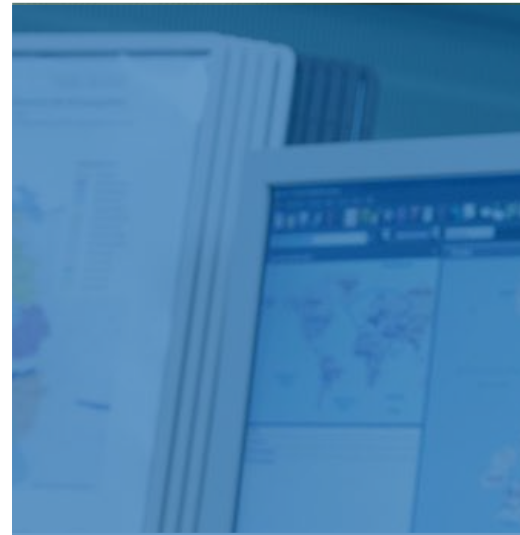




Annual Report

2016



Communication and information solutions

For a safer world

400<sup>+</sup>

customers  
worldwide



130<sup>+</sup>

countries



Largest

AIM-System  
in the world



25,000

working positions  
using Frequentis solutions

ED-137  
End-to-end  
IP VCS



Largest

public safety control  
center in Europe



Largest maritime  
coastline - safer - 240,000 km



360°

Remote tower  
high-resolution infrared

Virtual center

30% VCS market share



#1 GSM-R dispatcher  
terminal market share

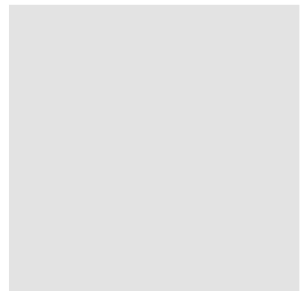
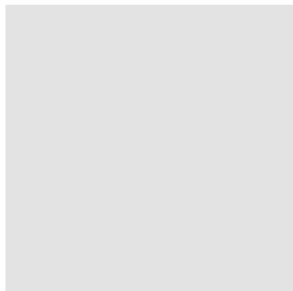
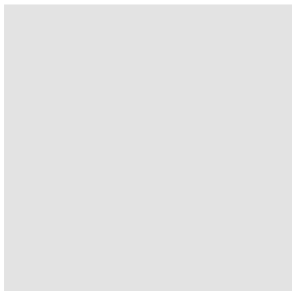
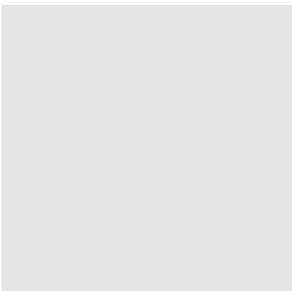


Participation in key organisations

SESAR | NextGEN | ICAO | CANSO | ATCA | IFATCA |  
EUROCAE | RTCA | OGC | NENA | EENA | IALA

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# Preface by the Executive Board

Ladies and Gentlemen,

In the **70<sup>th</sup> year of its existence**, the Frequentis Group is **stronger than ever**. Our growth is pushed by our innovative power and, particularly in 2016, by the investment in the formation of **Comsoft Solutions GmbH** in Germany.

The **Air Traffic Management** segment was greatly reinforced by this move. The **complementary product portfolio** enables the further development of our position as **market leader** in the area of Aeronautical Information Management (AIM). Aside from that we are securing market leadership in the area of Message Handling Systems (MHS). Another important expansion is that of **Surveillance Systems** for the depiction of the air situation. Consequently, we will be able to cover a broad range of **relevant technologies** in air traffic control. That makes us well-positioned for current and future requirements.

Our **growth** in 2016 shows a significant increase in **order intake**. With EUR 259.5 million it exceeds that of the previous year by 18%. In terms of operating performance, we reached EUR 252.2 million, up by 11%. **EBIT** (earnings before interest and taxes) came up to EUR 12.4 million, remaining at the same level as in the previous year.

We were able to further expand our strong position as global **niche supplier** in the mission-critical area

in **Public Safety & Transport**: With the new **SW-based product** in the area of Public Safety and with applications in connection with **LTE technology** we managed the leap into the next era of technology.

The history of Frequentis has been coined by an **orientation towards technology** and strong **innovative power – for 70 years**. Founded in 1947, during the chaotic post-war era in Vienna, Frequentis developed from a tiny Austrian enterprise into the international company group it is today. Our vision focuses on the ambitious goal of becoming '**number 1 in control centre solutions**'.

One essential factor for success, however, is the **special culture** when it comes to handling mission-critical processes. Seventy years' experience gained from projects with a high degree of innovation and multiple requirements in a mission-critical environment have enabled Frequentis to amass a wealth of expertise and a profound, even emotional understanding and knowledge of our customers' needs.

We would like to express our **deepest gratitude**: to our customers and our business partners for the trust they have shown us and the **positive cooperation**, and our employees for their **commitment** and **support** – in the past and the future.



Norbert Haslacher



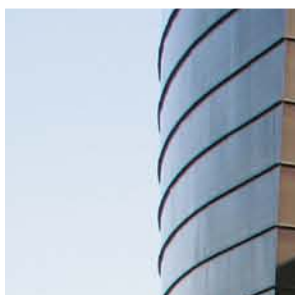
Sylvia Bardach



Hannes Bardach

Hermann Mattanovich





# Executive bodies of the company

## Executive Board

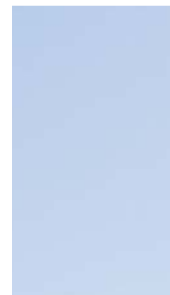
- Hannes Bardach, Chairman of the Board
- Hermann Mattanovich
- Sylvia Bardach
- Norbert Haslacher

## Supervisory Board

- Georg Bahn, Chairman
- Rainer Hasenauer, Vice Chairman
- Michael Millauer
- Boris Nemsic

## Employee Representatives

- Gabriele Schedl
- Dubravka Maglicic



Number one in control

# The year 2016 at a glance

**Takeover of the main assets of Comsoft GmbH, headquartered in Karlsruhe (Germany) and founding of Comsoft Solutions GmbH**

- Strategically important expansion of the ATM product portfolio
- Development of our position as market leader in Aeronautical Information Management (AIM) and Message Handling Systems (MHS)
- Comprehensive expansion of business volume in ATM

**Consistent ongoing market penetration in the non-European region, mainly in the United States and Australia**



Innovations  
for a safer world



## Outlook for 2017

**Continued integration of Comsoft Solutions GmbH**

- Reinforcement of the product portfolio and orientation towards complete solutions
- Realisation of synergies

**Targeted further creation of added value in the regions**



# center solutions

# Overall development of the company



The company Frequentis AG is an **international supplier of communication and information systems** for control centres with mission-critical tasks. These 'Control Centre Solutions' are developed and distributed by Frequentis in the business segments **Air Traffic Management** (civil and military air traffic control, air defence) and **Public Safety & Transport** (police, fire and rescue services, emergency medical services, railways, vessel traffic).

For Frequentis, the year 2016 was coined by a **significant growth spurt**: The expansion of the Frequentis Group by **Comsoft Solutions GmbH** resulted in a significant increase in order intake and operating performance and it strengthened the Frequentis Group's position as an ATM supplier on the global markets.

As a **wholly-owned Frequentis subsidiary**, Comsoft Solutions GmbH took over the main assets – incl. ongoing projects in the areas of air traffic control and air traffic management – of Comsoft GmbH (headquartered in Karlsruhe / Germany) on 22 January 2016 (closing) by means of an asset deal. The thus expanded **ATM product portfolio** and the complementary nature of the products create additional **growth opportunities** in the ATM area, a fact that already showed its effects in 2016.

In terms of order intake there was an 18%-increase, up from EUR 219.1 million in 2015 to EUR 259.5 million in 2016. Aside from the successful sales made by Comsoft Solutions GmbH, this is also due to **Frequentis' ongoing strategy of internationalisation**. The associated high level of **orders in hand** secured, already at the beginning of the year, 50% of Frequentis' operating performance for 2017.

Growth could also be achieved in terms of **overall performance**: In 2015, this figure came up to EUR 227.9 million, and in 2016 to EUR 252.2 million. This translates to a plus of 11%.

Standing at EUR 12.4 million in 2016, the generated **EBIT** (earnings before interest and taxes) remains stable and at the same level as in the year 2015, with EUR 12.5 million.

The expanded ATM product portfolio creates additional growth opportunities.



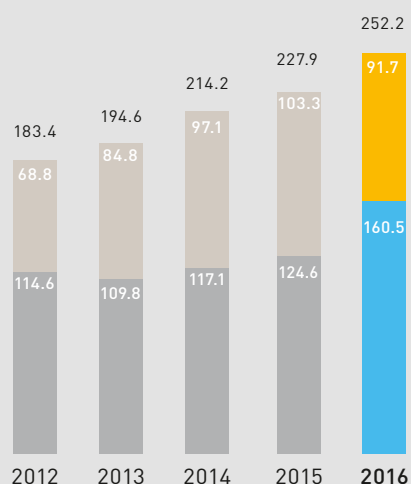
## Key figures at a glance in accordance with IFRS



	2015	2016	in/decrease	
	in EUR k	in EUR k	+/- in EUR k	+/- in %
Total operating performance	227,910	252,214	24,304	10.7
EBIT	12,549	12,425	-124	-1
EGT	12,592	12,234	-358	-2.8
Profit for fiscal year	11,182	9,218	-1,964	-17.6
Order intake	219,100	259,540	40,440	18.5
Equity	73,926	81,047	7,121	9.6
Employees	1,309	1,606	297	22.7

