-7,366	-480	-95,969
Actuarial gains (-) and losses (+)	-83,876	-8,298	-23,833	-8	-116,015
- of which changed parameters	-80,263	-14,621	-3,348	-36	-98,268
- of which experience-based adjustments	-3,613	6,323	-20,485	28	-17,747
<b>Present value of defined benefit obligations</b>	<b>3,263,720</b>	<b>1,122,068</b>	<b>215,702</b>	<b>5,279</b>	<b>4,606,769</b>
- of which benefits based on final salary					
Retirement payments	2,859,469	-	-	-	-
One-time payments	22,960	-	-	-	-
- of which benefits based on career average plan					
Retirement payments	381,291	-	-	-	-
One-time payments	0	-	-	-	-
<b>31 Dec 2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
As at 1 Jan 2018	3,263,720	1,122,068	215,702	5,279	4,606,769
Current service cost	112,360	54,222	1,903	110	168,595
Interest expense	58,270	19,830	3,814	89	82,003
Retirement benefits paid	-50,739	-42,239	-7,797	-545	-101,320
Acquisitions/disposals of businesses	0	451	0	0	451
Actuarial gains (-) and losses (+)	65,610	13,170	-5,331	-51	73,398
- of which changed parameters	0	-29	0	0	-29
- of which changed biometric basis	48,886	-7,451	5,553	-119	46,869
- of which experience-based adjustments	16,724	20,650	-10,884	68	26,558
<b>Present value of defined benefit obligations</b>	<b>3,449,221</b>	<b>1,167,502</b>	<b>208,291</b>	<b>4,882</b>	<b>4,829,896</b>
- of which benefits based on final salary					
Retirement payments	2,960,161	-	-	-	-
One-time payments	37,810	-	-	-	-
- of which benefits based on career average plan					
Retirement payments	451,250	-	-	-	-
One-time payments	0	-	-	-	-

## 27.7 Plan assets

	VersTV (Pensions) €'000	ÜVersTV (Transitional payments) €'000	KTV (Insurance) €'000	Other €'000	Total €'000
<b>31 Dec 2017</b>					
As at 1 Jan 2017	1,634,859	596,694	20,762	0	2,252,315
Projected return on plan assets	28,238	10,274	346	0	38,858
Employer contributions and payments	83,649	39,468	0	0	123,117
Retirement benefits paid	-40,031	-30,654	-807	0	-71,492
Actuarial gains (+) and losses (-)	61,063	19,361	-248	0	80,176
<b>Market value of plan assets</b>	<b>1,767,778</b>	<b>635,143</b>	<b>20,053</b>	<b>0</b>	<b>2,422,974</b>
Actual return on plan assets	89,301	29,635	98	0	119,034
<b>31 Dec 2018</b>					
As at 1 Jan 2018	1,767,778	635,143	20,053	0	2,422,974
Projected return on plan assets	33,594	12,415	353	0	46,362
Employer contributions and payments	83,533	45,959	0	0	129,492
Retirement benefits paid	-43,449	-30,293	-845	0	-74,587
Actuarial gains (+) and losses (-)	-104,921	7,715	-438	0	-97,644
<b>Market values of plan assets</b>	<b>1,736,535</b>	<b>670,939</b>	<b>19,123</b>	<b>0</b>	<b>2,426,597</b>
Not directly assigned plan assets from the capital investments of Universal Investment					386,699
<b>Market value of plan assets</b>					<b>2,813,296</b>
Actual return on plan assets	-71,327	20,130	-85	0	-51,282

In the reporting year, the Board of Managing Directors decided to qualify a part of the capital investments in ATCP-UI-FONDS (fund) as plan assets and secure this through DFS Treuhandverein e. V. (trusteeship) against the case of insolvency. These re-designated plan assets cannot be assigned unequivocally to the obligations under the collective agreements and are presented as a separate line item.

## Composition of plan assets

	31 Dec 2018 €'000	31 Dec 2017 €'000
Capital investment in the general cover fund of the insurer (VersTV, ÜVersTV)	1,549,906	1,476,373
Capital investment in the general cover fund of the insurer (KTV)	19,123	20,053
Capital investment in fund-based pension insurance policy (Pegasus Fund)	857,568	926,548
Capital investment in ATCP-UI-FONDS	386,699	0
<b>Market value of plan assets</b>	<b>2,813,296</b>	<b>2,422,974</b>

The capital investment of the consortium is subject to the provisions of the German Insurance Supervision Act (VAG). While the life insurance policies are subject to specific investment guidelines, capital investments in fund-based pension insurance policies allow a higher equity allocation. This should lead to higher returns than normal. The separate investment is managed by an investment company on behalf of the insurance company and the asset allocation is as follows:

<b>Allocation of the capital investment in fund-based pension insurance policy</b>		
	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>In %</b>	<b>In %</b>
Shares	31.00	67.30
Bonds	41.10	31.60
Cash	27.90	1.10

Each year as at 31 December, the life insurance companies compare the capital reserve of the fund-based pension insurance policy with the capital reserve of a normal pension insurance policy. They check if there is sufficient cover for the promised insurance benefits. If this is not the case, the contribution to the fund-based pension insurance policy is increased to boost the existing capital reserve to the required level.

The capital investment in fund-based pension insurance policies is measured at present value and not at market price. They are a component of assets and are determined by the consortium at the balance sheet date.

## 27.8 Remeasurement of the net defined benefit liability in equity

	<b>VersTV (Pensions)</b>	<b>ÜVersTV (Transitional payments)</b>	<b>KTV (Insurance)</b>	<b>Other</b>	<b>Total</b>
	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
<b>31 Dec 2017</b>					
As at 1 Jan 2017	-1,167,343	-298,036	-118,711	-1,248	-1,585,338
Remeasurement of the net defined benefit liability in equity (other comprehensive income) = actuarial gains (+) and losses (-) of the ongoing business year	144,939	27,659	23,585	8	196,191
<b>Remeasurement of the net defined benefit liability in equity</b>	<b>-1,022,404</b>	<b>-270,377</b>	<b>-95,126</b>	<b>-1,240</b>	<b>-1,389,147</b>
<b>31 Dec 2018</b>					
As at 1 Jan 2018	-1,022,404	-270,377	-95,126	-1,240	-1,389,147
Remeasurement of the net defined benefit liability in equity (other comprehensive income) = actuarial gains (+) and losses (-) of the ongoing business year	-170,531	-5,455	4,893	51	-171,042
<b>Remeasurement of the net defined benefit liability in equity</b>	<b>-1,192,935</b>	<b>-275,832</b>	<b>-90,233</b>	<b>-1,189</b>	<b>-1,560,189</b>

## 27.9 Net defined benefit liability

	VersTV (Pensions) €'000	ÜVersTV (Transitional payments) €'000	KTV (Insurance) €'000	Other €'000	Total €'000
<b>31 Dec 2017</b>					
As at 1 Jan 2017	1,587,551	500,183	219,982	5,558	2,313,274
Expenses in income statement	144,445	63,841	5,811	209	214,306
Retirement benefits paid	-7,466	-9,972	-6,559	-480	-24,477
Employer contributions	-83,649	-39,468	0	0	-123,117
Remeasurement of the net defined benefit liability in equity (other comprehensive income) = actuarial gains (-) and losses (+) of the ongoing business year	-144,939	-27,659	-23,585	-8	-196,191
<b>Net defined benefit liability</b>	<b>1,495,942</b>	<b>486,925</b>	<b>195,649</b>	<b>5,279</b>	<b>2,183,795</b>
<b>31 Dec 2018</b>					
As at 1 Jan 2018	1,495,942	486,925	195,649	5,279	2,183,795
Expenses in income statement	137,036	61,637	5,364	199	204,236
Retirement benefits paid	-7,290	-11,946	-6,952	-545	-26,733
Employer contributions	-83,533	-45,959	0	0	-129,492
Remeasurement of the net defined benefit liability in equity (other comprehensive income) = actuarial gains (-) and losses (+) of the ongoing business year	170,531	5,455	-4,893	-51	171,042
Transfers/reconciliation	0	451	0	0	451
<b>Net defined benefit liability</b>	<b>1,712,686</b>	<b>496,563</b>	<b>189,168</b>	<b>4,882</b>	<b>2,403,299</b>
Not directly assigned plan assets from the capital investments of Universal Investment					-386,699
<b>Net amount of debt items (+) and asset items (-) in the balance sheet</b>					<b>2,016,600</b>

