50 YEARS PSI SOFTWARE

PLATFORM FOR INDUSTRIAL INTELLIGENCE

PSI

ANNUAL REPORT **2018**

PSI INDUSTRIAL INTELLIGENCE IN FIGURES

22
million in R&D expenditure

More than
1,400
developers and project employees in the Group

41%
higher investments in intangible assets and property, plant and equipment

1
award as one of the most innovative German SMEs in 2018

More than **50**
AI methods and combinations of them in industrial use

More than
20 years
of experience in the application of AI methods

11%
of revenues spent on R&D

85%
of employees are university graduates

PSI GROUP IN FIGURES

in EUR million	2018	2017	%
Revenues	199.2	186.1	7.0
Operating result	15.5	13.4	15.7
Earnings before taxes	14.5	12.5	16.0
Group net result	10.6	9.5	11.6
Shareholders' equity	86.6	80.3	7.8
Equity ratio (in%)	41.5	41.4	0.2
Return on equity (in%)	12.2	11.8	3.4
Investments*	7.8	4.4	77.3
Research and development expenses	22.0	18.5	18.9
Research and development ratio (in%)	11.0	9.9	11.1
New orders	217	190	14.2
Order backlog on 31 December	139	128	8.6
Employees at 31 December (number)	1,787	1,665	7.3

* Company acquisitions, intangible assets, property, plant and equipment

OUR SEGMENTS

Energy Management

Intelligent solutions for energy grid operators and for public transport. The focus here is on reliable and cost-effective solutions for intelligent grid management and safe operation of transport systems, as well as solutions for energy trading and distribution.

	2018	2017
Revenues*	99,706	91,576
Operating result*	6,766	4,360
Employees	902	834

* EUR thousand

Production Management

Software products and solutions for production planning, production control and logistics. The focus is on optimising the use of resources and cost-effectiveness in the metals industry, machinery/plant engineering, the automotive industry and logistics.

	2018	2017
Revenues*	99,450	94,520
Operating result*	10,004	9,911
Employees	885	831

* EUR thousand

"Industrial intelligence is characterised by a combination of methods from artificial intelligence, operations research and engineering."

Dr. Harald Schrimpf, CEO

50 YEARS OF SOFTWARE FOR OPTIMISING ENERGY AND MATERIAL FLOWS

As an independent software producer, PSI has been on the market since 1969 and for many years a technological leader in process control systems for energy grid operators and industrial production. PSI software ensures efficient use of energy, labour and raw materials in energy management (gas, oil, electricity, heating, energy trading, public transport) and production management (raw material extraction, metal production, automotive, mechanical engineering, logistics). To this end, PSI has been successfully relying on a combination of artificial intelligence methods and other industrially proven optimisation methods for two decades.

PSI software products stand for safe, efficient energy supply and optimised production and logistics processes worldwide.

CONTENTS

PLATFORM FOR INDUSTRIAL INTELLIGENCE

Our modern software platform provides a proven basis for the successful use of artificial intelligence (AI) in industrial applications. By selecting the best method for the specific application and combining more than 50 optimisation methods, our industrial intelligence applications ensure maximum benefit for our customers.

"We combine the now technologically standardised products to form sector suites."

Dr. Harald Schrimpf, 54
Chairman

Responsibilities: Marketing, Sales, Technology and Investor Relations

Harald Fuchs, 54
Member of the Board of Directors

Responsibilities: Organisation, HR, Finances and Controlling

Ladies and gentlemen,

In 2018, your PSI Software AG increased its operating result by 15% to EUR 15.5 million and grew by 7% to EUR 199 million in terms of revenues. With these results – the best in our company's history – we have overcome the recent dip and are continuing our series of record results again. Our ongoing transformation into a software product company should ultimately bring us up to the usual margin level in the sector. With new orders totalling EUR 217 million and the acquisition of a relevant competitor, we have laid the foundations for growth in 2019. PSI is the biggest, most modern and most reliable German provider of control system software for large electricity and gas grids, for steelworks, for electric bus depots, for swarm control in automotive manufacturing and for industrial applications of artificial intelligence.

Sharing our Legoland

We originally developed our software platform for ourselves so that we could build sector products out of new non-variable parts based on the Lego principle and quickly adapt them to customers' wishes using the business process editor (BPM) and PSI Click Design. Our model- and object-oriented platform (Java/EMF) automates many development tasks, such as object-relational persistence and redundancy. Roughly two thirds of our products have now been changed over – with a lot of aspects having to be completely redeveloped. We combine the now technologically standardised products to form sector suites. For example, the automotive suite consists of ERP/POM, WMS, TMS, SCM, JIT, MES/Q, SCADA and Qualicision-based swarm optimisation. After intensive research and several pilot projects, in autumn 2019 we will launch WORA (write once, run anywhere) technology, with which PC client-server applications run completely identically in web browsers and on mobile devices (including PSI Click Design). More and more customers are now discovering this PJF platform. The IT departments of large corporations have set up "Click Design teams" that carry out the roll-outs and modifications independently across their different plants and even develop their own applications.

Kaizen speed matters

This represents a major change for PSI – after all, for almost 50 years the company primarily supplied and maintained turnkey real-time solutions. However, the customers' IT departments and their integration partners felt excluded because they had hardly any opportunity to get involved. Now, though, customers can also modify the PSI products, sector suites and standard platform modules themselves and can even design their own applications. Only the inner core of the sector products and standard modules remains sealed in order to protect life and health, equipment, intellectual property and cyber-security. Our customers' IT departments can now make their contribution to continuous improvement processes in production quickly themselves. PSI will provide support in day-to-day business with training, consulting and upgrades, with projects being launched only for more complex tasks. For this purpose, PSI will further expand the tool chain for the PJF software development and runtime platform and will make tools for usage measurement and automated requirements and test management available to customers (DevOps).

Freedom!

This late market entry into platform business has the advantage that we are doing it with a state-of-the-art, highly efficient technology stack that is based on open global standards and includes BPM, PSI-Click-Design GUI, EMF, Java, WORA Web and ESB. We have freed ourselves of many expensive dependencies and backward features. The platform runs on almost all hardware, in the cloud, on many operating systems and on all databases, and has graphically editable connections to legacy systems. And we are now offering this technology to our customers.

Economies of scale instead of a zero-sum relationship

All major PSI products are now upgradable. But it will take years until all customers have changed over to upgrade-as-a-service and the full economies of scale take effect. We have increased our recurring strong business with maintenance, upgrade services and the cloud by almost 10% to EUR 63.5 million. With further types of revenues of a software product provider such as licences, services billed according to cost, and partner products, we now have low-risk, profitable business totalling EUR 120 million.