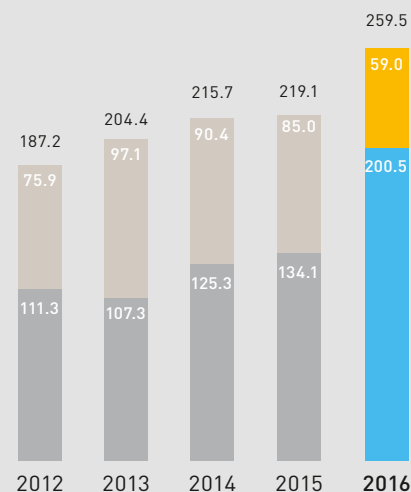
### Operating performance

ATM PST in EUR million



### Order intake

ATM PST in EUR million



### Total operating performance

€252million



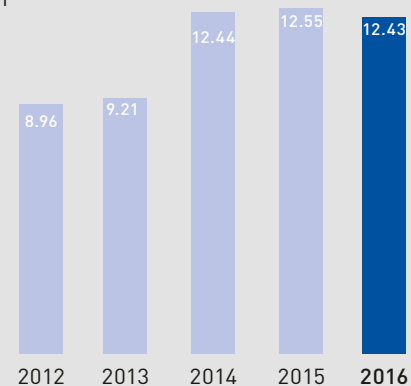
### Order intake

€259million



### EBIT

in EUR million



### EBIT

€12.4million

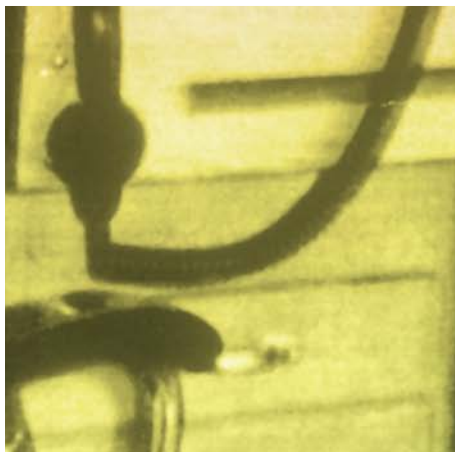
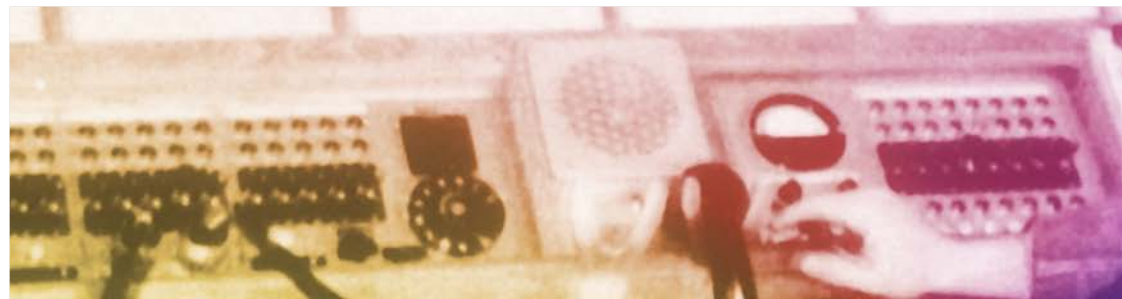
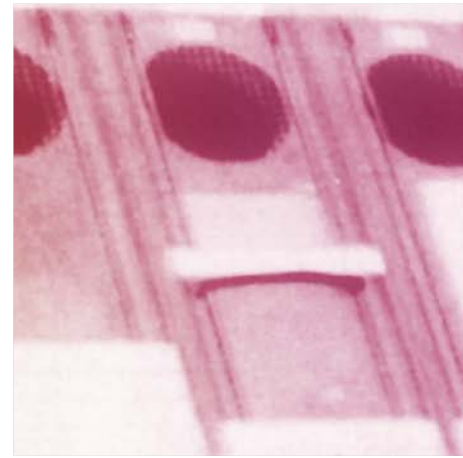
### Equity ratio

44.1%

# 70 years of innovation for a safer world

Founded  
**1947**

→ Built exactly what the young republic needed: High-frequency hardening plant as an important business area

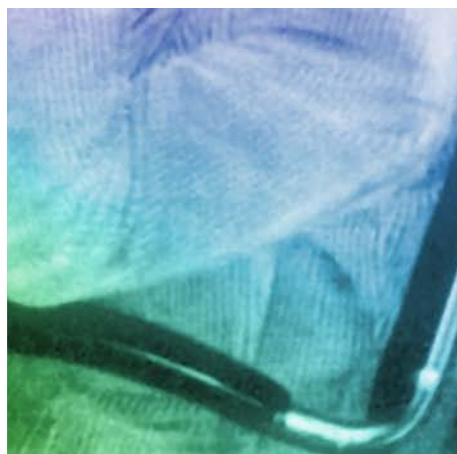
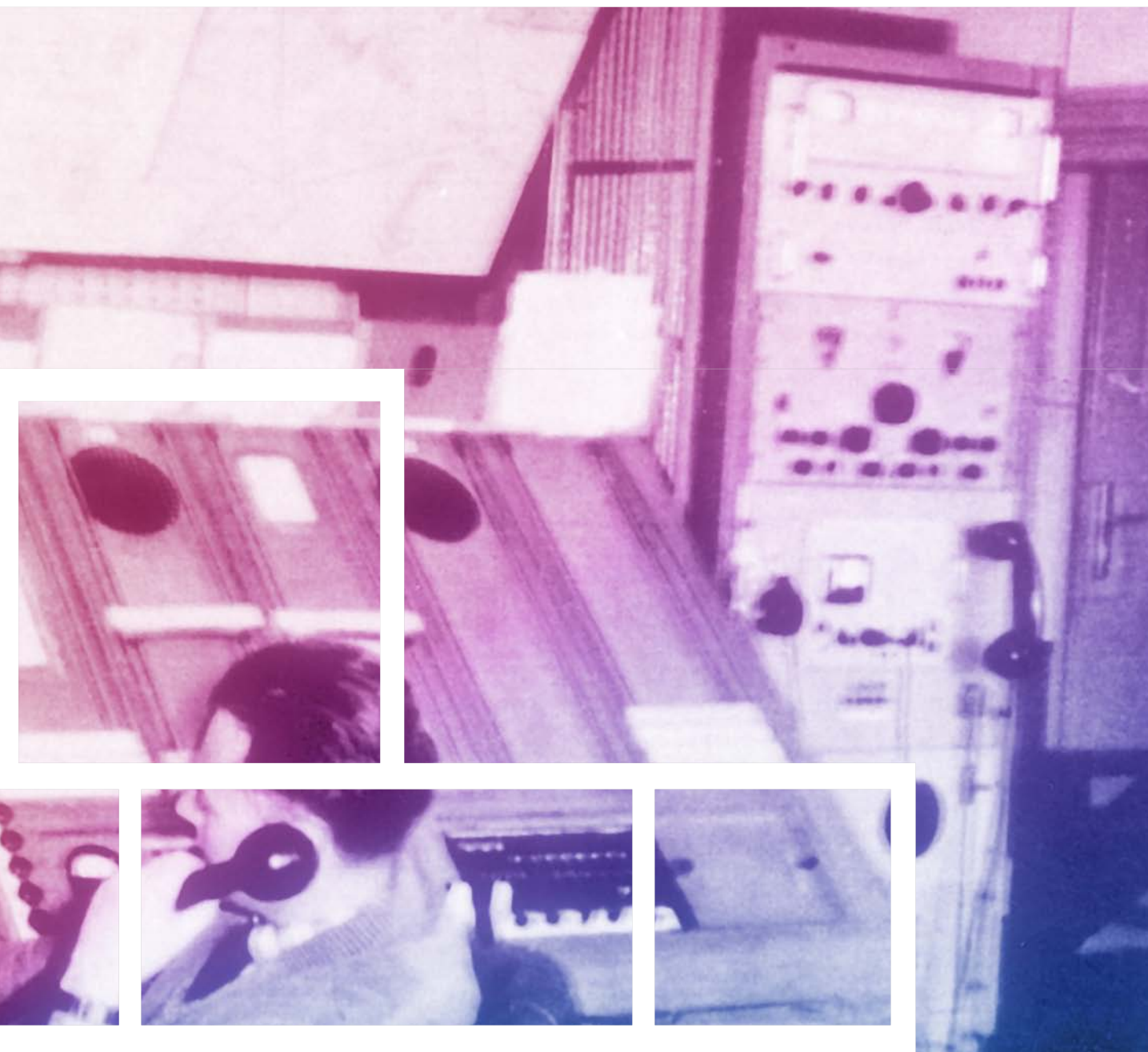


First air traffic  
control contract

**1955**



→ Installation of equipment for an Austrian air traffic control at Vienna airport, after withdrawal of the four occupying powers



→ At the Winter Olympics 1976 in Innsbruck, the skiing races were broadcasted live on television. Frequentis built a radio synchronisation system that allowed all the television cameras set up along the racetrack to be synchronised. These so-called "TV links" remained in use by the Austrian broadcasting company for a very long time.



# 1993



→ First fully digitized Voice Communication System for Air Traffic Control: delivery for Eurocontrol and German Armed Forces



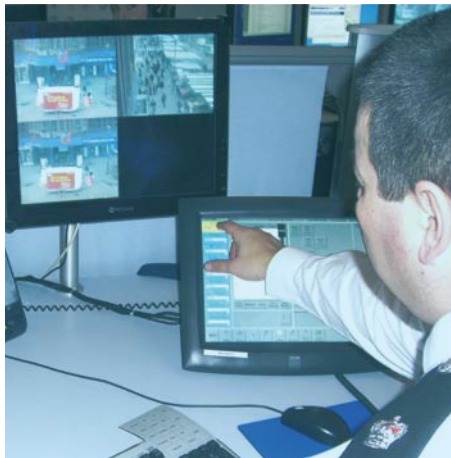
# 2001

→ Began the strategic development for the business segment Public Safety & Transport: Customers in the areas of police forces, ambulances, maritime, and railways

# 2005



→ London Metropolitan Police: Integrated communication platform with over 600 working positions, including video surveillance



# 2010

→ Largest maritime project in company history: Country-wide delivery of a maritime communications system for the Canadian Coast Guard



# 2014



→ ATM Network Brazil: Nationwide IP-based communications solution that integrates voice and data applications



**100** tower automation systems  
– largest installed base worldwide

largest maritime coastline –



# 2003

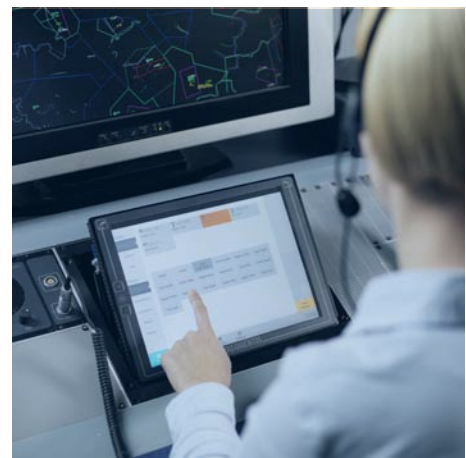
→ Breakthrough in the US market:  
Delivery for Command Centre of  
Federal Aviation Administration  
(FAA) in Herndon, Virginia



# 2008

## SESAR

→ Frequentis joined EU modernisation  
programme SESAR (Single European  
Sky ATM Research Programme)



# 2015

→ G7 summit in Bavaria: New Public  
Safety solution employed as the  
primary instrument for communi-  
cation by the Bavarian Police for  
their security measures

# 2016

## COMSOFT SOLUTIONS

→ Founded Comsoft Solutions, a soft-  
ware company located in Karlsruhe,  
Germany, reinforcing the Frequentis  
group

safer **240,000** km

**25,000** working positions  
using Frequentis solutions



# Subsidiaries & shareholdings of the Frequentis group

The **parent company** of the Frequentis Group is Frequentis AG, a public-limited company with its registered office in Vienna, where the strategic business activities and corporate functions are centralised. **Continual expansion** of the company group in accordance with the three pillars **sales & operations**, **software & products**, and **services & solutions** is firmly anchored in the corporate strategy.

