



**FREQUENTIS**

FOR A SAFER WORLD

Communication  
and information  
solutions

for a safer world

Annual Report

2017



## Largest AIM system worldwide

European AIS Database, operational since 2003



## 2017 Winner ATCA Industry Award



## EUROCAE ED 137

Interoperability standard for VoIP components



Full Member of (European Telecommunications Standards Institute) **ETSI**

## Bridging

safety-critical with standard communications



## NATO secret certified

Secure audio switch for Defence



European emergency number association



Member of **EENA** (European Emergency Number Association) and **NG 112**



since 2009



## Proven

references with all GSM-R suppliers and lab-tested, aligned road maps



Since 1996 Frequentis in-house specialist team working on **human/machine interfaces**



## Seven Seas Five Continents

equipped with Frequentis technology



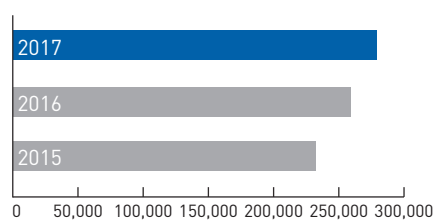
Active part in the **NEXTGEN** activities undertaken by the US ANSP FAA



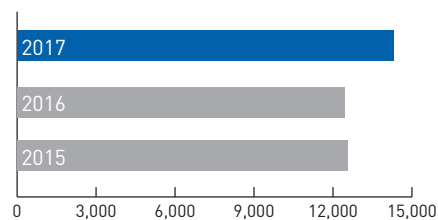
# Key figures

	2017	2016	2015
Total operating performance in EUR thousand	274,545	252,214	227,910
EBIT in EUR thousand	14,321	12,425	12,549
EBIT margin in %	5.2%	4.9%	5.5%
Equity in EUR thousand	90,095	81,047	73,926
Equity ratio in %	46.3%	44.1%	51.6%
Net balance (debt) in EUR thousand	70,029	59,475	38,081
Free cash flow in EUR thousand	12,130	23,054	1,111
Employees (FTE by reporting date)	1,741	1,637	1,331
Average employees (FTE)	1,697	1,606	1,309
Order intake in EUR thousand	287,767	259,545	219,130
Increase order intake in %	10.9%	18.4%	1.6%
Increase total operating performance in %	8.9%	10.7%	6.4%
Increase EBIT in %	15.3%	-1.0%	0.9%

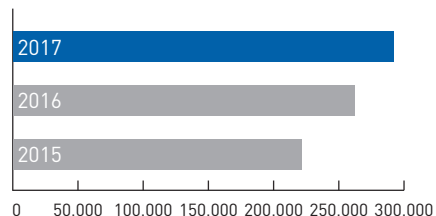
Total operating performance in EUR thousand



EBIT in EUR thousand



Order intake in EUR thousand



# 2017 at a glance

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Total operating performance  
in EUR thousand



274,545



+8.9%

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EBIT in EUR thousand



14,321



+15.3%

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Order intake  
in EUR thousand



287,767



+10.9%

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Equity ratio



46.3%

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Free cash flow in EUR thousand



12,130

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Ø Employees (FTE)



1,697

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# Group profile

## Safety & Security

In places where systems by Frequentis are used, people bear responsibility for the safety of other people and goods. As an international provider of communications and information systems for command centres with safety-critical tasks, Frequentis develops and sells custom-tailored control centre solutions in the areas of Air Traffic Management (for civil and military air traffic control, AIM, air defence) and Public Safety & Transport (for police, fire brigades, emergency medical services, shipping and railways).

Frequentis develops and optimises systems for customers in safety-critical areas – wherever high-performance, efficient and flexible solutions are required. In a human-centred design process, integrated systems are created for providing safer and more stable working environments for end users in command centres, such as for example air traffic controllers, dispatchers and operators.

## Performance & Efficiency

The Frequentis Group is a highly specialised provider in the dynamically growing sub-sectors of the global transport and safety infrastructure megamarkets. The growing need for safety throughout the world, and rising global mobility are leading to rising demand for modern technologies to optimise command centres in the traffic and public safety areas.

These solutions are used in more than 25,000 working positions for air traffic controllers, operators and dispatchers. The know-how and experience of over 1,700 employees worldwide (roughly 950 of whom are employed at the company's headquarters in Vienna), in conjunction with a worldwide network of subsidiaries and local representatives in more than fifty countries, allows Frequentis to serve over 500 customers in nearly 140 countries.

Founded in 1947, Frequentis is a global market leader in voice communication systems for air traffic control with a market share of about 30%. Moreover, the Frequentis Group's systems are global leaders in AIM (aeronautical information management) and message handling systems (messaging systems for aeronautics). In 2017, the Group's total operating performance amounted to EUR 274.5 million.

# Control Centre Solutions

## For a safer world

Frequentis' customers include authorities, organisations and companies with safety-critical tasks. Frequentis' control centre solutions comprise software developed in-house, as well as hardware components configured for specific applications.

The company develops and integrates state-of-the-art IT components in comprehensive communication and information systems, which satisfy top requirements in safety-critical applications. In addition, Frequentis provides an array of supplementary services, which support customers throughout the entire life cycle of their Frequentis systems.

Control centre solutions is a generic term for command centres with safety-critical tasks, as encountered daily by Frequentis on its customers' premises. Control centre solutions are used to either control traffic or to organise safety. The same tasks need to be carried out, even if they are labelled differently in each application area.

### To put it simply, basically three components always interact:

- A tactical situation report
- A planning and management tool, which helps make the right decision quickly and safely
- A communication system to communicate with transport users or security forces



Speech and data communication, an area where Frequentis is a world leader, is an indispensable element in any command centre. Therefore, the communication system is often a good starting point for the development of a fully integrated solution for customers, using additional products and services from the Frequentis service portfolio.

In addition, networks are shifting to the centre of the communication solutions: for example, traditional voice communication systems are being supplemented by voice and data communication services in the network.

## Rapid progress in integrating Comsoft Solutions

- The expanded product portfolio in the ATM (Air Traffic Management) business domain, achieved through the acquisition in 2016 of the ATM assets from the bankrupt company Comsoft GmbH has significantly strengthened the Frequentis Group's position on the world market.
- In 2017, revenues increased significantly and Comsoft Solutions reported a positive earnings position.

## Regionalisation strategy enhances regional added-value

- In 2017, one area of focus was implementing and harmonising a Group-wide process and IT landscape.





## Air Traffic Management business domain

### Important milestones in large ATM projects

- In Maastricht, the first communication system under the FABEC N-VCS order — the latest generation system — was put into operation.  
[FABEC is one of the nine functional air spaces in the future European air space]
- A framework contract with Air Traffic Control the Netherlands (LVNL) for the tower modernisation programme is a growth driver for the automation business.

### Strong growth in China

- The order for Beijing Daxing International Airport is an additional milestone in the 20+ year collaboration with the Civil Aviation Administration of China.

### Effective sales strategy for the defence sector

- Stable key accounts and new orders (focus regions: Australia, Central Europe and the USA) secure geoexpansion and above-average growth.

### Record order intake in the Aeronautical Information Management (AIM) business unit

- At the beginning of October, a comprehensive cooperation agreement was signed with Boeing/Jeppesen on joint development of AIM COTS products.

## Public Safety & Transport business domain

### Successful marketing of the public safety multimedia collaboration platform 3020 LifeX

- The first 3020 LifeX installation in the integrated command and control centre for the Fire and Civil Protection Office in Bozen proves its capability in live operation.
- The British Ministry of Health is using the new platform to re-equip the control centres for the UK Ambulance Trust (Ambulance Radio Programme).
- 3020 LifeX is also used in the Austrian Federal Ministry of the Interior's (BM.I) order for the "ELKOS Austria" project.

### Inter-divisional use of Frequentis solutions

- The Unified TETRA Gateway (UTG), originally developed for public safety use, made possible the successful commissioning of the first bearer independent communication solution for the Finnish railway system.
- In the Maritime business unit, UTG was used for the first MAR-TETRA connection in Sweden.



## Preface by the Chairman of the Executive Board

### Ladies and Gentlemen,

2017 was an anniversary year for Frequentis, one which let us look back proudly over 70 successful years. The company started out all those years ago as a small enterprise – what would today be called a start-up – founded by two ambitious engineers in bombed-out post-war Vienna, before growing into a medium-sized Austrian operation and eventually going on to become a successful global group of companies. I am extremely proud to have had the privilege of being part of this journey for more than four decades.

In 2017, we were able to continue our path, shaped by our innovative strength and a deep understanding of the working environments of our customers. I am proud to draw attention to our total operating performance, which amounted to EUR 274.5 million in 2017 – an increase of nearly 9% from EUR 252.2 million in the previous year.

We managed to increase order intake from EUR 259.5 million to EUR 287.8 million in 2017 – a considerable rise of 11%. The reasons for this lay in the successful continuation of Frequentis' internationalisation strategy, as well as the positive development of the ATM business following the acquisition of the Comsoft operations at the beginning of 2016. The high order level means that Frequentis had already secured 60% of its total operating performance for 2018 by the start of the year.

The Frequentis Group generated EBIT (earnings before interest and taxes) of EUR 14.3 million, a significant increase of 15% compared to 2016, when EBIT was EUR 12.4 million.

The rapid progress with the integration of Comsoft Solutions was another significant event in 2017. The integration of the teams in the AIM area was completed and cooperation was strengthened at all levels. Thanks to the complementary product portfolio, we can now offer our customers an extended range of solutions from a single source, and have already achieved joint successes. For 2017, the strategically important Boeing/Jeppesen order is particularly noteworthy.

The role of Comsoft Solutions as a key member of the Frequentis Group was also highlighted by a change of name. At the beginning of March 2018, the company was renamed Frequentis Comsoft.

Overall, the Air Traffic Management business domain continued its positive development in 2017. Frequentis is a market leader in voice communication systems for air traffic control, aeronautical information management (AIM), and in message handling systems (MHS). In addition, in combination with our surveillance expertise, i.e. our systems for air situation display, we cover a broadly based range of relevant technologies in air traffic control, so we are well-positioned for current and future customer requirements.

In 2017, we also expanded our strong position as a highly specialised provider in the safety-critical area in the PST business domain. The Public Safety business unit acquired a few large trend-setting projects, such as the "Ambulance Radio Programme" in Great Britain, which covers the re-

equipment of control centres for the UK Ambulance Trust, and ELKOS, the contract for an Austria-wide command/control and communication system.

Frequentis' business is driven by the worldwide trends in safety and mobility. The growing need for safety throughout the world, along with increasing global mobility, are leading to rising demand for modern technologies to optimise command centres in the traffic and public safety areas.

Based on these trends, we successfully gained 16 new customers for Frequentis in 2017. Due to the long-term nature of our customer relationships, each new customer contributes to the lasting expansion of our customer base and therefore safeguards our business.

We have many plans for the future: The Frequentis vision focuses on the ambitious goal of becoming "number 1 in control centre solutions". For us, this means control centres for safety-critical applications, which, in addition to our core communications business, include planning & management tools and tactical situation reports.

One essential factor on our road to success is the special culture and understanding of safety-critical processes, which is characteristic of the entire Group. More than 70 years of experience gained from highly innovative projects to meet the diverse needs of the safety-critical environment have enabled Frequentis to amass a wealth of expertise and a deep, even emotional knowledge and understanding of customers' needs.

At this point, I would like to express my sincere gratitude to Frequentis' customers and business partners for the trust shown in us. In addition, I would like to thank all employees of the Frequentis Group for their commitment, motivation, and dedication in the past and in the future. I thank my fellow Executive Board members and the Supervisory Board for their constructive cooperation.

I would like to conclude with a look ahead to the immediate future and a personal statement: Having been responsible for Frequentis' operations for 35 years, I have decided to focus on the parent company and my role as active owner in the future. At the Annual General Meeting in mid-April 2018, I will therefore move to the role of Chairman of the Supervisory Board of Frequentis AG. As an active owner, I will devote my time to further strategic and mission-critical tasks.

My successor as Chairman of the Executive Board will be Norbert Haslacher, who has been a member of Frequentis' Executive Board for three years and is currently responsible for sales and marketing. As of April 2018, Frequentis will be managed by a three-member Executive Board; CFO Sylvia Bardach and CTO Hermann Mattanovich will remain in their positions.

I look forward to our future cooperation and also ask all of you to continue to place your full trust in Frequentis' Executive Board in its new set-up.

Yours,



Hannes Bardach  
(Chairman of the Executive Board)



## Executive Board

Johannes Bardach	Managing Director since 1983, Chairman of the Executive Board since 2007
Sylvia Bardach	Commercial Director since 2000, CFO since 2007 Responsible for Finance & Shared Services
Hermann Mattanovich	CTO, COO since 2009 Responsible for Technology Management & Projects
Norbert Haslacher	CSO since 2015 Responsible for Sales & Marketing

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## Supervisory Board

Georg Bahn	Chairman since 2007
Rainer Hasenauer	Deputy Chairman since 2007
Michael Millauer	Member since 2007
Boris Nemsic	Member since 2007
Gabriele Schedl	Member since 2015; delegated by the Workers' Council
Dubravka Maglicic	Member since 2015; delegated by the Workers' Council



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## Report of the Supervisory Board

In the 2017 fiscal year, the Supervisory Board of Frequentis AG convened four times; the Supervisory Board's Audit Committee held three meetings. At the meetings, the Executive Board reported to the Supervisory Board in detail on the development of the business, the company's situation, the most important projects in progress, and the questions involved. The Supervisory Board reviewed the Executive Board's reports in detail, and checked and analysed the information provided. This examination, which took the form of an open discussion between the Executive and Supervisory Boards, did not reveal any grounds for objection. In matters where the Articles of Association or Rules of Procedure require the Supervisory Board's approval, it was obtained. The annual financial statements of Frequentis AG and the consolidated accounts for the year ended 31 December 2017, the management report and the group management report for the 2017 fiscal year were audited by the appointed auditors Confida Wirtschaftstreuhandgesellschaft m.b.H. As the audit did not reveal any grounds for objection and was consistent with the applicable statutory provisions, the auditors gave their unqualified approval.

At its meeting on 16 April 2018, the Supervisory Board's Audit Committee examined the annual financial statements and the consolidated financial statements and proposed that they should be approved by the Supervisory Board.

The Supervisory Board examined the annual financial statements and consolidated financial statements submitted, as well as the proposal for appropriation of profits, the management report, and the group management report by the Executive Board and agrees with the results of the audit. The Executive Board's management report and the group management report were approved and the proposal on the appropriation of profits noted and agreed.

Having been accepted by the Supervisory Board, the annual financial statements and the consolidated financial statements for the year ending 31 December 2017 can be deemed approved pursuant to Article 125 (2) Austrian Companies Act (AktG).

Vienna, 16 April 2018

Dr. Georg Bahn  
Chairman of the Supervisory Board

## Sustainability & corporate social responsibility

In accordance with its corporate mission, “for a safer world”, the Frequentis Group is committed to corporate social responsibility and sustainability in everything it does. In 2017, the company continued and extended its sustainability-related CSR activities.

Frequentis also endeavours to implement extensive corporate social responsibility and sustainability measures at its subsidiaries. Appropriate measures are put in place by the subsidiaries, taking into account local statutory requirements.

### Processes & quality

Frequentis implements its social responsibility through an integrated management system, which is controlled by means of processes. These processes, which are divided into core processes, management processes, and support processes, build the foundation for the ongoing optimisation and increased efficiency of the company.



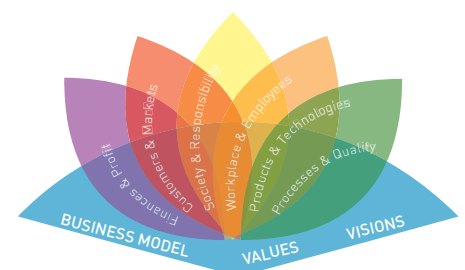
Optimisation and increased efficiency

- The results of the core processes create direct value for customers.
- Management processes define activities geared to strategic alignment and management of the company. Examples include innovation and product management.
- The workflows required to support the core processes are defined in support processes. These include the supply chain as well as development.

Implementation of the new process model introduced in 2016 continued in 2017. This model covers the entire life cycle, from the product idea to phase-out, while also taking the requirements of the software and solution-focused business into account.

The processes build a substantial foundation to obtain and maintain Frequentis' certification under the following standards:

- ISO 9001 (quality)
- ISO 14001 (environment)
- ISO 27001 (information security) & the UK Cyber Essentials Certificate
- OHSAS 18001 (occupational safety)



The process content and its application are verified during audits, which are conducted at regular intervals by external certification authorities. Frequentis switched to the amended versions ISO9001:2015 and ISO14001:2015 in 2017.

Frequentis' processes are valid for all subsidiaries. Excepted from this are those subsidiaries that have their own independently certified quality management systems with customised processes, such as Frequentis California and Frequentis USA.

## Workplace & measures taken for employees

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people took advantage of the medical check-up offer

As a responsible employer, Frequentis has a genuine desire to actively support the health of its employees. Vaccination campaigns (influenza, FSME, dip/tet/polio), annual health examinations, heart check days, lung function tests, eye tests and vein checks are performed annually at the Vienna location as part of the company's occupational healthcare activities. These are supplemented by stress checks in the area of occupational psychology and measures geared to preventing burnout.

The wide-ranging vitality programme at the Vienna headquarters includes an extensive choice of free sports activities and a range of discounted sports and fitness offerings. In 2017, nearly 100 employees participated in the Vienna City Marathon and the Vienna Business Run. Participation was sponsored by Frequentis. Other activities sponsored by the company include table tennis and football.

A key aspect of the Frequentis vitality programme is healthy nutrition for employees and guests at the Vienna location. Meals are freshly cooked daily and four different menus are available. Great emphasis is placed on the top quality of all food products.

Where possible, programmes geared to promoting physical and mental health are also offered at Frequentis' subsidiaries.

Frequentis also pays great attention to the compatibility of work and family life. As a family-friendly company, Frequentis has offered the "Frequently Children's Weeks" childcare programme during the summer holidays since 2012. In 2017, around 100 employees' children between the ages of three and ten were taken care of over the course of two weeks as part of this initiative.

In 2017, the motto of the "Children's Weeks" was "Exploring Nature". This comprised an exciting and varied full-day programme – directly on Frequentis' premises, supplemented by a variety of workshops and various excursions. Sports activities are also part of the programme. In this way, Frequentis makes an active contribution to the "Companies for Families" programme of the Austrian Ministry for the Family. Frequentis has been involved in this initiative as a network partner since 2015.

The Frequently Children's Weeks initiative, which mainly takes place directly on site at the company's premises to give the children an insight into the working world of their parents, has proven very popular and will be continued in 2018.

To help staff to pursue their personal interests, the company also supports parental and educational leave.

Many options for taking unpaid leave

During an annual salary review, employees and their managers use legal requirements and external benchmarks to examine whether salaries correspond to minimum requirements, and market conditions. An internationally customisable leadership development programme supports succession planning. Group-wide knowledge acquisition and exchange is supported by the further development of skills management, virtual platforms and distance learning.

## Products & technologies

Attention is paid to sustainability and environmental consciousness in the company's production sequences: Careful use of primary energy and raw materials, reducing harmful waste and the use of environmentally friendly production methods are documented and verified in a regular HSE report.

The photovoltaic system installed in 2014 is effective and is now operating at a capacity of 115.3 kWp. The waste heat from the integration and assembly building is being used to heat the company's premises in Innovationsstrasse. An in-house interdepartmental energy team has been implemented to explore additional savings potential in the area of energy.

Frequentis has created an open culture, in which ideas and suggestions are recognised and valued by everyone. A continuous improvement process and active suggestion system are essential components of a functioning quality management system.

The "FREQUENTIS IDEAS" platform has been up and running since 2014: Here, Frequentis employees are asked to proactively generate ideas for improvement, i.e. ideas which could be profitable for the company in the broadest sense or with which existing resources could be used could better or more wisely. This also includes improvements to workflows.



IDEAS - a platform for suggesting improvements

Around 10 ideas are introduced per month. Together with the contributor of the idea, they are evaluated in more detail and processed transparently with a view to potential implementation. One example is "The Launcher," a tool for the preconfiguration of Frequentis' information systems (JIRA, JAMA, SAP, DMS, ...) when creating a specific project in the Frequentis IT landscape. Valuable working time can be saved as a result. The tool was implemented in 2017.

## Customers & markets

For Frequentis, long-term business relationships are characterised by transparency, fairness and integrity. The company has an outstanding reputation as a reliable and recognised partner with its customers and suppliers, as well as in the international community.

Proximity to customers, which is very important to Frequentis, is continuously being extended thanks to the establishment of a new sales structure in 2016. The core is the development of regional sales units in all key markets. Close cooperation with the business units where optimisation was the focus in 2017 secures professional expertise, in addition to regional know-how.

Cooperation between domain and regional sales

Suppliers are selected based on objective criteria. Customers and suppliers who are simultaneously competitors are handled fairly and are not disadvantaged. Regular training of employees in supply chain management guarantees compliance with the rules of transparency in the supply chain, including the strict avoidance of slavery, human trafficking, any form of forced labour or compulsory labour, child labour, and any type of discrimination. Audits cover subcontractors, suppliers, and employment agencies, taking into account any specific country and/or regional risks.

Frequentis strictly complies with national and international laws, regulations and official regulations in each country where it does business. An example is the "Modern Slavery Act" in Great Britain.