It’s the energy transition

The integration of the smart grid department acquired from BTC AG at the start of the year, with around 140 employees in Germany (the conclusion of the Polish part of the transaction is scheduled for the second quarter of 2019), is chiefly a matter of capacity utilisation. Our new colleagues are helping us to work through the very high level of new orders received in 2018 and the persistently strong customer demand quickly and expertly. Demand is currently also being boosted by the fact that a US provider with a German brand cancelled a high-profile major project with which it had intended to re-enter the German market. In addition, we see good opportunities for exports of our energy transition functionality when the learning curves of solar and wind power fall below the costs of fossil fuels in a growing number of climate regions within a few years, ushering in a large-scale, global, commercially driven energy transition.

Thanks and respect

We would like to thank our customers for their trust. Our particular respect goes to the pioneering customers who are already using our platform themselves to accelerate their improvement processes and are carrying out their roll-outs themselves. We would also like to thank our employees for their commitment and achievements. Many of them courageously left behind their usual technology and took up the new technology, for which everything had to be learnt from scratch: New modelling, new graphics, a new programming language, a new runtime environment, a new product-based project method and a new platform-oriented sales method. Our employees achieved all of that alongside their project work, and for this they have our full recognition and thanks.

Outlook

For 2019, we have set ourselves the ambitious target of growing by 10% to EUR 220 million in terms of revenues while also increasing our profits by 10% to EUR 17 million. Our products are now strong enough for the homeland of software, the USA. After doubling our revenues in North America to EUR 6 million in 2018, we are aiming to achieve further strong growth in the coming year. By the second quarter, we will already have more than 2,000 employees worldwide.

Dr. Harald Schrimpf Harald Fuchs

Karsten Trippel,
Supervisory Board Chairman

REPORT BY THE SUPERVISORY BOARD

Dear PSI shareholders,
Dear friends and partners of our company,

As in the previous years, the Supervisory Board worked in trusting cooperation with the Board of Directors in the 2018 financial year. Its work particularly focussed on the Group's financial situation in the context of the economic environment, the medium-term corporate planning and the strategic development of the Group. We therefore regularly monitored the Board of Directors' work and provided advice according to the law, the company's Articles of Association and the German Corporate Governance Code. The Board regularly informed us promptly, in writing and orally about the situation of PSI Software AG. On this basis, we discussed business performance and decisions in detail. The Board of Directors fully met its obligations to provide the Supervisory Board with information.

——— The Supervisory Board ensured that the law, the Articles of Association and the rules of procedure of the Supervisory Board and the Board of Directors were complied with. It passed the resolutions required by the law and the Articles of Association. When business transactions required the Supervisory Board's approval, it discussed them in depth with the Board of Directors before passing a resolution. Cooperation between the Supervisory Board and the Board of Directors was always constructive and purposeful.

——— The Chairman of the Supervisory Board was also in regular contact with the Board of Directors outside of Supervisory Board meetings and was informed about the business situation and material business transactions. The consultation between him and the two Board of Directors members was ongoing and extensive. The Supervisory Board Chairman shared the material information from each of these exchanges with the other members of the Supervisory Board.

Main areas of discussion for the Supervisory Board

In the performance of its monitoring function, the Supervisory Board's discussions included the following main topics:

- Development of new orders, revenues and earnings of the PSI Group and the individual business units
- Supervision and review of the acquisition of Moveo Software GmbH to expand the market position and broaden the range of public transport services
- Supervision and review of the acquisition of BTC AG's network control software business PRINS to further strengthen the competitive position on the German control system market
- Ongoing supervision of further steps in the transformation of the Group from a project-based to a more product-based business model
- Ongoing supervision of the migration of further Group activities and products to the new, Group-wide technology platform

On 23 April 2018, Ms. Elena Günzler and Mr. Uwe Seidel were re-elected to the Supervisory Board of PSI Software AG as employee representatives.

Supervisory Board meetings and key topics

The Supervisory Board held nine ordinary meetings in order to perform its duties in 2018. It was in full attendance at all meetings. The key topics addressed by the Supervisory Board and the dates of the meetings are summarised in the table below.

8 March 2018	Discussion of the 2017 annual financial statements
14 March 2018	Adoption of the 2017 annual financial statements
25 April 2018	Discussion of the short-term and medium-term Group planning
26 April 2018	Preparation for the Annual General Meeting
16 May 2018	Annual General Meeting and constitutive Supervisory Board meeting
5 September 2018	Discussion of the Group strategy and its implementation status
6 September 2018	Discussion of the current development of operating business
5 December 2018	Discussion of the BTC PRINS acquisition
6 December 2018	Audit of the Supervisory Board's work

——— In addition to the financial performance of PSI Software AG and the Group, the Supervisory Board also concerned itself with the development of individual subsidiaries, paying particular attention to their activities abroad. The Supervisory Board was also provided detailed information from the Board of Directors on an ongoing basis regarding the development of the business and financial situation, the risk situation, the market and competitive situation and the personnel situation in these areas.

Work of the Supervisory Board committees

The Supervisory Board has formed two committees.

——— The Personnel Committee deals with the employment contracts and personnel matters of the Board of Directors. The committee met two times in the financial year with full attendance. Among other things, it dealt with the structure of Board of Directors remuneration. This focused in particular on the vertical comparison between the remuneration of top management and the remuneration of the workforce of PSI as a whole – as required by the German Corporate Governance Code.

——— The Audit Committee is particularly concerned with issues of accounting and risk management. The committee met three times in 2018, with one meeting serving to prepare the adoption of the annual financial statements and the approval of the consolidated financial statements. All three meetings were attended by all committee members.

Corporate governance

As in previous year, the Board of Directors and the Supervisory Board monitored the Group's compliance with the rules of the German Corporate Governance Code. The Supervisory Board adopted the declaration of compliance according to section 161 of the German Stock Corporation Act on 5 December 2018. The company fulfils the majority of the Code's recommendations. The few deviations are explained in the corporate governance report, which was published in connection with the corporate governance declaration on the website at **www.psi.de.**

——— The Supervisory Board examined the efficiency of its own work again at an audit meeting in 2018.

Composition of the Supervisory Board and the committees

In the 2018 financial year, the Supervisory Board comprised the shareholder representatives Karsten Trippel (Chairman), Prof. Ulrich Wilhelm Jaroni (Deputy Chairman), Andreas Böwing and Prof. Uwe Hack and the employee representatives Elena Günzler and Uwe Seidel. The Personnel Committee comprised the Supervisory Board members Karsten Trippel as Chairman, Prof. Ulrich Wilhelm Jaroni and Elena Günzler, while the Audit Committee comprised the Supervisory Board members Prof. Uwe Hack (Chairman), Andreas Böwing, Prof. Ulrich Wilhelm Jaroni, Uwe Seidel and Karsten Trippel.

Audit of annual and consolidated financial statements

At the Annual General Meeting of PSI Software AG on 16 May 2018, Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft was elected as the auditor of the financial statements. This company audited the annual financial statements, the management report, the consolidated financial statements and the consolidated management report for the financial year from 1 January to 31 December 2018 and issued an unqualified audit opinion in each case.