## FREQUENTIS AG

simplified scheme

### → Sales & Operations

- 100% FREQUENTIS Australasia Pty. Ltd.
- 100% FREQUENTIS do Brasil Ltda.
- 100% FREQUENTIS Canada Ltd.
- 100% FREQUENTIS France SARL
- 100% FREQUENTIS Deutschland GmbH
  - 51% ELARA Leitstellentechnik GmbH, Aachen
- 100% FREQUENTIS Norway AS
- 100% FREQUENTIS Saudi Arabia Ltd. (i.L.)
- 100% FREQUENTIS (Shanghai) Co., Ltd.
- 100% FREQUENTIS Singapore Pte. Ltd.
- 100% FREQUENTIS UK Ltd.
- 100% FREQUENTIS USA Inc.
  - 100% FREQUENTIS DEFENSE Inc.

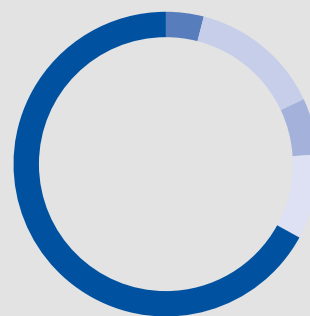
### → Software & Products

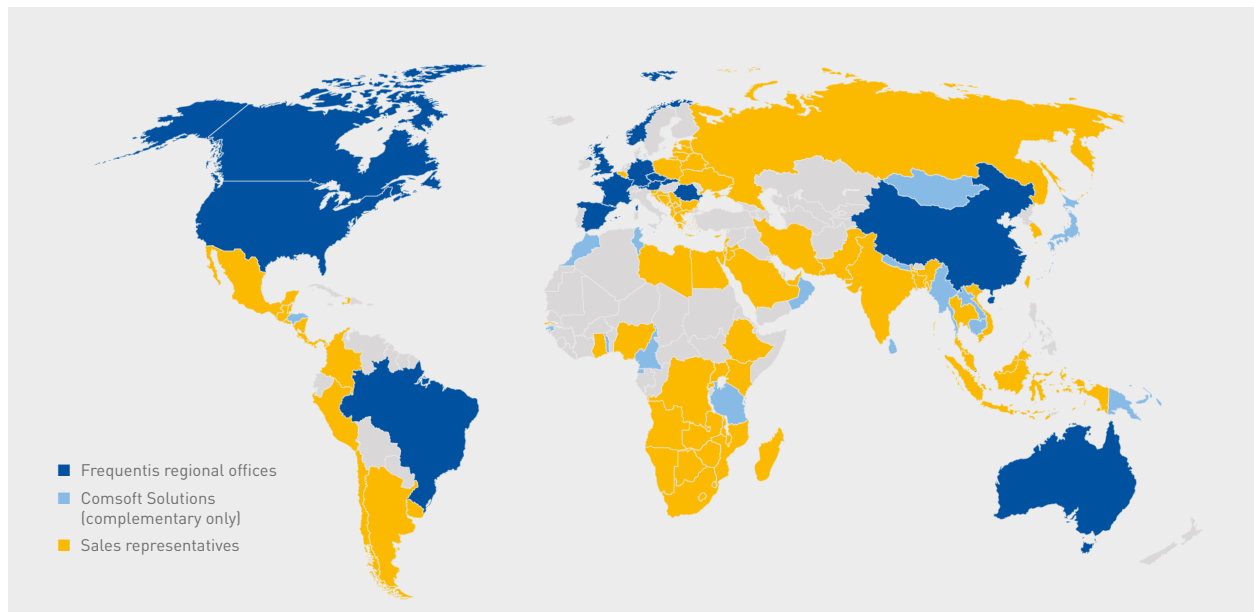
- 100% FREQUENTIS California Inc.
- 100% FREQUENTIS Czech Republic s.r.o.
- 100% FREQUENTIS România SRL
- 100% FREQUENTIS Slovakia s.r.o.
- 100% PDTS GmbH, Vienna
- 20% Mission Embedded GmbH, Vienna

### → Services & Solutions

- 100% Comsoft Solutions GmbH, Karlsruhe
- 100% FREQUENTIS Solutions s.r.o., Bratislava
- 100% CNS-Solutions & Support GmbH, Vienna
- 100% Secure Service Provision GmbH, Leipzig
- 75,4% TEAM Communication Technology Mgt. GmbH, Vienna
- 51% Systems Interface Ltd., United Kingdom
- 28% GroupEAD Europe S.L., Madrid
  - 20% GroupEAD Asia Pacific Ltd.

### Order intake 2016 by region





Headquarters  
**Vienna**

Export  
**>95%**

Solutions partners and regional  
offices in over 50 countries

**130+** countries

Employees  
**1,606**



**75% STEM\***

\*Science, technology, engineering and mathematics

The Frequentis Group has a **globally active network of subsidiary companies**. Large trendsetting customer projects have been and will continue to shape the expansion and development of these subsidiary companies. They are also increasingly creating local added value, particularly in terms of project delivery and after sales.

In 2016, it was once more the largest Frequentis subsidiary in **Germany** to make significant contributions in terms of order intake and operating performance. Frequentis has been active with a wholly-owned company here since 1985, there is a wide customer base with references in all of Frequentis' markets.

The **Australian** subsidiary, formed in 2004, which works the Australian market and parts of the

South-Pacific region, also achieved an excellent performance. The growing team is working on the Early VCS order that is part of the large-scale project OneSky as well as on projects for the Australian Air Force. The railway project Sydney Trains has successfully started its test operation.

In the **USA** (the founding of the subsidiary with its own production and integration facilities took place in 1999), successful development continued. Within the framework of the big IVSR programme of the US-American air traffic control FAA, more than 130 programmes have been delivered so far.

The subsidiary in **Brazil**, which was founded in 2011, is seeing the execution of a large-scale project for a country-wide communication network for air traffic control. For this purpose, the local

competences in the area of project management and services are continuously expanded.

The Frequentis Group's **Software Companies**, located in Austria and nearshoring countries, make an important contribution to the continued expansion of the business.

In the ATM area, the Frequentis Group saw a significant expansion and reinforcement via the newly founded wholly-owned subsidiary **Comsoft Solutions GmbH**, a software-technology firm which was founded at the beginning of 2016 and is headquartered in Karlsruhe.

The company **CNS-Solutions & Support**

**GmbH**, formed in 2004, supplies innovative, integrated software solutions and relevant technical process consulting in the emergency, crisis, and disaster management sector. As of October 2016, the recording business (DIVOS product line) was taken over from Frequentis AG. This underlines the positioning of CNS as a group-wide **software production house**.

**Mission Embedded GmbH**, which was founded in 2015, is also developing positively. Frequentis' know-how in the area of hardware and hardware-related software for mission-critical applications is bundled in this company. And in addition to its performance for Frequentis, Mission Embedded won its first customers on a third market in 2016.

## COMSOFT Solutions – a new member of the FREQUENTIS Group

In January 2016, the Frequentis Group was expanded by the newly-founded Comsoft Solutions GmbH. It was created as a result of the takeover of the **Comsoft GmbH's main ATM assets**, the original company was founded in 1979 in Karlsruhe/Germany and had been a leading software producer for the Air Traffic Control / Air Traffic Management (ATC/ATM) sector for more than 30 years.

**Comsoft Solutions** also took over most of the projects in the business area of **air traffic control and air traffic management**. The company thus strengthens and broadens Frequentis' **ATM presence** on the global market. Consequently, the Frequentis Group covers the technologies relevant for air traffic control on a broad scale.

In the area of **message handling**, Comsoft Solutions possesses the largest Installed Base in the world. With the common presence, the market share in the area of **AIM** (Aeronautical Information Management) is increased significantly. Additionally, the area of **ATM networks** is strengthened by the cooperation, too. In the **tower area**, the

portfolios complement each other via solutions for the depiction of the air traffic situation and automation tools, e.g. collision warning. At Comsoft Solutions, **surveillance systems**, i.e. solutions for the depiction of the air traffic situation, are of particular importance.

In 2016, we succeeded in taking over most of the customer contracts and in securing the **customers' trust**. A new **powerful organisation** was put into place and the section responsible for handling customer projects was newly staffed. The **integrated cooperation**, particularly in sales, allows for comprehensive care for customers in the air traffic management area worldwide.



## Continuity with new perspectives

### MALS Plus New

Renewal of the approach control system of the Swiss Air Force

→ In April, the delivery contract for MALS („Militärisches Anflugleitsystem für die Schweiz“) Plus NEW was signed with Airbus. The contract includes the completion of the displays for the Precision Approach Radar (PAR) for the final approach and the airport control radar ASR (Airport Surveillance Radar).

### WAM Poland

Completion of WAM Network for Poland Gdańsk region

→ The Wide Area Multilateration (WAM) Network, delivered by Comsoft Solutions, provides a high precision surveillance solution for the Polish Air Navigation Services Agency (PANSNA); it will enable high accuracy multilateration coverage for an extended region around Gdańsk.

### MLAT Patent

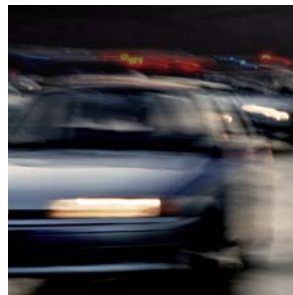
European patent for Automatic Calibration

→ This patent was developed together with the Karlsruhe Institute of Technology (KIT). It is a tracking system for civil aircraft (product “QUADRANT” of Comsoft Solutions). Independent of GPS, the patent allows an automatic calibration of the system which is an essential feature for many air navigation service providers.



# The Frequentis markets

The business drivers of Frequentis AG are the global needs for **safety** and **mobility**. The customer groups in the public authority sphere and the business activities in the **infrastructure sector** provide the basis for Frequentis' long-term growth and sustained stability. Our worldwide **clientele** includes air navigation service providers, organisations for internal and external security, the police, fire and rescue services, emergency medical services, railways, and vessel traffic.