Frequentis' code of conduct as a guideline for actions

Naturally, integrity and high ethical standards are the basis of all Frequentis' business activities. The principles and guidelines for responsible action and integrity are outlined in a code of conduct issued in 2016 and clearly summarised for customers and partners.

## Finances & profit

Frequentis stands for sustainable business management. This is a duty arising from its special corporate culture in dealing with safety-critical applications.

Long-term customer and supplier relationships also ensure the sustainability of the company's business activities. This is supported by the long-term stability of Frequentis' teams.

Transparent reporting and open communication policies provide the basis for credibility and trust in Frequentis' management.

Consistent growth in the total operating income over the past 35 years, an excellent equity base, and well-secured liquidity document the sustainable development of Frequentis. This is also shown by the stable equity ratio, which was 46.3% in 2017, compared with 44.1% in 2016.

Frequentis' extensive financial management provides funding for the Group. This ensures the company's financial independence and continuous liquidity, along with permanent monitoring of all interest rate and currency risks.

35

years of  
growth in total  
operating  
performance

## Society & responsibility

In accordance with the company's mission statement "for a safer world", Frequentis considers that it has a social responsibility and obligation to make a contribution to disaster relief and, in this way, to express solidarity with those in need.



Rapid aid for  
children in need

Special focus is placed on the most vulnerable members of society, children. Frequentis has been a partner of the UN child welfare organisation, UNICEF, for many years. UNICEF provides aid wherever children are in danger – due to war, disasters, epidemics, or violent conflicts. By providing emergency aid and long-term support, UNICEF helps set the course for girls and boys worldwide to grow up healthy, safe, and with a bright future.

## Resource handling

In conjunction with efficient use of resources, Frequentis makes a sustained effort to reduce the use of resources within the company and the use of dangerous materials in production. An annual HSE audit evaluates the measures implemented and recommends new initiatives.

Environmental protection has a significant role throughout the entire value chain, from the selection of materials, through processing to recyclability. Particular attention is paid to lower hazardous materials in production.



Power consumption is another important indicator. Over the past few years, Frequentis has succeeded in significantly reducing or maintaining consumption at the same level, thanks to a range of measures, such as free cooling and the use of water pumps and solar facilities.

Frequentis' contribution to the conservation of resources and sustainability includes the fact that its products and solutions are operated by customers for many years, often decades. In addition, Frequentis provides extensive service and maintenance programmes, such as life cycle management to support this long service life. Customers can select various service levels, while service teams are available around the clock worldwide.

## Educational sponsorship

For years now, Frequentis has been putting emphasis on selective sponsorship of technical schools and universities. Special technically-oriented training facilities require considerable financial resources (basic financing by the government can often cover only part of the cost) and exchange with industry to be able to offer top-quality practice-oriented education and training that is state-of-the-art. Close collaboration between business and education is therefore essential.

For many years, Frequentis has been involved at the FH Technikum and the FH Campus in Vienna, in order to support top-quality education at these universities of applied sciences. Its participation includes sponsorship, lectures, support for bachelor's and master's degree programmes, workshops and study trips on topics such as "Women in Technology". Furthermore, Frequentis actively contributes to the development of study programmes (e.g. in software design & engineering).

In addition, Frequentis has had a long-term cooperation with FH St. Pölten since 2010. This focuses above all on IT-related topics, such as cyber security. Moreover, Frequentis managers are represented on advisory boards for security/information security and railway technology & mobility.

The Frequentis Start-Up Centre in Phorugasse in Vienna, which was founded in 2001, helps graduates from TU Vienna set up their own businesses. The support programme basically lasts three years. In addition to an inexpensive and flexible location with appropriate infrastructure, during this time young entrepreneurs have access to an array of services, including the possibility of tapping into business opportunities at Frequentis. In total, more than 50 companies with over 200 employees in the IT, hardware and software development, and technical consulting segments have found their 'first home' at the Start-Up Centre.



Service teams  
throughout the  
world

50+

companies have  
been set up at  
the Start-Up  
Centre so far



# Group Management Report 2017

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## Economic environment & industry development

### World economy <sup>1)</sup>

Global business activity continued to consolidate in 2017. According to the IMF, global growth for 2017 was 3.7%, 0.1 percentage points more than forecast in the autumn and half a percentage point higher than in 2016. The growth momentum was broadly based, with positive surprises in Europe and Asia. Global growth forecasts for 2018 and 2019 were revised upwards by 0.2 percentage points to 3.9%. This adjustment reflects the stronger global growth momentum and the expected effects of the recently approved tax policy changes in the USA.



Global  
growth  
gaining  
strength

### Strengthening global recovery

The cyclical upswing that developed in mid-2016 continued to gain strength over the past financial year. Growth in the most important economies recovered in 2017 compared to the previous year. This was the largest synchronised growth worldwide since 2010. Growth in advanced economies was higher in the third quarter of 2017 than had been projected in the autumn, especially in Germany, Japan, Korea, and the United States. Important emerging and developing economies, among them Brazil, China and South Africa, also experienced stronger growth than forecast in 2017.

### Industry development

As a specialist in the safety-critical area, Frequentis operates in the fast growing megamarkets of transport and safety. The economy's positive signals are also stimulating the markets served by Frequentis, which are characterised by the features of an mobile and open society.

On the one hand, this increasing mobility and openness places demands on the capacities of the traffic and transport sector; on the other hand, they result in specific risks or security needs along with increased efforts to make these risks controllable.

<sup>1)</sup> <http://www.imf.org/en/Publications/WEO/Issues/2018/01/11/world-economic-outlook-update-january-2018>, [https://www.ifw-kiel.de/pub/kieler-konjunkturberichte/2017/kkb\\_33\\_2017-q3\\_welt\\_de.pdf](https://www.ifw-kiel.de/pub/kieler-konjunkturberichte/2017/kkb_33_2017-q3_welt_de.pdf)

## Mobility & safety



Frequentis has a first-class customer base

The global trends in safety and mobility are business drivers for the Frequentis Group, and the associated international rise in risk awareness, capacity bottlenecks (e.g. in air space) and the efforts to increase efficiency are causing a noticeable increase in the demand for adequate technology to enhance and optimise the tasks of control centres in the fields of traffic and public safety.

The company's worldwide clientèle includes air traffic control centres, authorities, organisations for internal and external security, the police, fire brigades, ambulance services, railways, and shipping.

The safety-critical nature of customer requests places extremely high demands on market players. Therefore, Frequentis benefits from high barriers to market entry while at the same time maintaining its market position and continuing to penetrate its target market segments. The basis for this is long-term collaboration with customers and excellent references.

Increasing cost pressure and continual changes in the operating environment are currently the greatest challenges for organisations in the safety-critical area. To continue to meet the high safety and security requirements that are demanded here, users need more flexible systems. Operating resources and operational locations must be easy to adapt to current needs.

Consequently, flexible communication media and integrated control room solutions are necessary. The migration of data and voice communication to joint IP networks creates the technical prerequisite for this flexibility. Cyber security is also becoming a more important issue and the demands made on secure infrastructure are rising as a result of increased networking. According to a study by IT market researcher Gartner<sup>2)</sup>, worldwide investments in IT security are increasing by 7% per year – growth that will continue in the coming years.

In addition, new technologies such as LTE require adjustments to the safety-critical infrastructure. Additional impetus is coming from the increasing importance of drone management and digitalisation.

No safety without security

Instabilities resulting from the British government's Brexit negotiations, the insecure political situation in the Middle East and in North Korea, along with newly emerging protectionism of individual governments could hinder or jeopardise international projects. However, to date this has not had any impact on Frequentis' business activities.

As a rule, Frequentis' business development lags the global economy. This is due to long project lead times and the fact that projects often take several years to complete. Moreover, the markets targeted by Frequentis are characterised by high barriers to entry due to special security requirements.

<sup>2)</sup> Source: Gartner, publication dated 16 August 2017, <https://www.gartner.com/newsroom/id/3784965>



## Subsidiaries & associated companies

Vienna-based Frequentis AG is the parent company of the Frequentis Group, which bundles the principal business activities and strategic corporate functions. Frequentis and its subsidiaries and associated companies are assigned to the following functional areas (further details can be found in the description of the Group in the notes to the consolidated financial statements):

- Regional sales & operations
- Software & products
- Services & solutions

### FREQUENTIS AG

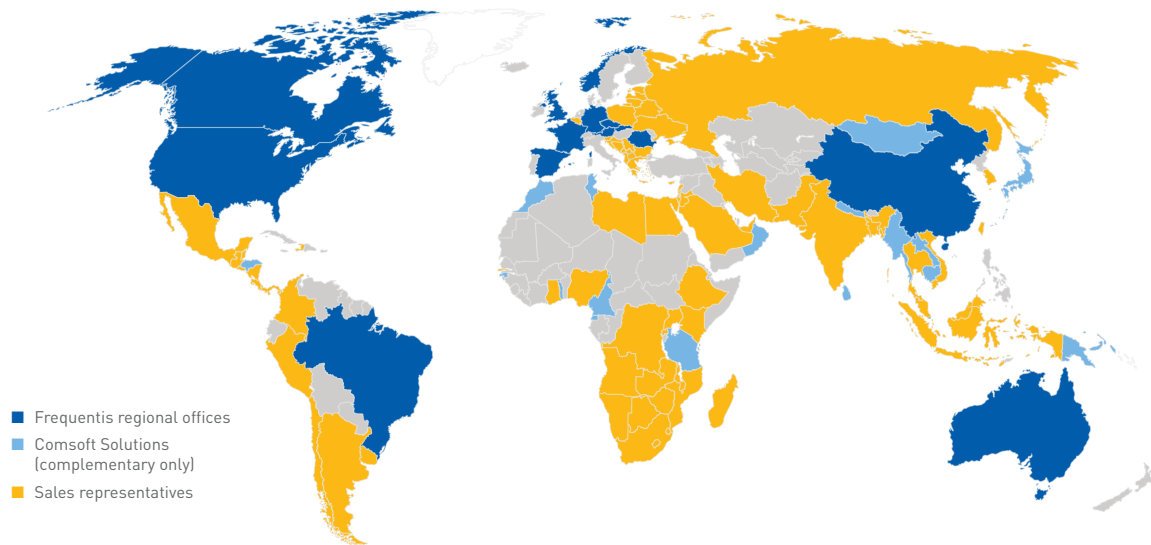
> Regional sales & operations	> Software & products	> Services & solutions
FREQUENTIS Australasia Pty. Ltd.	FREQUENTIS Czech Republic s.r.o.	FREQUENTIS California Inc.
FREQUENTIS do Brasil Ltda.	FREQUENTIS România SRL	COMSOFT Solutions GmbH, Karlsruhe
FREQUENTIS (Canada) Ltd.	FREQUENTIS Slovakia s.r.o.	FREQUENTIS Solutions s.r.o., Bratislava
FREQUENTIS Deutschland GmbH	PDTS GmbH, Vienna	CNS-Solutions & Support GmbH, Vienna
FREQUENTIS France SARL	ELARA Leitstellentechnik GmbH	Secure Service Provision GmbH, Leipzig
FREQUENTIS Norway AS	AIRNAV Technology Services Inc., Philippines	TEAM Communication Technology Mgt. GmbH, Vienna
FREQUENTIS (Shanghai) Co., Ltd.		Systems Interface Ltd., United Kingdom
FREQUENTIS Singapore Pte. Ltd.		GroupEAD Europe S.L., Madrid
FREQUENTIS UK Ltd.		Mission Embedded GmbH, Vienna
FREQUENTIS USA Inc.		

Simplified visualisation of direct and indirect shareholdings of more than 20%

## Regional sales & operations

Continuous expansion of the Frequentis Group

The regional sales and operations function at Frequentis comprises a powerful network of subsidiaries. Large trend-setting customer projects have shaped and continue to shape the expansion and development of these subsidiaries. As part of the expansion of Frequentis' sales organisation, these companies are gradually being developed into regional sales units with responsibility for the region assigned to them.



In addition to sales activities, the goal is to successively raise the local added value by shifting some project management to the regional sales units. Management will remain with the central units at Frequentis AG in Vienna; this allows for the quick implementation of organisational and structural adjustments, where necessary.

Germany, the USA, China, and Norway made significant contributions to order intake in 2017.

## Changes in the Group structure

To expand the value chain in Southeast Asia, Frequentis AG acquired a minority share in AIRNAV Technology Services, a systems engineering service company based in the Philippines (Iloilo).

In January 2018, Frequentis acquired a strategic non-controlling interest in British start-up Altitude Angel Ltd. This investment allows close collaboration in drone management.

At the end of February 2018, Comsoft Solutions GmbH was renamed Frequentis Comsoft GmbH. This step underscores the close collaboration within the Frequentis Group; the customers are offered a wide range of solutions from one source thanks to the complementary product portfolio.

At the beginning of March 2018, a cooperation agreement was signed with German air traffic control (DFS) Aviation Services GmbH on the establishment of a company for the joint development of the remote tower business.

Frequentis Comsoft is a strong partner in the corporate network

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## Financial situation

### Key performance indicators

Frequentis uses the following three key indicators to plan and evaluate its business performance:

- Order intake as a basis for efficiency of sales activities
- Total operating performance (as a total of revenues, work in progress, and own work capitalised<sup>\*)</sup>, and other operational income) as a performance indicator for project execution
- EBIT and the EBIT margin as a % of total operating performance define the profitability of the business

<sup>\*)</sup> R&D activities are not capitalised.

### Supplementary performance indicators

In addition to the key performance indicators, Frequentis uses the following supplementary indicators:

- Equity and equity ratio (equity ratio: equity as a % of equity and total liabilities) as the first yardstick for the credit worthiness of lenders
- Net cash or net debt (cash in bank minus liabilities to banks) as a second yardstick for the credit worthiness of lenders

### Earnings and financial position

2017 was a very successful year for the Frequentis Group. Compared to the previous year, order intake increased by 10.9%, total operating income by 8.9%, and EBIT by 15.3%.

#### Order intake

Order intake rose by EUR 28 million or 10.9% from EUR 259.5 million in 2016 to EUR 287.8 million in 2017.

The split among the business domains was as follows: ATM accounted for EUR 200.4 million (nearly 70%) and PST for EUR 87.4 million (30%).

## Total operating performance

Total operating performance in the 2017 financial year increased by EUR 22.3 million to EUR 274.5 million (EUR 252.2 million in 2016). This was principally due to the EUR 25.7 million increase in revenues, while other operating income fell by EUR 3.2 million due to lower reversals of provisions and lower miscellaneous income. This was partially compensated by higher grants and subsidies.

Total operating performance	2017 in EUR	2016 in EUR
Revenues	266,927,005.77	241,220,912.97
Own work capitalised	65,182.15	245,346.43
Other operating income	7,553,013.33	10,747,653.19
Total operating performance	274,545,201.25	252,213,912.59

In 2017, EUR 185.8 million of the total operating performance was generated by the ATM business domain and EUR 86.7 million by the PST business domain.

## Expenses

In 2017, the cost of materials and purchased services increased by EUR 10.7 million to EUR 75.5 million. In other words, more was spent on materials (+EUR 5.8 million) and purchased services (+EUR 4.9 million) in proportion to sales in 2017. This increase (16.5%) was due to projects both in ATM and in PST that required large quantities of materials and purchased services.

	2017 in EUR	2016 in EUR
Cost of materials and purchased services	75,510,089.67	64,791,164.56
Staff expenses	134,509,040.60	124,894,841.97
Depreciation and amortisation	5,701,894.70	5,256,627.63
Other operating expenses	44,503,258.06	44,846,319.49
Total	260,224,283.03	239,788,953.65

Staff expenses increased by EUR 9.6 million to EUR 134.5 million, while other operating expenses fell by EUR 0.3 million from EUR 44.8 million to EUR 44.5 million in 2017 as fewer provisions were established.

## EBIT

EBIT increased by EUR 1.9 million from EUR 12.4 million in the previous year to EUR 14.3 million in 2017. Therefore, the EBIT margin increased from 4.9% to 5.1% in 2017.

## Equity and financial resources

During the reporting period, equity increased from EUR 81.0 million to EUR 90.1 million, so the equity ratio improved from 44.1% to 46.3%. Net cash, an important reserve for investments, project financing and acquisitions, increased by EUR 10.5 million from EUR 59.5 million in 2016 to EUR 70.0 million in 2017.

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## Report on the business domains

Frequentis operates in highly specialised sub-sectors of the global transport and safety infrastructure megamarkets. Its customers are authorities, organisations and companies with safety-critical tasks.

### Air Traffic Management business domain

The ATM business domain encompasses the ATM Civil, AIM (Aeronautical Information Management), AMHS (Aeronautical Message Handling Services), Surveillance, and Defence business units. Its main customers are civil and military air traffic control organisations, airports, and homeland security authorities. These organisations are responsible for managing air traffic in their national airspaces or share responsibility for overall monitoring and coordination tasks.

In 2016, the ATM business domain achieved a total order intake of EUR 200.6 million and generated a total operating performance of EUR 159.1 million. In 2017, order intake remained unchanged at EUR 200.4 million, and the total operating performance increased by 17% to EUR 185.8 million.



ATM Civil — Frequentis' largest business unit — was highly successful in 2017. Worth noting is the positive development in order intake in Poland, where the establishment of the Polish air navigation services agency PANSa as a key account customer was driven forward. 2017 saw the largest order intake to date for Frequentis on the Chinese market with an order for the prestige project, the Beijing Daxing International Airport, the new mega airport in the Chinese capital. There were also significant successes with air navigation service providers in Germany, France, and Norway.

Acquiring a comprehensive framework contract for a tower modernisation programme with LVNL, Air Traffic Control the Netherlands, is an important milestone. This is crucial for the expansion of the automation business. Airways New Zealand also opted for a digital tower solution from Frequentis.

In Maastricht, the first voice communication system for the FABEC N-VCS order — the latest generation system — was put into operation in 2017. Significant progress was also made with the OneSKY project in Australia; it comprises the world's first fully integrated air traffic management system for mutual civilian and military use, covering the entire Australian continent.



Due to a team effort with Comsoft Solutions in Jeppesen, a Boeing subsidiary, AIM achieved a record order intake. This order is for joint development of AIM COTS (commercial-off-the-shelf) products for the world market. At the end of the year, the redesigned Homebriefing system with numerous new functions was put into operation at the Austrian air navigation service provider Austro Control.

A comprehensive validation campaign, in which a single-tower controller simultaneously monitors three airports for the first time, took place at SESAR 2020 (Single European Sky Air Traffic Management Research) in conjunction with partners as part of the SESAR project "Remote tower for multiple airports". The results prove the operational feasibility and provide recommendations for additional concept and design improvements.

In the AMHS area, Frequentis provides systems for processing and forwarding aeronautical messages; here, the company is a world market leader with a market share of nearly 70%. In 2017, great successes were achieved in the Czech Republic and Venezuela, among others. A considerable success was achieved in Taiwan with an order for replacing aeronautical data processing for Taiwanese air traffic control.





The area of Surveillance includes developing and providing systems for tracking aircraft to safely handle air traffic. In 2017, WAM (wide area multilateration) systems went live for large-scale aircraft surveillance in Poland and Denmark, replacing radar. Regarding the SDDS (surveillance data distribution system) NG, additional DFS German air traffic control locations and locations in the Portuguese capital of Lisbon were put into operation with the new system generation of the radar data distribution in 2017.

The success of the Defence business unit is due to a clear strategy and planned sales activities. Significant contributions came from European key accounts like the German Bundeswehr. In the projects sector, the first systems under the Marshall programme for Great Britain were successfully put into live operation in 2017. There is a focus on continuing to expand the American market. In 2017, systems for 19 military towers were delivered as part of the IVSR programme — Frequentis is currently the only supplier that is certified for voice communication systems by the US air navigation service provider, the FAA.



## Public Safety & Transport business domain

The PST business domain comprises the Public Safety, Public Transport, and Maritime business units. The main customers for Public Safety are “flashing blue-light organisations”, fire and rescue services, police, and emergency medical services, as well as authorities and organisations, that deal with public safety tasks. The principal customers in the Public Transport business unit include railway infrastructure organisations, and for Maritime they are coast guards and organisations operating canals, ports, and inland waterways.

This business domain saw a massive 48% increase in order intake in 2017, from EUR 59.0 million in 2016 to EUR 87.4 million for 2017. Total operating performance saw a slight 5% decrease from EUR 90.9 million in 2016 to EUR 86.7 million in 2017.

After a difficult year in 2016, 2017 was very positive for Public Safety. The new sales structure with region-specific specialised sales ensured successes in order intake. A few examples include the British Ambulance Radio Programme — the British Ministry of Health will use a cloud solution from Frequentis to re-equip the control centres for the UK Ambulance Trust — and the ELKOS programme at the Austrian Federal Ministry of the Interior. This is a central control and communication system for the Austrian police force and for fire brigades in Lower Austria.



Public Safety continues to have a strong position in Germany: In North Rhine-Westphalia, the TETRA concentrator came into service at the first control centres belonging to non-police emergency response services (fire brigade and ambulance service). This innovative Frequentis solution enables the integration of control centres from many different manufacturers.



The development of the Public Transport business unit varied. The expected decrease in demand for GSM-R systems before the introduction of successor technology, along with project delays, prevented this business unit from achieving its target. Collaboration with the key account customer in Switzerland continues to develop positively. The Finnish URCA project commissioned the world's first bearer independent communication in railways. This is a rail-specific, carrier-independent communication solution that allows the use of TETRA and GSM for railway-specific communication.