——— All Supervisory Board members received the financial statements and management reports, the auditor's reports and the Board of Directors' proposal on the appropriation of net profit after they were compiled and in due time ahead of the meeting convened to approve the annual accounts. After preparatory discussion by the Audit Committee, the Supervisory Board as a whole dealt with these documents at its meeting on 21 March 2019. These meetings were attended by members of the Board of Directors and representatives of the auditor. The latter reported on the audit in general, the audit priorities set, the material findings of the audit and the services that the auditor provided in addition to the audit services, and answered the Supervisory Board members' questions. There were no objections from the Supervisory Board, which therefore acknowledged and approved the results of the audit.

——— The Supervisory Board examined the consolidated financial statements and Group management report and the annual financial statements and management report for 2018 as well as the results of the audit by the auditor. In accordance with the conclusive findings of these examinations, it raised no objections and adopted the annual financial statements and approved the consolidated financial statements at the Supervisory Board meeting on 21 March 2019. The Supervisory Board agrees with the Board of Directors' proposal on the appropriation of net profit, which stipulates a dividend of EUR 0.25 per entitled share.

——— In addition, the Supervisory Board also reviewed the Board of Directors' non-financial CSR report for the company and the Group for 2018 and discussed it with the Board of Directors at the meeting on 21 March 2019. There were no objections to be raised, so the Supervisory Board also approved the CSR report.

——— In 2018, demand in many of PSI's business areas increased further. Growing investments in the intelligent management of energy grids, the expansion of public transport and the continuing boom in the logistics sector led to a significant increase in new orders. At the same time, the measures initiated in the previous years to limit risk in emerging economies and the stronger focus on exports to developed industrialised nations started to bear fruit. The PSI Group was thus able to increase its new orders, revenues and earnings in 2018 as planned. In 2018, PSI continued to benefit from the technology investments made in recent years, which also form the basis for further increases in earnings. As in previous years, important new customers were acquired and follow-up orders from existing customers were obtained. In the areas of network control software and public transport, PSI strengthened its business with selective acquisitions. The successes achieved jointly by the Board of Directors, management and employees against the backdrop of dynamic changes in many target markets deserve recognition and respect. The Supervisory Board therefore thanks everyone involved for the work they have done and for their great commitment.

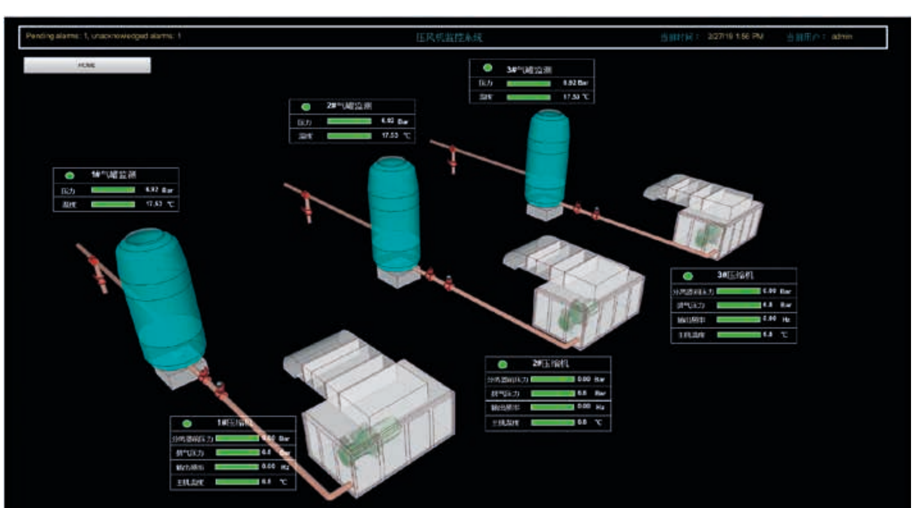
——— It also thanks customers and shareholders for the confidence they showed in 2018. PSI will remain a reliable partner for customers in 2019 and work with all its strength on supporting them with innovative solutions in the continuing digitalisation of their business processes and the development of new business models. Satisfied reference customers will continue to be the basis for gaining further new customers in the future and continuing PSI's positive development.