We set standards!







Frequentis offers its portfolio of solutions optimised for **control centre solutions**. This includes **control centres for mission-critical areas** which, in addition to communication, our core business, also contain planning tools and tactical situation description.

Frequentis' activities are always focused on its **customers' needs**. At present, the biggest challenges for our customers are the increasing cost pressure, and therefore the need for **economical and efficient solutions**, as well as the continually **changing conditions** in the customer's respective environment, such as the merging of security centres.

In order to continue to meet the high safety requirements in this environment and to be able to rapidly react to changes, our customers require more **flexible systems** than in the past. This entails an increased demand for **complete solutions** – solutions that Frequentis offers with its product portfolio for control centre solutions.

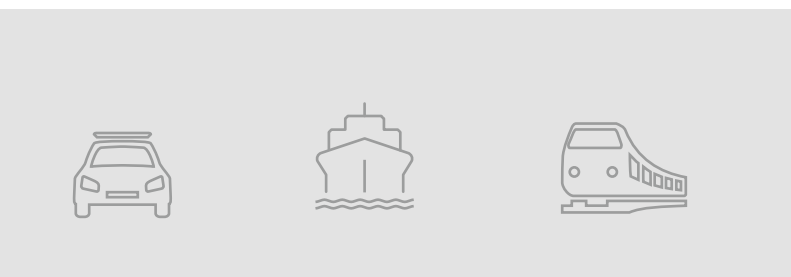


In 2016, **Comsoft Solutions** were added to the company group and thus a major **expansion** of the portfolio in the **market segment ATM** (Air Traffic Management) has taken place. Based on the complementary product portfolio, Frequentis further developed its position as **market leader** in the area of **Aeronautical Information Management** (AIM). Additionally, we have secured the position as market leader in the area of **Message Handling Systems** (MHS). In connection with MHS products made by Frequentis California, we can now work the market with a two-product strategy.

With a market share of 30%, Frequentis continues to be world market leader in voice communications for air traffic control.

The international setup of **Frequentis' sales** operations enables increased development of the markets outside of the core market Europe, too. What's important for the sustained success is the optimum **collaboration of regional and domain sales**. The focus here also lies on the continuous care and further expansion of all our **key customers** in all the business areas; they have a major part in the stable development of our sales.

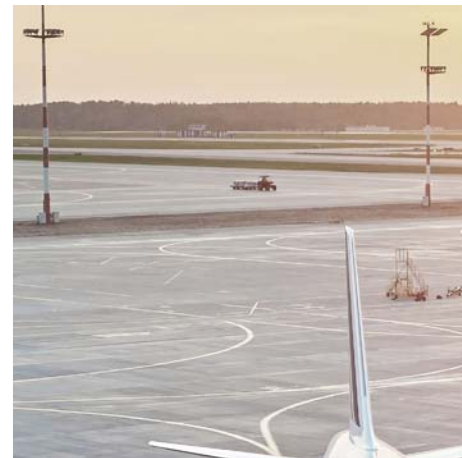
Comprehensive sales commitment within the entire Frequentis Group led to an all-time high of order intake in 2016 with EUR 259.5 million. Because of Comsoft Solutions' significant contribution, when looking at the performance of the segments separately, the share of **Air Traffic Management** (ATM) increased to 77.3% compared to **Public Safety & Transport** (PST) with 22.7%.



The split of **market regions** shows the following picture: Just like in the past years, the European core market is dominant with 67%, ahead of North and Latin America with 14% which are followed by Australia/Pacific with 9%, Asia with 6%, and Africa with 4%.

# Business segment Air Traffic Management

The business segment ATM encompasses the areas of **ATM Civil**, **AIM** (Aeronautical Information Management), and **Defence**. **Main clients** include civil and military air navigation service providers; these organisations are responsible for air traffic management in the respective national airspace.



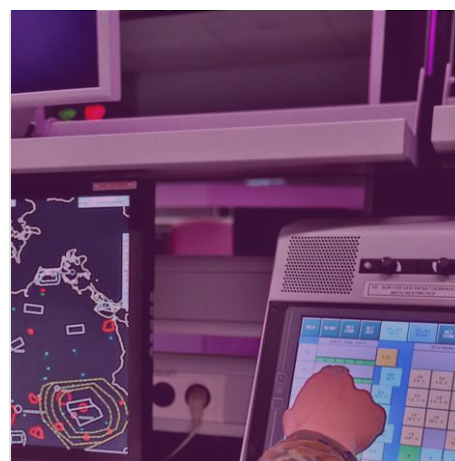
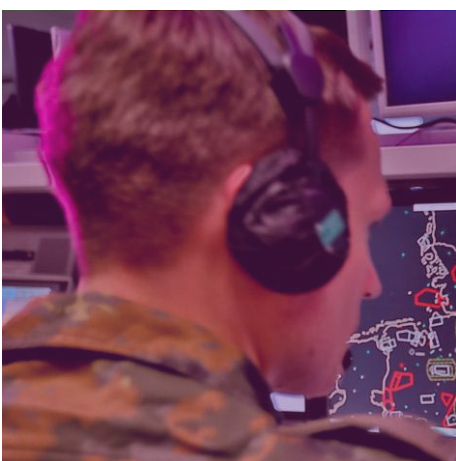
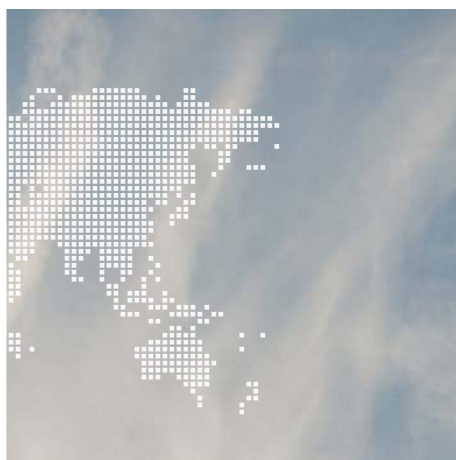
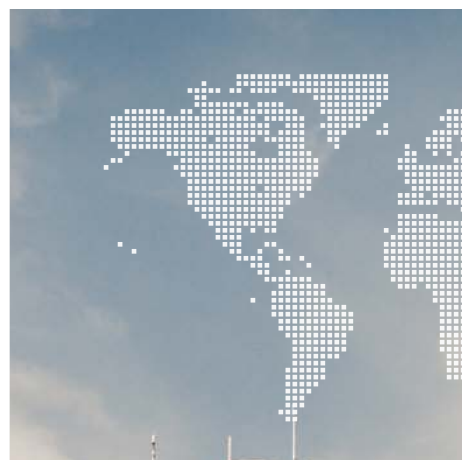
The expansion of the ATM product portfolio, caused by the projects that came in with Comsoft Solutions, is mirrored in the segment's figures: In 2016, the **order intake** in this business segment came up to EUR 200.5 million (which corresponds with a plus of just under 50% in comparison to EUR 134.1 million in 2015), and generated an **operating performance** of EUR 160.5 million (in 2015 the operating performance was EUR 124.6 million, a plus of 28.9%).

**ATM Civil** – the largest business area of Frequentis – can look back on an outstanding year and in 2016 it exceeded its objectives. What stands out is that significant projects from the 1st phase of the Australian **large-scale programme** for a fully integrated air traffic management system used by both civil and military entities were secured. A continuous positive business

development can be seen with our air traffic control clients in **Poland and Sweden**.

The framework agreement with the American air traffic control in the **USA** was also continued in a positive manner – here we are delivering the so far biggest system to the Dallas Fort Worth International Airport. Aside from very stable business in the area of voice communications, Frequentis also sees positive development in the areas Remote Tower (project in **Germany**) and ATM networks (there was a positive development of the strategic partnership with our customer of the ATM network in **Brazil**).

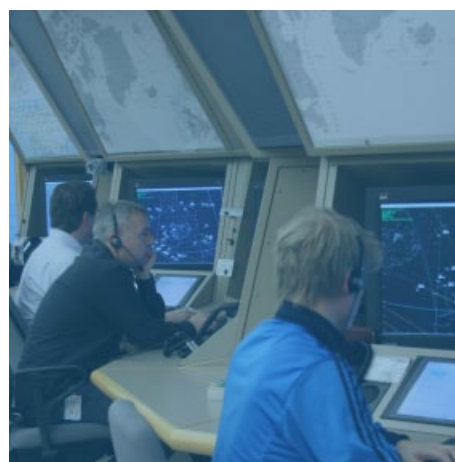
In **AIM**, the first non-air traffic control customer could be won for a project in the area of data integration in 2016, and the first Defence contract was secured, too. In Asia, Frequentis was



successful with a combined solution by Frequentis/ Comsoft Solutions for the first time. The **contract for technical operation** has been extended for the European air traffic control database **EAD**, which was developed on behalf of EUROCONTROL.

In 2016, phase 2 of the programme **SESAR** (Single European Sky Air Traffic Management Research), the European programme for new air traffic design, **SESAR 2020**, was initiated.

In the Defence area, a **clearly formulated strategy** proves successful. In **Germany**, 2016 saw yet another strong key account performance; among other things a new, innovative management system went operational; a system other countries have also expressed their interest in. An important migration task is being carried out with our key account in **Switzerland**. Another focus also lays on the continued working of the market in the **USA**.



**1<sup>st</sup>** SDN based ATM network



# ATM

Some  
insights into  
the projects



## Voice communication system for Dallas Fort Worth (DFW)

→ With 109 operator positions, Frequentis delivers its so far largest US voice communication system to Dallas Fort Worth (DFW), one of the world's busiest airports. This system is the 118<sup>th</sup> system Frequentis delivers to the FAA.



## Long-term partnership with armasuisse and the Swiss air force

→ Within the framework of the FLORAKO-programme, Frequentis delivered the voice communication system for the Swiss air force in 1999 – the beginning of what is now an almost 20-year old collaboration. In September 2016, Frequentis was awarded with the contract to – step by step – replace the existing communication infrastructure of the FLORAKO control centres and radio locations with modern IP technology.

## Technology and research partnership between Vienna Airport and Frequentis

→ Vienna Airport and Frequentis have signed a cooperation agreement to jointly develop a video-based smart-VISION system to increase efficiency and enhance operational safety. The systems and knowledge developed from the partnership will be used for future research projects.





## AIM solution for Myanmar – first AIM solution worldwide in line with the ICAO AIS-to-AIM roadmap

→ The project for the Department of Civil Aviation of Myanmar (DCA Myanmar) consists of a complete AIM solution delivered by Comsoft Solutions that enables the consistent management of all aeronautical information and the publication of the Aeronautical Information Publication while guaranteeing high data quality. The project also comprises data-driven aeronautical charting, which is based on the GIS based SmartCharting tool by Frequentis.