2017, was a difficult year for the Maritime business unit, but the foundations were laid for important large-scale projects. Business went well with existing customers, like the Australian GMDSS project and the acceptance test in the large Norwegian coastal radio project. In Sweden, the first maritime TETRA connection based on product development across business units was a success.



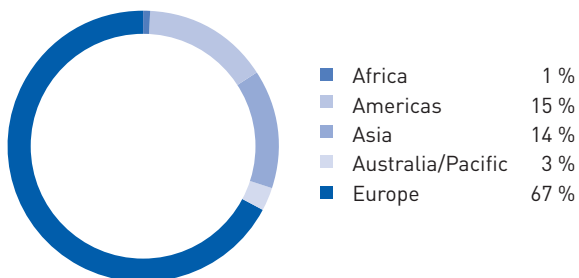
## Regional distribution

The market breakdown of order intake is as follows: The European home market continued to be dominant in 2017 accounting for an unchanged 67%, while the Americas accounted for 15.5%, Asia for 13.6%, Australia/Pacific for 2.8% and Africa for 1.1%.

This breakdown is partly due to different regional focus areas in the various market segments. Frequentis serves the global market in the ATM Civil and Maritime business units, whereas activities in the Defence unit are focused on Europe and the USA. Public Safety concentrates on the German-speaking areas of Europe, plus Norway and Great Britain, while Public Transport focuses on Europe.

Order intake by region	31 Dec. 2017 in %	31 Dec. 2016 in %
Europe	67	67
Americas	15	14
Asia	14	6
Australia/Pacific	3	9
Africa	1	4

Note: The breakdown of order intake is not identical to the breakdown of the total operating performance as there is an order-related time lag because large orders are processed over a number of years.



# Some insights into the Frequentis projects

## World's first and largest multinational airspace management programme utilising VoIP communication going live

In October, Frequentis has placed the industry's largest fully end-to-end IP VCS into operation for Maastricht Upper Area Control Centre (MUAC), fulfilling demanding safety criteria and supporting the network capability requirements of the Functional Airspace Block Europe Central (FABEC) project. As part of the FABEC N-VCS contract, and in close co-operation with its project partners, France's DSNA (Direction des Services La Navigation Aérienne) and EUROCONTROL (MUAC), two of Europe's leading ANSPs, Frequentis has deployed its leading end-to-end IP communication solution.



## Mariners in Victoria, Australia, are operating virtually

Frequentis delivered a new Marine Distress Emergency Monitoring Service (MDEMS), known as Marine Radio Victoria, under a contract with the Victorian Department of Economic Development, Jobs, Transport and Resources. Requiring just an internet connection, MDEMS makes it possible to conduct and manage safety services without being in a physical control centre. The system was delivered to the Frequentis customer Kordia, a leading provider of mission-critical technology, to ensure volunteers can assist Global Maritime Distress and Safety System (GMDSS) operators with the provision of the best safety services along the coast of Victoria (south-eastern Australia).

## Next Generation Radar Data Service: Over 30 sites now operating SDDS-NG

SDDS-NG (Surveillance Data Distribution System Next Generation) is a state-of-the-art solution that safely and easily interconnects any system that handles surveillance data, and is the answer to an evolving ATC industry that requires more flexibility and greater efficiency of data exchange.

In November, SDDS-NG was successfully taken into operational service at three major European Air Traffic Control centres, as additional steps of their changeover project. The operational transitions in the Portuguese capital Lisbon, and the German cities of Karlsruhe and Langen took the number of operational SDDS-NG sites worldwide to 31.





## OneSKY CMATS Phase 1 (Early VCS) progressing and critical milestones achieved



In 2015, Frequentis was subcontracted by Thales to deliver OneSKY CMATS Phase 1 (Early VCS) as “advanced work”. Under this contract Frequentis is delivering the latest generation end-to-end IP-based voice communication systems to the Airservices Australia sites in Melbourne, Brisbane, Sydney and Perth – equipping a total of 280 working positions. In 2017, several critical milestones were passed successfully with the deployment of the systems starting in early 2018; the first site commissioning is planned for end of 2018. In the second half of 2017 also the negotiation for the main tranche of OneSKY continued; the OneSKY CMATS Acquisition and Support Contract was signed in February 2018.

## Taiwan CAA transforms aeronautical message handling

The Taipei Flight Information Region (FIR) is one of the busiest air transport hubs in Asia covering 180,000 square nautical miles and bordering five other FIRs (Fukuoka, Manila, Hong Kong, Guangzhou and Shanghai). Flight volume in the region increased by over 7% in 2016 alone and to maintain efficiency and manage flight numbers it was important for ANWS to transform their message handling capabilities.

Air Navigation and Weather Services (ANWS), a division of the Taiwan Civil Aeronautics Administration (CAA), has selected Comsoft Solutions Aeronautical Message Handling System (AMHS) in order to transform the way in which they transmit messages and aeronautical data.



## Strategic alliance with Jeppesen in support of next generation data-centric software solutions

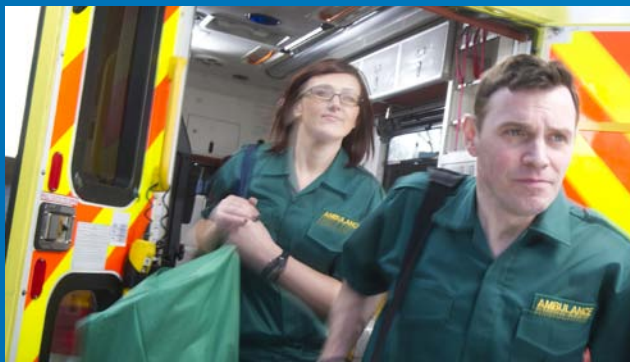


After intensive testing, Jeppesen, a subsidiary of the Boeing Company, and the Frequentis Group joined a strategic alliance in order to further advance the Jeppesen database and comply with aeronautical AIXM data standards.

The alliance will also provide a stronger data infrastructure to support Jeppesen's growing portfolio. During the testing period, both companies focused on combining their exceptional operational and technical expertise to ensure maximum effectiveness of the future Jeppesen database solutions.

## Successful commissioning of the URCA project at the Finnish railways

The Finnish URCA (Unified Railway Communication and Application) project is based on the Frequentis BIRCA platform, which allows the additional use of the Finnish TETRA network VIVRE. On a tight schedule, it was possible to launch the world's first bearer independent communication solution for rail communications. The FTA (Finish Transport Agency) realises comprehensive cost savings while at the same time extending operational functionality.



## Department of Health selects Frequentis control room software

The Department of Health has selected the Frequentis 3020 LifeX integration platform as a replacement for their current ageing, decentralised Integrated Command and Control System (ICCS). The Control Room Software (CRS) project required a new approach to the provision of radio dispatch for the UK Ambulance Trust using a cloud-based model. The system will enable the trust to be ready to transition to the United Kingdom's Emergency Services Network (ESN).

## LVNL selects Frequentis tower system for SESAR deployment

Frequentis has been selected by LVNL (Air Traffic Control the Netherlands) to deploy a tower system in accordance with the Pilot Common Project (PCP) regulations driving the SESAR deployment, thereby replacing and upgrading existing systems and delivering the company's electronic flight strips system.

The contract involves a development partnership for up to 25 years, ensuring LVNL is able to deploy the required ATM functions supporting airport integration and throughput.



## A major milestone achieved in the 22-year MoD Marshall project

In October 2014, Frequentis was selected to deliver voice communication systems for 40 Royal Airforce sites in the UK and overseas, in cooperation with NATS.

After a detailed design and testing phase, the first sites were put into operation in autumn 2017. The deployable secure communication elements have now entered the design phase.



## Airways New Zealand selects Frequentis Digital Tower solution



Digital towers present air traffic controllers with panoramic views of the airfield showing more details than visible with the human eye. Now Airways New Zealand has selected Frequentis to provide a digital air traffic control tower demonstration to show how the safety and efficiency of airport operations could be enhanced. The system will be supported by additional situational awareness tools such as target tracking and infrared capabilities.

## North Rhine-Westphalia: Connection of the control centres of the fire brigade and the rescue service to the digital radio network (TETRA) of the BOS

North Rhine-Westphalia is the most densely populated federal state in Germany, 60 control centres for non-police security (fire brigade and rescue service) serve 18 million inhabitants. These control centres were connected to the digital radio BOS via the NRW Concentrator, which has been in full operation since the beginning of October 2017. The NRW Concentrator is an innovative Frequentis solution that enables the integration of control centres from various manufacturers.



## Continued success for the IVSR Program in the USA



2017 was a very busy year for the IVSR Program as 19 milATC systems were installed for the US Army. This included the first Frequentis US Army site outside of the United States, in Central America. Frequentis also replaced the first US Army ETVS system, constituting the introduction of Frequentis systems into the larger US Army bases. Frequentis was also tasked to kick off a US Army maintenance training program hosted at the Frequentis training centre at Columbia, Maryland, USA facility.



## Central dispatch control system ELKOS ensures greater safety in Austria

Over the next few years, a central command and communication system for the federal police will be implemented for all of Austria, with the Federal Ministry of the Interior acting as contracting entity. Frequentis and Hexagon Safety & Infrastructure have been selected to supply mission-critical technologies for the "ELKOS Austria" project. The implementation will also support the fire brigades in Lower Austria, for which the Lower Austria State Administration acts as contracting party.



## Research & development

12%

R&D rate

A solid technological basis and high innovative capability are the drivers of research & development at Frequentis. The company is a recognised innovation leader in the markets it serves. On average, 12% of total operating performance is invested annually in research & development, which underlines the central value that this area has for Frequentis.

### Challenges in the customer's environment

Increasing cost pressure and continual changes in the operating environment are currently the greatest challenges for the customers in the safety-critical area. In order to continue to meet the high safety requirements that are demanded here, users need more flexible systems. Operating resources and operational locations must be easy to adapt to current needs. Therefore, flexible means of communication and integrated control room solutions are necessary. The migration of data and voice communication to joint IP networks creates the technical prerequisite for the greater flexibility required. At the same time, cyber security is becoming an increasingly important issue due to increased networking.

Frequentis is responding to this development by providing IP-based systems. In the next phase, the networks will shift to the centre of the communication solutions. Traditional voice communication systems are being expanded by voice and data communication services in the network. New application platforms, such as 3020 LifeX for Public Safety or the MosaiX integrated voice and data platform for air traffic control, enable Frequentis to provide customers with the necessary services in the respective networks. These solutions are increasingly being offered on a cross-business-unit basis.

Frequentis uses a special user-centric process to support changes in customers' working environments. This will increase customer acceptance of new technologies in control centres.



Control Room  
Consulting  
optimises  
workflows

Proximity to customers and integrating development into individual business units prove their worth in software-centred tasks that are increasingly solution-oriented. The company uses its technological expertise to ensure its systems and solutions remain state-of-the-art. At the same time, it actively drives progress. Product development is greatly stimulated by ongoing projects.

Close exchange with customers, with most of whom Frequentis has a long-standing partnership, allows early identification and a timely response to technological developments. In addition to rising requirements in the field of safety and security, one example is the increasing importance of managing drones (UAV or unmanned aeronautical vehicles). Together with industry, research, and government partners, Frequentis is researching new options for the detection of drones and their controlled and secure integration into public (air) spaces.

## International research projects

Furthermore, Frequentis is involved in a range of other national and EU-funded innovation projects, such as the EPISECC project (Establish a Pan-European Information Space to Enhance seCurity of Citizens), which is researching the seamless exchange of information between public safety and security services and their optimum collaboration in case of a crisis.

Frequentis has played a key role in the SESAR programme (Single European Sky Air Traffic Management Research) since 2009. SESAR is one of the largest technology programmes in worldwide air traffic and its goal is to re-organise European air space. As the leader of the “Frequentis SESAR partners” consortium, Frequentis is involved in “SESAR 2020” which focuses on product and solution-specific research.



One of SESAR’s key research topics is SWIM (System Wide Information Management), the newly developed concept for exchanging information in air traffic management, which ensures improved situation awareness and information management.

Innovations at Frequentis are protected by patents wherever possible.

## Frequentis Start-Up Centre

Through its Start-Up Centre in Phorusgasse in Vienna, Frequentis provides young entrepreneurs with the premises, infrastructure, and specific consulting services to help them set up their own business — and in return gains creative impetus and ideas for its own business.

In addition, an international start-up network is being planned. An initial example is the Frequentis investment in Altitude Angel Ltd., UK, in January 2018.

# Some insights into R&D projects & initiatives

## Networked security - KATWARN for warning the general public

Providing current and purposeful warnings to the general public in large-scale emergency situations is a core task of crisis management. Citizens are informed about endangered areas, recommended self-protection measures, initiated rescue operations or evacuations via KATWARN. The KATWARN warning system, developed by Fraunhofer FOKUS, is an integrative component of the 3020 LifeX platform and therefore provides a significant added value for a networked safety solution as shown at the PMRExpo trade fair in Cologne in November 2017.



## Developing a common “European Information Space”

The main objective of the EPISECC research project, which is funded by the 7th Framework Programme for Research and Technological Development (FP7), is to develop a Common Information Space, ensuring a seamless exchange of information between public safety agencies involved in European crisis and disaster management and interoperability of information systems. The electronic information exchange between these stakeholders will help them respond to large disasters, such as floods, earthquakes, forest fires, technical incidents, or terrorist attacks.

## Control Room Consulting: Putting the human in the centre

Frequentis Control Room Consulting (CRC) is increasingly becoming a trusted partner in helping customers to continuously improve their control rooms. Using their successful human-centric design process, CRC is consulting internal and external customers. “We ensure User Acceptance” is their mission, which targets the number one risk in safety-critical control rooms. It is based on an uncompromising business process perspective from CRC, balancing usability (effective, efficient) and user experience (satisfying), which directly relates to user acceptance and therefore saves money in all change projects.



## Better information management and situational awareness with SWIM



SWIM (System Wide Information Management), one of the major results of the Single European Sky ATM Research Programme (SESAR), offers an information-sharing approach to ATM information management and its adoption offers advantages for better situational awareness and information management. The project aims to unleash the full potential of SWIM by utilising the semantic container approach to shield developers from the complexities of data provisioning in Air Traffic Management. Simultaneously, the SWIM Integration Platform product is being developed as a highly-available, high-performance ATM core component.

## New drone technologies, new threat scenarios, new solutions

Civil and military air navigation service providers as well as public security organisations are responding to heightened threat scenarios caused by drone technologies (UAV – unmanned aerial vehicle). As a result, Frequentis and its subsidiaries CNS and Comsoft Solutions – together with several industry, research, and governmental partners – are researching the controlled and safe integration of drones into public (air) space. The focus is on integrating unmanned aerial vehicles into the systems of air navigation service providers and security authorities.



## Successful first SESAR 2020 Multiple Remote Tower validation for three airports



“Single” remote tower settings have already been deployed in former projects; however, most significant impacts in cost-effectiveness are to be expected with multiple and/or centre settings. The SESAR 2020 project PJ05 aims to bring the concept of remotely controlling multiple airports to the next maturity level. In November 2017, Frequentis, HungaroControl, DLR, and Selex ES (Leonardo LTP) conducted a first successful validation campaign on “Remote Tower for Multiple airports” in Braunschweig.

## Employees

"Together for a safer world"

Employees are the most important success factor for achieving corporate objectives and international growth. Their commitment and dedication, and the innovative power of multi-cultural teams give Frequentis crucial competitive advantages on the international market.

### High qualification level and expertise



75%

engineers and specialists

About 75% of Frequentis' employees are highly qualified engineers and specialists. Their broad yet deep specialist knowledge, and the general, extensively practised customer and market focus continue to be appreciated. As a high-tech company, Frequentis employs both young, highly trained university graduates, and experienced specialists. The company offers an attractive working environment that is characterised by continuity and sustainability.

A particular feature in day-to-day work is the unique corporate culture, characterised by years of experience in dealing with safety-critical systems. Both internal collaboration and relationships to customers are characterised by a deep technical and emotional understanding of customers' needs, an ability to understand current challenges and working processes, and strong identification with the task in hand. Additionally, importance is given to openness, flexibility, and transparency.

34 nations

Customers greatly appreciate the teams' internationality — the culture on which this is based is an important competitive factor on the international market. That is why Frequentis makes every effort to enshrine it in the dynamically growing Group in a sustainable manner group-wide. An optimum work-life balance should be possible for every employee, irrespective of age, gender, culture, religion, or background.

An additional aspect of this corporate culture is the priority given to long-term staff retention. This is also in line with the continuous focus on customer relationships and efforts to keep know-how in the company wherever possible.

In 2017, recruitment of new employees focused on system engineers, project managers, and software engineers. The number of employees in the Group rose from an average of 1,606 people in 2016 to 1,697 in 2017, a growth rate of 5.6%. 1,741 people were employed as at 31 December 2017 (31 December 2016: 1,637), nearly 55% of them work at the Group's headquarters in Vienna (945 people were employed at this location as at 31 December 2017).

### Widespread employee development

Trainee programmes in the Frequentis Group and the onboarding programme make it possible for new employees, in particular, to be quickly integrated into the company and to impart to them the necessary technical know-how in the areas of project management, system engineering, and software development.



2017 2016

In addition to the Frequentis career model, which includes the equal treatment of management, expert and project management careers, attention is paid to targeted, cross-departmental and cross-border development of talented employees and those with potential. Frequentis' talent management, which covers more than three-quarters of all employees of the Frequentis Group, offers an overview of the distribution of performance and potential at the company, division and team level and provides specific information on where development measures are needed on a case-by-case basis. Company-wide education and training programmes are also aligned to meet needs in this context.

Career model &  
talent management

In 2017, there was a total of roughly 5,500 training participations by Frequentis employees. These training sessions were primarily held by internal trainers – an important element in terms of passing on knowledge and conserving Frequentis' specific know-how. In 2017, Frequentis focused on the ongoing development of technical expertise, mainly to improve domain know-how and thus knowledge of customers and their processes. Additional focus was placed on the areas of professional software engineering, professional systems engineering with a focus on IT expertise, and on security and process training. As a result, it was possible to meet the special requirements arising from the software-centred business models. Furthermore, there was high participation in training in the areas of health & safety, project management, and management & leadership competencies.

**5,500**  
participants in training  
sessions

## Company-wide knowledge management

Frequentis sees shared knowledge as a fundamental factor in creating value and a guarantor for success. Hence, company-wide knowledge management supports the exchange of experience and international cooperation within the Frequentis Group. The company sees itself as a network of experts where every employee develops, contributes, and gains knowledge. At the same time, employees are encouraged by this network to develop and test new ideas.

The wide range of applications and components that promote the acquisition of knowledge and make it easy to exchange knowledge include, among other things, the continued expansion of skill management, a lessons learned database, and ramping up distant learning.



In addition to focal issues, there was also an emphasis on developing corporate culture, like the continued expansion of the self-study principle to encourage people to take the initiative in personal development and the implementation of "communities". One example is facilitating a software excellence community to enhance the awareness of Frequentis software developers in safety-critical project environments.

Additionally, Frequentis supports employees with offerings that promote health. For instance, the Vienna location has a vitality programme that includes a wide range of free sports activities. Other recurring highlights in 2017 were the Vienna City Marathon and the Vienna Business Run, in which roughly 100 employees took part.

A flexible working time model aligned to the different regional legal requirements in the Group, means that personal requirements can be taken into account and facilitates a good work-life balance.

Attractive working  
environment



## Human Resources International

An in-house centre of competence was set up a few years ago to handle key aspects in the continuous support of international employees (including “educational visits” to headquarters in Vienna) and setting up international assignments. The Human Resources International centre of competence also provides valuable assistance in rolling out HR processes and sharing and transferring knowledge across the Group.



Local leadership programmes

These services were extended in 2017, e.g. in the form of local leadership programmes in the USA and Australia. The system engineering exchange programme, which began in 2016, is a special form of extended educational visit. Additional support is provided by the new international management handbook, which was created and published to give managers in different countries and at different hierarchical levels a practical tool for daily HR work. For example, it provides access to HR standards, processes, and helpful tips on onboarding, appraisal interviews, and international team development.

Furthermore, the goal is to establish local HR managers or HR support staff. In 2017, there was also a focus on continuing to establish HR staff in Romania and at Comsoft Solutions in Karlsruhe. In knowledge management, the focus is on efficiently and effectively strengthening the international transfer of knowledge in the Frequentis Group, e.g. by giving the subsidiaries access to the Group-wide learning centre’s training catalogue and content.

This knowledge transfer also includes recruitment activities. Group-wide, Frequentis uses selected recruiting platforms and events such as job fairs to position itself as an attractive employer in the IT sector. Social media platforms are becoming increasingly important, especially in the area of active sourcing. In 2017, Frequentis was awarded the “silver quality seal” in the “best recruiters by career” competition for its recruiting activities and professional employer branding.

The company is proud of what it has achieved so far and sees this as an incentive to continue to strengthen and expand its position as an attractive and respected employer in the future.



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## Opportunity & risk management

Frequentis has implemented an active risk management system throughout the Group. The fundamental goal is to identify potential opportunities and risks as early as possible and to implement the appropriate measures to protect profitability and to ensure the continued existence of the Group. Risk awareness, the vigilance of all staff, and early identification of risks are well-developed and incorporated in a sound risk policy.

Extensive scenario management

One central risk lies in variable capacity utilisation scenarios, which the company handles via extensive scenario management. This allows for timely recognition and Group-wide counter-action, even in business situations that develop in an unforeseen manner.