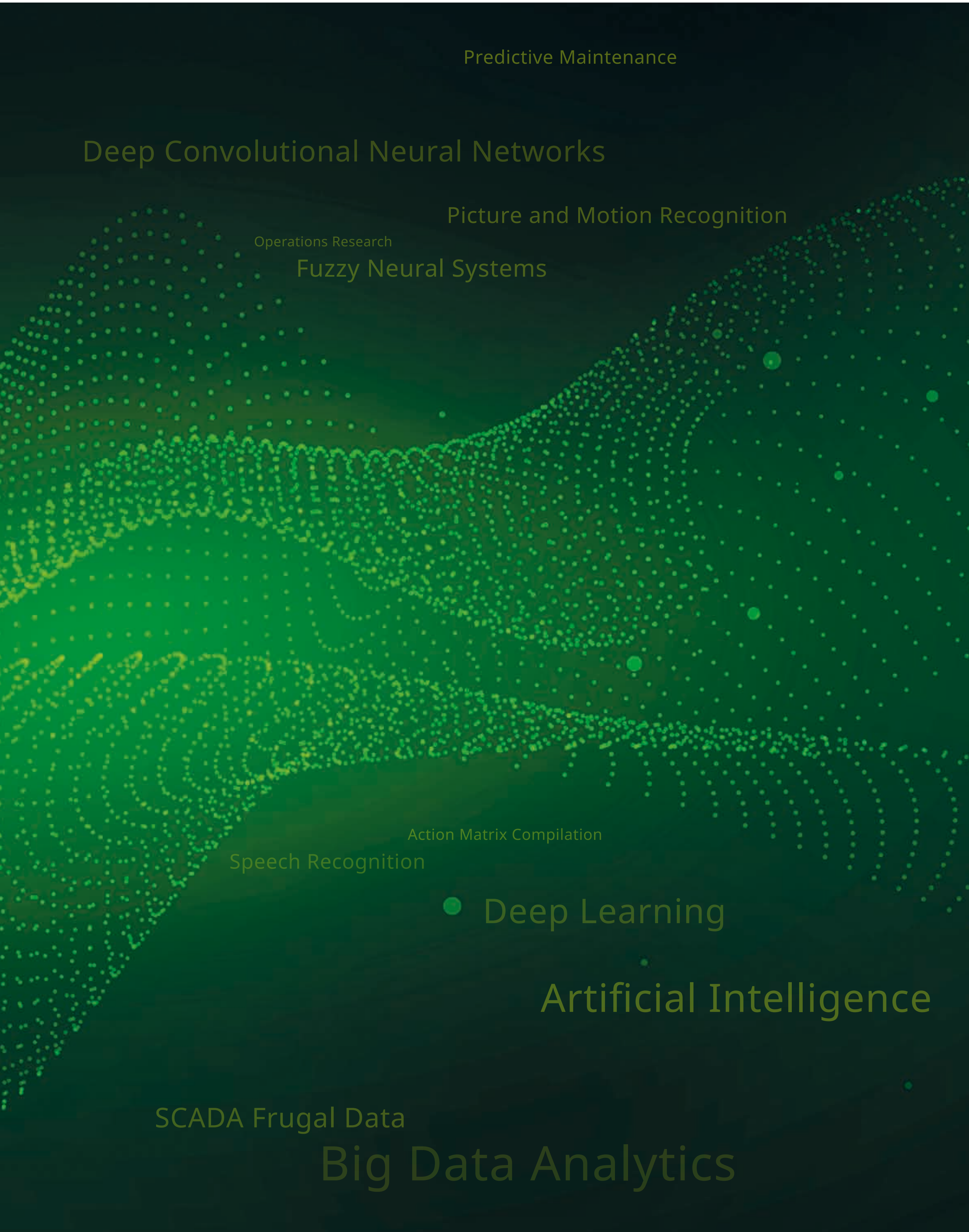
Berlin, March 2019

Karsten Trippel
Supervisory Board Chairman

FUTURE-PROOF TECHNOLOGY PLATFORM FOR THE HIGHEST STANDARDS

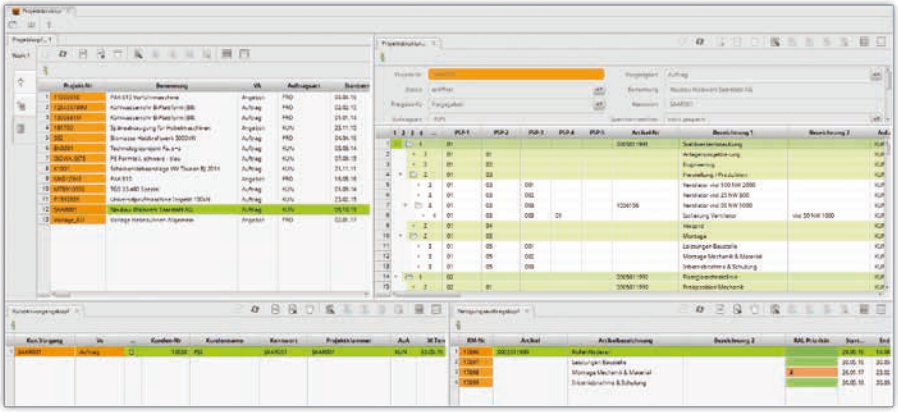
With the PJF software platform, PSI has established a scalable technological basis that we use throughout the Group. Thanks to the latest technology and global standards, it ensures a high degree of independence from technology cycles and individual manufacturers. Its software architecture is model-based, object-oriented and allows for high productivity in development and during implementation at the customer. Business processes are supported in real-time and optimised using a range of different artificial intelligence methods. In addition to traditional PC workstations, modern, intuitive user interfaces also support access via the web and on mobile devices.




Predictive Maintenance
Deep Convolutional Neural Networks
Picture and Motion Recognition
Operations Research
Fuzzy Neural Systems
Action Matrix Compilation
Speech Recognition
Deep Learning
Artificial Intelligence
SCADA Frugal Data
Big Data Analytics

SIMPLE PROCESS AND INTERFACE DESIGN

By means of integrated business process modelling, the business logic can be mapped simply and individually in the software and automated using workflow management. PSI Click Design, which is also integrated, offers individually modifiable user interfaces that can easily be adjusted during runtime using drag-and-drop and saved in profiles. PSI Click Design is available both for conventional clients and for web interfaces.




Machine Learning
Artificial Intelligence
Deep Learning
Analytics
Big Data
Fuzzy Neural Systems
Deep Convolutional Neural Networks
Picture and Motion Recognition
Operations Research
Predictive Maintenance
Speech Recognition

15%

more electricity from renewable energy was produced in Germany in 2017.

THE ELECTRICITY GRID GETS SMART

The expansion of renewable energy is changing our energy system. Weather-dependent, heavily fluctuating generation and large-scale transportation of electricity are a challenge for grid operation.

——— To meet this challenge, grid operators are ever more frequently having to carry out redispatch measures, i.e. with overloaded grids reduce production of renewable energies in the north, at the same time deploying conventional power plants in the south. Industrial artificial intelligence facilitates the optimised use of measures and helps minimise the associated costs. PSIcontrol systems can precisely forecast grid loads and the feed-in of renewable energy, for example by using machine learning and neural networks – and combining these with other methods. On this basis, it is possible to make forward-looking grid calculations and respond flexibly to changes in generation and consumption.

——— The PSIcontrol/SASO product goes beyond this, offering smart monitoring and analysis of the grid and thereby allowing for a rapid evaluation of grid conditions. The current condition, as well as weather and consumption forecasts are the basis on which the system generates forecasts for future grid conditions. It uses these to generate recommended courses of action and rankings of different measures for maintaining grid stability at minimal costs. To keep a handle on the complexity of the grid and the frequently conflicting objectives, the software uses enhanced fuzzy logic for optimisation purposes. Practical use at major grid operators has shown that PSIcontrol/SASO can be used as a grid autopilot.

EUR 1.4 billion

was the total cost of grid stabilisation in Germany in 2017.*

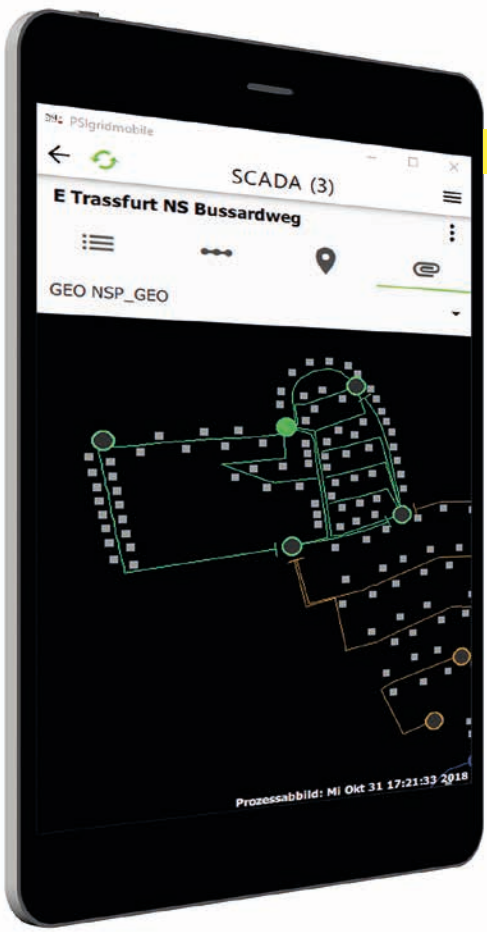
36%

of the electricity consumed in Germany in 2017 came from renewable energy.**

*Source: German Federal Network Agency **Source: German Environment Agency

1 Mobile solutions such as PSIgridmobile enable decentralised grids to be administered by installers and external companies. By combining all information on a mobile device, a completely new level of efficiency can be achieved.