## 27.10 Balance sheet amounts

	VersTV (Pensions)	ÜVersTV (Transitional payments)	KTV (Insurance)	Other	Total
	€'000	€'000	€'000	€'000	€'000
<b>31 Dec 2017</b>					
Present value of defined benefit obligations	3,263,720	1,122,068	215,702	5,279	4,606,769
Fair value of plan assets	1,767,778	635,143	20,053	0	2,422,974
Funding status obligation (+) and asset (-)	1,495,942	486,925	195,649	5,279	2,183,795
Amount not recognised as assets (IAS 19.64)	0	0	0	0	0
<b>Net amount of debt items (+) and asset items (-) in the balance sheet</b>	<b>1,495,942</b>	<b>486,925</b>	<b>195,649</b>	<b>5,279</b>	<b>2,183,795</b>
<b>31 Dec 2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Present value of defined benefit obligations	3,449,221	1,167,502	208,291	4,882	4,829,896
Fair value of plan assets	1,736,535	670,939	19,123	0	2,426,597
Funding status obligation (+) and asset (-)	1,712,686	496,563	189,168	4,882	2,403,299
Amount not recognised as assets (IAS 19.64)	0	0	0	0	0
<b>Net defined benefit liability</b>	<b>1,712,686</b>	<b>496,563</b>	<b>189,168</b>	<b>4,882</b>	<b>2,403,299</b>
Not directly assigned plan assets from the capital investments of Universal Investment					-386,699
<b>Net amount of debt items (+) and asset items (-) in the balance sheet</b>					<b>2,016,600</b>

## 27.11 Expenses and income recognised in the statement of comprehensive income

	VersTV (Pensions)	ÜVersTV (Transitional payments)	KTV (Insurance)	Other	Total
31 Dec 2017	€'000	€'000	€'000	€'000	€'000
Interest expense	54,386	18,308	4,029	92	76,815
Projected return on plan assets	-28,238	-10,274	-346	0	-38,858
Net interest expense	26,148	8,034	3,683	92	37,957
Current service cost	118,297	55,807	2,128	117	176,349
Past service cost	0	0	0	0	0
Expenses in income statement	144,445	63,841	5,811	209	214,306
Reversal of the provision for past service cost					-6,065
Interest income from capitalised value					-61
Contributions to the German mutual insurance association					2,510
Payments to defined contribution plans					36,030
- of which contributions to pension insurance					33,836
					<b>246,720</b>
31 Dec 2018	€'000	€'000	€'000	€'000	€'000
Interest expense	58,270	19,830	3,814	89	82,003
Projected return on plan assets	-33,594	-12,415	-353	0	-46,362
Net interest expense	24,676	7,415	3,461	89	35,641
Current service cost	112,360	54,222	1,903	110	168,595
Past service cost	0	0	0	0	0
Expenses in income statement	137,036	61,637	5,364	199	204,236
Reversal of the provision for past service cost					-6,065
Interest income from capitalised value					0
Contributions to the German mutual insurance association					2,764
Payments to defined contribution plans					36,767
- of which contributions to pension insurance					34,165
					<b>237,702</b>

## 28 Other provisions

	As at 1 Jan 2018	Utilisation	Reversal	Discounting	Additions	As at 31 Dec 2018	Remaining term more than 1 year
	€'000	€'000	€'000	€'000	€'000	€'000	€'000
Over-recovery of charges	209,874	-41,151	0	0	129,830	298,553	131,843
Personnel	35,128	-3,777	0	283	13,288	44,922	33,336
Re-conversion	18,060	-305	-143	549	83	18,244	17,834
Leasehold ( <i>Erbpacht</i> )	16,614	-588	-34	737	0	16,729	16,097
Preserving records	10,398	-887	0	116	784	10,411	9,530
Restructuring	1,738	0	-1,738	0	0	0	0
Miscellaneous	10,260	-1,170	-7,145	0	1,055	3,500	0
	<b>302,072</b>	<b>-47,878</b>	<b>-9,060</b>	<b>1,685</b>	<b>145,040</b>	<b>391,859</b>	<b>208,640</b>

The provision for over-recovery of charges relates to the over-recovery for the past service cost still to be allocated over six years.

For the en-route cost unit, a regulated procedure for determining charges has been in force since 2012. Across Europe, the respective national supervisory authorities lay down binding unit rates according to EU regulations. Consequently, traffic volume and cost changes impact profit and loss. If the values fall short, the DFS Group is authorised and obliged to demand any under-recovery and if the values exceed the relevant thresholds, it is authorised and obliged to return any over-recovery (carry-over). In 2015, the terminal services cost unit was shifted to a performance-based form of regulation. The charges are set by means of a statutory instrument of the Federal Government. For the en-route cost unit, the chances and risks resulting from the differences between planned and actual traffic volume are split between the airspace users and the Group.

The DFS Group participated in several bidding rounds in targeted investments in air traffic management under one of the EU funding programmes. From these grant programmes of the Connecting Europe Facility, the Group acquired grant funding to foster SESAR implementation projects over various terms until 2023. The DFS Group plans to use the grant funding to reduce air navigation services charges and includes the funding in the over-recovery of charges. Grant funding is recognised as accruals and recorded in profit or loss over the useful lives of the underlying property, plant and equipment.

Personnel provisions comprise provisions for early retirement, partial retirement, anniversary payments and recuperation cures (treatments) for air traffic controllers. Actuarial reports are available for early retirement, partial retirement and anniversary obligations.

Up until now, partial retirement obligations were recognised based on individual contractual agreements. The contributions were placed in a fiduciary account. With effect from 1 April 2017, DFS concluded a new collective agreement covering partial retirement with the air navigation services union (GdF) based on the so-called 'block model'. The work to be done over the entire period of the employment relationship under partial retirement is split in such a way that it is carried out in the first half, or block (working phase, *Beschäftigungsphase*). In the second half, or block, the employee is released from work and paid proportionally. The DFS Group recognises provisions for the release phase. Partial retirement obligations are based on

a discount rate as at 1 January 2019 of 1.80 percent (previous year: 1.80 percent) and a salary trend of 2.50 percent (previous year: 2.50 percent).

The provisions for lease interest (for a heritable building right) relate to payment obligations to the (German) Protestant Church (*Evangelische Kirchengemeinde*) concerning land, and the buildings upon it, in Berlin Schönefeld, which is not used operationally. The heritable building right (*Erbbaurecht*) has a term until 31 December 2041.

The provision for restructuring relates to personnel (severance payments) and infrastructural measures (re-conversion obligations) in connection with operational units to be closed where no future economic benefits are expected.

<b>Due dates of future non-discounted settlement values</b>						
	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>From 2024</b>
	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Over-recovery of charges	166,710	101,052	6,065	0	0	24,725
Personnel	11,586	6,336	1,536	1,537	1,537	22,390
Re-conversion	410	100	3,391	0	0	15,161
Leasehold ( <i>Erbpacht</i> )	632	644	657	670	684	14,933
Preserving records	881	940	948	955	978	5,880
Miscellaneous	3,000	0	0	0	0	0
	<b>183,219</b>	<b>109,072</b>	<b>12,597</b>	<b>3,162</b>	<b>3,199</b>	<b>83,089</b>

<b>Discount rates (in %) distributed over the respective remaining terms in years</b>						
	<b>1 to 2</b>	<b>2 to 3</b>	<b>3 to 4</b>	<b>4 to 5</b>	<b>5 to 6</b>	<b>6 to 7</b>
2018	-0.37	-0.30	-0.18	-0.04	0.11	0.25
2017	-0.45	-0.35	-0.25	-0.05	0.15	0.25
	<b>7 to 8</b>	<b>8 to 9</b>	<b>9 to 10</b>	<b>11 to 15</b>	<b>15 to 30</b>	
2018	0.33	0.39	0.47	0.40	0.95	
2017	0.47	0.57	0.68	0.66	1.28	

<b>Effects of the changes to the discount rate</b>			
	<b>Computation with the interest rate as at 31 Dec 2018</b>	<b>Computation with the interest rate as at 31 Dec 2017</b>	<b>Effects</b>
	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Discounted provisions	67,916	66,837	+1,079
Interest expense	1,509	481	+1,028

## 29 Financial liabilities

	31 Dec 2018	31 Dec 2018	31 Dec 2017	31 Dec 2017
	Total	Remaining term more than 1 year	Total	Remaining term more than 1 year
	€'000	€'000	€'000	€'000
Bonds	0	0	25,000	0
Debenture loans	197,500	197,500	197,500	197,500
QTE transaction	36,612	29,223	41,850	34,954
Derivative financial instruments	1,965	0	1,320	0
Financial debt from the capital investments of the investment entity	573	0	856	0
	<b>236,650</b>	<b>226,723</b>	<b>266,526</b>	<b>232,454</b>

Bonds and debenture loans						
Term	Currency	Nominal value	Nominal interest rate	Effective interest rate	31 Dec 2018	31 Dec 2017
		€'000			€'000	€'000
2003 to 2018	EUR	25,000	4.840%	4.840%	0	25,000
<b>Bonds</b>		<b>25,000</b>			<b>0</b>	<b>25,000</b>
2010 to 2020	EUR	87,500	3.007%		87,500	87,500
2013 to 2023	EUR	110,000	2.308%		110,000	110,000
<b>Debenture loans</b>		<b>197,500</b>			<b>197,500</b>	<b>197,500</b>

The DFS Group repaid €25.00 million to investors for a term bond.