### Project management as an operational mainstay

Risk management is therefore essential in projects that form the core business and mainstay of operations at Frequentis. An in-depth risk analysis as part of professional and effective project management examines the entire life cycle of the projects. Risks are identified, tracked, mitigated, and eliminated to ensure clear controlling of risks and results control.

The entire project portfolio is managed by a project management board that meets periodically and projects are reviewed and allocated to the respective business types. Furthermore, the project management board drives continuous improvement of project management excellence, project methods, and project management processes as well.

In addition, projects are evaluated several times a year by an extended management circle. All major projects, risk assessments, and deviations are discussed and the appropriate measures are adopted. In this way, service provision, billing, and payments are continuously monitored.

These project evaluations are supplemented by periodic status meetings in the individual business units, in which total operating performance and the marginal income are monitored with a view to the Group's profit.

Foreign exchange risks are countered by using financial derivatives. The risk of bad debts can be generally rated as low. In individual cases, credit insurance, advance payments, or letters of credit are used as safeguards. Regular treasury meetings and ongoing liquidity planning enable rapid detection of potential liquidity bottlenecks and cash flow risks, so prompt countermeasures can be taken.

## Group-wide risk management

Systematic  
evaluation of  
opportunities and  
risks

Risk and opportunity management is an important precondition for business activity. Hence, the Frequentis Group undertakes a regular and comprehensive evaluation of all relevant risks and opportunities and compiles a Group-wide risk report that is discussed by an extended management circle. As well as exploiting opportunities, Frequentis enters risks with a view to raising the value of the company. To ensure early identification and proactive management of risks, the Frequentis Group operates a Group-wide risk management system, an extensive internal control system, and an internal audit.

Essentially, Frequentis systematically evaluates and summarises the strategy, prevailing competitive landscape, the political situation in countries with the greatest project exposure, the organisation of professional project execution, and liquidity management. The resulting measures to utilise opportunities and reduce any risks identified are discussed by an extended management circle, and the appropriate action is decided on. The Vice President Group Controlling is responsible for the process.

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## Outlook

Continued growth of the Group remains the focus for 2018. Frequentis will achieve sustained profitable growth with its established product and customer portfolio – the installed base is particularly important here. Additionally, the company plans to acquire an average of 15 new customers per year across all business units.

Further internationalisation and the creation of added value in the individual regions will play a key role in this process. Subsidiaries, which are being expanded into regional hubs in sales & operations, are taking the lead here and will therefore drive forward further market penetration in their regions.

Naturally the market in Europe, where Frequentis intends to secure its strong position with innovative, new products, continues to be of great importance. It is precisely here that the company can utilise its full strength as a recognised expert with existing and new customers using its high innovative strength and continuously expanding product portfolio. In addition, market penetration in the non-European regions is being continued, mainly in the United States, Latin America, Australia, and Asia.

The company assumes a continuous increase in order intake in 2018, as in previous years. This will be driven by the successful continuation of Frequentis' internationalisation strategy and the positive development of Comsoft GmbH, which was acquired at the beginning of 2016. The high level of orders in hand at the start of 2018 secured nearly 60% of Frequentis' total operating performance in 2018, making the company confident for the coming business year.

In line with this, year-on-year, Frequentis AG aims for a single-digit increase in its total operating performance. Based on a corresponding inflation trend, earnings before interest and taxes (EBIT) is expected to be at least as good as in the previous year.

Having been responsible for Frequentis' operations for 35 years, Executive Board Chairman Hannes Bardach has decided to assume the role of active owner in the future. As such, at the Annual General Meeting in mid-April 2018, he is moving to the role of Chairman of the Supervisory Board of Frequentis AG.

His successor as Chairman of the Executive Board will be Norbert Haslacher, who has been a member of the Executive Board for three years and is currently responsible for sales and marketing. As of April 2018, Frequentis will be managed by a three-member Executive Board; the other two members, Hermann Mattanovich (CTO) and Sylvia Bardach (CFO), will remain in their roles.



Further increase in  
local value-added



# For a safer world

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In places where Frequentis systems are in operation, people bear responsibility for the safety of other individuals and goods.

The following pages will give you some insights into the world of Frequentis.

# Three billion passengers fly safely with Frequentis every year.

Air navigation service providers throughout the world put their trust in solutions from market leader Frequentis for their responsible tasks. Air traffic controllers in towers and at area control centres communicate constantly with pilots – before and during the entire flight.

## FOR A SAFER WORLD







# A common operational picture allows quick action in a crisis.

Cross-divisional cooperation between authorities and organisations for emergency response is becoming more and more important for the protection of critical infrastructure. Frequentis Incident & Crisis Management offers important decision-making tools for this purpose.

## FOR A SAFER WORLD



# Emergency response at twice the speed thanks to European eCall.

In traffic accidents, assistance within the first hour is decisive to the chances of survival of those who are seriously injured. In addition to a normal voice call, the automatic emergency call system eCall transfers other information about the accident, so the dispatcher in the control room can activate the emergency services faster. This built-in data preparation is an essential component of the product portfolio of Frequentis' Public Safety business unit.

## FOR A SAFER WORLD





# Safety and efficiency in rail communication.

25 countries put their trust in Frequentis Public Transport solutions. Frequentis is market leader with the GSM-R dispatcher. The incident management solution ensures safe and efficient communication with over 10,000 trains daily, so passengers reach their destinations quickly and safely.

## FOR A SAFER WORLD





# Securing the coasts – from polar bears to penguins

Using a GMDSS (Global Maritime Distress and Safety System), the Canadian Coast Guard monitors the longest coastline of any country - it extends 240,000 km. GMDSS, an international system for distress and safety radio communication, supports maritime rescue efforts and ensures safe shipping. Frequentis supplies the complex, high-capacity communication systems required for this.

## FOR A SAFER WORLD







# Consolidated Financial Statements 2017

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# Consolidated financial statements as at 31 December 2017

## Consolidated income statement

	Note	2017 EUR	2016 EUR
Revenues	(3) (4)	266,927,005.77	241,220,912.97
Own work capitalised	(3) (5)	65,182.15	245,346.43
Other operating income	(3) (6)	7,553,013.33	10,747,653.19
<b>Total operating performance</b>	(3)	<b>274,545,201.25</b>	<b>252,213,912.59</b>
Cost of materials and purchased services	(7)	-75,510,089.67	-64,791,164.56
Staff expenses	(8)	-134,509,040.60	-124,894,841.97
Depreciation and amortisation	(9)	-5,701,894.70	-5,256,627.63
Other operating expenses	(10)	-44,503,258.06	-44,846,319.49
<b>Earnings before interest and taxes (EBIT)</b>		<b>14,320,918.22</b>	<b>12,424,958.94</b>
Financial income	(11)	465,202.92	528,608.66
Financial expenses	(11)	-519,135.04	-787,152.45
Other financial results	(11)	-59,234.93	0.00
<b>Financial results</b>		<b>-113,167.05</b>	<b>-258,543.79</b>
Income from associated companies	(12)	177,074.51	67,937.81
<b>Profit before tax</b>		<b>14,384,825.68</b>	<b>12,234,352.96</b>
Income taxes	(13)	-3,688,636.15	-3,016,257.66
<b>Profit for the financial year</b>		<b>10,696,189.53</b>	<b>9,218,095.30</b>
<b>Profit attributable to:</b>			
Equity holders of the company		9,852,146.43	9,042,490.35
Non-controlling interests		844,043.10	175,604.95
		<b>10,696,189.53</b>	<b>9,218,095.30</b>

## Consolidated statement of comprehensive income

	Note	2017 EUR	2016 EUR
<b>Profit for the financial year</b>		<b>10,696,189.53</b>	<b>9,218,095.30</b>
<b>Items that may be reclassified to the income statement in the future</b>			
Foreign currency translation differences	(14)	-919,879.90	-128,933.94
Unrealised gains and losses on available-for-sale financial assets	(14)	-25,274.52	3,802.40
Fair value gains/losses from cash flow hedges	(14)	1,321,774.43	738,095.17
Taxes on items that may be reclassified to the income statement in the future	(14)	-324,124.98	-185,474.39
<b>Items that cannot be reclassified to the income statement</b>			
Remeasurement of liabilities (assets) from post-employment benefits	(14)	-39,062.72	-1,100,998.93
Remeasurement of liabilities (assets) from post-employment benefits - from associated companies	(14)	-580.11	-866.77
Taxes on items that cannot be reclassified to the income statement	(14)	9,765.68	272,478.36
<b>Other comprehensive income for the period, net of tax</b>		<b>22,617.88</b>	<b>-401,898.10</b>
<b>Total comprehensive income for the period</b>		<b>10,718,807.41</b>	<b>8,816,197.20</b>
<b>Total comprehensive income attributable to:</b>			
Equity holders of the company		9,864,323.57	8,649,263.20
Non-controlling interests		854,483.84	166,934.00
		<b>10,718,807.41</b>	<b>8,816,197.20</b>

## Consolidated balance sheet

ASSETS	Note	31 Dec. 2017 EUR	31 Dec. 2016 EUR
<b>Non-current assets</b>			
Property, plant and equipment	(15)	8,699,120.55	8,252,836.70
Intangible assets	(15)	8,046,632.70	9,697,969.38
Goodwill	(16)	2,227,983.84	2,175,025.41
Investments in associated companies	(17)	591,418.75	553,807.71
Non-current securities	(18)	884,089.66	1,146,532.40
Other non-current assets	(19)	162,755.71	142,620.92
Deferred tax assets	(20)	1,739,494.76	2,939,070.69
		<b>22,351,495.97</b>	<b>24,907,863.21</b>
<b>Current assets</b>			
Inventories	(21)	10,213,153.59	10,968,523.14
Trade accounts receivable	(22)	39,147,846.14	40,609,015.85
Receivables from construction contracts under IAS 11	(23)	33,474,298.12	29,947,494.88
Receivables from associated companies	(24)	9,406.76	20,482.80
Other current assets	(25)	11,675,207.50	8,177,117.05
Current securities	(18)	1,700,000.00	0.00
Cash and cash equivalents		76,033,527.18	69,109,970.51
		<b>172,253,439.29</b>	<b>158,832,604.23</b>
<b>Total assets</b>		<b>194,604,935.26</b>	<b>183,740,467.44</b>



LIABILITIES AND EQUITY	Note	31 Dec. 2017 EUR	31 Dec. 2016 EUR
<b>Equity</b>			
Share capital	(26)	12,000,000.00	12,000,000.00
Retained earnings	(26)	79,543,711.06	71,431,664.86
Reserves	(27)	-2,098,377.19	-3,034,130.72
Adjustments for foreign currency translation	(28)	-604,247.87	315,632.03
Non-controlling interests	(29)	1,254,198.34	333,956.84
		<b>90,095,284.34</b>	<b>81,047,123.01</b>
<b>Non-current liabilities</b>			
Financial liabilities to banks	(36)	7,500,000.00	9,500,000.00
Provisions for severance payments	(30) (31)	11,988,565.21	12,225,276.50
Provisions for pensions	(30) (32)	647,634.89	614,528.66
Provisions for anniversary bonuses	(30) (33)	300,803.00	325,359.00
Other non-current provisions	(30) (34)	1,897,022.84	1,226,912.53
Trade accounts payable	(36)	362,884.96	444,399.16
Other non-current liabilities	(36) (39)	3,204,627.35	3,852,901.39
Deferred tax liabilities	(35)	2,859,972.14	2,848,803.76
		<b>28,761,510.39</b>	<b>31,038,181.00</b>
<b>Current liabilities</b>			
Financial liabilities to banks	(36)	204,415.15	135,094.92
Advances from customers	(36) (37)	38,556,069.66	33,610,938.59
Trade accounts payable	(36)	10,284,653.62	9,213,585.29
Payables to associated companies	(36) (38)	132,143.66	56,648.40
Other current liabilities	(36) (39)	7,802,943.81	9,265,022.08
Current tax liabilities	(36)	550,181.03	1,376,758.28
Other current provisions	(40)	18,217,733.60	17,997,115.87
		<b>75,748,140.53</b>	<b>71,655,163.43</b>
<b>Total equity and liabilities</b>		<b>194,604,935.26</b>	<b>183,740,467.44</b>

## Consolidated cash flow statement

	2017 EUR	2016 EUR
Profit before tax	14,384,826	12,234,353
Adjustments for non-cash items:		
Adjustment postings/currency differences	-861,476	-135,808
Profit/loss from the disposal of assets	28,173	212,230
Depreciation, amortisation and write-ups of non-current assets and current securities	5,761,130	5,256,334
Income from associated companies	-177,075	-67,938
Changes in assets and liabilities:		
Changes in inventories, trade accounts receivable and other assets, provided, that they do not relate to investing or financing activities	-3,537,829	3,572,623
Change in provisions (excluding income tax provisions)	623,504	2,567,733
Changes in trade accounts payable and other liabilities, provided they do not relate to investing or financing activities	5,221,603	19,674,977
Net interest	62,661	615,150
Interest paid	-512,335	-1,128,889
Interest received	449,674	513,740
Income taxes paid	-4,896,153	-4,465,000
<b>Net cash flow from operating activities</b>	<b>16,546,703</b>	<b>38,849,505</b>
Proceeds from the disposal of property, plant and equipment and intangible assets (excluding financial assets)	73,946	209,606
Proceeds from the disposal of financial assets and other financial investments	286,484	0
Payments for property, plant and equipment and intangible assets (excluding financial assets)	-4,658,280	-16,005,431
Payments for financial asset acquisitions and other financial investments	-103,680	0
Additions to the consolidated group	-15,253	0
<b>Net cash flow from investing activities</b>	<b>-4,416,783</b>	<b>-15,795,825</b>
Dividends received	144,897	36,069
Dividends paid	-2,420,580	-1,732,200
Payments from non-controlling interests	700,000	36,750
Cash inflows from loans	0	9,500,000
Cash outflows for repayment of loans	-1,930,680	-96,025
<b>Net cash flow from financing activities</b>	<b>-3,506,363</b>	<b>7,744,594</b>
Change in cash and cash equivalents		
Net cash flow from operating activities	16,546,703	38,849,505
Net cash flow from investing activities	-4,416,783	-15,795,825
Net cash flow from financing activities	-3,506,363	7,744,594
Net change in cash and cash equivalents	<b>8,623,557</b>	<b>30,798,274</b>
Cash and cash equivalents as at 1 January	69,109,970	38,311,696
<b>Cash and cash equivalents as at 31 December<sup>1)</sup></b>	<b>77,733,527</b>	<b>69,109,970</b>

<sup>1)</sup> In the reporting period, the cash and cash equivalents reported here comprised the balance sheet item cash and cash equivalents totaling EUR 76,034 thousand and current securities totaling EUR 1,700 thousand.

# Consolidated statement of changes in equity

Note	Share capital (26)	Capital reserves (30)	IAS 19 reserve (net of tax) (31) (32) (33)	IAS 39 reserve (net of tax)	Retained earnings	Foreign currency translation	Non-controlling interests (29)	Total equity
As at 1 January 2017	12,000,000.00	1,774,002.96	-3,978,573.20	-829,560.48	71,431,664.86	315,632.03	333,956.84	81,047,123.01
Additions to the consolidated group					0.00		0.00	0.00
Profit for the financial year					9,852,146.43		844,043.10	10,696,189.53
Other comprehensive income for the period	0.00	0.00	-40,317.89	972,374.93	0.00	-919,879.90	10,440.74	22,617.88
Total comprehensive income for the period	0.00	0.00	-40,317.89	972,374.93	9,852,146.43	-919,879.90	854,483.84	10,718,807.41
Dividends					-1,440,000.00		-980,579.54	-2,420,579.54
Other changes					2,259.22		0.00	2,259.22
Increase (+)/decrease (-) in non-controlling interests			3,696.49		-302,359.45		1,046,337.20	747,674.24
As at 31 December 2017	12,000,000.00	1,774,002.96	-4,015,194.60	142,814.45	79,543,711.06	-604,247.87	1,254,198.34	90,095,284.34

	Share capital	Capital reserves	IAS 19 reserve (net of tax)	IAS 39 reserve (net of tax)	Retained earnings	Foreign currency translation	Non-controlling interests	Total equity
As at 1 January 2016	12,000,000.00	1,774,002.96	-3,157,856.81	-1,385,983.66	63,949,174.51	444,565.97	302,472.84	73,926,375.81
Additions to the consolidated group					0.00		0.00	0.00
Profit for the financial year					9,042,490.35		175,604.95	9,218,095.30
Other comprehensive income for the period	0.00	0.00	-820,716.39	556,423.18	0.00	-128,933.94	-8,670.95	-401,898.10
Total comprehensive income for the period	0.00	0.00	-820,716.39	556,423.18	9,042,490.35	-128,933.94	166,934.00	8,816,197.20
Dividends					-1,560,000.00			-1,560,000.00
Other changes					0.00		0.00	0.00
Increase (+)/decrease (-) in non-controlling interests							-135,450.00	-135,450.00
As at 31 December 2016	12,000,000.00	1,774,002.96	-3,978,573.20	-829,560.48	71,431,664.86	315,632.03	333,956.84	81,047,123.01

# Notes to the consolidated financial statements

## 1. General information

### Reporting

The consolidated financial statements of Frequentis AG for the 2017 financial year have been prepared in accordance with the provisions of the International Financial Reporting Standards (IAS/IFRS) as adopted by the European Union. Similarly, all interpretations of the International Financial Reporting Interpretations Committee (IFRIC) that were mandatory for 2017 have been applied.

The present consolidated financial statements, including the group management report, constitute an exemption within the meaning of Section 245a of the Austrian Commercial Code (UGB). Therefore, consolidated financial statements in accordance with the Austrian Commercial Code have not been prepared.

### Information on the company

The Frequentis Group operates internationally. The parent company is a joint stock company and its registered address is Innovationstrasse 1, 1100 Vienna, Austria.

The parent company, Frequentis AG, was founded in 1947 and has been registered in the commercial register at Vienna Commercial Court under the number FN 72115 b since 30 August 1948.

According to Section 2 of the articles of association, the purpose of the company is the development, production, distribution and maintenance of control systems, information processing and transmission systems and communication systems, especially for air traffic control, road, rail and water transport and public safety organisations.

The financial year is 1 January to 31 December.

In the reporting period, the Executive Board comprised:

- Hannes Bardach, Chairman
- Sylvia Bardach
- Hermann Mattanovich
- Norbert Haslacher

The consolidated financial statements were approved by the Executive Board on the date of signature, subject to the approval of the financial statements by the Supervisory Board at its first meeting in 2018.

### Consolidated group

Alongside the parent company, the consolidated financial statements of Frequentis AG include 4 domestic and 21 foreign subsidiaries, in which Frequentis AG holds a majority of the voting rights or exercises uniform control.

Two foreign companies and one domestic company are included in the consolidated financial statements using the equity method.

**a) Fully consolidated Austrian subsidiaries**

- BlueCall Systems GmbH, Vienna (100%)
- CNS-Solutions & Support GmbH, Vienna (100%)
- PDTs GmbH, Vienna (100%)
- Team Communication Technology Management GmbH, Vienna (51%)

**b) Fully consolidated foreign subsidiaries**

- Comsoft Solutions GmbH, Karlsruhe (100%)
- ELARA Leitstellentechnik GmbH, Aachen (51%)
- Frequentis Australasia Pty. Ltd., Hendra (100%)
- Frequentis California Inc., Monterey (100%)
- Frequentis Canada Ltd., Ottawa (100%)
- Frequentis Czech Republic s.r.o., Prague (100%)
- Frequentis Defense Inc., Columbia (100%)
- Frequentis Deutschland GmbH, Langen (100%)
- Frequentis do Brasil Assessoria, Serviços e Comércio de Sistemas de Informação e Comunicação Ltda., Sao Paulo (100%)
- Frequentis France SARL, Toulouse (100%)
- Frequentis Norway AS, Oslo (100%)
- Frequentis Romania S.R.L., Cluj-Napoca (100%)
- Frequentis Saudi Arabia Ltd. in liquidation, Riyadh (100%)
- Frequentis (Shanghai) Co. Ltd., Shanghai (100%)
- Frequentis Singapore Pte. Ltd., Singapore (100%)
- Frequentis Slovakia s.r.o., Bratislava (100%)
- Frequentis Solutions s.r.o., Bratislava (100%)
- Frequentis UK Ltd., Twickenham (100%)
- Frequentis USA Inc., Columbia (100%)
- Secure Service Provision GmbH, Leipzig (80%)
- Systems Interface Ltd., Surrey (51%)

All data on the consolidated group relate to the situation as at 31 December 2017.

**c) Equity method**

- AIRNAV Technology Services Inc., Iloilo (40%)
- GroupEAD Europe S.L., Madrid (28%)
- Mission Embedded GmbH, Vienna (20%)

## Changes to the consolidated group

The only changes in the reporting period related to non-controlling interests, which are outlined in more detail in Note 29 “Non-controlling interests”, and the addition of a 40% interest in AIRNAV Technology Services Inc., which is carried at equity and is outlined in more detail in Note 17 “Investments in associated companies”.

## 2. Accounting and valuation policies

The provisions of all mandatory International Financial Reporting Standards, including the applicable interpretations of the International Financial Reporting Interpretations Committee, as endorsed by the European Union, were applied in full.

The financial statements of all consolidated companies were prepared using uniform Group-wide accounting and valuation policies. There are no significant differences in the valuation policies used for the associated companies included at equity compared to those applied by the Frequentis Group.

The reporting date for all companies included in the financial statements is 31 December. The figures in the consolidated financial statements of Frequentis AG are reported in EUR.