2 For decentrally produced energy PSI developed a smart network controller.



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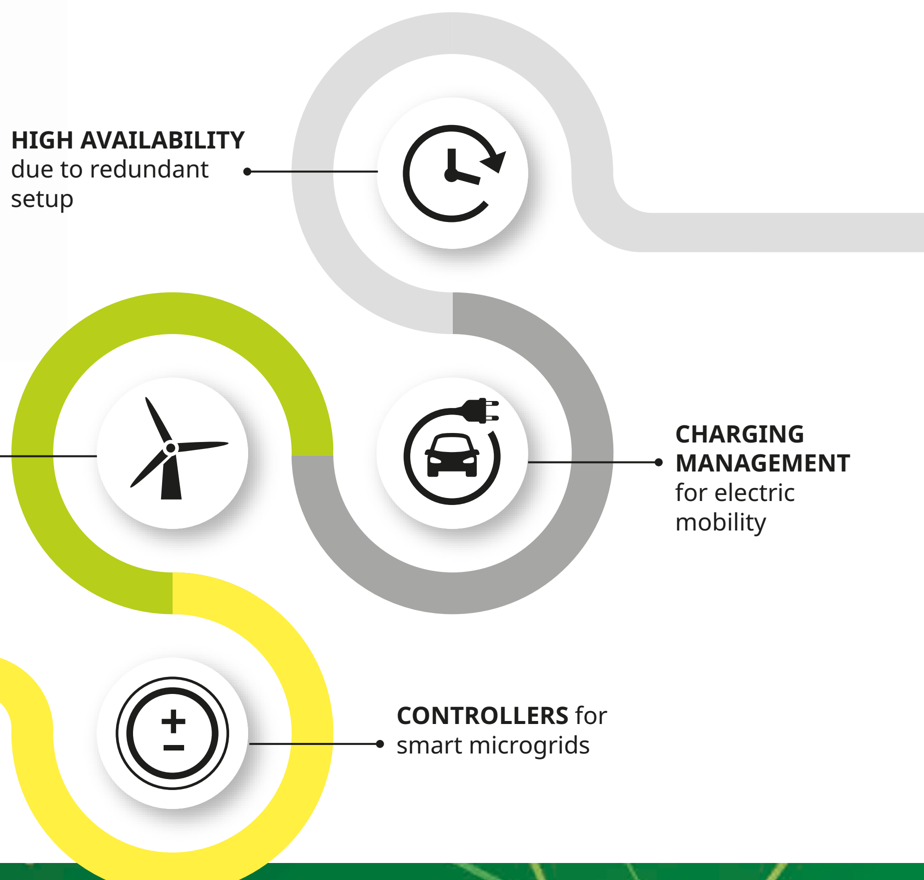


"Smart distribution grids save up to 40% of grid expansion costs."

DECENTRALISED, DIGITAL ENERGY SUPPLY

In a growing number of regions worldwide, due to falling system prices energy from renewable sources is also becoming increasingly attractive from an economic perspective. It is therefore clear that the future of energy supply will be renewable and decentralised.

——— As a result, the requirements for today's electrical distribution grids are also changing. In rural regions, they are becoming collection grids for renewable energy, while urban distribution grids are facing the challenges of growth in electric mobility. Given that a massive expansion of the distribution grids' capacity is fairly unrealistic for financial and political reasons, digitalisation plays a particularly important role here. Smart distribution grids are the most expedient option for ensuring reliable and cost-effective grid operation in the future, too.

——— To this end, PSI has developed a smart grid controller for microgrids and for low- and medium-voltage grids that allows for autonomous, distributed grid management. Here, PSI relies on innovative, self-learning algorithms and methods. This ensures cost-optimised control when there is a risk of bottlenecks in the grid. Although in principle it can monitor and control the allocated grid entirely autonomously, the local grid controller exchanges information with the central control system and transmits key data and reports. This means that in the event of a failure of individual grid components, the central system is also able to take over decentralised functions and control the grid condition. This redundant setup ensures maximum system availability and supply reliability.

——— Compared to conventional grid expansion, investment in intelligent hardware and software saves around 40% of the costs that would otherwise be incurred for new transformers, cables and earthworks.

Only

608

of 40,000 buses in Germany were equipped with alternative drive systems in 2018.

MAKING TRANSPORT SMART AND ELECTRIC

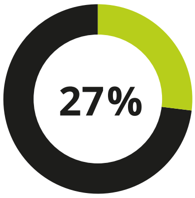
Alongside the energy transition, the transition in transport will also play a particularly important role when it comes to reducing climate-damaging emissions. It is already becoming clear that the mobility of the future will be electric.

——— Despite the trend towards electric mobility and public subsidy programmes, this is still a niche topic in many countries. In addition to low ranges and high purchase costs, it is particularly the lack of comprehensive charging infrastructure that is holding back expansion. High costs along with low user numbers are discouraging a rapid expansion. This is exacerbated by the limitations of the electrical distribution grids, which were not designed for the development of charging infrastructure.

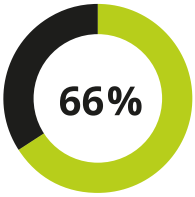
——— The ability to overcome these problems and the initial cost disadvantages will partly depend on making the right use of digitalisation and artificial intelligence. Intelligent management of local grids will make it possible to use existing grid capacity optimally for electric mobility. When it comes to expanding the charging infrastructure, it makes sense to initially focus on operators of large vehicle fleets with their own depots. Logistics service providers and transport companies are not dependent on public charging stations and can expand their existing PSI depot management system with charging management for electric buses or electric delivery vehicles.

——— Using artificial intelligence and enhanced fuzzy logic, all processes at the depot can be optimised – from vehicle placement to cleaning and maintenance to charging management. The maximum power input from the local grid is taken into account at all times in this context. In the future, a key role will be played by autonomous driving, proactive traffic flow optimisation and combinations of technologies like these, on which PSI is already working in pilot projects.

Charging infrastructure can be integrated in existing depots.



of all buses in China are already powered electrically.



of all newly delivered public buses are to be electric by 2030.

of all newly purchased buses in many cities are set to be emission-free from 2020 onward.

8–10%

productivity gain can be achieved by means of fuzzy-logic-based sequence optimisation.

20%

additional improvement is possible with Industry 4.0 swarm production.

“Industry 4.0 software makes an important contribution to the success of electric mobility.”

PSI software optimises electric vehicle factories

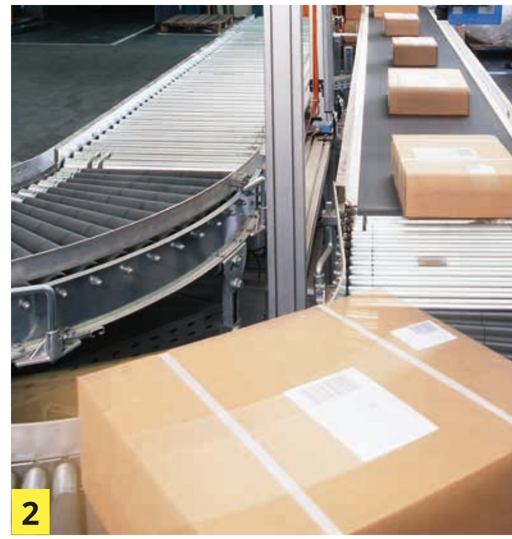
AN INDIVIDUAL PRODUCT FOR EVERYONE

Thanks to smart Industry 4.0 methods, it is now possible to manufacture customised products at competitive prices. The key lies in successfully applying AI technologies.