## Major progress in the Brazilian ATM network programme

→ Frequentis delivers a nationwide IP-based ATM-grade network solution with language and data integration based on the Frequentis vitalsphere portfolio to the Brazilian air traffic control DCEA/ CISCSEA. Plant acceptance took place in October. The programme's great success was honoured with the IHS Jane's ATC Technology Award in March of 2017.



## Australian key project – Early VCS for OneSky

→ Frequentis started to work on the Early VCS part of OneSky. Early VCS represents the first part within the OneSky Australia programme. This programme is about the implementation of a nationwide, uniform civil-military air traffic management system in Australia.

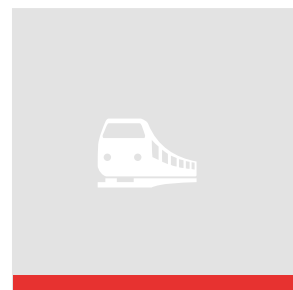
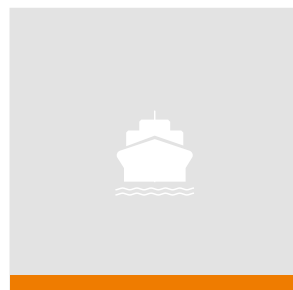
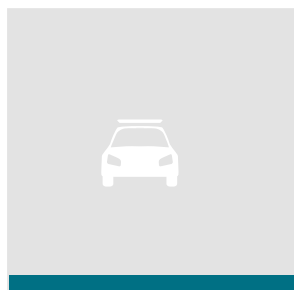
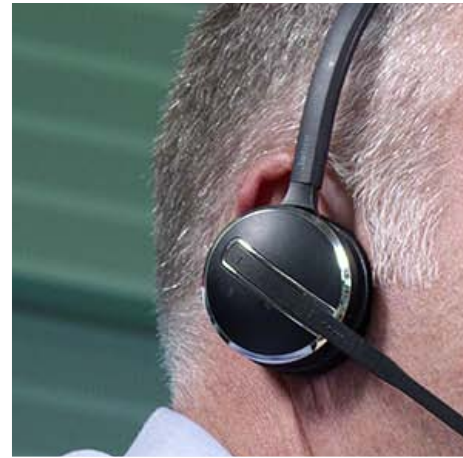






## Royal Saudi Airforce (RSAF) goes digital with aeronautical information

→ To ensure a safe and efficient data-centric Aeronautical Information Management solution compliant with ICAO (International Civil Aviation Organization) standards, Royal Saudi Airforce decided to upgrade and expand their existing technology.



# Business segment Public Safety & Transport





The business segment PST comprises the areas **Public Safety**, **Public Transport**, and **Maritime**. Main Public Safety customers are the 'flashing blue light organisations' fire and rescue services, police, emergency medical services, as well as authorities and organisations that deal with tasks in the area of Public Safety. Main customers in Public Transport are railway infrastructure organisations, in Maritime they are coast guards and organisations operating canals and ports.

In 2016, the **order intake** for this business segment amounted to EUR 59.0 million (i.e. 30% less than in the previous year when it amounted to EUR 85.0 million); at EUR 91.7 million the **operating performance** was lower by 11.2% than that of 2015, namely EUR 103.3 million.

For **Public Safety**, the business year of 2016 represented a challenge – there were postponements with several large-scale projects. However, the big key accounts in **Norway**, **Germany**, and **Great Britain** proved stable once more. In connection with the project for London's police, an important milestone was reached: Here the new radio standard LTE will be used for the first time in the mission-critical environment, which means that Frequentis can prove its innovative leadership in the sector of command centres.

The new product line **3020 LifeX** took up operation and went live in a command centre in South Tyrol; a large new order for the new software-based system was secured in Great Britain, another large order is to be awarded soon.

The development in the area of Public Transport is stable. In June, the **Finnish** traffic authority accepted the tender for the world's first rail-specific independent communication solution that allows the use of TETRA and GSM for rail-specific communication. Concerning the order for a railway control centre in New South Wales/**Australia**, the implemented incident management system successfully took up test operation.

In the area of **Maritime**, the order of a global distress and safety radio system in **South Africa** means that a large-scale project could be secured. The launch of the **VTS project** (Vessel Traffic Service, an electronic surveillance system) in Great Britain was performed successfully.

# PST

## Some insights into the projects



### Frequentis supports cross-border voice and data services for Nødnett

→ In November 2016, a large-scale field exercise between Norwegian and Swedish first responders demonstrated cross-border communications between the different TETRA networks Nødnett (Norway) and Rakel (Sweden). Frequentis delivered its latest ICCS 3020 software to support cross-border voice and data services in the control centres.



### First railway-specific bearer-independent communication solution in Finland

→ Frequentis was awarded the contract by the Finnish Transport Agency FTA to implement the first bearer-independent communication solution for railway communication in Europe. The so-called Unified Railway Communication & Application (URCA) fulfils FTA's need for a cost-saving transitional solution to the successor of GSM-R in railway communication.



### Sydney Trains with Frequentis Incident Management System

→ The government of New South Wales/Australia is currently implementing a new state-of-the-art Rail Operations Centre (ROC). It will modernise the control of Sydney's rail network incorporating many different operational functions and systems into a single location, including a new incident management system. In December 2016, the first technical go-live milestone was achieved.







## Joint communications systems upgrade at North Wales Police

→ North Wales Police have commissioned the upgrade of the existing Frequentis 3020 Integrated Communication Control System (ICCS) to the Frequentis 3020 LifeX software platform. The upgrade provides North Wales Police with a single platform to handle both emergency and non-emergency contacts. The new contact centre provides control room communications including digital radio, telephony, email, and web chat. The project is delivered together with Hexagon Safety & Infrastructure as general contractors.

## First maritime system for Africa

→ The first Frequentis coastal maritime system will be installed in South Africa for the South African Department of Transport through Telkom Maritime Services who will be supplied with a Frequentis solution for a Global Maritime Distress and Safety System (GMDSS). The Frequentis system will replace the old coastal Maritime Distress Communications System and will service coastal waters along a coastline extending for 2,800 kilometres. Frequentis partner and prime contractor for the project is the South African company, AME Telecommunications.



## Go Live in the integrated command centre of the Autonomous Province Bozen/Bolzano – South Tyrol

→ At the end of November, the integrated control centre went live and with it the first complete 3020 LifeX. The project is run together with Hexagon Safety & Infrastructure as general contractor. The 3020 LifeX communication platform is coupled with the dispatch system Intergraph Computer Aided Dispatch (I/CAD) by Hexagon.

## Official opening of Maritime Safety and Security Centre in Cuxhaven

→ As the technical general contractor, Frequentis delivered its communication solution ASGARD, the entire IT solution, media technology, and the dedicated furniture. In July 2016, the system went live in the new Maritime Safety and Security Centre's building, thus creating the space and technical basics for ideal communication and exchange of information with the seven partner authorities, i.a. via a unified communication technology.

# Research & Development

**Increasing cost pressure and continual changes in requirements** are the biggest challenges our customers face at present. In order to continue to meet the high safety demands in this environment, customers need **more flexible systems** than they used to. Operating resources and operational locations must be easily adaptable to current needs. Consequently, flexible means of communication and control room solutions are necessary. The **migration of data and voice communication to joint IP networks** creates the technical prerequisite for greater flexibility. Thanks to increasing networking, the topic of **Cyber Security** is also becoming more important.

## 12% R&D

Frequentis is taking this development into account through the provision of **IP-based systems**. In the next phase, **networks** will move to the centre of the communication solutions, traditional voice communication systems will be replaced by **Voice and Data Communication Services** in the network. With our new application platforms – such as 3020 LifeX for Public Safety and the new Service Delivery Platform for Public Transport – we are providing our customers with the necessary services within the network.

In an increasingly solution-oriented, software-centred environment, our **close contact with our customers** and the **integration** of development activities into the individual business areas continue to prove successful. Product development draws many impulses from current projects. In addition, **Corporate Research** continues to promote topics of the future.

In 2016, the European aviation research programme **SESAR** saw the successful completion of phase 1. Among the most important successes of SESAR 1 are prototype works for Remote Tower, the evaluation and demonstrations of the integrated air traffic controller workstation of the future – in February, a live demonstration on '**SESAR Virtual Centres**' at Frequentis in Vienna received much attention; aside from that

significant developments took place for data models for AIM, MET, and Airport as well as D-NOTAM. As consortium leader of 'Frequentis SESAR Partners', Frequentis is also invested in the follow-up programme '**SESAR 2020**' which focuses on product- and solution-oriented research.

In addition to this, Frequentis continues to work on **national and EU-funded innovation projects**. A great number of Frequentis activities is currently focused on **safety research and crisis management**. In this context, Frequentis is active in a new research project within the framework of Austrian safety research which is about the electronic exchange of information on the basis of a common situation picture between civil and military control centres and command information centres in cases of disaster control. Other areas of focus in research are **Cyber Security** and projects for the monitoring of **drones**.

The close collaboration between Corporate Research and product management is essential in this process. All research and development projects are combined in the function '**RD Cooperation & Strategy**', the Technical Management Board serving as a means of control and for the exchange of information.

In the area of R&D, **ATM** has made good progress in 2016, particularly with regards to the development of the **Remote Tower** solution. Aside from a project in Germany, Frequentis also provided the Airport



Vienna-Schwechat with a **video-based approach area monitoring solution** within the framework of a technology partnership with Vienna International Airport. Positive development also happened in the area of **Software Architecture** coming from ATM. In March, the Frequentis solution for **ATM-optimised networks** was launched at World ATM Congress, the industry's biggest event, taking place in Madrid. This solution enables the migration of several applications with different requirements in one network platform. The customer project in the **Brazilian ATM network programme** saw good progress in 2016; the successful factory acceptance test which took place in October received a lot of positive feedback. Both when it comes to networks and to new platforms, Frequentis always respects the requirements of Cyber Security.

In the **AIM** segment, the further development of functions in the European AIS Database **EAD** took place.

In the area of **Defence, integrated overall solutions** are also required more and more. These are developed around the core product in the Defence area, the highly accessible IP voice communication system iSecCOM, while using the entire company group's portfolio.

In the area of **Public Safety**, R&D activities focused on the continued development of **3020 LifeX** as part of a software-centred business model; the launch of the system in South Tyrol shows its successful application. At the Critical Communications World Gala in Amsterdam, Frequentis was honoured with the '**Future Technology Award 2016**' for its **Unified Radio Gateway** – a modular, scalable, analogue and/or digital radio gateway that connects networks, radios, and Dispatcher Terminals to ensure reliable communication (the Gateway is used on the German market). Another project is the integration of the new radio standard **LTE** (replacing the radio standard TETRA, project with the London Police) with Frequentis' Unified Radio Gateway.