## New and amended standards and interpretations

The following amendments to existing IASs, IFRSs and interpretations, and the following newly issued standards and interpretations, insofar as they had been published in the Official Journal of the European Union up to 31 December 2017 and had come into effect by this date, were used in the preparation of the consolidated financial statements:

	Newly amended standards	To be applied for financial years starting in	Significant effects
IAS 7	Disclosure Initiative	2017	None
IAS 12	Recognition of Deferred Tax Assets for Unrealised Losses	2017	None

The above provisions were applied in full, insofar as they were applicable. This did not, however, have any significant impact on the presentation of the assets, financial position and results of operations.

In addition, as at 31 December 2017, the following new and amended standards had been endorsed by the EU, but were not mandatory for the 2017 financial year:

	Newly amended IFRSs	To be applied for financial years starting in	Significant effects
IFRS 9	Financial Instruments	2018	Outlined below
IFRS 15	Revenue from Contracts with Customers, including change to the initial effective date	2018	Outlined below
IFRS 15	Revenue from Contracts with Customers - Clarifications	2018	Outlined below
IFRS 16	Leases	2019	Outlined below
IFRS 4	Applying IFRS 9 Financial Instruments with IFRS 4 Insurance Contracts	2018	None

Furthermore, the following new or amended standards and interpretations had been published by the IASB as at 31 December 2017, but not yet endorsed by the EU:

	Newly amended IFRSs	To be applied for financial years starting in	Significant effects
IFRS 17	Insurance Contracts	2021	None
IAS 28	Long-term Interests in Associates and Joint Ventures	2019	None
IAS 40	Transfers of Investment Property	2018	None
IFRS 2	Classification and Measurement of Share-based Payment Transactions	2018	None
IFRS 9	Prepayment Features with Negative Compensation	2019	None
AIP	Annual Improvements to IFRS Standards 2014 - 2016 Cycle	2017/2018	None
AIP	Annual Improvements to IFRS Standards 2015 - 2017 Cycle	2019	None
IFRIC 22	Foreign Currency Transactions and Advance Consideration	2018	None
IFRIC 23	Uncertainty over Income Tax Treatments	2019	None



The newly applicable standards IFRS9, IFRS 15 and IFRS 16 are outlined below.

The application of IFRS 9 "Financial Instruments" will alter the classification and measurement of financial instruments. This change is only expected to result in minor changes in the amounts presented because the basic valuation methods used by the Group will not alter significantly.

The new impairment model based on expected losses will affect the measurement of the Group's financial assets, especially trade accounts receivable. IFRS 9 replaces the incurred loss model prescribed by IAS 39 by the future-oriented expected loss model.

Since IFRS 9 introduces a principle-based approach, as a rule more hedge relationships can be considered for hedge accounting. It is assumed that the Frequentis Group's present hedge relationships will qualify for continuation of the hedge relationship when IFRS 9 is adopted. Therefore, the Frequentis Group does not expect any significant impact on its financial reporting.

IFRS 15 "Revenue from Contracts with Customers" replaces the present provisions on revenue recognition, including IAS 18 "Revenue", IAS 11 "Construction Contracts" and IFRIC 13 "Customer Loyalty Programmes". The core principle of IFRS 15 is that an entity should recognise revenue in an amount that reflects the consideration to which the entity expects to be entitled in exchange for the performance obligation(s), i.e. the transfer of goods or the provision of services. The new 5-step model will be used to determine the amount of revenue and whether it is recognised at a point in time or over a period of time.

The 5-step model will be applied to determine the possible impact of IFRS 15 on customer contracts that are already in effect:

Construction contracts: Revenues from customer-specific construction contracts are currently recognised using the percentage of completion method. IFRS 15 contains new criteria for recognising revenues over a period of time. Based on the findings of the analyses to date, it is assumed that the construction contracts currently on hand will essentially meet the criteria in IFRS 15 recognition over a period of time.

Multi-component contracts: The Frequentis Group concludes some multi-component contracts where a system solution and a subsequent maintenance contract are performed over a defined period of time. As regards the application of IFRS 15, it is necessary to examine, in particular, whether there is any change in the timing and amount of revenue recognition. As at the date of preparation of the consolidated financial statements, this analysis was not far enough advanced to provide any conclusive information on the possible impact.

Contract costs: IFRS 15 requires capitalisation of certain costs arising in the performance of a contract, provided that the relevant criteria are met. As at the date of preparation of the consolidated financial statements, the relevant analysis was not far enough advanced to provide any conclusive information on the possible impact.

Frequentis will complete its analysis of the impact of the new standard in the first half of 2018 and intends to implement it in full in the fourth quarter.

IFRS 16 "Leases" sets out the principles for the recognition, measurement, presentation and disclosure of leases in financial statements. The standard provides a single model for the recognition of leases by lessees. This requires that lessees recognise all assets and liabilities from leases in the balance sheet unless they relate to a period of 12 months or less or the underlying asset is low value.

The standard will mainly affect the reporting of operating leases where the Frequentis Group is a lessee. The Frequentis Group has not yet conclusively determined the extent to which such leases will result in recognition of an asset and a corresponding liability. However, it can be assumed that it will result in a significant change to the balance sheet, which will in turn affect many financial indicators (e.g. a reduction in the equity ratio). A quantitative presentation of the impact is not yet possible because the analysis and steps to implement IFRS 16 will only be completed in the first six months of 2018.

Some of the present lease obligations may fall within the scope of the exemptions for short-term leases and low-value assets.

There are no further standards or interpretations that are not yet mandatory and that could have a significant effect on the Group.

## Intangible assets, property, plant and equipment

Intangible assets, property, plant and equipment are carried at the cost of acquisition or production. Where they are subject to wear and tear, amortisation or depreciation is calculated over the customary useful life using the straight-line method. The following useful lives are used:

Technical plant and machinery	up to 10 years
Other plant, factory and office equipment	up to 40 years
Licences and rights	up to 10 years

The carrying amounts of intangible assets, property, plant and equipment are tested for impairment as soon as events or altered circumstances indicate that the carrying amount could exceed the recoverable amount. In this case, the carrying amount is compared to the higher of the fair value less costs of disposal and the present value of the estimated future cash flows from use of the asset. If the reason for the impairment no longer applies, the asset is written up.

Goodwill is recognised for any difference between the cost of an acquisition and the share of the fair value of the identifiable assets and liabilities acquired as at the transaction date. The value of goodwill is reviewed every year.

## Securities and investments in associated companies

Investments in associated companies are carried at the proportionate share of equity. A review of the value of investments in associated companies and a corresponding impairment loss or write-up is recognised if there are indications of a change in value.

Securities are valued in accordance with IAS 39. In accordance with IAS 39.9, securities are classified as "available-for-sale financial assets", "financial assets held for trading" and "financial assets held to maturity" and measured at fair value. In accordance with IAS 39.55 (a and b), gains and losses from a change in fair value are recognised either through profit or loss ("financial assets held for trading" and "financial assets held to maturity") or in other comprehensive income ("available-for-sale financial assets") and presented in the statement of changes in equity. When the securities are sold, the gains and losses recognised in equity are reclassified to profit or loss.

## Inventories

Raw materials, auxiliaries, supplies and merchandise are measured at cost of acquisition or production or the lower current value, based on the lowest value principle.

Work in progress and finished goods are measured at the cost of production or net realisable value, whichever is lower. The net realisable value is the price that could be obtained in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make a sale. The cost of production is calculated using all direct costs incurred and fixed and variable material and general overheads. Borrowing costs are not capitalised. The cost is calculated using the moving average cost method.

## Receivables from construction contracts/revenue recognition

Receivables from construction contracts that have not yet been invoiced are calculated using the percentage of completion method (IAS 11). In the Frequentis Group, the percentage of completion is calculated from the costs incurred (cost-to-cost method). In the cost-to-cost method, revenues are recognised on the basis of the production costs actually incurred relative to expected total costs. Advances from customers are offset and anticipated losses from the valuation of projects that have not yet been invoiced are recognised immediately as an expense. Political and other country-specific risks are also taken into account in the preparation of the financial statements.

## Receivables

Receivables and other assets are recognised at cost of acquisition or value on the reporting date, whichever is lower. Foreign currency receivables are valued using the average exchange rate on the reporting date.

On every reporting date, the Group examines whether there are objective signs of impairment. Objective signs of impairment include indications that a customer is in financial difficulty, an increased probability of insolvency or observable data that indicate a quantifiable reduction in estimated future cash flows from a group of financial assets. Such signs include unfavourable changes in economic conditions that correlate with losses on the assets of the Frequentis Group.

The level of the impairment loss is derived from the difference between the carrying amount of the asset and the present value of the expected future cash flows. The impairment loss is recognised in profit or loss. If the impairment is reduced in a subsequent period as a result of circumstances that occur after initial recognition of the impairment loss, the write-up is recognised in profit or loss.

## Grants and subsidies for research and development costs

Grants and subsidies for research and development costs relate to individual projects in the Frequentis Group and are recognised on the income statement in other operating income.

## Provisions

The provisions for severance payments were measured on the basis of an actuarial report using the projected unit credit method in accordance with IAS 19 ("Employee Benefits"). The retirement age was deemed to be the earliest possible age for (early) retirement under the 2004 pension reform.

The pension provisions were established on the basis of an actuarial report using the projected unit credit method, which complies with the provisions of IAS 19 ("Employee Benefits"). Since the pension insurance is pledged to the Executive Board, the pension provisions are offset against the amount accrued in the pension insurance scheme in accordance with IAS 19.

The provisions for anniversary bonuses were measured using the project unit credit method in accordance with IAS 19 ("Employee Benefits").

The actuarial gains and losses relating to severance payments and pensions are presented in other comprehensive income in accordance with IAS 19. Any past service cost is recognised immediately in profit or loss.

## Other provisions

The other provisions are measured in each case at the amount required to cover future payment obligations, recognisable risks and uncertain liabilities, based on prudent commercial judgement. In each case, the amount deemed most probable in a careful evaluation of the matter is recognised. Provisions have not been recognised for expenses.

## Liabilities

Liabilities are recognised at nominal value or the expected settlement amount, whichever is higher. Foreign currency liabilities are measured using the average exchange rate on the reporting date.

## Research and development costs

Research and development costs were recognised as an expense in the reporting period in accordance with IAS 38. Grants from third parties are recognised in other operating income.

## Deferred taxes

In accordance with IAS 12, temporary accounting and valuation differences between the tax valuations and the carrying amounts in the IFRS financial statements are included in deferred taxes. Deferred tax assets and liabilities are netted if they relate to an independent entity within the Group and to the same tax authority and the same maturity.

## Total operating performance of the business domains

The presentation is based on the internal reporting structure, and reflects the markets served by the Frequentis Group. The Air Traffic Management business domain comprises the ATM Civil and Defence business units. The Public Safety and Transport business domain comprises the Public Safety, Public Transport and Maritime business units.

## Foreign currency translation

The annual financial statements of the foreign subsidiaries included in the consolidated financial statements are translated using the modified closing rate method. Investments in consolidated subsidiaries and the associated equity items are translated at the historical rates as at the date of initial consolidation; the other balance sheet items are translated using the average exchange rate as at the reporting date. Income statement items are translated using average annual exchange rates. The net profit or loss is translated using the average exchange rate as at the reporting date, while retained earnings are reported at the values recognised in the previous year.

## Significant estimates and exercise of discretion

Preparation of the consolidated financial statements in accordance with the generally accepted accounting and valuation principles of the IFRS involves estimates and assumptions that may influence the amount and presentation of the reported assets and liabilities, the disclosure of contingent assets and liabilities as at the reporting date, and the reported income and expenses during the reporting period. The actual values may ultimately differ from the estimates and assumptions. Estimates and assumptions are reviewed continuously and revised prospectively.

The consolidated financial statements include the following items whose valuation depends to a large extent on assumptions and estimates:

**Useful life of non-current assets:** Property, plant and equipment and purchased intangible assets are recognised at the cost of acquisition or production and depreciated/amortised over their useful life using the straight-line method. Factors such as wear and tear, obsolescence, technical standards and contract duration are taken into account when determining the useful life.

**Estimated impairment of goodwill:** The Frequentis Group tests goodwill for impairment once a year. The recoverable amount of cash-generating units is determined by calculating their value-in-use. This is based on corresponding planning calculations, which are naturally based on estimates and assumptions.

**Percentage of completion of construction contracts:** The Group recognises construction contracts using the percentage of completion method. Application of the percentage of completion method requires that the Group estimates the estimated profit margin on construction contracts. An analysis of the assumptions made in the past and the actual profit margins achieved has shown that the estimates made so far were basically reliable.

**Other estimates and assumptions:** Other areas where estimates and assumptions are of material significance for the consolidated financial statements are deferred tax assets/liabilities, post-employment benefit obligations to employees, and provisions for warranties, project risks and anticipated losses. The sensitivity of post-employment benefit obligations is outlined in Notes 31 and 32.

There were no changes to accounting and valuation policies in the reporting period.

# Notes to the consolidated income statement

## 3. Breakdown of total operating performance by business domain

The reporting format is based on the strategic business domains.

Rounding differences may occur due to the presentation in whole EUR.

	Air Traffic Management 2017 EUR	Public Safety & Transport 2017 EUR	Reconciliation 2017 EUR	Total 2017 EUR
Revenues	182,441,742	84,373,682	111,582	266,927,006
Other operating income	3,399,493	2,358,779	1,794,741	7,553,013
Own work capitalised	0	0	65,182	65,182
<b>Total operating performance</b>	<b>185,841,235</b>	<b>86,732,461</b>	<b>1,971,505</b>	<b>274,545,201</b>

	Air Traffic Management 2016 EUR	Public Safety & Transport 2016 EUR	Reconciliation 2016 EUR	Total 2016 EUR
Revenues	153,841,774	87,143,082	236,057	241,220,913
Other operating income	5,195,712	3,699,504	1,852,437	10,747,653
Own work capitalised	90,359	46,230	108,757	245,346
<b>Total operating performance</b>	<b>159,127,845</b>	<b>90,888,816</b>	<b>2,197,251</b>	<b>252,213,912</b>

## 4. Revenues

The revenues of EUR 266,927 thousand (2016: EUR 241,221 thousand) comprise EUR 182,442 thousand (2016: EUR 153,842 thousand) generated by the ATM domain and EUR 84,374 thousand (2016: EUR 87,143 thousand) generated by the PST domain. The remaining revenues of EUR 112 thousand (2016: EUR 236 thousand) come from the reconciliation.

Revenues from a joint arrangement with a consortium have been offset against the related expenses of EUR 8,197 thousand (2016: EUR 7,701 thousand).

In the reporting period, work in progress increased by EUR 7,693 thousand (2016: decreased by EUR 4,292 thousand). This amount comprises the balance of the reduction in projects invoiced and the increase in new projects and projects in progress.

## 5. Own work capitalised

Expenses of EUR 65 thousand were recognised in 2017 (2016: EUR 245 thousand) for self-created test systems.



## 6. Other operating income

	2017 EUR	2016 EUR
Grants and subsidies for research and development costs	3,916,403.79	2,950,657.04
Revenue from a government research subsidy	1,729,993.85	1,937,329.74
Miscellaneous other operating income	1,026,228.80	1,186,975.49
Currency difference from consolidation	385,992.81	1,464,671.33
Income from the reversal of provisions	209,033.86	1,830,487.37
Income from foreign currency translation	192,671.98	87,157.94
Exchange rate differences	74,720.11	1,262,048.52
Income from the sale of assets	17,968.13	28,325.76
	<b>7,553,013.33</b>	<b>10,747,653.19</b>

The reduction in income from the reversal of provisions is principally attributable to the reversal of a project provision for a major project in the Arab region in 2016.

A government research subsidy of EUR 995 thousand can be claimed from the Austrian Finance Ministry for expenses totalling EUR 8,292 thousand. In addition, in the reporting period a government research subsidy of EUR 735 thousand was claimed for 2016.

Research and development costs of EUR 42,524 thousand (2016: EUR 42,870 thousand) were recognised in the income statement for the reporting period.

## 7. Cost of materials and purchased services

	2017 EUR	2016 EUR
Cost of materials	37,295,761.48	31,518,652.82
Cost of purchased services	38,214,328.19	33,272,511.74
	<b>75,510,089.67</b>	<b>64,791,164.56</b>

The increase in the cost of materials and purchased services from EUR 64,791 thousand in 2016 to EUR 75,510 thousand in 2017 is attributable to a large number of projects that made intensive use of materials and outsourced services.

## 8. Staff expenses

	2017 EUR	2016 EUR
Salaries	105,692,633.15	97,443,904.88
Expenses for severance payments	1,827,732.55	1,898,513.50
Expenses for pensions	840,049.06	793,603.95
Social security contributions	23,349,541.00	22,173,177.29
Other voluntary social welfare expenses	2,799,084.84	2,585,642.35
	<b>134,509,040.60</b>	<b>124,894,841.97</b>

The headcount at the end of the financial year was 1,741 (2016: 1,637). The average number of employees was 1,697 (2016: 1,606).

## 9. Depreciation and amortisation

	2017 EUR	2016 EUR
Depreciation of property, plant and equipment and amortisation of intangible assets	5,291,148.02	4,824,669.53
Depreciation and amortisation of low-value assets	410,746.68	431,958.10
	<b>5,701,894.70</b>	<b>5,256,627.63</b>

## 10. Other operating expenses

	2017 EUR	2016 EUR
Travel expenses	11,361,507.47	10,271,142.44
Rental expenses (buildings)	7,748,376.96	7,202,266.08
Legal and consulting expenses	4,837,681.15	4,437,027.43
External personnel	3,150,301.16	3,136,279.05
Advertising costs	2,572,105.48	2,200,019.18
Maintenance	1,800,187.19	1,857,218.00
Fleet costs	1,536,931.70	1,504,405.36
Telephone costs	1,206,353.69	1,254,013.16
Insurance expenses	1,476,977.00	1,435,953.89
Transport costs	1,118,835.44	954,737.18
Energy costs	990,691.29	959,117.29
Currency difference from consolidation	752,507.76	1,013,363.55
Staff recruitment costs	662,039.03	597,034.43
Bank charges and bank guarantee fees	635,114.35	662,493.50
Other taxes	222,600.69	206,171.12
Contractual penalties	199,137.74	367,698.03
Impairment of receivables	129,695.47	629,143.37
Exchange rate differences	83,836.91	37,711.59
Change in project provisions	50,437.61	176,855.09
Losses from the disposal of assets	47,057.03	240,555.42
IT leasing fees	0.00	162,370.10
Write-downs of receivables	0.00	836,560.62
Change in derivatives due to MTM valuation	-111,368.89	242,654.12
Miscellaneous	4,032,251.83	4,461,529.49
	<b>44,503,258.06</b>	<b>44,846,319.49</b>

In the reporting period, bank charges of EUR 184 thousand (2016: EUR 303 thousand) were reclassified from the financial result to other operating expenses. The prior-year figures were restated accordingly.

## 11. Financial results

### Financial income

	2017 EUR	2016 EUR
Interest and similar income	449,674.43	513,739.82
Income from securities (available-for-sale financial assets)	13,982.78	13,315.68
Income from securities (financial assets held for trading)	630.00	1,260.00
Income from the disposal of financial assets	915.71	0.00
Write-ups of securities (financial assets held for trading)	0.00	293.16
	<b>465,202.92</b>	<b>528,608.66</b>

## Financial expenses

	2017 EUR	2016 EUR
Interest and similar expenses	512,335.04	787,152.45
Impairment of securities (assets held to maturity)	6,800.00	0.00
	<b>519,135.04</b>	<b>787,152.45</b>

## Other financial results

	2017 EUR	2016 EUR
Impairment of goodwill	-9,239.03	0.00
Expenses for the disposal of financial assets	-49,995.90	0.00
	<b>-59,234.93</b>	<b>0.00</b>

The goodwill impairment results from the initial consolidation of AIRNAV Technology Services Inc.

## 12. Income from associated companies

	2017 EUR	2016 EUR
<b>GroupEAD</b>		
Attributable profit for 2015	0.00	36,069.28
Attributable profit for 2016	78,256.95	0.00
Attributable share of advance distribution of profit for 2017	66,640.00	0.00
<b>Mission Embedded</b>		
Attributable profit for 2016	0.00	31,868.53
Attributable profit for 2017	34,676.19	0.00
<b>AIRNAV Technology Services</b>		
Attributable profit for 2017	-2,498.63	0.00
	<b>177,074.51</b>	<b>67,937.81</b>

## 13. Income taxes

	2017 EUR	2016 EUR
Current income taxes	2,885,415.79	4,048,130.55
Change in deferred tax assets/liabilities	803,220.36	-1,031,872.89
	<b>3,688,636.15</b>	<b>3,016,257.66</b>

The tax reconciliation is as follows:

	2017 EUR thousand	Tax rate in %	2016 EUR thousand	Tax rate in %
Profit before tax	14,385	100%	12,234	100%
Theoretical tax expense based on a tax rate of 25%	3,596	25%	3,059	25%
Additional taxable amounts	223		153	
Tax deductions	-962		-735	
Tax difference subsidiaries	832		539	
Unrecognised tax loss carryforward	0		0	
<b>Actual total tax expense</b>	<b>3,689</b>	<b>25%</b>	<b>3,016</b>	<b>25%</b>

The additional taxable amounts comprise non-deductible expenses such as representational expenses. The tax deductions mainly comprise the government research subsidy.