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 22).

## 30 Trade payables

	31 Dec 2018	31 Dec 2018	31 Dec 2017	31 Dec 2017
	Total	Remaining term more than 1 year	Total	Remaining term more than 1 year
	€'000	€'000	€'000	€'000
Germany	26,081	0	9,962	27
Abroad	3,700	0	8,342	0
Creditors with debit balances	0	0	16,666	0
Amounts withheld	1,027	570	2,411	731
Maastricht unit	0	0	0	0
	<b>30,808</b>	<b>570</b>	<b>37,381</b>	<b>758</b>

Trade payables in foreign currencies amount to €243 thousand (previous year: €932 thousand) on the balance sheet date. Due to the low impact on the results (less than €1 thousand), there was no currency valuation.

Trade payables are regularly secured by means of reservation of title clauses until payment is made in full.

### 31 Other liabilities

	31 Dec 2018	31 Dec 2018	31 Dec 2017	31 Dec 2017
	Total	Remaining term more than 1 year	Total	Remaining term more than 1 year
	€'000	€'000	€'000	€'000
Staff costs	27,856	0	26,228	0
Outstanding invoices	10,861	0	8,802	0
Interest payable	3,605	0	4,833	0
Share of en-route charges: German Meteorological Service	933	0	953	0
Amounts owed to Shareholder	4,815	0	3,365	0
Liabilities to investments	1,308	0	2,389	0
Liabilities from the capital investments of the investment entity	399	0	463	0
Remaining	1,023	0	1,480	0
<b>Other liabilities (financial)</b>	<b>50,800</b>	<b>0</b>	<b>48,513</b>	<b>0</b>
Staff costs	28,656	0	24,757	0
Amounts owed to tax authorities	14,553	0	14,453	0
Remaining	21,069	19,135	24,066	19,873
<b>Other liabilities (non-financial)</b>	<b>64,278</b>	<b>19,135</b>	<b>63,276</b>	<b>19,873</b>
	<b>115,078</b>	<b>19,135</b>	<b>111,789</b>	<b>19,873</b>

<b>Offsetting of financial assets and liabilities</b>			
	<b>Financial assets (+)</b>	<b>Financial liabilities (-)</b>	<b>Assets (+) and liabilities (-) as reported on the balance sheet</b>
<b>31 Dec 2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
<b>Shareholder</b>	773	-5,588	-4,815
<b>Investments</b>			
FCS	87	-1,395	-1,308
GroupEAD	72	0	72
<b>31 Dec 2017</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
<b>Shareholder</b>	3,661	-7,026	3,365
<b>Investments</b>			
FCS	71	-2,446	-2,375
GroupEAD	42	-47	-5
BILSODA	0	-9	-9

The fair values of the offset financial assets and liabilities correspond to their carrying amounts. The DFS Group did not receive collateral for the financial assets nor did it provide collateral for the financial liabilities.

## **32 Tax assets and obligations**

	<b>Tax assets</b>		<b>Income tax obligations</b>	
	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
<b>Non-current</b>				
Corporation tax	0	0	18,092	18,092
Trade tax	0	0	12,777	12,777
Foreign taxes	0	0	0	0
<b>Current</b>				
Corporation tax	16,363	4,886	0	0
Trade tax	9,683	2,156	0	0
Foreign taxes	46	46	100	100
Other taxes	43	0	0	0
	<b>26,135</b>	<b>7,088</b>	<b>30,969</b>	<b>30,969</b>

Non-current income tax obligations relate to provisions from the tax audit from the years 2003 to 2011.

## Additional disclosures

### 33 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 Board of Managing Directors 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 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.

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#### 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 and Kaufbeuren ATM Training.

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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.

**Reconciliation from charges-related result before interest and taxes to IFRS Group earnings before interest and taxes**

	<b>EBIT</b>	<b>EBIT</b>
	<b>2018</b>	<b>2017</b>
	<b>€'000</b>	<b>€'000</b>
Terminal services	-53,765	-45,264
En-route services	76,026	93,886
Commercial business	-2,562	6,938
Other regulated and commercial business	8,472	6,591
<b>Charges-related earnings before interest and taxes (EBIT)</b>	<b>28,171</b>	<b>62,151</b>
Occupational pensions from a charges-related perspective	156,961	106,626
Occupational pensions under IFRS	-167,620	-177,341
Change in equity relevant to charges (closing deficit)	6,403	57,698
Consolidation/reconciliation	-528	-3,337
<b>Group earnings before interest and taxes under IFRS</b>	<b>23,387</b>	<b>45,797</b>

**Information on the business segments by cost type**

	<b>Regulated business</b>	<b>Commercial business</b>	<b>Group earnings</b>
<b>2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Revenues	1,041,814	65,239	1,107,053
Other operating income	51,542	1,877	53,419
Own work capitalised / changes in inventory	17,745	-297	17,448
<b>Total operating revenues and income</b>	<b>1,111,101</b>	<b>66,819</b>	<b>1,177,920</b>
Material expenses	-6,567	-5,925	-12,492
Employee expenses	-832,810	-46,053	-878,863
Depreciation, amortisation and impairments	-114,207	-3,953	-118,160
Other operating expenses	-131,185	-13,833	-145,018
<b>Total costs</b>	<b>-1,084,769</b>	<b>-69,764</b>	<b>-1,154,533</b>
<b>Earnings before interest and taxes (EBIT)</b>	<b>26,332</b>	<b>-2,945</b>	<b>23,387</b>
Financial income	118,986	663	119,649
Financial expenses	-171,826	-1,882	-173,708
<b>Financial result</b>	<b>-52,840</b>	<b>-1,219</b>	<b>-54,059</b>
<b>Profit (loss) before income taxes</b>	<b>-26,508</b>	<b>-4,164</b>	<b>-30,672</b>
Income taxes	1,047	-470	577
<b>Group net income (+) / loss (-)</b>	<b>-25,461</b>	<b>-4,634</b>	<b>-30,095</b>

Information on the business segments by cost type	Regulated business	Commercial business	Consolidation/ reconciliation	Group earnings
2017	€'000	€'000	€'000	€'000
External revenues	1,140,958	79,712		1,220,670
Intersegment revenues	27,753	-13,252	-27,753	-13,252
Other operating income	15,303	1,514	-4,691	12,126
Own work capitalised / changes in inventory	25,435	-2,030		23,405
<b>Total operating revenues and income</b>	<b>1,209,449</b>	<b>65,944</b>	<b>-32,444</b>	<b>1,242,949</b>
Staff costs	-830,041	-20,238		-850,279
Material costs	-123,413	-16,210	238	-139,385
Depreciation and amortisation	-114,071	-3,116	927	-116,260
Project costs	-14,407			-14,407
Intersegment costs		-27,753	23,561	-4,192
Reconciliation			297	297
<b>Total costs</b>	<b>-1,081,932</b>	<b>-67,317</b>	<b>25,023</b>	<b>-1,124,226</b>
<b>Internal results for the period</b>	<b>127,517</b>	<b>-1,373</b>	<b>-7,421</b>	<b>118,723</b>
Carry-over current business year	-72,926			-72,926
<b>Earnings before interest and taxes (EBIT)</b>	<b>54,591</b>	<b>-1,373</b>	<b>-7,421</b>	<b>45,797</b>
Interest	-18,097	-533	-5,090	-23,720
Catch-up effects	-55,230		55,230	0
Income taxes <sup>20)</sup>	4,563	4,132		8,695
<b>Group net income (+) / loss (-)</b>	<b>-14,173</b>	<b>2,226</b>	<b>42,719</b>	<b>30,772</b>