LTE is also being considered for **Public Transport** (successor technology for the GSM-R standard). In this case, LTE will be a motor for new dispatcher solutions. Frequentis was able to win a first client

for the development and implementation of the first railway-specific, independently supported communication solution in Finland. **URCA** (Unified Railway Communication and Application) allows the Finnish railways to utilise additional radio standards such as TETRA or, in the future, LTE for railway-specific communication.

In the **Maritime area**, the foundation for the **Next Generation Maritime Solution** has been laid; with this, Frequentis intends to gradually expand its product portfolio towards an integrated solution based on the current platform over the coming years.

In addition to this, Frequentis continues to work on **national and EU-funded innovation projects**. A great number of Frequentis' activities is currently focused on safety research and crisis management. In this context, Frequentis is active in a new research project within the framework of Austrian safety research which is about the electronic exchange of information on the basis of a common situation picture between civil and military control centres and command information centres in cases of disaster control. Other areas of focus in research are **Cyber Security** and projects for the monitoring of **drones**.

Essential **innovations** are protected by **patents** at Frequentis. Frequentis currently holds 12 patents (10 more are under examination) in Austria, 7 in the EU (here, too, 10 more are under examination), as well as 3 patents in the USA. In addition, 27 trademarks are protected internationally.

### Frequentis start-up centre

With the start-up centre in Phorusgasse in Vienna, Frequentis provides young entrepreneurs with the **premises, infrastructure, and targeted consulting** for the leap into self-employment – with the idea that they might provide impulses, ideas, and creativity for Frequentis business in exchange. At the start-up centre we are currently providing support for 14 companies; in total, more than 50 companies from the IT, HW & SW development, and technical consulting segments have already found their "first home" there.

# R&D

## Some insights into the projects & initiatives

### Electronic sharing of information enables comprehensive collaboration in disaster response

→ Frequentis partners with the AIT Austrian Institute of Technology in a new project for Austria's security research. The study – named INTERPRETER – concerns electronically sharing information between civil and military control centres and management information systems in disaster response scenarios. The aim is to give organisations involved in disaster response a shared view of critical aspects of the incident.



### Work on what inspires you – Frequentis Innovate!

→ Innovations are essential for Frequentis. They are developed as a result of varied activities. With a new Corporate Research initiative, all employees of the Frequentis Group were invited to contribute their creativity and innovative strength in the form of a competition.



### Frequentis Location Information Service (LIS) supports NASA Unmanned Aircraft System (UAS) flight tests

→ The Frequentis LIS software provided situational awareness for a ground control station during NASA's UAS Traffic Management (UTM) flight tests in Nevada. Multiple teams flew their drones beyond the line-of-sight of their operators in order to test the planning, tracking, and alerting capabilities of NASA's UTM platform. The LIS software provided accurate geo-location and telemetry data.





## Frequentis delivers air traffic safety technologies of the future

→ Within the framework of SESAR 2020, the focus of the next phase of this European aerospace research programme lies on product-specific and interoperable solutions. As a leading company on the global market, Frequentis works on innovative solutions in a consortium with Atos and HungaroControl. The focus here lies on virtual air traffic control centres, Remote Tower, the future communication infrastructure as well as information management in the area of air traffic control.

## New possibilities for infrastructure and transport operators

→ As one of the companies in the Frequentis start-up-centre, Control Center App closely collaborates with Frequentis. The announcement system 'Unité Crowd Com' enables infrastructure operators to communicate localised messages via smartphone to their internal and external staff. Consequently, traffic operators can also inform passengers at stops that are not equipped. Application scenarios can be found in public transport, organisations, individual traffic, and aviation.

## User-centred process supports transition during change

→ In the course of every change to a work environment, the people and their skills to carry this change play a major role – especially so in the safety critical area. Resistance from users to operate new systems leads to significant and unexpected increases in project costs. With 'Social Transition Management', our 5-step user centric design process includes a solution to that problem.



## 'Cyber defence' for the protection of critical infrastructure

→ Targeted cyber-attacks make it necessary for mission-critical systems to not only defend their borders but also to detect and fight potential problems as early as possible. These kinds of mechanisms must be integrated into a safety management system – a new challenge for our customers. For Frequentis, this is an opportunity to support our customers in a new way. It creates new tasks for our R&D, e.g. strengthening systems or developing new technical elements and services.

# Employees

Our employees are the **most important success factor** for the achievement of our corporate objectives and international growth. The **passion, commitment, and innovative power** of our multinational teams guarantee our success on the international market. What our business partners value in particular is our broad and profound expert **know-how** and the **comprehensive orientation** towards customer and market needs.

Our **culture** is the **binding element** for the growing **Frequentis company group**. It is characterised by the many years of experience our employees have in **dealing with mission-critical systems**. A profound and even emotional **understanding** for our customers' needs, a high degree of **sensitivity** in relation to changing requirements and work procedures, and a high degree of **identification** with their tasks characterise our customer relations as well as the internal and group-wide collaboration.

Via a structured **onboarding programme**, we communicate these values to all new employees. The comprehensive and swift integration of employees from the entire group, e.g. project managers and systems engineers, is complemented with special **trainee programmes**. **Short and long-term assignments** strengthen international networks.

About 75% of Frequentis employees are **highly qualified engineers and specialists**. As a high-tech company, we rely on a mixture of young, well-trained employees and experienced employees with practical experience – at Frequentis they all find an **attractive working environment** that offers continuity and sustainability.

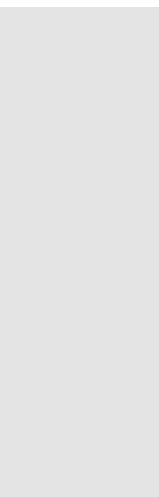
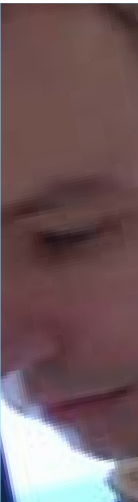
Alongside our **career model**, which emphasises the equal assessment of management, expert, and project management careers, we rely on company-wide **talent and potential management** as well as coordinated **training and development planning**.

In 2016, **more than 600 training sessions** took place – the range goes from focused short courses all the way to training programmes over several days; e-learning courses are increasingly gaining importance, too. **Focused internal trainings and development programmes** complement the broad spectrum of development options Frequentis offers.

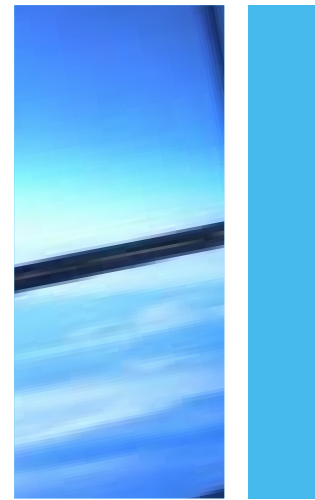
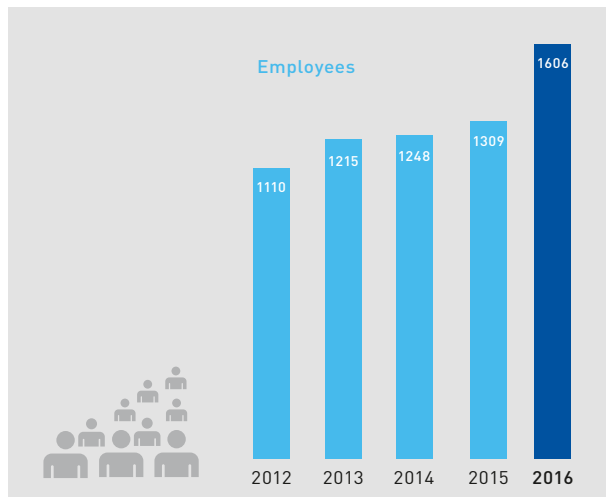
Additionally, the **health promotion** and **personal development** offers are much appreciated and well-received. A **flexible working hour model** makes it possible to take personal needs into consideration and allows for a good work-life balance.

One special focus lies on the **ongoing internationalisation** of our growing group of companies; a dedicated **competence centre** takes up international HR tasks in the companies that are part of the Frequentis Group. This ensures the sustainable passing on of our values and Frequentis domain know-how. Teamwork in

## 75% engineers & specialists







virtual teams and **group-wide knowledge management** are important aspects.

We have the **best team** on the market: All vacancies are advertised internally and externally with the objective of manning the **key posts** primarily from within the company.

When new employees are taken on, Frequentis proceeds in a very focused manner – we strive to achieve **positive, long-term collaboration for both parties**. The greatest attention is paid to employees with key know-how in the **IT and software field**. In order to address these candidates in a targeted manner, we maintain close cooperation with universities and technical colleges. We also get into contact with potential employees via IT-focused career fairs, job platforms, and professional networks.

The number of employees increased from an average of 1,309 employees (2015) by 297 persons to 1,606 employees; this above-average rise is due to the fact that the members of staff from **Comsoft Solutions** were welcomed to the company group in 2016!

Professional employer branding and targeted recruiting play an important role in the 'race for the best brains'. In 2016, Frequentis once more proved its excellence in this area; in the competition '**Best Recruiters by career**', the largest recruiting study in the German-speaking region,

Frequentis once more made it all the way to the top: We were delighted with our first place in the industry category IT/Software/Telecommunication and with the '**Golden Seal of Quality**'.

Frequentis was able to impress with the **high-quality, personal support** for applicants. Each year, Frequentis receives about 4,000 applications, our HR team runs around 1,000 interviews. In this process, we value **appreciative and respectful communication** with applicants in order to give new employees a taste of Frequentis culture from the first moment on.

We are proud of our culture: We are proud of what we have already achieved and see this as an incentive to safeguard and further expand our position as an **attractive and renowned employer** in the future – **working together for a safer world!**



# Sustainability and Corporate Social Responsibility

In keeping with its corporate mission, 'For a safer world', the Frequentis Group feels committed to **Corporate Social Responsibility and sustainability** in everything it does. In 2016, the measures that had already been set in the area of CSR were expanded and continued for the purpose of sustainability.

## Processes & quality

Frequentis observes its social responsibility via an **integrated management system**. In 2016, a new process model was introduced that looks at the complete lifecycle from product idea all the way to phase out and also takes into account requirements of the software and solution-centred business. This process model is part of the integrated management system according to ISO 9001 (quality management), ISO 14001 (environmental management), OHSAS 18001 (occupational health and safety assessment system) as well as ISO 27001 (information security management).