## 14. Other comprehensive income for the period

	Before taxes EUR thousand	Tax expense/credit EUR thousand	After taxes EUR thousand
2017			
Foreign currency translation differences	-920	0	-920
Unrealised gains and losses on available-for-sale financial assets	-25	6	-19
Fair value gains/losses from cash flow hedges	1,322	-330	992
Remeasurement of liabilities (assets) from post-employment benefits	-39	10	-29
Remeasurement of liabilities (assets) from post-employment benefits - from associated companies	-1	0	-1
<b>Other comprehensive income</b>	<b>337</b>	<b>-314</b>	<b>23</b>

	Before taxes EUR thousand	Tax expense/credit EUR thousand	After taxes EUR thousand
2016			
Foreign currency translation differences	-129	0	-129
Unrealised gains and losses on available-for-sale financial assets	4	-1	3
Fair value gains/losses from cash flow hedges	738	-185	553
Remeasurement of liabilities (assets) from post-employment benefits	-1,100	272	-828
Remeasurement of liabilities (assets) from post-employment benefits - from associated companies	-1	0	-1
<b>Other comprehensive income</b>	<b>-488</b>	<b>86</b>	<b>-402</b>

Financial derivatives were concluded to hedge future cash flows. Where it is possible to form a hedge relationship and the hedge relationships are effective, the gains and losses have to be recognised in other comprehensive income. Further details can be found in the section on financial instruments.

Actuarial gains and losses from changes in provisions for severance payments and pensions are also recognised in other comprehensive income, as outlined in Notes 31 and 32.

# Notes to the consolidated balance sheet

## 15. Property, plant and equipment, intangible assets

The following tables show the change in the Group's non-current assets (in EUR):

	Buildings on leased land	Technical plant and machinery	Other plant, factory and office equipment	Vehicle fleet	Advances and plants under construction	Total
<b>Carrying amount as at 31 December 2015</b>	<b>1,221,192</b>	<b>408,077</b>	<b>4,267,778</b>	<b>102,326</b>	<b>430,677</b>	<b>6,430,050</b>
Foreign currency translation difference	-631	-1,274	8,566	9	0	6,670
Reclassification of advances	71,570	0	222,124	0	-414,687	-120,993
Additions from the acquisition of companies	0	0	0	0	0	0
Additions	1,288,556	246,655	3,410,650	71,588	100,774	5,118,223
Disposals	-39,199	0	-32,735	-34,707	-22,990	-129,631
Depreciation	-276,312	-185,754	-2,545,490	-43,928	0	-3,051,484
<b>Carrying amount as at 31 December 2016</b>	<b>2,265,176</b>	<b>467,704</b>	<b>5,330,893</b>	<b>95,288</b>	<b>93,774</b>	<b>8,252,835</b>
Cost of acquisition/production	4,410,823	3,973,551	18,247,581	206,970	93,774	26,932,699
Accumulated depreciation	-2,145,647	-3,505,847	-12,916,688	-111,682	0	-18,679,864
<b>Carrying amount as at 31 December 2016</b>	<b>2,265,176</b>	<b>467,704</b>	<b>5,330,893</b>	<b>95,288</b>	<b>93,774</b>	<b>8,252,835</b>
<b>Carrying amount as at 31 December 2016</b>	<b>2,265,176</b>	<b>467,704</b>	<b>5,330,893</b>	<b>95,288</b>	<b>93,774</b>	<b>8,252,835</b>
Foreign currency translation difference	-18,486	-194	-37,245	0	-1,905	-57,830
Reclassification of advances from customers	81,736	0	8,794	0	-90,530	0
Additions from the acquisition of companies	0	0	0	0	0	0
Additions	338,691	183,278	3,044,416	99,453	378,673	4,044,511
Disposals	0	0	-36,661	-54,431	-11,943	-103,035
Depreciation	-333,893	-172,066	-2,888,707	-42,695	0	-3,437,361
<b>Carrying amount as at 31 December 2017</b>	<b>2,333,224</b>	<b>478,722</b>	<b>5,421,490</b>	<b>97,615</b>	<b>368,069</b>	<b>8,699,120</b>
Cost of acquisition/production	4,797,909	3,616,190	20,168,260	205,652	368,069	29,156,080
Accumulated depreciation	-2,464,685	-3,137,468	-14,746,770	-108,037	0	-20,456,960
<b>Carrying amount as at 31 December 2017</b>	<b>2,333,224</b>	<b>478,722</b>	<b>5,421,490</b>	<b>97,615</b>	<b>368,069</b>	<b>8,699,120</b>

	Software and licences	Advances	Total
<b>Carrying amount as at 31 December 2015</b>	<b>2,095,581</b>	<b>0</b>	<b>2,095,581</b>
Foreign currency translation difference	203	0	203
Reclassification of advances	120,993	0	120,993
Additions from the acquisition of companies	0	0	0
Additions	9,978,541	0	9,978,541
Disposals	-292,204	0	-292,204
Amortisation	-2,205,144	0	-2,205,144
<b>Carrying amount as at 31 December 2016</b>	<b>9,697,970</b>	<b>0</b>	<b>9,697,970</b>
Cost of acquisition/production	17,153,006	0	17,153,006
Accumulated amortisation	-7,455,036	0	-7,455,036
<b>Carrying amount as at 31 December 2016</b>	<b>9,697,970</b>	<b>0</b>	<b>9,697,970</b>
<b>Carrying amount as at 31 December 2016</b>	<b>9,697,970</b>	<b>0</b>	<b>9,697,970</b>
Foreign currency translation difference	-574	0	-574
Reclassification of advances from customers	0	0	0
Additions from the acquisition of companies	0	0	0
Additions	538,770	75,000	613,770
Disposals	0	0	0
Amortisation	-2,264,533	0	-2,264,533
<b>Carrying amount as at 31 December 2017</b>	<b>7,971,633</b>	<b>75,000</b>	<b>8,046,633</b>
Cost of acquisition/production	17,420,125	75,000	17,495,125
Accumulated amortisation	-9,448,492	0	-9,448,492
<b>Carrying amount as at 31 December 2017</b>	<b>7,971,633</b>	<b>75,000</b>	<b>8,046,633</b>

Rounding differences may occur due to the presentation in whole EUR.

## 16. Goodwill

For the purpose of impairment testing, goodwill has been allocated to the Group's cash-generating units as follows:

	31 Dec. 2017 EUR thousand	31 Dec. 2016 EUR thousand
Systems Interface Ltd.	1,266	1,266
Comsoft Solutions GmbH	909	909
Team Communication Technology Management GmbH	53	0
	<b>2,228</b>	<b>2,175</b>

The restructuring of the investment in Team Communication Technology Management GmbH in the reporting period resulted in an addition to goodwill of EUR 53 thousand.

Goodwill was tested for impairment when preparing the consolidated financial statements by estimating the recoverable amount of the relevant companies using discounted cash flows for a three-year detailed planning period and a perpetual annuity derived from this.

The impairment test in accordance with IAS 36 was based on detailed earnings, balance sheet and investment plans for all cash-generating units for the next three years. These are prepared annually as part of the Group-wide budget planning process, taking the current business situation into account. For periods after the budget planning period, a long-term growth rate is determined and used to forecast future cash flows.

Forecast future cash flows were discounted using discount rates that take account of normal market and country-specific risks. Future increases in interest rates were taken into account by raising the discount rate used to value the perpetual annuity.

	Systems Interface Ltd.	Comsoft Solutions GmbH
Interest rate 2018-2020	6.55%	6.35%
Interest rate perpetual annuity	7.45%	7.25%
Present value of forecast cash flows in EUR thousand	5,087	21,312

Since the calculated present value of the forecast cash flows for the cash-generating units exceeds the goodwill allocated to them, no impairment losses had to be recognised in the reporting period.

## 17. Investments in associated companies

	31 Dec. 2017 EUR	31 Dec. 2016 EUR
Investments in associated companies	591,418.75	553,807.71

The investments in associated companies relate to the investments in GroupEAD Europe S.L., Madrid, Mission Embedded GmbH, Vienna and AIRNAV Technology Services Inc., Iloilo, which are included in the consolidated financial statement at equity.



The Group has a 28% interest in GroupEAD Europe S.L., Madrid. The carrying amount of this investment is as follows:

		EUR
<b>31 December 2016</b>	<b>Investment in GroupEAD</b>	<b>490,661.49</b>
	Attributable profit for 2016	78,256.95
	Less dividend for 2016 distributed in 2017	-78,256.95
	Provisional attributable profit for 2017	66,640.00
	Less dividend distributed for 2017	-66,640.00
<b>31 December 2017</b>	<b>Investment in GroupEAD</b>	<b>490,661.49</b>

GroupEAD Europe S.L. acts as service provider of the EAD system on behalf of EUROCONTROL. This system was developed by Frequentis, which is responsible for technical operation. The close relationship between the technical and operational service provider has a positive impact on the quality of service and the customer relationship. In addition, Frequentis is able to use the experience and operational expertise of GroupEAD in the ongoing development of the EAD system and to develop other AIM systems for the international market.

The next table contains summarised financial information on this company as at the last reporting date (31 December 2016):

	31 Dec. 2016 EUR	31 Dec. 2015 EUR
<b>GroupEAD</b>		
Non-current assets	241,770.87	212,678.52
Current assets	2,796,678.61	2,630,944.96
of which cash and cash equivalents	2,305,569.92	2,224,713.92
Equity	2,031,851.60	1,881,181.37
Liabilities	1,006,597.88	962,442.11
Total operating performance	6,708,795.90	6,309,664.08
Depreciation and amortisation	56,245.77	65,944.31
Income taxes	112,083.59	53,198.71
Profit for the financial year	279,489.09	128,818.86

The Frequentis Group holds a 20% interest in Mission Embedded GmbH, Vienna. The development of this investment is presented below:

		EUR
<b>31 December 2016</b>	<b>Investment in Mission Embedded</b>	<b>63,146.22</b>
	Attributable profit for 2017	34,676.19
	Actuarial losses in 2017 in accordance with IAS 19	-580.11
<b>31 December 2017</b>	<b>Investment in Mission Embedded</b>	<b>97,242.30</b>

Mission Embedded GmbH was created by spinning off the "Mission Embedded" department in 2014 to drive forward the positive development of Frequentis' expertise in hardware and hardware-related software for safety-critical applications by giving it greater independence.

The next table contains summarised financial information on this company as at the last reporting date (31 December 2017):

	31 Dec. 2017 EUR	31 Dec. 2016 EUR
<b>Mission Embedded</b>		
Non-current assets	145,062.67	140,394.49
Current assets	1,372,174.55	1,217,028.97
of which cash and cash equivalents	688,174.34	647,137.57
Equity	500,680.31	315,731.13
Liabilities	1,016,556.91	1,041,692.33
Total operating performance	3,867,356.36	2,856,760.56
Depreciation and amortisation	75,220.96	48,584.10
Income taxes	41,026.01	69,169.58
Profit for the financial year	173,380.93	159,342.66

In April 2017, Frequentis AG acquired a 40% interest in AIRNAV Technology Services Inc., which is headquartered in the Philippines (Iloilo). The table shows the development of this investment:

		EUR
April 2017	Purchase price of the investment	15,252.62
	Goodwill due to initial consolidation	-9,239.03
	Attributable loss for 2017	-2,498.63
<b>31 December 2017</b>	<b>Investment in AIRNAV Technology Services</b>	<b>3,514.96</b>

This company was established in January 2017 and operates in the ATM domain. Its operations comprise testing, installation and maintenance services and on-site training for international customer projects (especially in the Asian and Arab markets).

The next table contains summarised financial information on this company:

	31 Dec. 2017 PHP	31 Dec. 2016 PHP
<b>AIRNAV Technology Services</b>		
Non-current assets	585,822.35	n/a
Current assets	270,760.94	n/a
of which cash and cash equivalents	129,279.04	n/a
Equity	506,583.29	n/a
Liabilities	350,000.00	n/a
Total operating performance	5,927,347.84	n/a
Depreciation and amortisation	99,300.00	n/a
Income taxes	11,979.00	n/a
Loss in the financial year	-368,416.71	n/a

## 18. Securities

The securities held in the reporting period were allocated to the following categories:

	31 Dec. 2017 EUR	31 Dec. 2016 EUR
Financial assets held for trading	0.00	224,910.00
Available-for-sale financial assets	884,089.66	921,622.40
Financial assets held to maturity	1,700,000.00	0.00
	<b>2,584,089.66</b>	<b>1,146,532.40</b>

The financial assets held for trading were sold in the reporting period.

An interest rate floater maturing in April 2018 was purchased in the reporting period. It is recognised in current assets in the category "financial assets held to maturity".

## 19. Other non-current assets

	31 Dec. 2017 EUR	31 Dec. 2016 EUR
Other non-current assets	162,755.71	142,620.92

The other non-current assets mainly result from deposits paid for rental obligations.

## 20. Deferred tax assets

Deferred tax assets and liabilities are netted, taking into account their maturity, if there is a corresponding legally enforceable claim to offsetting and the deferred tax assets and liabilities refer to income taxes that are levied by the same tax authority for the same taxable entity.

	Asset value 2017 EUR	Liability value 2017 EUR	Asset value 2016 EUR	Liability value 2016 EUR
Provisions for severance payments	167,307		203,461	
Provisions for anniversary bonuses			100,471	
Adjustments relating to provisions	276,866	-27,019	144,495	-40,679
Asset value rental/leasing	70,859		102,586	
Measurement of construction contracts	80,289	-509,195	270,115	-133,577
Depreciation/amortisation that is not tax-deductible	416,289	-87,288	523,628	-107,789
Valuation of receivables/liabilities	2,643			-28
Tax credits from grants and subsidies for research costs that have not yet been offset	242,027		277,530	
Deferred taxes on currency differences			4,076	
Tax loss carryforward	1,106,717		1,594,782	
<b>Total</b>	<b>2,362,997</b>	<b>-623,502</b>	<b>3,221,144</b>	<b>-282,073</b>
<b>Net amount</b>		<b>1,739,495</b>		<b>2,939,071</b>

## 21. Inventories

	31 Dec. 2017 EUR	31 Dec. 2016 EUR
Raw materials, auxiliaries and supplies	6,928,320.91	6,923,537.53
Finished goods and merchandise	3,010,962.29	3,940,011.83
Advance payments made	273,870.39	104,973.78
	<b>10,213,153.59</b>	<b>10,968,523.14</b>

The impairment charge on inventories was EUR 1,492 thousand in 2017 (2016: EUR 919 thousand).

## 22. Trade accounts receivable

	2017 EUR	2016 EUR
Trade accounts receivable, gross	39,715,813.67	41,460,941.80
Accumulated impairment losses on trade accounts receivable	-567,967.53	-851,925.95
<b>Trade accounts receivable, net</b>	<b>39,147,846.14</b>	<b>40,609,015.85</b>

Trade accounts receivable are not interest-bearing and are generally due within 30 days.

All identifiable risks are taken into account by appropriate impairment charges. In the event of default, the receivables are derecognised. As at the reporting date, there were no indications that debtors of receivables that were neither overdue nor impaired would not meet their payment obligations.

The table shows the development of impairments of trade accounts receivable:

	2017 EUR	2016 EUR
<b>As at 31 December of the previous year</b>	<b>851,925.95</b>	<b>632,861.73</b>
Additions from the acquisition of companies	0.00	0.00
Additions	129,695.47	629,143.37
Use	-75,862.66	-127,994.67
Reversal	-337,791.23	-282,084.48
Foreign currency translation differences	0.00	0.00
<b>As at 31 December of the financial year</b>	<b>567,967.53</b>	<b>851,925.95</b>

The maturity structure of trade accounts receivable as at 31 December 2017 was as follows:

	2017 EUR thousand
Trade accounts receivable, net	39,148
of which: neither overdue nor impaired	27,743
of which, overdue but not impaired	
Up to 30 days	7,966
30 - 60 days	1,032
60 - 90 days	922
90 - 120 days	261
120 - 180 days	221
180 - 210 days	251
> 210 days	752

## 23. Receivables from construction contracts under IAS 11

	31 Dec. 2017 EUR	31 Dec. 2016 EUR
Receivables from construction contracts under IAS 11	49,488,152.33	41,795,059.31
Advances from customers	-16,013,854.21	-11,847,564.43
	<b>33,474,298.12</b>	<b>29,947,494.88</b>

The change in receivables from construction contracts under IAS 11 mainly relate to a project in Europe.

## 24. Receivables from associated companies

This item contains receivables from the following companies:

	31 Dec. 2017 EUR	31 Dec. 2016 EUR
GroupEAD	6,992.75	1,696.20
Mission Embedded	2,414.01	18,786.60
of which current	9,406.76	20,482.80
of which non-current	0.00	0.00

## 25. Other current assets

The other receivables totalling EUR 11,675 thousand mainly comprise a receivable of EUR 995 thousand relating to a government research subsidy for 2017, receivables of EUR 1,986 thousand from the Austrian tax authorities (excluding income taxes) and accruals of EUR 3,845 thousand (2016: EUR 2,295 thousand).

## 26. Share capital and retained earnings

The change in equity can be seen from the consolidated statement of changes in equity.

The company's share capital is divided into 12,000,000 voting shares with no par value.

### Dividends

The net profit of Frequentis AG stated in the individual financial statements as at 31 December 2017 is EUR 8,179,951.48 and the distributable profit is EUR 52,969,169.24.

At the Annual General Meeting, the Executive Board of Frequentis AG will propose payment of a dividend of EUR 0.15 per share and a bonus dividend to be determined by the Annual General Meeting.

In 2017, the issued shares received a dividend payment of EUR 1,440 thousand for 2016 (2016 for 2015: EUR 1,560 thousand). That corresponds to a payment of EUR 0.12 per share in 2017 (2016: EUR 0.13 per share).

## 27. Reserves

	31 Dec. 2017 EUR	31 Dec. 2016 EUR
Capital reserves	1,774,002.96	1,774,002.96
IAS 19 reserve	-4,015,194.60	-3,978,573.20
IAS 39 reserve	142,814.45	-829,560.48
	<b>-2,098,377.19</b>	<b>-3,034,130.72</b>

The increase of EUR 991 thousand in the IAS 39 reserve is due to the change in the cash flow hedge reserve. Further details can be found in the section on financial instruments.

## 28. Adjustments for foreign currency translation

The translation differences on the balance sheet arising from different exchange rates are presented in a separate item "adjustments for foreign currency translation". The translation differences in the income statement resulting from different exchange rates are recognised in other operating income/expenses.

In the 2017 financial year, foreign currency translation differences of EUR 87 thousand (2016: EUR 18 thousand) increased income. The changes in equity and accumulated depreciation/amortisation were translated at the exchange rate on the reporting date (closing rate). In addition, in 2017 foreign currency translation differences resulting from consolidation reduced income by EUR 367 thousand (2016: increased income by EUR 451 thousand).



## 29. Non-controlling interests

The non-controlling interests relate to the following subsidiaries:

	31 Dec. 2017 EUR	31 Dec. 2016 EUR
Team Communication Technology Management GmbH	971,595	484,932
ELARA Leitstellentechnik GmbH	16,836	1,992
Systems Interface Ltd.	107,799	-152,967
Secure Service Provision GmbH	157,968	0
	<b>1,254,198</b>	<b>333,957</b>

The ownership structure of Team Communication Technology Management GmbH was altered in the reporting period. A capital increase by a co-owner and the purchase of further shares in the company at a purchase price of EUR 104 thousand increased non-controlling interests from 24.6% to 49%.

In addition, 20% of the shares in Secure Service Provision GmbH were sold for EUR 48 thousand in the reporting period.

At Team Communication Technology Management GmbH a pro rata distribution of EUR 981 thousand was made to non-controlling interests in the reporting period.

The next table provides information on the balance sheets of consolidated subsidiaries with material non-controlling interests and the carrying amount of the non-controlling interests (amounts stated in EUR thousand, before intragroup eliminations):

Balance sheet data as at 31 December 2017	Non- current assets	Current assets	Non-current liabilities	Current liabilities	Net assets	Carrying amount of non- controlling interests
Team Communication Technology Management GmbH	57	3,235	133	1,177	1,982	971
ELARA Leitstellentechnik GmbH	239	87	0	292	34	17
Systems Interface Ltd.	14	2,437	734	1,475	242	108
Secure Service Provision GmbH	55	956	1	220	790	158
						<b>1,254</b>

Balance sheet data as at 31 December 2016	Non- current assets	Current assets	Non-current liabilities	Current liabilities	Net assets	Carrying amount of non- controlling interests
Team Communication Technology Management GmbH	287	2,491	188	619	1,971	485
ELARA Leitstellentechnik GmbH	286	99	0	381	4	2
Systems Interface Ltd.	21	1,740	760	1,283	-282	-153
						<b>334</b>

The next table provides information on the income statement and statement of comprehensive income of the consolidated subsidiaries with significant non-controlling interests (in EUR thousand):

	Amounts before intragroup elimination				Profit attributable to non-controlling interests		
	Total operating per- formance	Profit for the period	Other comprehensive income	Total comprehensive income	Profit for the period	Other comprehensive income	Total comprehensive income
<b>2017</b>							
Team Communication							
Technology Management GmbH	6,609	1,049	53	1,102	514	10	524
ELARA Leitstellentechnik GmbH	1,631	30	0	30	15	0	15
Systems Interface Ltd.	6,336	532	0	532	261	0	261
Secure Service Provision GmbH	2,426	272	0	272	54	0	54
<b>Total</b>					<b>844</b>	<b>10</b>	<b>854</b>

	Amounts before intragroup elimination				Profit attributable to non-controlling interests		
	Total operating per- formance	Profit for the period	Other comprehensive income	Total comprehensive income	Profit for the period	Other comprehensive income	Total comprehensive income
<b>2016</b>							
Team Communication							
Technology Management GmbH	4,561	756	-35	721	186	-9	177
ELARA Leitstellentechnik GmbH	1,615	-191	0	-191	-93	0	-93
Systems Interface Ltd.	4,126	170	0	170	83	0	83
<b>Total</b>					<b>176</b>	<b>-9</b>	<b>167</b>

### 30. Non-current provisions

	31 Dec. 2017 EUR	31 Dec. 2016 EUR
Provisions for severance payments	11,988,565.21	12,225,276.50
Provisions for pensions	5,019,153.00	4,923,747.00
Offsetting of pension insurance policy reserves	-4,371,518.11	-4,309,218.34
	<b>647,634.89</b>	<b>614,528.66</b>
Provisions for anniversary bonuses	300,803.00	325,359.00
Other provisions	1,897,022.84	1,226,912.53
<b>Total non-current provisions</b>	<b>14,834,025.94</b>	<b>14,392,076.69</b>

Since the life insurance policies are pledged to cover pension provisions, the corresponding policy reserves were offset against pension provisions.