<sup>20)</sup> Of which in the commercial business €5,077 thousand deferred tax assets from a one-off effect at DFS International Business Services

#### Information on important external customers

	2018	2018	2017	2017
	€'000	In %	€'000	In %
DFS total revenues <sup>21)</sup>	1,133,188	100.00	1,122,891	100.00
Deutsche Lufthansa	174,612	15.41	170,167	15.15
Eurowings	73,262	6.47	63,102	5.62
Ryanair	68,433	6.04	65,991	5.88
Federal Ministry of Defence	59,470	5.25	60,015	5.34
easyJet Airline	49,331	4.35	36,583	3.26
British Airways	31,257	2.76	32,134	2.86
KLM Royal Dutch Airlines	30,741	2.71	32,039	2.85
Wizz Air Hungary	27,375	2.42	26,170	2.33
Emirates	26,422	2.33	26,369	2.35
Turkish Airlines	23,984	2.12	23,929	2.13

<sup>21)</sup> Comprising terminal and en-route revenues as well as revenues from military operational air traffic

### 34 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.

<b>Short overview of the consolidated cash flow statement</b>		
	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>€'000</b>	<b>€'000</b>
Cash outflow/inflow from operating activities	-180,992	265,897
Cash outflow from investing activities	-110,907	-108,894
Cash inflow from financing activities	183,793	139,111
<b>Changes to cash in the business year</b>	<b>-108,106</b>	<b>296,114</b>
Cash and cash equivalents at the beginning of the year	1,240,361	944,247
<b>Cash and cash equivalents at the end of the year</b>	<b>1,132,255</b>	<b>1,240,361</b>

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 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 were 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.

Cash and cash equivalents at the end of the year are made up as follows:

	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>€'000</b>	<b>€'000</b>
Financial assets	677,166	963,440
Cash in hand and cheques	35	40
Cash at bank	455,054	276,881
<b>Cash and cash equivalents at the end of the year</b>	<b>1,132,255</b>	<b>1,240,361</b>

## 35 Financial instruments

Financial assets by category						
	Carrying amount	Amortised cost	Assets at fair value through profit or loss	Equity instruments at fair value through other comprehensive income	Fair value	Level
31 Dec 2018	€'000	€'000	€'000	€'000	€'000	
<b>Financial assets at fair value</b>						
Financial assets	677,166		677,166		677,166	2
Investments	17,076			17,076	17,076	3
<b>Financial assets not at fair value</b>						
Loans	7,869	7,869			7,869	3
Trade receivables	157,741	157,741			157,741	3
Contract assets	7,146	7,146			7,146	3
QTE transaction	36,004	36,004			36,004	2
Receivables from EU grant funding	42,564	42,564			42,564	3
Capitalised value	3,856	3,856			3,856	2
Trusteeship ( <i>Treuhandverein</i> )	6,168	6,168			6,168	2
Interest receivables	1,341	1,341			1,341	2
Receivables from investments	72	72			72	3
Other assets of level 3	1,451	1,451			1,451	3
Liquid funds	455,089	455,089			455,089	2
	<b>1,413,543</b>	<b>719,301</b>	<b>677,166</b>	<b>17,076</b>	<b>1,413,543</b>	

**Financial assets by category**

	Carrying amount	At fair value through profit or loss	Held-to-maturity	Loans and receivables	Available-for-sale	Fair value	Level
31 Dec 2017	€'000	€'000	€'000	€'000	€'000	€'000	
Loans to investments	2,760			2,760		2,760	3
Investments	4,121				4,121	4,121	3
Derivative financial instruments	2,306				2,306	2,306	2
Trade receivables	155,796			155,796		155,796	3
Future receivables from production contracts	6,185			6,185		6,185	3
QTE transaction	41,042		41,042			41,042	2
Capitalised value	3,046				3,046	3,046	2
Receivables from EU grant funding	24,341			24,341		24,341	3
Interest receivables	1,463			1,463		1,463	2
Trusteeship ( <i>Treuhandverein</i> )	5,918			5,918		5,918	2
Creditors with debit balances	16,666			16,666		16,666	3
Other assets of level 3	822			822		822	3
Securities	963,440				963,440	963,440	2
Liquid funds	276,921			276,921		276,921	2
	<b>1,504,827</b>	<b>0</b>	<b>41,042</b>	<b>490,872</b>	<b>972,913</b>	<b>1,504,827</b>	

### 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

	<b>Stage 2</b>	<b>Stage 3</b>	<b>Stage 2</b>	<b>Stage 3</b>
	<b>31 Dec 2018</b>	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>	<b>31 Dec 2017</b>
	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
As at 1 Jan	1,294,136	210,691	1,010,142	191,940
Ongoing gains (+) and losses (-)	-21,437	-3,174	-16,685	-7,954
Gains (+) and losses (-) recognised in other comprehensive income	-7,946	0	5,063	0
Additions (+) and disposals (-)	-85,129	26,402	295,616	26,705
Transfers in and out of levels	0	0	0	0
As at 31 Dec	1,179,624	233,919	1,294,136	210,691

<b>Financial liabilities by category</b>					
	<b>Carrying amount</b>	<b>Amortised cost</b>	<b>Liabilities at fair value through profit or loss</b>	<b>Fair value</b>	<b>Level</b>
<b>31 Dec 2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	
<b>Financial liabilities at fair value</b>					
Derivative financial instruments	1,965		1,965	1,965	2
<b>Financial liabilities not at fair value</b>					
Debenture loans	197,500	197,500		212,844	2
QTE transaction	36,612	36,612		36,612	2
Financial debt from the capital investments of the investment entity	573	573		573	2
Trade payables	30,808	30,808		30,808	3
Staff costs	27,856	27,856		27,856	3
Amounts owed to Shareholder	4,815	4,815		4,815	3
Liabilities to investments	1,308	1,308		1,308	3
Outstanding invoices	10,861	10,861		10,861	3
Interest payable	3,605	3,605		3,605	2
Liabilities from the capital investments of the investment entity	399	399		399	3
Share of en-route charges: German Meteorological Service	933	933		933	3
Other assets of level 3	1,023	1,023		1,023	3
	<b>318,258</b>	<b>316,293</b>	<b>1,965</b>	<b>333,602</b>	

Financial liabilities by category

	Carrying amount	At fair value through profit or loss	Amortised cost	Fair value	Level
31 Dec 2017	€'000	€'000	€'000	€'000	
Bonds	25,000		25,000	25,113	1
Debenture loans	197,500		197,500	216,203	2
QTE transaction	41,850		41,850	41,850	2
Derivative financial instruments	1,320	1,320		1,320	2
Financial debt from the capital investments of the investment entity	856		856	856	2
Trade payables	37,381		37,381	37,381	3
Staff costs	26,228		26,228	26,228	3
Amounts owed to Shareholder	3,365		3,365	3,365	3
Liabilities to investments	2,389		2,389	2,389	3
Outstanding invoices	8,802		8,802	8,802	3
Interest payable	4,833		4,833	4,833	2
Liabilities from the capital investments of the investment entity	463		463	463	3
Share of charges: German Meteorological Service	953		953	953	3
Remaining financial liabilities	1,480		1,480	1,480	3
	<b>352,420</b>	<b>1,320</b>	<b>351,100</b>	<b>371,236</b>	

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### 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

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### Reconciliation of the fair values of level 2 and 3

	Stage 2	Stage 3	Stage 2	Stage 3
	31 Dec 2018	31 Dec 2018	31 Dec 2017	31 Dec 2017
	€'000	€'000	€'000	€'000
As at 1 Jan	265,062	81,061	373,528	76,194
Ongoing gains (+) and losses (-)	0	0	0	0
Gains (+) and losses (-) recognised in other comprehensive income	0	0	0	0
Additions (+) and disposals (-)	-9,463	-3,058	-108,466	4,867
Transfers in and out of levels	0	0	0	0
As at 31 Dec	255,599	78,003	265,062	81,061

Net results of financial instruments by measurement category					
	Assets			Liabilities	
	Amortised cost	At fair value through profit or loss	At fair value through other comprehensive income	Amortised cost	
<b>31 Dec 2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	
Income (+) from investments			721		
Gains (+) from foreign currency translation	828	12,860			
Gains (+) and losses (-) from remeasurement	-2,106	-32,993			
Expenses (-) from impairments	-3,174	-26			
Interest income (+)	2,032	7,844			
Interest expense (-)	-23	-358		-6,077	
Other financial expenses (-)	-566	-1,269		-118	
<b>Gains (+) and losses (-)</b>	<b>-3,009</b>	<b>-13,942</b>	<b>721</b>	<b>-6,195</b>	
Recognised directly in other comprehensive income	0	0	-7,246	0	
	Assets				Liabilities
	At fair value through profit or loss	Held-to-maturity	Loans and receivables	Available-for-sale	Amortised cost
<b>31 Dec 2017</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Income (+) from investments				603	
Income (+) from foreign currency translation			-1,234	-16,389	
Gains (+) and losses (-) from remeasurement			68	909	
Gains (+) and losses (-) from disposals			1,818	24,153	
Expenses (-) from impairments			-7,965	-183	
Interest income (+)		1,354	1,190	7,525	
Interest expense (-)			-1	-13	-9,219
Other financial expenses (-)			-909	-1,602	-268
<b>Gains (+) and losses (-)</b>	<b>0</b>	<b>1,354</b>	<b>-7,033</b>	<b>15,003</b>	<b>-9,487</b>
Recognised directly in other comprehensive income	0	0	0	5,063	0

### 36 Derivative financial instruments

The DFS Group is exposed to market risks in the form of interest and currency fluctuations (see Note 37 and section 6.2.2 in the Group management report). The Group uses derivative financial instruments to manage these risks.