——— In order to compete successfully on the market, manufacturers have to make increasingly individualised products. This conflicts with the goal of traditional lean-production concepts: to increase efficiency by means of high standardisation. By contrast, innovative Industry 4.0 concepts focus on interconnected, smart production with flexible resources and driverless transportation systems instead of rigid production lines.

——— Even in line production, the production processes can be optimised using enhanced fuzzy logic. By creating sequences with flexible use of resources, balancing out conflicts between objectives and being able to react in real-time, cost savings of 8% to 10% can be achieved. Dynamic, self-organising Industry 4.0 swarm production based on production islands and intelligent work pieces can generate productivity gains of an additional 20% with corresponding optimisation.

——— The production of electric vehicles is currently still characterised by comparatively low quantities and the entry of new market participants. By applying agile Industry 4.0 concepts, these new players can reduce the time and expense required to establish new production sites. In addition, they can gain flexibility and scalability for future model variants and larger quantities right from the start. PSI solutions for production and logistics have been optimising the production of electric vehicles since 2015 – both for successful new market participants and for the establishment of new capacity for electric vehicle production at major automotive manufacturers.



1 PSIwms supports all relevant warehouse types and technologies and ensures transparent and efficient processes.

2 PSItms helps post and parcel service providers to optimise multimodal transportation chains.

3 PSIglobal is the strategic tool for analysing, planning and optimising logistics networks.

FAST, AFFORDABLE AND TRANSPARENT LOGISTICS

In a globalised, interconnected world, logistics is becoming increasingly important. The service range extends from tracking individual deliveries in real-time to strategic optimisation of global supply chains.

——— Digitalisation and interconnection of the entire process has become a key success factor in logistics, too. Companies that comprehensively examine and improve their production and logistics processes can cut their logistics costs by up to 10%, depending on the company's specific situation.

——— This is based on strategic analysis and optimisation of the entire supply chain. With the software product PSIglobal, companies can visualise, analyse and design national and global supply chains and optimally plan their locations. Transport costs, operating times, location costs, utilisation and CO_2 emissions can be balanced out and optimised in line with strategic objectives. The recipe for success here consists of combinational methods and multi-criteria optimisation methods that are selected depending on specific logistical issues and combined with one another.

——— Other standard software solutions help with the operational implementation of logistics processes. The transport management system PSItms supports transport companies such as post and parcel service providers with the planning, management, accounting and analysis of transport networks. The warehouse management system PSIwms ensures transparent and efficient warehousing processes in intralogistics. Warehousing and transportation are optimised using enhanced fuzzy logic.

Steel producers are also increasingly focusing on digitalisation.

STEEL FOR SPECIAL REQUIREMENTS

Steel is still a key base material for many sectors of industrialised society. However, the requirements for steel producers have changed significantly.

——— Whereas just a few years ago it was mainly about expanding capacity and increasing throughput at existing plants, nowadays it is increasingly a question of staying competitive by standing out from the crowd with special qualities and an efficient production and logistics process. This particularly also involves producing smaller quantities and steel qualities for customer-specific applications.

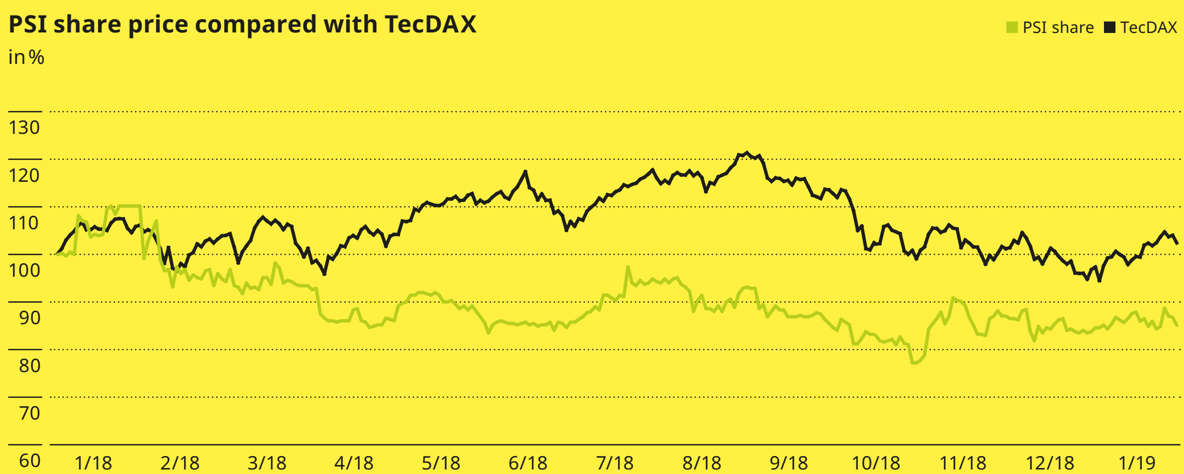
——— PSImetals is a unique software product whose comprehensive approach covers the entire supply chain in the steel industry. From the supplier to the customer, across all processes of metal production and processing, modules are available for planning, production, quality management, automation, logistics and optimisation of energy use. PSImetals optimises production and sequence planning in the steel and aluminium industry by means of combinational methods. As a result, conflicts between different objectives can be resolved in a way that takes account of overarching strategies and plant-specific targets. This makes it possible to achieve up to 80% higher adherence to schedules, up to 25% better reliability, up to 20% shorter processing times and up to 10% higher productivity overall.

[redacted]

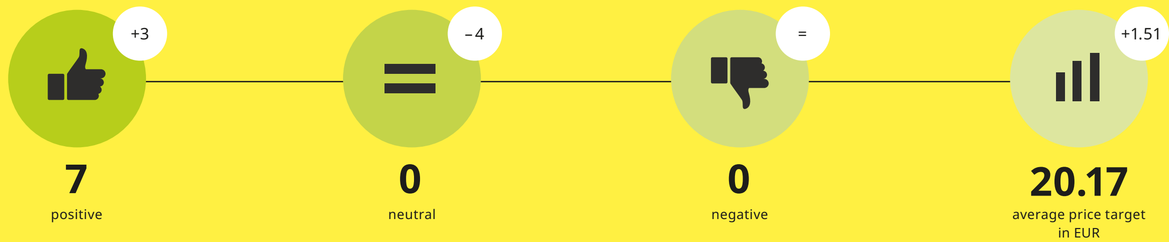
THE PSI SHARE

PSI has developed a smart grid controller for energy generated on a decentralised basis. In 2018, after a good start to the year the PSI share moved into a long sidewards movement. Due to its long-term strategy, its technologically leading positions and its good business development, analysts recommend the share as a Buy.