The other non-current provisions of EUR 1,897 thousand mainly comprise non-current provisions for projects.

## 31. Provisions for severance payments

This item comprises claims by employees in Austria to one-off severance payments on the basis of statutory regulations and collective agreements. These payments may arise due to dismissal by the employer, termination of the employment contract by mutual consent, retirement or death of the employee. The level of the severance payment depends on the number of years service with the company and the remuneration applicable when the employee leaves the company.

Obligations for severance payments were calculated using the following parameters:

	2017	2016
Interest rate	1.85%	1.85%
Wage and salary trend	2.50%	2.20%

The next table contains the reconciliation of the severance payment obligations at the start and end of the reporting period:

	2017 EUR	2016 EUR
<b>Present value of severance payment obligations (DBO) as at 1 January</b>		
<b>= Provisions as at 1 January</b>	<b>12,225,276.50</b>	<b>10,961,293.95</b>
Current service cost (CSC)	608,487.13	581,387.83
Interest cost (IC)	214,969.86	297,435.79
Actual payments made	-1,253,312.92	-164,714.00
Recognised actuarial loss (+)/gain (-)	193,144.64	549,872.93
<b>Present value of severance payment obligations (DBO) as at 31 December = Provisions as at 31 December</b>	<b>11,988,565.21</b>	<b>12,225,276.50</b>

The provisions for severance payments relate exclusively to employees who joined the Austrian companies in the group before 31 December 2002 because there was a switch from defined-benefit to define-contribution payments on 1 January 2002 due to a change in Austrian law. The new regulation applies to employees who joined the Group after 31 December 2002. For these employees, the company pays a monthly contribution to an external post-employment benefit plan which has to guarantee the severance payments, so the company has no severance payment obligations for these employees.

Breakdown of the recognised actuarial gains/losses for severance payment obligations:

	2017 EUR thousand	2016 EUR thousand
Changes in demographic assumptions	0	0
Changes in financial assumptions	368	487
Other changes	-175	63
<b>Total</b>	<b>193</b>	<b>550</b>

In the following sensitivity analysis for severance payment obligations (amounts in EUR thousand), the effect of changes in key actuarial parameters were varied, while the remaining variables were held constant.

Interest rate	Salary increases	DBO 31 Dec. 2017
1.35%	2.5%	12,692
1.85%	3.0%	12,681
1.85%	2.5%	11,989
1.85%	2.0%	11,345
2.35%	2.5%	11,341

## 32. Provisions for pensions

The pension benefit obligations were calculated using the following parameters:

	2017	2016
Interest rate	1.85%	1.85%
Retirement age	60/65 years	60/65 years

Development of pension provisions and plan assets:

	2017 EUR	2016 EUR
Present value of the pension benefit obligations (DBO) as at 1 January	4,923,747.00	4,098,235.00
Fair value of plan assets	-4,309,218.34	-4,116,864.42
<b>+ Provisions/credit as at 1 January</b>	<b>614,528.66</b>	<b>-18,629.42</b>
<b>Annual change in net pension expenses</b>		
Service cost	163,727.00	197,202.00
Net financial expense or income	9,893.00	-2,707.00
Realised actuarial losses (+)/gains (-)	-154,081.92	598,258.38
	<b>19,538.08</b>	<b>792,753.38</b>
<b>Payments made</b>		
Payments made to insurance	-100,000.00	-159,595.30
Payments received from plan assets	202,269.35	88,701.20
Pension payments	-88,701.20	-88,701.20
	<b>13,568.15</b>	<b>-159,595.30</b>
Total change	33,106.23	633,158.08
+ Provisions/credit as at 1 January	614,528.66	-18,629.42
Total change	33,106.23	633,158.08
<b>+ Provisions/credit as at 31 December</b>	<b>647,634.89</b>	<b>614,528.66</b>
<b>Provisions as at 31 December</b>		
Present value of the pension benefit obligation (DBO)	5,019,153.00	4,923,747.00
Fair value of plan assets	-4,371,518.11	-4,309,218.34
<b>+ Provisions/credit as at 31 December</b>	<b>647,634.89</b>	<b>614,528.66</b>

In the reporting period, the actuarial gains and losses were recognised in other operating income in accordance with IAS 19.

The table shows a breakdown of the recognised actuarial gains/losses for pension provisions:

	2017 EUR thousand	2016 EUR thousand
Changes in demographic assumptions	0	0
Changes in financial assumptions	0	580
Other changes	-69	25
Other changes to plan assets	-85	-7
<b>Total</b>	<b>-154</b>	<b>598</b>

In the following sensitivity analysis for pension benefit obligations (amounts in EUR thousand), the effect of changes in key actuarial parameters were varied, while the remaining variables were held constant.

Interest rate	DB0 as at 31 Dec. 2017
1.35%	5,392
1.85%	5,019
2.35%	4,685

### 33. Provisions for anniversary bonuses

Provisions for obligations to pay anniversary bonuses relate to long-term claims by staff at Comsoft Solutions GmbH based on company practice.

Obligations for anniversary bonuses were calculated using an interest rate of 1.85%.

	2017 EUR	2016 EUR
<b>Present value of anniversary bonus obligations (DB0) as at 1 January =</b>		
<b>Provisions as at 1 January</b>	<b>325,359.00</b>	<b>356,485.00</b>
Current service cost (CSC)	37,348.00	43,089.00
Interest cost (IC)	5,644.00	6,042.00
Actual payments made	-41,596.00	-33,125.00
Recognised actuarial loss (+)/gain (-)	-25,952.00	-47,132.00
<b>Present value of anniversary bonus obligations (DB0) as at 31 December = Provisions as at 31 December</b>	<b>300,803.00</b>	<b>325,359.00</b>

In the following sensitivity analysis for anniversary bonus obligations (amounts in EUR thousand), the effect of changes in key actuarial parameters were varied, while the remaining variables were held constant.

Interest rate	DB0 31 Dec. 2017
1.35%	313
1.85%	301
2.35%	290

### 34. Other non-current provisions

The other non-current provisions comprise:

	As at 31 Dec. 2016 EUR	Foreign exchange difference EUR	Change in consol. group EUR	Used EUR	Reversed EUR	Added EUR	As at 31 Dec. 2017 EUR
Holidays not yet taken	19,496	-952	0	0	0	15,179	33,723
Provisions for projects	1,207,417	0	0	0	0	640,534	1,847,951
Other	0	0	0	0	0	15,349	15,349
	<b>1,226,913</b>	<b>-952</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>671,062</b>	<b>1,897,023</b>

The provisions for projects comprise expenses that have not yet been incurred for projects that have already been invoiced and project expenses for which provisions are required as future expenses will exceed future revenues.

## 35. Deferred tax liabilities

Deferred tax assets and liabilities are netted, taking into account their maturity, if there is a corresponding legally enforceable claim to offsetting and the deferred tax assets and liabilities refer to income taxes that are levied by the same tax authority for the same taxable entity.

	Asset value 2017 EUR	Liability value 2017 EUR	Asset value 2016 EUR	Liability value 2016 EUR
Provisions for severance payments	1,277,010		1,221,042	
Provisions for pensions	490,529		473,922	
Adjustments relating to provisions	36,948	-1,118,856	20,033	-820,377
Asset value rental/leasing	5,680		13,718	
Write-down and sale of investments (1/7 tax rule)	84,164		91,584	-37,904
Measurement of construction contracts		-3,316,106		-3,771,412
Depreciation/amortisation that is not tax-deductible	78,500	-221,479	113,846	-224,694
Valuation of receivables/liabilities	14,694	-86,547		-180,586
Adjustments relating to derivatives and securities		-101,391	283,053	-31,029
Deferred taxes from foreign currency translation differences from debt consolidation		-3,118		0
<b>Total</b>	<b>1,987,525</b>	<b>-4,847,497</b>	<b>2,217,198</b>	<b>-5,066,002</b>
<b>Net amount</b>		<b>-2,859,972</b>		<b>-2,848,804</b>

## 36. Liabilities

	31 Dec. 2017 EUR	Less than 1 year EUR	1 to 5 years EUR	More than 5 years EUR
<b>2017</b>				
Financial liabilities to banks	7,704,415	204,415	0	7,500,000
Advances from customers	38,556,070	38,556,070	0	0
Trade accounts payable	10,647,539	10,284,654	362,885	0
Payables to associated companies	132,144	132,144	0	0
Other liabilities	11,007,571	7,802,944	3,204,627	0
Tax liabilities	550,181	550,181	0	0
<b>Total liabilities</b>	<b>68,597,920</b>	<b>57,530,408</b>	<b>3,567,512</b>	<b>7,500,000</b>

	31 Dec. 2016 EUR	Less than 1 year EUR	1 to 5 years EUR	More than 5 years EUR
<b>2016</b>				
Financial liabilities to banks	9,635,095	135,095	0	9,500,000
Advances from customers	33,610,939	33,610,939	0	0
Trade accounts payable	9,657,984	9,213,585	444,399	0
Payables to associated companies	56,648	56,648	0	0
Other liabilities	13,117,923	9,265,022	3,852,901	0
Tax liabilities	1,376,758	1,376,758	0	0
<b>Total liabilities</b>	<b>67,455,347</b>	<b>53,658,047</b>	<b>4,297,300</b>	<b>9,500,000</b>



## 37. Advances from customers

Some advances received for orders are secured by advance payment bonds. In addition, some performance obligations are secured by bank guarantees. There was no physical collateral either on the reporting date or during the year.

Starting in the 2016 financial year, advances from customers and similar liabilities (accruals for advance billing) are summarised in the line item "advances from customers". This brought the breakdown of liabilities into line with internal reporting in the Group.

The next table shows the structure of advances from customers, including similar liabilities:

	31 Dec. 2017 EUR	31 Dec. 2016 EUR
Advances from customers	36,529,448.40	32,739,850.75
Advances that have been offset against receivables from construction contracts under IAS 11	-16,013,854.21	-11,847,564.43
	<b>20,515,594.19</b>	<b>20,892,286.32</b>
Liabilities similar to advances	27,899,934.20	19,021,421.21
Offsetting against outstanding receivables	-9,859,458.73	-6,302,768.94
	<b>18,040,475.47</b>	<b>12,718,652.27</b>
<b>Total advances from customers</b>	<b>38,556,069.66</b>	<b>33,610,938.59</b>

The increase in liabilities classified as similar to advances is mainly attributable to a project in South America.

## 38. Payables to associated companies

	31 Dec. 2017 EUR	31 Dec. 2016 EUR
Mission Embedded	111,179.25	37,748.40
Group EAD	18,900.00	18,900.00
AIRNAV Technology Services	2,064.41	0.00
<b>Total payables to associated companies</b>	<b>132,143.66</b>	<b>56,648.40</b>

The liabilities related to the following Group companies:

	31 Dec. 2017 EUR	31 Dec. 2016 EUR
Frequentis AG	88,587.00	56,648.40
Frequentis USA Inc.	41,492.25	0.00
Frequentis California Inc.	1,244.60	0.00
Comsoft Solutions GmbH	819.81	0.00

## 39. Other liabilities

The reduction in other non-current liabilities is principally attributable to the repayment of loans received in connection with grants and subsidies for research and development amounting to EUR 572 thousand.

The other current liabilities amounting to EUR 7,803 thousand (2016: EUR 9,265 thousand) mainly comprise deferred revenues of EUR 2,638 thousand (2016: EUR 3,302 thousand) and advances received in connection with grants and subsidies totalling EUR 1,315 thousand (2016: EUR 2,057 thousand).

## 40. Other current provisions

The other current provisions comprise:

	As at 31 Dec. 2016 EUR	Foreign exchange difference EUR	Change in consol. group EUR	Used EUR	Reversed EUR	Added EUR	As at 31 Dec. 2017 EUR
Holidays not yet taken	2,628,995	-30,660	0	0	0	384,915	2,983,250
Consulting fees	521,942	-11,329	0	-506,961	-3,652	698,252	698,252
Bonuses	5,701,244	-73,992	0	-5,627,252	0	6,861,407	6,861,407
Overtime	303,363	-6,424	0	-296,939	0	345,448	345,448
Provisions for projects	5,778,361	-38,864	0	-5,729,250	-10,247	5,138,105	5,138,105
Other	3,063,211	-17,950	0	-2,850,126	-195,135	2,191,272	2,191,272
	<b>17,997,116</b>	<b>-179,219</b>	<b>0</b>	<b>-15,010,528</b>	<b>-209,034</b>	<b>15,619,399</b>	<b>18,217,734</b>

The provisions for bonuses contain employee bonuses and variable salary components that are not yet due for payment. This amount also includes the profit-sharing bonus for employees.

The provisions for projects contain expenses not yet incurred for projects that have already been invoiced, warranties and project costs for which provisioning is required as future expenses will exceed future revenue.

The other provisions mainly comprise provisions for outsourced services totalling EUR 1,543 thousand (2016: EUR 1,961 thousand).

# Other information

## 41. Cash flow statement

The cash and cash equivalents presented in the cash flow statement comprise the balance sheet item "cash and cash equivalents" amounting to EUR 76,034 thousand and current securities totalling EUR 1,700 thousand.

In the cash flow from financing activities, the cash outflows for the repayment of loans totalling EUR 1,931 thousand comprise EUR 2,000 thousand for the repayment of non-current liabilities to banks and EUR 69 thousand for the additional use of a credit facility.

## 42. Financial Instruments

The next table shows the reconciliation from financial instruments to individual items on the balance sheet:

Reconciliation of assets 2017	Financial assets EUR	Trade accounts receivable EUR	Other assets EUR	Total EUR
Receivables	0	39,157,253	11,467,021	50,624,274
Available-for-sale financial assets	884,090	0	0	884,090
Assets held for trading	0	0	6,133	6,133
Assets held to maturity	1,700,000	0	0	1,700,000
Hedge accounting	0	0	364,809	364,809
	<b>2,584,090</b>	<b>39,157,253</b>	<b>11,837,963</b>	<b>53,579,306</b>

Reconciliation of assets 2016	Financial assets EUR	Trade accounts receivable EUR	Other assets EUR	Total EUR
Receivables	0	40,629,499	8,242,805	48,872,304
Available-for sale financial assets	921,622	0	0	921,622
Assets held for trading	224,910	0	61,499	286,409
Assets held to maturity	0	0	0	0
Hedge accounting	0	0	15,434	15,434
	<b>1,146,532</b>	<b>40,629,499</b>	<b>8,319,738</b>	<b>50,095,769</b>

Financial assets are measured at fair value in accordance with level 1 (based on publicly quoted market prices). Other assets contain forward exchange contracts in the amount of EUR 371 thousand. These are measured at fair value (level 2 - based on observable market data).

Reconciliation of liabilities 2017	Trade accounts payable EUR	Financial liabilities to banks EUR	Other liabilities EUR	Total EUR
Liabilities held for trading (derivatives)	0	0	252,320	252,320
Available-for-sale liabilities (derivatives)	0	0	0	0
Liabilities	10,779,682	7,704,415	6,642,624	25,126,721
Hedge accounting	0	0	159,812	159,812
	<b>10,779,682</b>	<b>7,704,415</b>	<b>7,054,756</b>	<b>25,538,853</b>

Reconciliation of liabilities 2016	Trade accounts payable EUR	Financial liabilities to banks EUR	Other liabilities EUR	Total EUR
Liabilities held for trading (derivatives)	0	0	419,055	419,055
Available-for-sale liabilities (derivatives)	0	0	0	0
Liabilities	9,714,633	9,635,095	6,208,059	25,557,787
Hedge accounting	0	0	1,132,211	1,132,211
	<b>9,714,633</b>	<b>9,635,095</b>	<b>7,759,325</b>	<b>27,109,053</b>

The financial liabilities of EUR 25,539 thousand comprise liabilities of EUR 25,127 thousand carried at amortised cost, liabilities held for trading totalling EUR 252 thousand and liabilities of EUR 160 thousand designated for hedge accounting. These forward exchange contracts are measured at fair value (level 2 - based on observable market data).

The remaining term of the financial instruments is as follows:

	Remaining term < 1 year EUR	Remaining term > 1 year EUR	Total EUR
Financial assets	0	2,584,090	2,584,090
Trade accounts receivable	39,157,253	0	39,157,253
Other assets	11,675,208	162,756	11,837,963
	<b>50,832,461</b>	<b>2,746,846</b>	<b>53,579,306</b>
Trade accounts payable	10,416,797	362,885	10,779,682
Financial liabilities to banks	204,415	7,500,000	7,704,415
Other liabilities	3,850,129	3,204,627	7,054,756
	<b>14,471,341</b>	<b>11,067,512</b>	<b>25,538,853</b>

The following hierarchy was used to allocate all assets and liabilities measured at fair value to a valuation method:

- Level 1: Valuation based on market prices
- Level 2: Valuation based on market prices of similar assets
- Level 3: Valuation based on models with significant valuation parameters that are not observable on the market

All assets and liabilities carried at fair value are assigned to level 1.

A distinction is made between derivative and non-derivative financial instruments. The derivative financial instruments mainly comprise hedging transactions to hedge exchange rate fluctuations.

The carrying amount of securities is their current fair value, which is their current stock market price.

## Financial derivatives

Foreign exchange risks are managed with the aid of financial derivatives, unless a natural hedge can be used (e.g. contracts with suppliers in the same foreign currency). The biggest foreign exchange items are due to export revenues in AUD, CAD, CHF, GBP, NOK, PLN, SGD and USD.

Frequentis aims to manage and monitor the foreign exchange risks throughout the entire project period through hedging with forward exchange contracts at the date of order intake. Wherever possible, financial derivatives have been allocated to the underlying transactions, i.e. existing balance sheet items (fair value hedges) and contractually agreed future cash flows in foreign currencies (cash flow hedges). Derivatives and the corresponding hedged items are treated as a valuation unit on the basis of this allocation.

Forward exchange contracts and options were concluded to hedge the risk of exchange rate fluctuations. Financial derivatives are not used for speculative purposes. A prospective effectiveness test is performed when the derivative is concluded to make a quantitative assessment of the hedging effect of the derivative financial instrument. In accordance with IAS 39, the fair values of the financial derivatives allocated must be recognised as a receivable or a liability if their effectiveness is adequate, but the related income or expense must be recognised through other comprehensive income and not through profit or loss in the consolidated income statement.

Insofar as documented allocation of financial derivatives that are used to hedge a foreign currency risk did not result in sufficiently substantiated cash flows (cash flow hedges) or balance sheet items (fair value hedges) in the reporting period, the gain or loss on measurement was recognised in profit or loss.

A retrospective effectiveness test is performed at year-end using the relative difference method. If a hedge relationship is ineffective, the valuation unit concerned is dissolved and the derivative and hedged item are valued separately.

The carrying amount is the present fair value, which is determined using the current market value as at 31 December 2017, with evidence provided by corresponding confirmation by a bank.