In addition, the DFS Group is exposed to default risk. To minimise this risk, it concludes derivative transactions exclusively with its core bankers, who have good credit ratings.

Speculative transactions with derivative instruments where there is no underlying transaction are forbidden.

<b>Derivative financial instruments</b>					
	<b>Remaining term</b>	<b>Nominal volume</b>	<b>Fair value</b>	<b>Nominal volume</b>	<b>Fair value</b>
		<b>31 Dec 2018</b>	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>	<b>31 Dec 2017</b>
		<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Positive fair value					
Futures	Up to 1 year	904	904	2,306	2,306
		<b>904</b>	<b>904</b>	<b>2,306</b>	<b>2,306</b>
Negative fair value					
Futures	Up to 1 year	-1,965	-1,965	-1,320	-1,320
		<b>-1,965</b>	<b>-1,965</b>	<b>-1,320</b>	<b>-1,320</b>

The futures were concluded as part of the capital investments through the investment entity and are due within six months.

### 37 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.

The assessment of the consolidated financial risks of the DFS Group is given by the rating awarded by the rating agencies.

<b>Ratings</b>			
	<b>Long-term</b>	<b>Short-term</b>	<b>Outlook</b>
Standard & Poor's	AAA	A-1+	Stable

### 37.1 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.

<b>Maturities of undiscounted principal and interest payments from financial liabilities</b>					
	<b>Up to 3 months</b>	<b>4 to 12 months</b>	<b>1 to 5 years</b>	<b>More than 5 years</b>	<b>Total</b>
<b>31 Dec 2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
<b>Non-derivative financial liabilities</b>					
Debenture loans	0	0	197,500	0	197,500
Interest	0	5,170	12,786	0	17,956
QTE transaction	7,389	0	29,223	0	36,612
Financial debt from the capital investments of the investment entity	573	0	0	0	573
Trade payables	30,238	0	570	0	30,808
Other liabilities	43,438	7,362	0	0	50,800
<b>Derivative financial liabilities</b>					
Derivatives	1,965	0	0	0	1,965
	<b>83,603</b>	<b>12,532</b>	<b>240,079</b>	<b>0</b>	<b>336,214</b>
<b>31 Dec 2017</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
<b>Non-derivative financial liabilities</b>					
Bonds	25,000	0	0	0	25,000
Debenture loans	0	0	87,500	110,000	197,500
Interest	3,749	2,631	15,417	2,539	24,336
QTE transaction	6,896	0	34,954	0	41,850
Financial debt from the capital investments of the investment entity	856	0	0	0	856
Trade payables	35,222	1,401	758	0	37,381
Other liabilities	41,070	7,443	0	0	48,513
<b>Derivative financial liabilities</b>					
Derivatives	1,320	0	0	0	1,320
	<b>114,113</b>	<b>11,475</b>	<b>138,629</b>	<b>112,539</b>	<b>376,756</b>

The DFS Group holds a relatively high level of liquid funds (€455.09 million), which it uses to service its financial liabilities. In addition, it regularly monitors the expected incoming payments, especially from trade receivables and other assets.

### 37.2 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.

<b>Default risk by category</b>	<b>31 Dec 2018 €'000</b>	<b>31 Dec 2017 €'000</b>
Amortised cost	719,301	0
At fair value through profit or loss	677,166	0
At fair value through other comprehensive income	17,076	0
Held-to-maturity	0	41,042
Loans and receivables	0	490,872
Available-for-sale	0	972,913
	<b>1,413,543</b>	<b>1,504,827</b>

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.

### 37.3 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.

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.

<b>Interest rate risk for financial liabilities</b>		
	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>Nominal value</b>	<b>Nominal value</b>
	<b>€'000</b>	<b>€'000</b>
Fixed-rate bonds	0	25,000
Fixed-rate debenture loans	197,500	197,500
	<b>197,500</b>	<b>222,500</b>

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 converted into the functional currency by means of derivatives, changes in exchange rates therefore have no material impact on the result or equity.

<b>Net risk by currency</b>				
	<b>31 Dec 2018</b>	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>	<b>31 Dec 2017</b>
	<b>Nominal</b>	<b>Value at</b>	<b>Nominal</b>	<b>Value at</b>
	<b>value</b>	<b>reporting</b>	<b>value</b>	<b>reporting</b>
	<b>€'000</b>	<b>date</b>	<b>€'000</b>	<b>date</b>
	<b>\$'000</b>	<b>€'000</b>	<b>\$'000</b>	<b>€'000</b>
Primary transactions	371	324	1,205	1,016
Derivative financial instruments	0	0	0	0
Planned hedges	0	0	0	0
	<b>£'000</b>	<b>€'000</b>	<b>£'000</b>	<b>€'000</b>
Primary transactions	0	0	1	1
Derivative financial instruments	0	0	0	0
Planned hedges	0	0	0	0
	<b>CHF'000</b>	<b>€'000</b>	<b>CHF'000</b>	<b>€'000</b>
Primary transactions	22	20	10	9
Derivative financial instruments	0	0	0	0
Planned hedges	0	0	0	0

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 95.00 percent when the holding period is ten days.

<b>Value-at-risk</b>				
	<b>31 Dec 2018 Foreign exchange risk €'000</b>	<b>31 Dec 2018 Interest rate risk €'000</b>	<b>31 Dec 2017 Foreign exchange risk €'000</b>	<b>31 Dec 2017 Interest rate risk €'000</b>
<b>By currency</b>				
USD (\$)	18	0	25	0
EUR	0	243	0	1,130
<b>By line item</b>				
Money market	0	1	0	26
Capital market	0	244	0	1,151
Hedge	18	1	25	3
<b>Overall risk</b>	<b>Value at year end €'000</b>	<b>Highest value €'000</b>	<b>Lowest value €'000</b>	<b>Annual average €'000</b>
2018	250	1,311	250	765
2017	1,121	3,817	709	1,873

### 38 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 IAS/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 and the build-up of equity as its profits are not subject to regulation.

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.

### 38.1 Reconciliation and indicators of the regulated business

<b>Reconciliation and indicators of the regulated business</b>		
	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>€'000</b>	<b>€'000</b>
Group equity recognised on the balance sheet	-665,507	-681,304
Catch-up effects not yet accounted for	201,223	264,478
Deferred taxes on this amount	-3,661	-3,346
Occupational pensions from a charges-related perspective	1,360,430	1,304,067
Change in equity relevant to charges (closing deficit)	442,716	297,124
Consolidation/reconciliation	-11,291	-12,245
<b>Regulated equity</b>	<b>1,323,910</b>	<b>1,168,774</b>
Equity ratio	31.92%	28.50%
Return on equity	-2.27%	2.63%
Profit/loss for the financial year	-30,095	30,772
EBIT	23,387	45,797
Borrowings	2,823,373	2,932,532
Debt ratio	68.08%	71.50%
Return on total assets	-0.73%	0.76%
Leverage ratio	-21.59%	-23.74%
Liquid funds	455,089	276,921
Financial assets	677,166	963,440
Non-current financial liabilities	2226.723	232,454
of which QTE transaction	29,224	34,954
Current financial liabilities	9,927	34,072
of which QTE transaction	7,388	6,896
Financial net assets (+)	895,605	973,835

### 39 Contingent liabilities and other financial obligations

#### 39.1 Contingent liabilities

<b>Maturities of sureties</b>					
	<b>Up to 1 year</b>	<b>1 to 5 years</b>	<b>More than 5 years</b>	<b>Indefinite term</b>	<b>Total</b>
	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
2018	352	1,983	50	369	2,754
2017	109	499	0	275	883

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.