PSI share price compared with TecDAX
in %



Analyst recommendations on the PSI share in 2018



Share performance during the year

Good start to the year followed by long sideways trend

After the strong increase in the previous year, the PSI share started 2018 at a price of EUR 18.51 and quickly rose to its high for the year of EUR 20.50 by the end of January. After tracking sideways for a long time, the share price fell to its low for the year of EUR 14.25 in late October in the wake of the general weak performance of technology stocks. Following the publication of the third-quarter figures, it quickly recovered to around EUR 16 and, after another sideways trend, ended the year at EUR 15.65 – down 15.4% on the previous year's closing price.

Continuous dialogue with the capital market

In 2018, we once again communicated actively and intensively with the capital market. We presented PSI at 19 investor conferences and roadshows in Europe and the USA. We were visited on 17 occasions by investors and investor groups who came to inform themselves about PSI and our long-term transformation strategy on site. In addition, discussions also focused on topics such as the possible consequences of Brexit, the consolidation of grid operators in Germany and, at the end of the year, the acquisition of BTC's PRINS business.

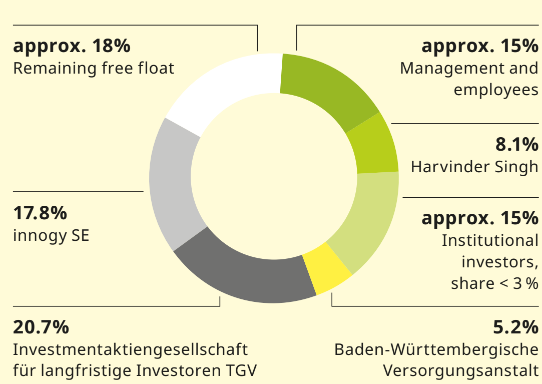
Data on the PSI share

Stock exchanges	Xetra, Frankfurt, Berlin, Stuttgart, Düsseldorf, Hamburg, Hanover, Munich, Tradegate
Stock exchange segment	Regulated Market, Prime Standard
Inclusion in indices	Technology All Share, DAXsector Software, DAXsector All Software, DAXsubsector Software, DAXsubsector All Software, Prime All Share, CDAX
ISIN	DE000A0Z1JH9
Securities identification number (WKN)	A0Z1JH
Stock exchange symbol	PSAN

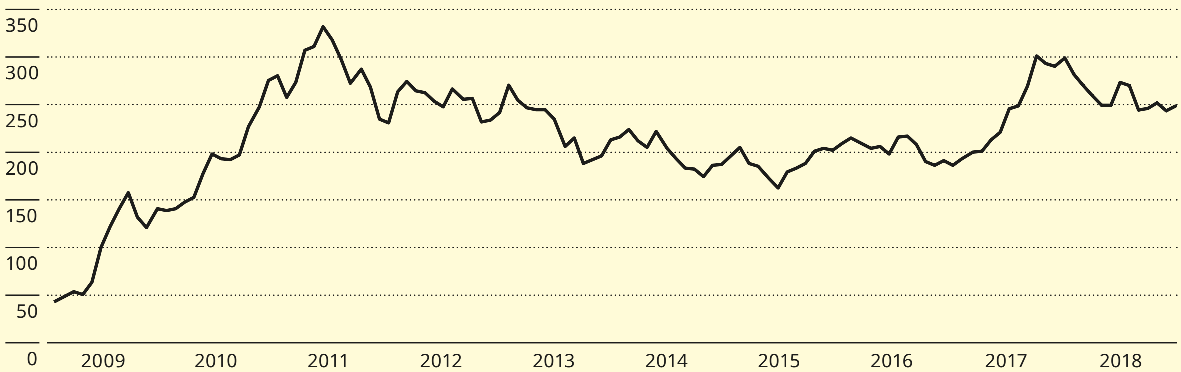
Key figures and data on the PSI share	2018	2017
Earnings per share*	0.68	0.61
Market capitalisation on 31 December*	245,663,778	290,558,245
High for the year*	20.50	19.95
Low for the year*	14.25	11.50
Number of shares on 31 December	15,697,366	15,697,366

* in EUR

Shareholder structure on 31 December 2018



Market capitalisation of PSI 2009–2018
in EUR million



Creating long-term value

Transforming into a software product provider

For several years, PSI has been pressing ahead with its transformation into a software product provider with long-term customer relationships and increasing recurring revenues. To this end, the Group continuously invests in standardising its product base on the basis of the technologically leading PSI technology platform PJF. This improves profitability and thereby increases enterprise value.

Industrial artificial intelligence brings competitive advantages

PSI combines the outstanding industry expertise it has gathered over 50 years with a range of artificial intelligence methods that create tangible competitive advantages for customers and thereby make them fit for technological change and the challenges of the future.

Pioneer in digitalisation, integrated energy and Industry 4.0

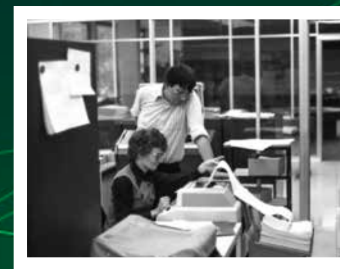
PSI has invested at an early stage in future topics such as new, digital business models for energy distribution, integrated energy in the energy transition and decentralised, self-organising manufacturing structures. This enables our customers to achieve digital transformation of their business processes and opens up new growth potential both for them and for us.

Growth potential from artificial intelligence and updated core technology

The Click Design technology developed by PSI enables customers and partners to adapt their PSI standard software flexibly in line with specific requirements and to expand it on a personalised basis while nonetheless benefiting from long-term maintenance and further development. This creates additional growth potential for revenues and profits at PSI.

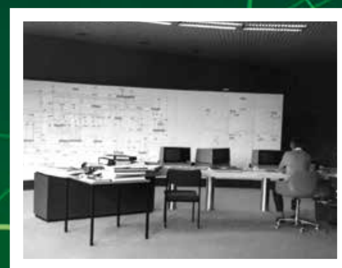
1969

Three of the founders at the test on the GE 412 at the customer in Bochum



1977

Software tests at the customer ÖMV on an Interdata computer



1973

After the merger with GID in Aschaffenburg, PSI develops the first energy control systems

1976

1971

1985

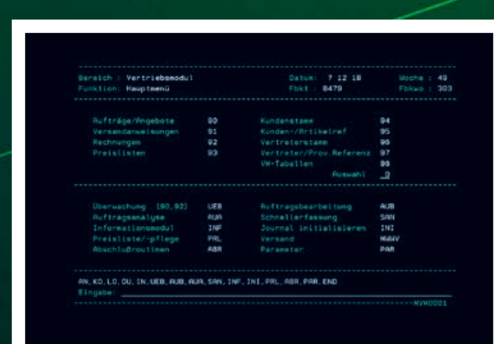
1990

1986

PIUSS-O is introduced as the first standard PPS system for production planning and control for mechanical engineering

1969

PSI is founded with the name Gesellschaft für Prozesssteuerungs- und Informationssysteme mbH in Berlin by six AEG employees



2019

2012

2004

2015

2018

2006

2001

2009
Development of uniform technology platform PJF

1997
PSI moves into its new headquarters in Berlin-Mitte

1998
PSI goes public on the New Market in Frankfurt

2019
PSI celebrates its 50th anniversary.

HIGHLIGHTS 2018

Top 10

In 2018, PSI Logistics was named by the US trade magazine Logistics Tech Outlook as one of the 10 best warehouse management solution providers in the world.