The next table shows the development of financial derivatives:

### 2017

Currency	Derivative		Fair value hedge		Cash flow hedge		For MTM valuation		Total
	Put amount	Call amount EUR	Currency value	Market value EUR	Currency value	Fair value EUR	Currency value	Fair value EUR	Fair value EUR
AUD	-1,756,716.00	1,123,750.66	-982,333.02	3,831.13	-648,914.04	1,229.51	-125,468.94	975.74	6,036.38
CAD	-879,834.00	592,800.29	0.00	0.00	-521,056.20	15,873.36	-358,777.80	3,796.32	19,669.68
CHF	-580,502.00	510,045.07	-69,948.23	1,756.18	-494,517.37	9,933.92	-16,036.40	361.95	12,052.05
GBP	-5,501,954.00	6,198,444.86	-1,543,767.42	26,451.28	-3,941,289.58	38,329.29	-16,897.00	819.47	65,600.04
USD	-15,162,033.00	12,748,688.70	-3,703,519.11	92,375.53	-11,450,802.29	299,443.28	-7,711.60	179.48	391,998.29
		21,173,729.58		124,414.12		364,809.36		6,132.96	495,356.44
AUD	-1,820,808.00	1,153,859.64	-660,268.73	-2,383.68	-1,160,018.72	-4,256.85	-520.55	-1.95	-6,642.48
CAD	-61,577.00	39,630.13	-54,648.35	-388.55	-6,848.61	-92.67	-80.04	-0.39	-481.60
CHF	-752,618.00	800,383.38	-54,687.15	-2,201.16	-406,669.85	-16,170.83	-291,261.00	-22,900.72	-41,272.71
GBP	-12,398,000.00	2,818,816.36	-615,680.83	-4,419.36	-11,782,319.17	-84,573.50	0.00	0.00	-88,992.86
NOK	-2,319,610.00	1,413,189.96	-1,656,864.29	-6,650.21	-662,745.71	-2,660.08	0.00	0.00	-9,310.30
USD	-3,459,089.00	2,477,322.18	-1,472,801.95	-55,862.34	-854,406.95	-52,058.20	-1,131,880.10	-229,417.25	-337,337.79
		8,703,201.65		-71,905.30		-159,812.13		-252,320.31	-484,037.74

## 2016

Currency	Derivative		Fair value hedge		Cash flow hedge		For MTM valuation		Total Fair value EUR
	Put amount EUR	Call amount EUR	Currency value	Fair value EUR	Currency value	Fair value EUR	Currency value	Fair value EUR	
AUD	90,040.00	-52,012.45	0.00	0.00	-40,000.00	2,108.39	130,040.00	6,042.92	8,151.30
CAD	-621,065.00	441,291.45	-29,243.51	408.44	-791,756.49	5,065.04	199,935.00	4,270.48	9,743.97
CHF	-113,700.00	106,887.02	0.00	0.00	-113,700.00	540.56	0.00	0.00	540.56
GBP	-708,152.00	836,316.83	0.00	0.00	-510,020.94	7,216.81	-198,131.06	9,929.05	17,145.86
USD	528,231.00	-449,962.38	0.00	0.00	-71,599.00	503.10	599,830.00	41,256.17	41,759.27
		882,520.47		408.44		15,433.90		61,498.62	77,340.96
AUD	-3,581,143.00	2,328,635.55	-160,424.52	-1,351.59	-3,038,355.37	-55,400.18	-382,363.11	-10,203.81	-66,955.58
CAD	-1,161,813.00	780,679.54	-100,692.94	-3,156.78	-35,806.68	-1,152.90	-1,025,313.38	-22,297.39	-26,607.08
CHF	-138,526.00	128,761.51	0.00	0.00	-138,526.00	-805.34	0.00	0.00	-805.34
GBP	234,878.81	-317,985.27	0.00	0.00	-166,257.09	-2,164.09	401,135.90	-44,119.76	-46,283.86
NOK	1,059,000.00	-114,796.75	0.00	0.00	0.00	0.00	1,059,000.00	-44.00	-44.00
USD	-13,880,021.40	11,276,031.95	-2,047,525.28	-193,085.27	-9,285,136.86	-1,072,688.58	-2,547,359.26	-342,389.89	-1,608,163.73
		14,081,326.53		-197,593.64		-1,132,211.09		-419,054.85	-1,748,859.59

For the cash flow hedge and MTM valuation, a positive fair value of EUR 371 thousand was recognised in other receivables in 2017, while a negative fair value of EUR 412 thousand was recognised in other liabilities.

In the reporting period, profit was increased by a positive change of EUR 111 thousand (2016: decreased by a negative change of EUR 243 thousand), which was recognised in other operating expenses, and EUR 1,322 thousand (2016: EUR 738 thousand) was recognised net of the pro rata deferred taxes in the IAS 39 reserve and thus outside of profit or loss. Payments out of hedged cash flows are expected between 2018 and 2023.

Based on the sensitivity analysis, an increase of +10% in the exchange rates as at the reporting date would increase the fair value by EUR 2,704 thousand (2016: EUR 3,184 thousand), while a reduction of -10% in the exchange rates as at the reporting date reduce the fair value by EUR 3,330 thousand (2016: EUR 177 thousand).

In the reporting period, EUR 887 thousand was reclassified from equity to the profit for the financial year and recognised in the item "Fair value gains/losses from cash flow hedges". In addition, EUR 94 thousand was derecognised from equity in the reporting period and included in the initial cost of acquisition or carrying amount of a non-financial asset or a non-financial liability.

## 43. Financial liabilities under rental and leasing agreements

The Frequentis Group has concluded operating leases and IT leases with some contractual partners. The future minimum lease payments arising from these existing contracts are as follows:

Year/period	EUR thousand
2018	8,085
2019-2022	28,621
	<b>36,706</b>

These amounts include an annual rental payment of EUR 3,545 thousand for the company's headquarters in Vienna.

During 2017, the Group concluded agreements for the purchase of property, plant and equipment totalling EUR 71 thousand, which will be completed and invoiced in 2018.



## 44. Information on business relations with related parties

The following transactions were undertaken with related parties in the reporting period:

	2017 EUR	2016 EUR
Expenses for consulting services	548,446.17	196,910.20
Expenses for project support services	357,871.88	527,999.07
Expenses for software development and engineering	417,694.18	391,460.35
Rental expenses	3,647,246.43	3,601,185.24
Revenues	1,419.00	189,963.25
Receivables as at December 31	1,702.80	41,868.40
Payables as at December 31	58,268.08	276,040.13

In the reporting period, revenues from transactions with the associated company GroupEAD Europe S.L. were as follows:

	2017 EUR	2016 EUR
Invoices from GroupEAD (project services)	75,600.00	83,490.00
Invoices to GroupEAD (project services)	42,926.90	35,289.76

In the reporting period, revenues from transactions with the associated company Mission Embedded GmbH were as follows:

	2017 EUR	2016 EUR
Invoices from Mission Embedded (hardware development)	1,939,239.40	2,086,054.63
Invoices to Mission Embedded (project services)	118,300.07	226,751.17

In the reporting period, revenues from transactions with the associated company AIRNAV Technology Services Inc. were as follows:

	2017 EUR	2016 EUR
Invoices from AIRNAV Technology (project services)	98,673.15	0.00
Invoices to AIRNAV Technology	0.00	0.00

The receivables from/payables to associated companies are stated separately on the balance sheet.

In the reporting period, Frequentis AG acquired a 5.76% interest in Team Communication Technology Management GmbH at a purchase price of EUR 104 thousand.

The transactions took place on customary market terms.

## 45. Significant events after the reporting date

There were no events after the reporting date that would have impacted the annual financial statement as at 31 December 2017.

## 46. Additional information

The Frequentis Group had an average of 1,697 employees in 2017 (2016: 1,606 employees).

### Information on governance bodies

The total remuneration of all managing directors and Executive Board members of the companies in the Frequentis Group in the reporting period was EUR 6,539 thousand (2016: EUR 5,802 thousand).

Expenses of EUR 353 thousand were incurred in the financial year (2016: EUR 468 thousand) for contributions to pension insurance and the establishment of pension provisions for members of the Executive Board. Contributions of EUR 100 thousand to pension insurance will also be incurred in 2018. In the event of termination of employment, there are claims for severance payments under Austrian law. Additions to the corresponding provisions for severance payments amounted to EUR 116 thousand in 2017 (2016: EUR 171 thousand).

The remuneration of the Supervisory Board was EUR 58 thousand in the reporting period (2016: EUR 53 thousand).

As in the previous year, no advances or loans were granted to members of the Executive Board or Supervisory Board and no liabilities were assumed to their benefit.

### Audit fees

In the reporting period, EUR 333 thousand (2016: EUR 290 thousand) was spent on auditing of the financial statements of companies in the Frequentis Group and the consolidated financial statements. As in the previous year, no other services were provided by the auditors.

## 47. Capital management

In addition to a sustained increase in the value of the company, financial management of the Frequentis Group aims to maintain an appropriate capital structure in order to retain an excellent credit rating. The principal performance indicators used to manage the capital structure are the EBIT margin, the equity ratio and net debt, which are compared with respective planned amounts. Since Frequentis currently has a net cash position, it refers to net cash rather than net debt. The net cash position comprises bank deposits less financial liabilities to banks. All growth measures are designed to maintain or improve the target indicators. The key performance indicators developed as follows in the reporting period:

	2017	2016
EBIT margin	5.2%	4.9%
Equity ratio	46.3%	44.1%
Net cash in EUR thousand	70,029	59,475

Maintaining an optimum capital structure to ensure sustained growth is a key aim of capital management in the Frequentis Group. The company meets the minimum capital requirements defined by law and the articles of association. Frequentis AG is subject to the minimum capital requirements of the Austrian Companies Act. The articles of association do not set any minimum capital requirements. The capital managed comprises the equity reported in the consolidated balance sheet.

## 48. Risk management

The Frequentis Group has an internal control system (ICS) integrated into its accounting process. This includes controls on capital management. The reliability of the internal control system is monitored by the internal audit department. The Group has initiated several processes based on best practice standards to ensure that its risk management is effective. The fundamental aim is to identify opportunities and risks as soon as possible and take suitable measures to maintain profitability and secure the continued existence of the Group. Risk awareness, the vigilance of all staff and early identification of business and natural risks are well developed and are incorporated in a solid risk management policy.

### Project business

The project business is the core business of the Frequentis Group and is its principal operating risk. It is therefore important that all project managers and other management personnel are aware of risks in advance, so they can evaluate them and respond accordingly. The necessary countermeasures have to be initiated and implemented and the results must be monitored. All relevant project information is discussed at periodic meetings of a project management board. Performance of the projects, invoicing and receipt of payments are monitored continuously. All key projects are presented at project evaluations to an extended management circle, which discusses risk assessments and deviations and agrees on the action to be taken. The Risk Management Policy serves as a guideline.

### Foreign currencies

In international business, it is necessary to conclude contracts in foreign currencies. The Group's foreign currency risk results principally from future business transactions, insofar as they are performed in a currency other than the functional currency of the parent company or the respective subsidiary. Frequentis uses financial derivatives to hedge such contracts in order to limit the risk of fluctuations in exchange rates. The biggest foreign exchange items are due to exports in AUD, CAD, CHF, GBP, NOK, PLN, SGD and USD (for information on the use of financial derivatives see Note 42).

### Credit risk

Since most of the Frequentis Group's customers are authorities, government-related businesses or, in the case of general contractors, large international companies, the credit risk is classified as low. One aspect of risk management at Frequentis is that business relationships are only entered into with third parties that are deemed to be creditworthy. The creditworthiness of customers is systematically evaluated and deliveries are only made if they have appropriate credit standing or if adequate steps are taken to address the risks identified.

If a higher risk is identified during the quotation process, credit insurance, advances by customers or letters of credit are used to reduce the credit risk.

The carrying amounts of financial assets are the maximum credit risk.

## Market risk

Market risk refers to market conditions and developments and poses a significant risk for Frequentis that is subject to constant monitoring. One major risk is that in the case of international tenders orders may be delayed by objections or official procedures or there may be seasonal variations in orders from government-related customers towards the end of the financial year. In this context, there is also a risk that progressive customer concentration could prove detrimental to the Group. Frequentis endeavours to limit this risk on the one hand by diversifying into several market segments and on the other by using optimised scenario management.

International business may be adversely affected by changes in legal and political conditions in other countries. Frequentis addresses this risk by continuous monitoring of its international investments.

The market is characterised by increasing competition, which could result in a loss of profitability. Frequentis counters this risk through specialisation and ongoing research and development into niche products to ensure an excellent market position.

## Liquidity risk

A functioning banking system is of fundamental importance for Frequentis and its customers. Frequentis requires access to debt to pre-finance upfront project services up to settlement of the invoice. Therefore, it continuously monitors, controls and evaluates its financial and liquidity position in order to limit the associated risks. The Group manages liquidity risks through careful planning and management of its liquidity requirements. Suitable measures are defined on the basis of cash flow forecasts and the Group ensures that it has adequate financial reserves to cover operational requirements and monitors credit lines.

In addition, the risk of default by customers is reduced by mandatory credit assessments and measures to secure payment.

## Declaration by the Executive Board on the conformance of the annual financial statement to the IFRSs

The Executive Board hereby declares that the consolidated financial statements as at 31 December 2017 provide a true and fair view of the assets, financial position and results of operations of all companies in the consolidated Frequentis Group, in accordance with the IFRSs, and that the management report presents the business performance, results of operations and situation of the Frequentis Group in such a way that it gives a true and fair view of the assets, financial position and results of operations and that it describes the material risks and uncertainties.

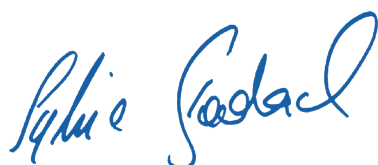
Vienna, 19 March 2018



Hannes Bardach  
Chairman of the Executive Board



Hermann Mattanovich



Sylvia Bardach



Norbert Haslacher

# Auditor's Report

## Report on the Consolidated Financial Statements

### Audit Opinion

We have audited the consolidated financial statements of Frequentis AG, Vienna, and of its subsidiaries (the Group) comprising the consolidated balance sheet as of 31st December 2017, the consolidated income statement, the consolidated statement of other comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the fiscal year then ended and the notes to the consolidated financial statements.

Based on our audit the accompanying consolidated financial statements were prepared in accordance with the legal regulations and present fairly, in all material respects, the assets and the financial position of the Group as of 31st December 2017 and its financial performance for the year then ended in accordance with the International Financial Reporting Standards, as adopted by the EU (IFRS), and the additional requirements under Section 245 et seq. Austrian Commercial Code.

### Basis for Opinion

We conducted our audit in accordance with in accordance with Austrian Standards on Auditing. Those standards require that we comply with International Standards on Auditing (ISAs). Our responsibilities under those regulations and standards are further described in the "Auditor's Responsibilities for the Audit of the Financial Statements" section of our report. We are independent of the Company in accordance with the Austrian General Accepted Accounting Principles and professional requirements and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### Responsibilities of Management and of the Audit Committee for the Consolidated Financial Statements

Management is responsible for the preparation of the consolidated financial statements in accordance with Austrian Generally Accepted Accounting Principles, for them to present a true and fair view of the assets, the financial position and the financial performance of the Group and for such internal controls as management determines are necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

The Audit Committee is responsible for overseeing the Group's financial reporting process.

## Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Austrian Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with Austrian Standards on Auditing, which require the application of ISAs, we exercise professional judgment and maintain professional scepticism throughout the audit.

We also:

- identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our 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 continue as a going concern.
- evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with the Audit Committee 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.



## Comments on the Management Report for the Group

Pursuant to Austrian Generally Accepted Accounting Principles, the Group management report is to be audited as to whether it is consistent with the consolidated financial statements and as to whether it was prepared in accordance with the applicable legal regulations.

Management is responsible for the preparation of the Group's management report in accordance with Austrian Generally Accepted Accounting Principles.

We conducted our audit in accordance with Austrian Standards on Auditing for the audit of the Group's management report.

### Opinion

In our opinion, the management report for the group was prepared in accordance with the valid legal requirements and is consistent with the consolidated financial statements.

### Statement

Based on the findings during the audit of the consolidated financial statements of Frequentis AG, Vienna, and due to the thus obtained understanding concerning the Group and its circumstances no material misstatements in the Group's management report came to our attention.

Vienna, 19 March 2018

## CONFIDA

Wirtschaftstreuhandgesellschaft m.b.H.  
Wirtschaftsprüfungsgesellschaft

Mag. Werner Egger  
External Auditor

This report is a translation of the original report in German, which is solely valid. Publication or sharing with third parties of the group financial statements together with our auditor's opinion is only allowed if the financial statements and the management report are identical with the audited version. This audit opinion is only applicable to the German and complete financial statements with the management report. Section 281 par. 2 UGB (Austrian Company Code) applies to alternated versions.



# Glossary

The glossary explains specialist financial terminology and terms relating to Frequentis' business to facilitate understanding of this annual report.

## Frequentis business

Term	Explanation
3020 LifeX	Product name for the multimedia collaboration platform in the Public Safety business unit
AIM	Aeronautical Information Management Aeronautical information services (AIS) that provide pilots with all the information necessary for a flight.
(A)MHS	(Aeronautical) Message Handling System MHS: System for the processing and transmission of aeronautical messages that is based on an ICAO-standard for air-ground-ground-communication; e.g. for the transmission of NOTAM (notice to airmen), flight plans or meteorological data.
ATM	Air Traffic Management 1) Air traffic management (ATM) – ensures the safe and efficient movement of aircraft during all phases of their operation. 2) Name of a Frequentis business domain that comprises the Air Traffic Management Civil, Aeronautical Information Management, and Defence business units.
COTS	Commercial off the shelf Products that are commercially available and can be bought "as is"
EAD	European AIS (Aeronautical Information Services) Database The "European AIS Database" has been successfully operating since 2003. The EAD system was developed by Frequentis and is operated by GroupEAD. It ensures the standardisation and harmonisation of the relevant aviation data and therefore greater safety while reducing maintenance costs, thus representing an initial milestone for the concept of a "Single European Sky".
ELKOS	Dispatch and communications system – name of a project of the Austrian Ministry of the Interior
EPISSECC	Establish a Pan-European Information Space to Enhance seCurity of Citizens European research programme that aims to optimise the interconnected and safe cooperation of public safety organisations in emergencies.
FABEC N-VCS	FAB - Functional Airspace Block In the context of the Single European Sky project, the European airspace is divided into nine airspace sectors that replace the previous national sectors or combine them into new units.
FABEC - FAB Europe Central	In the context of the Single European Sky repartition, this comprises the airspace of Belgium, Germany, France, Luxembourg, the Netherlands, and Switzerland.
N-VCS -	New Voice Communication System Frequentis Voice Communication System
GMDSS	Global Maritime Distress and Safety System Global system for distress and safety radio communication; a set of technical equipment, service centres and rules to support global rescue efforts in cases of distress at sea and for the protection of shipping.
GSM-R	GSM for Railways A mobile radio system which is based on the globally dominating mobile radio standard, which was specifically adapted for use in the railway sector.
IP	IP stands for "Internet Protocol" IP networks work with the internet protocol and packet switching. They consist of subnetworks that use routers or switches to connect to the actual backbone network, which constitutes the communication infrastructure

IVSR	Interim Voice Switch Replacement Programme by the US American air navigation service provider FAA for the modernisation of their voice communication systems.
LTE	Long Term Evolution Standard for wireless communication of high-speed data for mobile phones and data terminals.
MosaiX	Product name for a Frequentis-developed integrated voice and data platform
PST	Public Safety & Transport Name of the Frequentis business domain comprising the Public Safety, Public Transport (i.e. railways), and Maritime business units.
SDDS; SDDS-NG	Surveillance Data Distribution System System developed by EUROCONTROL at the request of its member states to facilitate optimum mutual use of available surveillance information, and build an intelligent logical network for the distribution of surveillance data.
NG	means "New generation"
SESAR; SESAR 2020	Single European Sky ATM Research Programme A pan-European initiative for the unification, harmonisation and synchronisation of services within the framework of European air traffic management, which was initiated by the European Commission and the European Organisation for the Safety of Air Navigation, EUROCONTROL. The current programme is named "SESAR 2020".
SWIM	System Wide Information Management The SWIM concept describes a paradigm shift in how information is managed along its full value-added chain, involving stakeholders from across the whole European ATM network. Simply put, it is a kind of Intranet for ATM.
TETRA	TErrestrial Trunked Radio Open standard for digital trunked radio which enables the setup of universal networks.
UAV	Unmanned Aeronautical Vehicle An unmanned aerial vehicle (UAV), commonly known as a drone, is an aircraft without a human pilot aboard, and it can be operated and navigated via a computer or remote control.
URCA	Unified Railway Communication and Application
UTG	Unified TETRA Gateway
WAM	Wide Area Multilateration Wide area multilateration is a cooperative aircraft surveillance technology.

## Finance & economics

Term	Explanation
IMF	International Monetary Fund
Brexit	Britain's exit from the European Union
Capital employed	All interest-bearing capital used
Cash flow	<ul style="list-style-type: none"> <li>• From investing activities: Outflow/inflow of liquid funds from investments/divestments</li> <li>• From operating activities: Outflow/inflow of liquid funds, unless they are affected by investments, divestments or financing</li> <li>• From financing activities: Outflow/inflow of liquid funds from capital payments and capital contributions</li> </ul>
EBIT	Earnings before interest and taxes
EBIT margin	EBIT as a percentage of total operating performance
EBITDA	Earnings before interest, taxes, depreciation and amortisation
Equity ratio	Equity/Total equity and liabilities
FN	Commercial register number, unique identifier of a legal entity in Austria.
Free cash flow	Net cash flow from operating activities – net cash flow from investing activities
FTE	Full-time equivalent A full-time employee is equal to one FTE; part-time employees are included using a ratio corresponding to their working hours.
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards International accounting standards issued by the IASB to ensure internationally comparable accounting and disclosure by companies
ROCE	Return on Capital Employed
IFRIC	International Financial Reporting Interpretations Committee
UGB	Austrian Commercial Code

**Publishing information:**

**Editor:**

FREQUENTIS AG

**Concept & Wording:**

Frequentis Corporate Communications

**Graphic Design:**

cdc | brandcreation

**Photos / Illustrations:**

Alamy Stock Foto, Carniel, cdc, Eurocontrol, Fotolia, Frequentis AG Archiv, Frequentis Comsoft, Image Industry/Erich Hussmann, Lino Mirgeler/dpa Picture Alliance, istockphoto.com, Shutterstock, Pachauer

**Print:**

Donau Forum Druck, 1230 Vienna

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Minimal arithmetical differences may arise from the application of commercial rounding to individual items and percentages.

**The English translation of the Frequentis Annual Report is for convenience.**

**Only the German text is binding.**

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