**39.2 Other financial obligations**

<b>Due dates of other financial obligations</b>				
	<b>Up to 1 year</b>	<b>1 to 5 years</b>	<b>More than 5 years</b>	<b>Total</b>
<b>31 Dec 2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Intercompany credit lines to associated companies	1,500	0	0	1,500
of which taken up	0	0	0	0
Capital expenditure commitments for the acquisition of				
intangible assets	11,231	38,168	0	49,399
property, plant and equipment	49,974	29,737	4,166	83,877
other	56,717	60,492	4,952	122,161
Rental, leasing, tenancy, maintenance	1,432	1,942	611	3,985
Bank guarantee	0	10,000	0	10,000
	120,854	140,339	9,729	270,922
<b>31 Dec 2017</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Intercompany credit lines to associated companies	1,500	0	0	1,500
of which taken up	0	0	0	0
Capital expenditure commitments for the acquisition of				
intangible assets	15,588	47,206	2,325	65,119
property, plant and equipment	39,324	31,186	2,184	72,694
other	53,832	69,619	962	124,413
Rental, leasing, tenancy, maintenance	7,257	9,493	4,894	21,644
Bank guarantee	0	10,000	0	10,000
	117,501	167,504	10,365	295,370

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.

## 40 Contingent assets

<b>There are three separate abstract acknowledgements of debt (<i>abstrakte Schuldanerkenntnisse</i> – a standard German law acknowledgement of a borrower’s indebtedness) between DFS and FCS:</b>			
Effective from	26 April 2006	29 September 2008 and 6 October 2008, respectively	21 August 2018 / 24 September 2018, respectively
Collateral	Registration of a charge	Registration of a charge	Registration of a charge
Legal basis	Section 1 LuftfzG (Law on Rights regarding Aircraft – <i>Gesetz über Rechte an Luftfahrzeugen</i> )	Section 1 LuftfzG (Law on Rights regarding Aircraft – <i>Gesetz über Rechte an Luftfahrzeugen</i> )	Section 1 LuftfzG (Law on Rights regarding Aircraft – <i>Gesetz über Rechte an Luftfahrzeugen</i> )
Beneficiary	DFS	DFS	DFS
Object	Hawker Beechcraft Super King Air	Hawker Beechcraft Super King Air	Hawker Beechcraft Super King Air
Serial number	FL-473 D-CFMD	FL-626 D-CFME	FL-1156
Local Court	Braunschweig	Braunschweig	Braunschweig
Registration	22 August 2006	16 September 2009	In the first half of 2019
Basis	Loan agreement dated March 2006	Loan agreement dated September 2008 / October 2008	Loan agreement dated August 2018 / September 2018
Contract partner	DFS IBS and FCS	DFS IBS and FCS	DFS IBS and FCS
Loan 1	€5.50 million for the aeroplane FL-473 D-CFMD with a term until 31 December 2022	€4.30 million for the aeroplane FL-626 D-CFME with a term until 31 December 2025	€5.56 million for the aeroplane FL-1156 with a term until 31 December 2033
Loan 2	€3.00 million for the flight inspection system (type Aerodata AeroFIS) with a term until 31 December 2016	€1.70 million for the flight inspection system (type Aerodata AeroFIS) with a term until 30 December 2019	
Miscellaneous	The loan for the aeroplane is collateralised over its entire maturity by an abstract acknowledgement of debt in favour of DFS by means of a liability of €8.50 million. €7.10 million of the volume of the loan have been taken up.	The loan for the aeroplane 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. €5.20 million of the volume of the loan have been taken up.	The loan for the aeroplane 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. The loan sum has been called up in full.

#### 41 Post-balance-sheet-date events

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.

#### 42 Auditor's fees

<b>Total fees of the auditor under Section 314(1)(9) of the German Commercial Code (HGB)</b>		
	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>€'000</b>	<b>€'000</b>
Audit of the annual financial statements	156	150
Other assurance services	87	41
Tax advice	1	0
Other services	3	4
	<b>247</b>	<b>195</b>

#### 43 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 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 airports 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; perform other utility services and ensure that waste disposal services are rendered.

In return, the DFS Group reimburses the airports for these costs. If another air navigation service provider is entrusted with these Group duties, the legal and contractual rights and obligations 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.

### **43.1 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 3.1.3 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 of Transport and Digital Infrastructure (BMVI) 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.

### **43.2 Tower division**

Since 2015, terminal services have also been subject to a regime of economic regulation. The Federal Ministry of Transport and Digital Infrastructure (BMVI) lays down a unit rate each year on the basis of the German Ordinance on Terminal Charges of the Air Navigation Services (FSAKV) 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.

## 44 Related party disclosures

### 44.1 Related parties – entities

In the normal course of business, services are also rendered to related entities. Group companies render services to the DFS Group as well. 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.

<b>Outstanding balances</b>			
	<b>Shareholder</b>	<b>Associated companies</b>	<b>Investments</b>
<b>2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Financial assets		22,228	2,717
Other assets	773	87	72
Other liabilities	-5,588	-1,395	
<b>2017</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Financial assets		4,108	2,773
Other assets	3,661	71	42
Other liabilities	-7,026	-2,446	-56

<b>Income (+) and expenses (-)</b>	<b>Shareholder</b>	<b>Associated companies</b>	<b>Investments</b>
<b>2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Revenues	79,058	431	213
Purchased services		-3,786	
Employee expenses	-8,483		
Other operating expenses		-3,044	-268
Interest income		163	
Income from investments			721
<b>2017</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Revenues	78,988	476	232
Purchased services		-3,919	
Employee expenses	-8,455		
Other operating expenses		-3,379	-152
Interest income		166	
Income from investments			603

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 the considerable funding, as well as from the avoidance of incorrect cost allocation and flawed capital expenditures.

## 44.2 Related parties – persons

Related parties (persons) cover primarily the Board of Managing Directors, 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. Note 44 contains disclosures on the emoluments of the Board of Managing Directors and the Supervisory Board.

## 45 Organs of the parent company

### 45.1 Board of Managing Directors

Prof Klaus-Dieter Scheurle, Frankfurt am Main,  
Chairman and Chief Executive Officer

Robert Schickling, Bad Homburg vor der Höhe,  
Managing Director Operations

Dr Michael Hann, Bad Dürkheim,  
Managing Director Human Resources

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

<b>Payments due in the short term for members of the Board of Managing Directors</b>			
	<b>Fixed components (including benefits in kind)</b>	<b>Performance- related components</b>	<b>Total emoluments</b>
<b>2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Prof Klaus-Dieter Scheurle (Chairman)	349	151	500
Robert Schickling	292	133	425
Dr Michael Hann	301	133	434
	<b>942</b>	<b>417</b>	<b>1,359</b>
<b>2017</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Prof Klaus-Dieter Scheurle (Chairman)	353	177	530
Robert Schickling	292	155	447
Dr Michael Hann	302	155	457
	<b>947</b>	<b>487</b>	<b>1,434</b>

The DFS Group did not grant any advance payments, loans or benefits to members of the Board of Managing Directors or former Managing Directors on their termination. In addition, it paid no remuneration from consultancy or service contracts.

<b>Post-employment benefits</b>			
	<b>Pension benefits</b>	<b>Pension payments</b>	<b>Expenses for pension benefits earned in the current year<sup>22)</sup></b>
<b>2018</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Prof Klaus-Dieter Scheurle (Chairman)	1,697	0	291
Robert Schickling	2,572	0	145
Dr Michael Hann	1,509	0	253
Former Managing Directors	15,015	788	262
	<b>20,793</b>	<b>788</b>	<b>951</b>
<b>2017</b>	<b>€'000</b>	<b>€'000</b>	<b>€'000</b>
Prof Klaus-Dieter Scheurle (Chairman)	1,384	0	288
Robert Schickling	2,473	0	136
Dr Michael Hann	1,280	0	222
Former Managing Directors	14,931	769	256
	<b>20,068</b>	<b>769</b>	<b>902</b>

<sup>22)</sup> Service cost and interest cost

There were no other long-term benefits due or share-based compensation.