## Workplace & measures taken for employees

In addition to **industrial health care**, vaccination campaigns (influenza, FSME), the annual health examination, heart checks, lung function tests, hearing tests, and bio-impedance measurements were all performed at the **Vienna site**.

The measures derived from the evaluation and prevention of **mental stress** at the workplace were implemented.

As in previous years, back therapy training, bodywork, Ving Tsun-Kung Fu, Piloxing, and 'Tabata' (a high-intensity interval exercise) were offered in the company as part of the **Vital programme**.

All these sports offers are popular and free of charge and they were complemented by cost-reduced offers like Tuina massages or Kundalini yoga. In 2016, more than 100 employees took part in Viennese running events, where their participation was sponsored by Frequentis.

The **compatibility of family and career** is a comprehensive concern of Frequentis. As part of the initiative '**Frequent Children's Weeks**', two weeks of comprehensive care and a varied entertainment programme were offered once again in the summer months to a total of 100 children aged 3 to 10 years.

In 2016, the Children's Weeks were held under the motto '**Smart on the move**'. Behind it was an all-day, exciting, and varied programme for the kids – in the Frequentis building, at a variety of workshops, and on various external excursions. By doing this, we were able to make an active contribution to the initiative '**Companies for Families**' of the Austrian Ministry of Family, of which Frequentis has been a network partner since 2015.

The initiative of the Frequent Children's Weeks – the main care taking place directly on site at the company's premises so as to give the children an insight into their parents' working environment – proved to be very popular and will be continued in the coming year.





In line with the notion of promoting personal interest, the company also supports **maternity/ paternity leave and educational leave**.

### Products & technologies

In our company's **production sequences**, we pay attention to acting **sustainably and environmentally conscious**. The careful handling of primary energy and raw materials, the reduction of harmful waste, and the application of environmentally friendly production methods are documented and verified in a regular **HSE report**.

The **photovoltaic plant** was set up in 2014 and has proven itself, so in 2016 it was expanded to a capacity of 73.3kWp. The **waste heat** from the integration and assembly building is being used to heat the company's building in Innovationstraße, Vienna.

Suggestions to design production processes more efficiently that came up in the **Frequentis IDEAS competition** were put into practise – in 2016, they resulted in further energy savings in the running of the integration systems.

### Customers & markets

We count on **long-term business relationships** that are characterised by transparency, fairness, and integrity. With our customers and suppliers in the international society we enjoy an excellent reputation as a **reliable and renowned partner**. In order to continue to live up to this reputation, it is self-evident for Frequentis that we must keep performing all of our business activities with **integrity** and on the **basis of high ethical principles**. These are clearly outlined for our customers and partners in a **code of conduct** which we published in 2016.

### Finances & profit

Frequentis stands for **sustainable economic management**. The obligation to do this comes from our special corporate culture in dealing with mission-critical applications.

**Long-term customer and supplier relationships** ensure sustainability in the business activities of the company.

### Society & responsibility

In accordance with the company's mission statement 'For a safer world', Frequentis sees it as its **social responsibility and obligation** to make a contribution towards disaster relief and in doing so to express solidarity with those in need.

Frequentis made a significant contribution during the **hurricane catastrophe** in Haiti. In October of 2016, the hurricane Matthew did massive **damage to the Caribbean states' infrastructure**. Consequently, there was an immediate threat to the health of the locals and aid workers struggled to do their job. With a significant donation in kind – Frequentis provided the **voice communication system** for a **mobile tower** at the airport of Jeremie in Haiti's southwest – we supported the humanitarian workers locally.

In its **subsidiaries**, Frequentis also endeavours to comprehensively implement corporate social responsibility and sustainability. Corresponding measures are implemented **on the scene** in harmony with the local statutory conditions. The subsidiary in Australia, for example, was certified according to AS/NZS 4801, the Australian Health & Safety Standard, in 2016.

# Risk management

Frequentis has implemented **active risk management across the entire group**. The basic goal is to detect potential chances and risks as soon as possible and to take appropriate measures to preserve the earning power and ensure the company group's continued existence. Risk consciousness and alertness in our employees, early detection of risks that arise from our business operations, and any natural risks are well pronounced and incorporated by way of an established **Risk Policy**.

One of the main risks lies in variable capacity utilisation scenarios, which the company deals with by way of comprehensive **scenario management**; this allows for the timely detection of risks and for counteractive methods to be put into place in case unplanned economic situations develop.

**Foreign exchange risks** are countered with the use of derivative financial instruments. In general, the risk of **bad debts** can be rated as low, but in individual cases bad debt insurance, advance payments or letters of credit are used as safeguards. Regular treasury meetings and ongoing liquidity planning enable rapid detection of potential **liquidity constraints** and **cash flow risks**; consequently, prompt countermeasures can be taken.

Risk management is also essential in those **projects** that constitute the core business and mainstay of operations at Frequentis. A profound risk analysis that looks at our projects' **entire lifecycle** and that identifies, tracks, defuses, or adjusts risks in line with a clear risk and result management is part of professional and effective **project management**.

In a periodic **Project Management Board**, all relevant project information is exchanged. Service performance, accounting, and receipt of payments are monitored continuously. Projects are evaluated in an extended management circle, all major projects are presented, risk assessment and deviations are discussed, and measures decided on.

Communication and information solutions  
for a safer



# Outlook

The path of **sustainable growth** will be continued in the business year 2017, our current business units forming the essential pillars for this to happen. In accordance with our corporate strategy, we shall continue to press ahead with our development towards a software-centred company.

We continually analyse the **portfolio for communication and information solutions** and make targeted investments in **innovations** and possibilities for **process optimisation**. We thus intend to support our broad customer base as well as possible on changing markets. Our organisational growth is flanked by strategic **acquisitions and holdings**. Another focus also lies on a continuous expansion of the **Installed Base business**.

With the ongoing integration of the Comsoft Solutions product portfolio we aim to continuously expand the Frequentis AG's leading role on the global market – especially in the **Air Traffic Management** segment. The segment **Public Safety & Transport** will see several large projects being awarded where Frequentis is already well-positioned.

In line with the concept of sustainable growth, the continued internationalisation and the **development of added value** in the region will occupy a central role. **Subsidiaries** which are expanded to become **Regional Hubs** in the area of Sales & Operations will play a central role, their mission being the continued **market penetration** in their region.

The market in **Europe**, where Frequentis intends to generate further growth with innovative new products, continues – by its very nature – to be of great importance. In addition, the market penetration in the **non-European regions** will continue to be promoted, mainly in the United States and Australia.

On the basis of an at least stable overall economic trend, we are optimistic that we can expect **further increases in turnover** and a **positive result trend** in the business year 2017. The very solid order volume, strict monitoring of the market environment, and our commercial performance are the basis for this, enabling us to take countermeasures in successful times, if necessary.

Consequently, we are, in the 70<sup>th</sup> year of our company's existence, convinced that we are well-equipped for the tasks of the coming years and that we will be able to press ahead with the **expansion of our corporate group** in pursuit of our mission 'For a safer world'.

world

# Excerpts from the financial statements

## Consolidated balance sheet in accordance with IFRS as of

ASSETS	31.12.16 [EUR]	31.12.15 [EUR]
<b>NON-CURRENT ASSETS</b>		
Intangible assets	9,697,969.38	2,095,581.42
Goodwill	2,175,025.41	1,266,357.21
Property, plant and equipment	8,252,836.70	6,430,051.36
Investments in associated companies	553,807.71	522,805.95
Other financial assets	1,146,532.40	1,142,436.84
Other receivables and assets	142,620.92	26,321.26
Deferred tax	2,939,070.69	0.00
	<b>24,907,863.21</b>	<b>11,483,554.04</b>
<b>CURRENT ASSETS</b>		
Cash and cash equivalents	69,109,970.51	38,311,696.21
Accounts receivable	40,609,015.85	31,478,491.86
Receivables from construction contracts under IAS 11	29,947,494.88	31,567,674.39
Receivables from associated companies	20,482.80	42,313.23
Other receivables and assets	8,177,117.05	17,988,831.92
Inventories	10,968,523.14	12,334,245.42
	<b>158,832,604.23</b>	<b>131,723,253.03</b>
<b>TOTAL ASSETS</b>	<b>183,740,467.44</b>	<b>143,206,807.07</b>

# 2016

## 31 December 2016

LIABILITIES AND EQUITY		31.12.16 [EUR]	31.12.15 [EUR]
<b>EQUITY</b>			
Nominal capital		12,000,000.00	12,000,000.00
Retained earnings		68,397,534.14	61,179,337.00
Adjustments for foreign currency conversion		315,632.03	444,565.97
Non-controlling interests		333,956.84	302,472.84
		<b>81,047,123.01</b>	<b>73,926,375.81</b>
<b>LONG-TERM LIABILITIES</b>			
Financial liabilities / Loans		9,500,000.00	0.00
Accounts payable		444,399.16	0.00
Other long-term liabilities		3,852,901.39	4,620,993.11
Provisions for severance payments		12,225,276.50	10,961,293.95
Provisions for pensions		614,528.66	0.00
Provisions for anniversary bonuses		325,359.00	0.00
Other long-term provisions		1,226,912.53	25,639.79
Deferred tax liabilities		2,848,803.76	1,357,145.37
		<b>31,038,181.00</b>	<b>16,965,072.22</b>
<b>CURRENT LIABILITIES</b>			
Due to banks		135,094.92	231,119.64
Advances from customers		33,610,938.59	19,289,553.78
Accounts payable		9,213,585.29	6,602,052.52
Payables to associated companies		56,648.40	65,878.50
Other liabilities		9,265,022.08	6,928,135.84
Tax provisions		1,376,758.28	1,465,092.30
Other short-term provisions		17,997,115.87	17,733,526.46
		<b>71,655,163.43</b>	<b>52,315,359.04</b>
<b>TOTAL LIABILITIES AND EQUITY</b>		<b>183,740,467.44</b>	<b>143,206,807.07</b>

# Consolidated profit and loss statement

## IFRS – Group income statement

1 January – 31 December	2016 [EUR]	2015 [EUR]
Revenue	241,220,912.97	220,199,729.17
Own work capitalised	245,346.43	145,331.04
Other operating income	10,747,653.19	7,565,161.53
<b>TOTAL OPERATING PERFORMANCE</b>	<b>252,213,912.59</b>	<b>227,910,221.74</b>
Cost of materials and purchased services	-64,791,164.56	-63,110,786.44
Personnel expenses	-124,894,841.97	-105,814,890.02
Amortisation and depreciation	-5,256,627.63	-4,002,124.52
Other operating expenses	-44,846,319.49	-42,433,512.36
<b>EARNINGS BEFORE INTERESTS AND TAXES</b>	<b>12,424,958.94</b>	<b>12,548,908.40</b>
Net interest income	-258,543.79	-32,263.29
Results from investments in associated companies	67,937.81	61,059.87
Other financial result	0.00	14,186.55
<b>FINANCIAL RESULTS</b>	<b>-190,605.98</b>	<b>42,983.13</b>
<b>EARNINGS BEFORE TAXES</b>	<b>12,234,352.96</b>	<b>12,591,891.53</b>
Income taxes	-3,016,257.66	-1,409,397.95
<b>PROFIT FOR FISCAL YEAR</b>	<b>9,218,095.30</b>	<b>11,182,493.58</b>
to non-controlling interests	175,604.95	-103,882.93
to shareholders of the parent company	9,042,490.35	11,286,376.51



## IFRS - Statement of comprehensive income

1 January – 31 December	2016 [EUR]	2015 [EUR]
<b>PROFIT FOR FISCAL YEAR</b>	<b>9,218,095.30</b>	<b>11,182,493.58</b>
“Items that can be reclassified in future as affecting revenue or expenditure”		
Unrealised income from currency conversion	-128,933.94	99,295.77
Unrealised income from available for sale assets	3,802.40	-18,843.84
Unrealised income from cash flow hedges	738,095.17	-660,303.28
“Items that can never be reclassified as affecting revenue or expenditure”		
Actuarial gains and losses in accordance with IAS19	-1,100,998.93	-159,019.03
Actuarial gains and losses in accordance with IAS19 – from investments in associated companies	-866.77	0.00
<b>OTHER COMPREHENSIVE INCOME BEFORE TAXES</b>	<b>-488,902.07</b>	<b>-738,870.38</b>
Taxes on revenue incurred by items that can be reclassified in future as affecting revenue or expenditure	-185,474.39	169,786.78
Taxes on revenue incurred by items that can never be reclassified as affecting revenue or expenditure	272,478.36	39,754.76
<b>OTHER COMPREHENSIVE INCOME</b>	<b>-401,898.10</b>	<b>-529,328.84</b>
<b>COMPREHENSIVE INCOME</b>	<b>8,816,197.20</b>	<b>10,653,164.74</b>
to non-controlling interests	166,934.00	-81,378.54
to shareholders of the parent company	8,649,263.20	10,734,543.28

# IFRS – Group cash flow statement

31 December	2016 [EUR]	2015 [EUR]
Earnings before taxes	12,234,353	12,591,892
<b>Non-cash income and expenses</b>		
Adjustment postings/exchange differences	-135,808	51,291
Profit/loss from disposal of investment items	212,230	6,306
Amortisation/Depreciation/write-up/apreciation of non-current assets and marketable securities	5,256,334	3,987,528
Net income from investment in associated companies	-67,938	-61,060
<b>Changes in assets and liabilities</b>		
Increase/decrease in inventories, accounts receivables and other assets	3,572,623	-1,809,023
Increase/decrease in provisions	2,567,733	4,042,535
Increase/decrease in accounts payable and other liabilities	19,674,977	-253,837
Net interest	615,150	50,029
Interest paid	-1,128,889	-1,151,010
Interest received	513,740	1,100,981
Income tax paid	-4,465,000	-2,965,347
<b>Cash flow from operating activities</b>	<b>38,849,505</b>	<b>15,590,284</b>
Proceeds from the disposal of property, plant and equipment and intangible assets	209,606	151,718
Proceeds from the disposal of financial asset and other financial investments	0	0
Expenditure for property, plant and equipment and intangible assets	-16,005,431	-4,530,623
Payments for financial asset acquisitions and other financial investments	0	-10,125,500
Addition to basis of consoliation	0	25,000
<b>Cash flow from investment activities</b>	<b>-15,795,825</b>	<b>-14,479,405</b>
Dividends received	36,069	35,222
Dividends paid	-1,732,200	-4,800,000
Payments from minority shareholders	36,750	0
Redemption of loans granted / grant of loans	9,403,975	-243,433
<b>Cash flow from financing activities</b>	<b>7,744,594</b>	<b>-5,008,211</b>
<b>Change in cash and cash equivalents</b>		
Cash flow from operating activities	38,849,505	15,590,284
Cash flow from investment activities	-15,795,825	-14,479,405
Cash flow from financing activities	7,744,594	-5,008,211
<b>Net change in cash and cash equivalents</b>	<b>30,798,274</b>	<b>3,897,332</b>
Cash and cash equivalents at the beginning of the year	38,311,696	42,209,028
<b>Cash and cash equivalents at year-end</b>	<b>69,109,970</b>	<b>38,311,696</b>

# Report of the Supervisory Board

In the 2016 fiscal year, the Supervisory Board of Frequentis AG convened four times; the Supervisory Board's Audit Committee held two 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 2016, the management report and the group management report for the 2016 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 18 April 2017, the Supervisory Board's Audit Committee examined the annual financial statements and the consolidated financial statements and proposed that the Supervisory Board approves them.

The Supervisory Board examined the annual financial statements and consolidated financial statements submitted as well as the proposal on the 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 2016 can be deemed approved pursuant to Article 125 (2) Austrian Companies Act (AktG).

Vienna, 18 April 2017

DDr. Georg Bahn

Chairman of the Supervisory Board

## Information about auditing of the consolidated financial statements

The pages 38 – 42 of this financial report are an excerpt from the consolidated financial statements of Frequentis AG, Vienna, for the financial year from 1 January 2016 to 31 December 2016. The audit of the consolidated financial statements of Frequentis AG by Confida Wirtschaftstreuhandgesellschaft m.b.H. did not lead to any objections.

# Glossary Abbreviations

The glossary contains information on terms that are frequently used by Frequentis and the markets we serve.

AIM	<b>Aeronautical Information Management</b> <i>Aeronautical information services (AIS) that provide pilots with all the information necessary for a flight.</i>
ASR	<b>Airport Surveillance Radar</b> <i>An airport surveillance radar (ASR) is a relatively small radar system used at airports to detect and display the position of aircraft in the terminal area</i>
ATC	<b>Air Traffic Control</b> <i>Air traffic control (ATC) is a service provided by ground-based controllers who direct aircraft on the ground and through controlled airspace. The primary purpose of ATC worldwide is to prevent collisions, organise and expedite the flow of air traffic, and provide information and other support for pilots.</i>
ATM	<b>Air Traffic Management</b> <i>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 segment that comprises the areas of Air Traffic Management Civil, Aeronautical Information Management, and Defence.</i>
BOS	<b>Behörden und Organisationen mit Sicherheitsaufgaben</b> <i>BOS is a German umbrella term for institutions that are responsible for the prevention of dangers. In general, these operational forces are also known as blue light organisations.</i>
DIVOS	<b>Term for Frequentis Recording product family</b>
D-NOTAM	<b>Digital Notice to Airmen</b> <i>A Notice to Airmen (NOTAM) is a notice filed with an aviation authority to alert aircraft pilots of potential hazards along a flight route or at a location that could affect the safety of the flight.</i>
EAD	<b>European AIS (Aeronautical Information Services) Database</b> <i>Since 2003 the „European AIS Database“ is successful in operation. The EAD system was developed and implemented by Frequentis, and is operated by the GroupEAD. It secures the standardisation and harmonisation of the relevant aviation data and therefore greater safety while reducing maintenance costs.</i>
GIS	<b>Geographic information system</b> <i>A GIS is a system designed to capture, store, manipulate, analyze, manage, and present spatial or geographic data.</i>
GMDSS	<b>Global Maritime Distress and Safety System</b> <i>Global system for distress and safety radio communication; a set of technical equipment, service centres and rules to support rescue efforts in cases of distress at sea and for the protection of shipping.</i>
GPS	<b>Global Positioning System</b> <i>GPS is a space-based radio navigation system that provides geolocation data.</i>
GSM-R	<b>GSM for Railways</b> <i>A mobile radio system which is based on the globally dominating mobile radio standard and was adapted for the use in the railway sector.</i>
ISO	<b>International Organization for Standardization</b> <i>The International Organization for Standardization works out internationally valid norms for many areas.</i>
LTE	<b>Long Term Evolution</b> <i>Standard for wireless communication of high-speed data for mobile phones and data terminals.</i>



MET	<b>Aviation Meteorologie (MET)</b> <i>Aviation meteorology (MET) is an essential element of Air Traffic Management. Weather conditions all aspects of ATM operations, e.g. by variations in head and tail-wind components, through changes in pressure and temperature values at airports and in imposing low visibility operating conditions.</i>
MHS	<b>Message Handling System</b> <i>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.</i>
PAR	<b>Precision Annäherungsradar (PAR)</b> <i>Precision approach radar is a type of radar guidance system designed to provide lateral and vertical guidance to an aircraft pilot for landing, until the landing threshold is reached.</i>
PST	<b>Public Safety &amp; Transport</b> <i>Name for the Frequentis business segment that comprises the areas of Public Safety, Public Transport (i.e. railways) and Maritime.</i>
SESAR SESAR 1 SESAR 2020	<b>Single European Sky ATM Research Programme</b> <i>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".</i>
TETRA	<b>TErrestrial Trunked Radio</b> <i>Open standard for digital trunked radio which enables the setting up of universal networks.</i>
VCS	<b>Voice Communication System</b> <i>Frequentis Voice Communication System</i>
VoIP / IP	<b>Voice over IP</b> <i>IP-telephony, also called internet telephony or Voice over IP, stands for telephone communication through computer networks which are built on internet standards.</i>
VTs	<b>Vessel Traffic Service</b> <i>Electronic marine traffic monitoring system established by harbour or port authorities to control and also partly to manage nautical traffic.</i>
WAM	<b>Wide Area Multilateration</b> <i>By using multilateration, the position of an aircraft can be calculated with the help of the transmitted transponder's signal via delay time differences to several sensor positions on the ground. Multilateration is used as Wide Area Multilateration (WAM) for large-scale aircraft tracking, thus replacing the radar.</i>

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400<sup>+</sup>

customers  
worldwide



130<sup>+</sup>

countries



Largest

AIM-System  
in the world



25,000 working positions  
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ED-137  
End-to-end  
IP VCS



Largest

public safety control  
center in Europe



Largest maritime  
coastline - safer - 240,000 km



360°

Remote tower  
high-resolution infrared



Virtual center

30% VCS market share

#1 GSM-R dispatcher  
terminal market share



Participation in key organisations

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