## 45.2 Supervisory Board

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### Shareholder representatives

**Dr Martina Hinricher**

Chairperson  
*Ministerialdirektorin* (retired)  
 Federal Ministry of Transport and Digital  
 Infrastructure

**Frank Best**

Colonel (G.S.)  
 Federal Ministry of Defence  
 (Supervisory Board Member from  
 16 August 2018)

**Carmen von Bornstaedt-Radbruch**

*Ministerialrätin*  
 Federal Ministry of Defence

**Antje Geese**

*Ministerialdirigentin*  
 Federal Ministry of Transport and Digital  
 Infrastructure

**Andreas Hoppe**

Colonel (G.S.)  
 Federal Ministry of Defence  
 (Supervisory Board Member until  
 16 August 2018)

**Dr Angelika Kreppein**

*Regierungsdirektorin*  
 Federal Ministry of Finance

**Dr Carl-Stefan Neumann**

Management consultant

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### Staff representatives

**Markus Siebers**

Deputy Chairperson  
 Air traffic controller

**Catja Gräber**

Senior expert data communication service  
 (Supervisory Board Member until  
 16 August 2018)

**Sabrina Leitzbach**

Air traffic controller  
 (Supervisory Board Member from  
 16 August 2018)

**Volker Möller**

Air traffic controller  
 (Supervisory Board Member until  
 16 August 2018)

**Peter Schaaf**

Chairperson Central Staff Council  
 Air traffic controller

**Hagen Schlütter**

Head of Approval Management for ATS  
 Systems  
 (Supervisory Board Member from  
 1 June 2018 until 16 August 2018)

**André Vöcking**

Air navigation services engineer  
 (Supervisory Board Member from  
 16 August 2018)

**Andrea Wächter**

Head of Hamburg Tower

**Jörg Waldhorst**

Senior expert aviation  
 (Supervisory Board Member from  
 16 August 2018)

**Dirk Wendland**

Systems engineer  
 (Supervisory Board Member until  
 31 May 2018)

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In the business year, there were four scheduled ordinary Supervisory Board meetings.

<b>Remuneration of the Supervisory Board</b>		
	<b>31 Dec 2018</b>	<b>31 Dec 2017</b>
	<b>€'000</b>	<b>€'000</b>
Carmen von Bornstaedt-Radbruch	0.50	0.70
Frank Best	0.50	0.00
Antje Geese	1.30	1.00
Catja Gräber	0.20	0.80
Dr Martina Hinricher	0.90	0.80
Andreas Hoppe	0.40	0.90
Dr Angelika Kreppein	0.90	1.10
Sabrina Leitzbach	0.50	0.00
Volker Möller	0.50	1.10
Dr Carl-Stefan Neumann	1.20	0.60
Peter Schaaf	0.60	0.40
Hagen Schlütter	0.20	0.00
Markus Siebers	0.80	0.80
André Vöcking	0.40	0.00
Andrea Wächter	0.70	1.00
Jörg Waldhorst	0.50	0.00
Dirk Wendland	0.00	1.00
Members who left in the previous year	0.00	0.40
	<b>10.10</b>	<b>10.60</b>

The articles of association determine the level of remuneration of the Supervisory Board. The benefits received are made up of a fee for meeting attendance of €80.00 per meeting and a daily allowance of €26.00 per meeting.

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

#### **46 Disclosures on the Public Corporate Governance Code (PCGK)**

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

## Responsibility statement

The Board of Managing Directors of DFS Deutsche Flugsicherung GmbH issues the following statement, pursuant to Section 37(y)(1) of the German Securities Trading Act (WpHG) in conjunction with Sections 297(2)(4), 315(1)(6) and 315a(1) of the German Commercial Code (HGB).

To the best of our knowledge, and in accordance with the applicable reporting principles, the consolidated financial statements give a true and fair view of the results and financial position of the Group, and the Group management report includes a fair review of the development and performance of the business and the position of the Group, together with a description of the principal opportunities and risks associated with the expected development of the Group.

Langen, 20 March 2019

Prof Klaus-Dieter Scheurle  
Chairman and CEO

Robert Schickling  
Managing Director  
Operations

Dr Michael Hann  
Managing Director  
Human Resources

We have issued this unqualified auditor's report as follows:

### **Independent Auditor's Report\***

To DFS Deutsche Flugsicherung GmbH, Frankfurt am Main

### **Opinions**

We have audited the consolidated financial statements of DFS Deutsche Flugsicherung GmbH, Frankfurt am Main, and its subsidiaries (the Group), comprising the consolidated balance sheet as at 31 December 2018, the statement of comprehensive income from 1 January to 31 December 2018, the consolidated statement of changes in equity and the consolidated cash flow statement for the business year from 1 January to 31 December 2018 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 2018.

In accordance with German legal requirements, we have not audited the contents of the declaration of the legal representatives (Board of Managing Directors) 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 adopted by the EU, the additional requirements of the German Commercial Code law 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 2018 and the earnings for the business year from 1 January to 31 December 2018 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 statement and the corporate 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.

**\*Courtesy translation; see page 3**

## 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.

## Other information

The Board of Managing Directors are responsible for the other information. The other information comprises the German Sustainability Code ([www.deutscher-nachhaltigkeitskodex.de](http://www.deutscher-nachhaltigkeitskodex.de)) provided before the date of this Auditor's Report and the Corporate Governance Report under No. 6.1 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 Board of Managing Directors and the Supervisory Board for the consolidated financial statements and the group management report**

The Board of Managing Directors are 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 Board of Managing Directors are responsible for the internal controls they have deemed necessary under the German principles of proper accounting to enable the preparation of consolidated financial statements that are free from material misstatement, whether intentional or unintentional.

In preparing the consolidated financial statements, the Board of Managing Directors are responsible for assessing the Group's ability to continue as a going concern. Furthermore, they are responsible for disclosing matters relating to the going concern status, if relevant. In addition, they are 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 Board of Managing Directors are 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 Board of Managing Directors are responsible for the arrangements and measures (systems) they have 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 misstatement – 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 judgment and maintain an attitude of professional scepticism during the audit. In addition:

- We identify and assess the risks of material misstatement 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 a material misstatement 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 (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the 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 Board of Managing Directors and the reasonableness of estimates and related disclosures made by the Board of Managing Directors.
- We draw conclusions on the appropriateness of the Board of Managing Directors' 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 Board of Managing Directors in the group management report. On the basis of sufficient, appropriate audit evidence we evaluate, in particular, the significant assumptions used by the Board of Managing Directors 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 internal control that we identify during our audit.

Frankfurt am Main, 20 March 2019

Mazars GmbH & Co. KG  
*Wirtschaftsprüfungsgesellschaft*  
*Steuerberatungsgesellschaft*

Susanne Schorse  
 Auditor

Martin Lächele  
 Auditor

## DFS Deutsche Flugsicherung GmbH Acronyms and abbreviations

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AEROSENSE	FREQUENTIS DFS AEROSENSE GmbH, Vienna, Austria
AfA	Official German Schedule for Deductions for Depreciation – <i>Absetzung für Abnutzung</i>
AG	Public Limited Company – <i>Aktiengesellschaft</i>
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 – <i>Amtshilferichtlinie-Umsetzungsgesetz</i>
ANA	L'Administration de la Navigation Aérienne du Luxembourg, Findel, Luxembourg (Luxembourg air navigation service provider)
ANS	Air Navigation Services
ANS	Air Navigation Solutions Limited, London, United Kingdom
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 – <i>Altersteilzeit-Tarifvertrag</i>
AUC	Assets under Construction
AUSTRO CONTROL	Austro Control Österreichische Gesellschaft für Zivilluftfahrt mbH, Vienna, Austria (Austrian air navigation service provider)
BAF	Federal Supervisory Authority for Air Navigation Services, Langen, Germany – <i>Bundesaufsichtsamt für Flugsicherung</i>
BDL	German Aviation Association – <i>Bundesverband der Deutschen Luftverkehrswirtschaft</i>
BFS	Federal Administration of Air Navigation Services – <i>Bundesanstalt für Flugsicherung</i>
BGBI	German Federal Law Gazette – <i>Bundesgesetzblatt</i>
BHD	Bahraini Dinar
BilReG	German Accounting Law Reform Act – <i>Bilanzrechtsreformgesetz</i>
BILSODA	BILSODA GmbH & Co. KG, Pullach, Germany
BMF	Federal Ministry of Finance, Berlin, Germany – <i>Bundesministerium der Finanzen</i>
BMVg	Federal Ministry of Defence, Bonn, Germany – <i>Bundesministerium der Verteidigung</i>
BMVI	Federal Ministry of Transport and Digital Infrastructure, Berlin, Germany – <i>Bundesministerium für Verkehr und digitale Infrastruktur</i>
BMWi	Federal Ministry for Economic Affairs and Energy, Berlin, Germany – <i>Bundesministerium für Wirtschaft und Energie</i>
CEF	Connecting Europe Facility
CHF	Swiss Franc
CMS	Compliance Management System
CNS	Communications, Navigation and Surveillance
Co.	Compagnie

Co. W. L. L.	Company with Limited Liability
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 – <i>Deutsches Institut für Wirtschaftsforschung</i>
DM	Deutschmark – German Mark
DRS	Dresden International Airport
DSNA	Direction des Services de la Navigation Aérienne (French air navigation service provider)
Droniq	Droniq GmbH, Frankfurt, Germany
DVOR	Doppler VHF (Very High Frequency) Omnidirectional Radio Range
DWD	German Meteorological Service, Offenbach, Germany – <i>Deutscher Wetterdienst</i>
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
EGNOS	European Geostationary Navigation Overlay Service
Eisenschmidt	R. Eisenschmidt GmbH, Egelsbach, Germany
EMU	Economic and Monetary Union
ESSP SAS	European Satellite Services Provider Société par Actions Simplifiée, Toulouse, France
ETV	Collective Agreement on the Grading System at DFS – <i>Eingruppierungstarifvertrag</i>
EU	European Union
EUR	Euro
EUROCONTROL	European Organisation for the Safety of Air Navigation, Brussels, Belgium
EUROSTAT	Statistical Office of the European Union
e.V.	Registered Association – <i>eingetragener Verein</i>
FAB(EC)	Functional Airspace Block (Europe Central)
FCS	FCS Flight Calibration Services GmbH, Braunschweig, Germany
FMC	Flughafen Magdeburg-Cochstedt GmbH, Hecklingen, Germany
FSAAKV	German Ordinance on Terminal Charges of the Air Navigation Services – <i>Flugsicherungs-An- und Abflug-Kostenverordnung</i>
FS-AuftragsV	German Regulation concerning the Commissioning of an Air Navigation Services Enterprise – <i>Verordnung zur Beauftragung eines Flugsicherungsunternehmens</i>
FS-DiensteVO	German Service Provision Regulation – <i>Flugsicherungsdienste-Verordnung</i>

FS-DurchführungsV	German Air Navigation Services Regulation – <i>Verordnung über die Durchführung der Flugsicherung</i>
FSStrKV	German Regulation on Route Charges – <i>Flugsicherungs-Streckenkostenverordnung</i>
FührposGleichberG	German Law on the Equal Participation of Women and Men in Management Positions in the Private Sector and in Public Service – <i>Gesetz für die gleichberechtigte Teilhabe von Frauen und Männern an Führungspositionen in der Privatwirtschaft und im öffentlichen Dienst</i>
GBP	Pound Sterling (£)
GdF	Air Navigation Services Union – <i>Gewerkschaft der Flugsicherung</i>
GDP	Gross Domestic Product
GmbH	Limited Liability Company – <i>Gesellschaft mit beschränkter Haftung</i>
GoB	German Principles of Proper Accounting – <i>Grundsätze ordnungsmäßiger Buchführung</i>
GPS	Global Positioning System
GroupEAD	GroupEAD Europe S.L., Madrid, Spain
HGB	German Commercial Code – <i>Handelsgesetzbuch</i>
HRB	Commercial Register B – <i>Handelsregister Abteilung B</i>
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 PS	Auditing Standards ( <i>Prüfungsstandards</i> ) from the Institute of Public Auditors in Germany (IDW)
Ifo	Leibniz Institute for Economic Research at the University of Munich e.V., Munich, Germany – <i>Leibniz-Institut für Wirtschaftsforschung an der Universität München e.V.</i>
IFR	Instrument Flight Rules
IFRIC	International Financial Reporting Interpretations Committee
IFRS	International Financial Reporting Standards
IMC	Instrument Meteorological Conditions
ISIS-XM	Improved Speech Integrated System
ISO	International Organisation for Standardisation
IWH	Halle Institute for Economic Research, Halle, Germany – <i>Leibniz-Institut für Wirtschaftsforschung Halle</i>
KAT	Kaufbeuren ATM Training GmbH, Kaufbeuren, Germany
KfW	Kreditanstalt für Wiederaufbau, Frankfurt, Germany (German government-owned development bank)
KG	Partnership – <i>Kommanditgesellschaft</i>
KTV	Collective Agreement on Health and Long-term Care Insurance at DFS – <i>Kranken- und Pflegeversicherungstarifvertrag</i>
LBA	Federal Aviation Office, Braunschweig, Germany – <i>Luffahrt-Bundesamt</i>
Ltd.	Limited
LufABw	German Military Aviation Authority, Cologne Wahn, Germany – <i>Luffahrtamt der Bundeswehr</i>

LuftfzG	German Law on Rights regarding Aircraft – <i>Gesetz über Rechte an Luftfahrzeugen</i>
LuftVG	German Aviation Act – <i>Luftverkehrsgesetz</i>
LuftVStAbsenkV	German Ordinance on Decreasing the Air Transport Tax – <i>Luftverkehrsteuer-Absenkungsverordnung</i>
LuftVStFestV	German Law Laying down German Air Transport Tax – <i>Luftverkehrsteuer-Festlegungsverordnung</i>
LuftVStG	German Air Transport Tax – <i>Luftverkehrsteuergesetz</i>
MaRS	Modernisation and Replacement of Surveillance Infrastructure (at DFS)
MTV	Collective Framework Agreement at DFS – <i>Manteltarifvertrag</i>
MUAC	Maastricht Upper Area Control Centre
n	Represents the Current Business Year
No.	Number
NATS	National Air Traffic Services, Whiteley, Fareham, United Kingdom (UK air navigation service provider)
NORACON	NORth European and Austrian CONSortium (International consortium of nine air navigation service providers from Austria, Denmark, Estonia, Finland, Iceland, Ireland, Norway and Sweden)
NORD/LB	Norddeutsche Landesbank Girozentrale, Hannover, Germany ( <i>Landesbank of Lower Saxony and Saxony-Anhalt</i> )
NOTAM	Notice to Airmen
NV	Naamloze Vennootschap (Belgian public limited company)
OAT	Operational Air Traffic
OCI	Other Comprehensive Income
OECD	Organisation for Economic Cooperation and Development, Paris, France
P.	Page
P1	Project 1
PCGK	German Public Corporate Governance Code – <i>Public Corporate Governance Kodex</i>
PEI	Paul Ehrlich Institute, Langen, Germany
PMV	Participatiemaatschappij Vlaanderen NV, Brussels, Belgium
PTZ	Pan Tilt Zoom
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 – <i>Leibniz-Institut für Wirtschaftsforschung</i>
S.A.	Société Anonyme
S-ATM	Sectorless Air Traffic Management
SDA	SESAR Deployment Alliance
SES	Single European Sky
SESAR	Single European Sky Air Traffic Management Research
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 – <i>Tarifvertrag über Strukturmaßnahmen und Vorruhestand</i>
TATS	Tower Air Traffic Services S.L., Madrid, Spain
Terra Drone	Terra Drone Corporation, Tokyo, Japan
TVöD	Collective Agreement for the Public Service – <i>Tarifvertrag für den öffentlichen Dienst</i>
UAS	Unmanned Aircraft System
Unify	Unify NV, Antwerp, Belgium
USD	United States Dollar (\$)
ÜVersTV	Collective Agreement on Pensions and Transitional Payments at DFS – <i>Übergangsversorgungstarifvertrag</i>
VAFORIT	Very Advanced Flight Data Processing Operational Requirements Implementation
VaR	Value at Risk
VersTV	Collective Agreement on Pensions at DFS – <i>Versorgungstarifvertrag</i>
VFR	Visual Flight Rules
VHF	Very High Frequency
VITO	Vlaamse Instelling Voor Technologisch Onderzoek, Mol, Belgium (Flemish Institute for Technological Research)
VMC	Visual Meteorological Conditions
WACC	Weighted Average Cost of Capital
WpHG	German Securities Trading Act – <i>Wertpapierhandelsgesetz</i>

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DFS Deutsche Flugsicherung GmbH  
Corporate Communications  
Am DFS-Campus 10  
63225 Langen  
Germany  
Telephone +49 6103 707-4111  
E-mail [info@dfs.de](mailto:info@dfs.de)  
Internet [www.dfs.de](http://www.dfs.de)

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