Strengthening local public transport

With the acquisition of Moveo Software GmbH, PSI strengthened its public transport business and added to its product range.

Research on autonomous driving

PSI was awarded the contract as consortium manager for a state-subsidised research project on autonomous driving in road transport and logistics.

Energy award

PSI won the Bavarian Energy Award as a partner of the LINDA project for local stand-alone grid supply with decentralised generating facilities.

Growing energy

With the acquisition of BTC AG's smart grid business PRINS, PSI consolidated its position as a leading European provider of grid control software.

Innovative

In the ranking by the magazine WirtschaftsWoche, PSI was in 41st place among the most innovative German SMEs in 2018, selected from a total of 3,500 analysed companies.

FINANCIAL STATEMENTS

CONSOLIDATED MANAGEMENT REPORT

GROUP REVENUES

7% above previous year

RESULTS OF OPERATIONS AND LIQUIDITY POSITION

Further improvement

OPERATING RESULT

up 15.7% to EUR 15.5 million

NEW ORDERS

amount to EUR 217 million, up 14.2% on previous year's level

LICENCES AND MAINTENANCE

Growth in share of revenues

CASH FLOW

from operating activities increased to EUR 19.0 million

Basic information on the Group

Business model of the Group

The core business of the PSI Group consists of process control and information systems for the management of energy and material flows in the following industries:

– utility companies in the electricity, gas, oil and district heating sectors and public transport providers

– industry in the metallurgy, raw material extraction, mechanical and plant engineering, automotive, automotive supply and logistics sectors

The Group is accordingly divided into the Energy Management and Production Management segments. For these economic sectors, PSI develops and sells its own software products and complete systems based on these software products.

In the Energy Management segment, the PSI Group develops software products in the areas of control systems for electricity grids, cross-sector control systems, gas and pipeline management systems, and products for energy trading, energy distribution, virtual power plants, power plant optimisation, gas industry planning and the operation of public transport system.

In Production Management, PSI has an integrated portfolio of solutions for planning and controlling production processes in raw material extraction, metal production, logistics, mechanical engineering and automotive manufacturing.

With almost 1,800 employees worldwide, PSI is one of the biggest German software producers. As a specialist in high-quality process control systems, the Group has gained a leading position nationally, as well as internationally in the target export markets, particularly among utility companies and metal producers. The key competitive advantages are the functionality and innovativeness of PSI's products. PSI was established in 1969, making it one of the most experienced German software companies.

In Germany, the PSI Group has locations in Berlin, Aachen, Aschaffenburg, Dortmund, Düsseldorf, Essen, Hamburg, Hanover, Karlsruhe, Munich, Potsdam and Stuttgart. Internationally, PSI is represented by subsidiaries and representative offices in Austria, Bahrain, Belgium, Brazil, China, Denmark, India, Japan, Malaysia, Oman, Poland, Russia, Sweden, Switzerland, Thailand, the United Kingdom and the USA.

Strategy and control system

The central aspects of the Group's strategy are growth, internationalisation and a stronger focus on the software product business. In this way, PSI creates and maintains varied and secure jobs. To achieve its strategic goals, the PSI Group focuses on technology leadership, the openness of the Group technology platform and a high pace of development in order to influence trends in the target sectors at an early stage. In some cases, products and technologies are developed in collaboration with customers in pilot projects.

PSI pursues a growth strategy with a particular focus on international business. After establishing subsidiaries in Russia, Poland, China and Southeast Asia, PSI is investing in the markets in Northern and Central Europe and increasingly also in North America. Over the coming years, PSI will endeavour to achieve a further increase in the share of revenues attributable to products, to expand the share attributable to exports, and to step up business in the geographical target markets. This will create economies of scale and therefore improve the conditions for further increases in profitability.

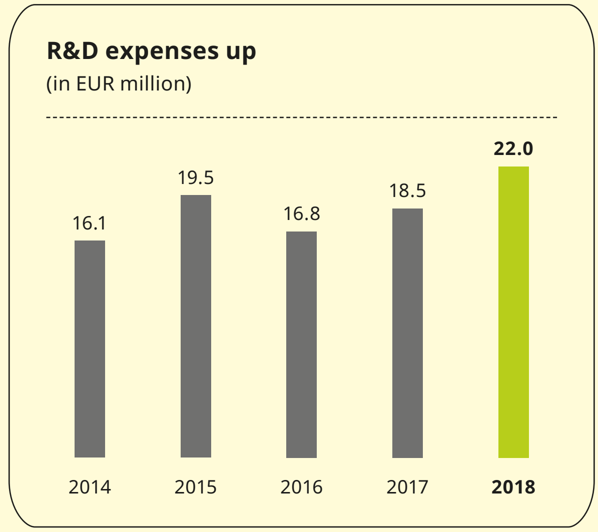
The key performance indicators for achievement of the strategic goals are:

- the ratio of operating result to revenues (EBIT margin) as the main key figure for improvement in the Group's profitability
- the development of revenues as a key figure for the Group's growth rate
- new orders as a significant leading indicator of future revenues growth
- the share of consolidated revenues attributable to licence revenues and maintenance revenues as key figures for PSI's transformation from a service-oriented IT provider to a software product provider

In the non-financial area, the PSI Group has since 2017 been calculating the following key figures to measure its performance with regard to employee commitment and customer loyalty:

- an employee commitment index showing the employees' motivation and loyalty and the extent to which they identify with PSI
- a customer loyalty index that measures the customers' willingness to rely on PSI in the long term and to provide a reference

As a result of its strategy aimed at growth and profitability, the PSI Group increased its revenues from EUR 115.2 million in 2004 to EUR 199.2 million. The share of the Group's revenues attributable to international business more than tripled from 13% to 42% in this period.



Research and development

Innovative products and maintaining a technological edge are among the most important competitive advantages in the software market. For this reason, the development of new unique selling points and products plays a key role for the PSI Group. Functionality and modernity are pivotal factors for economic success, as are the use of Group-wide development platforms and the exchange of new functionalities within the Group.

When developing new products, PSI works closely with industry-leading pilot customers. This collaboration ensures right from the start that the products will offer customer benefits. These products are then continuously evolved in follow-up projects and adapted to the development in the target markets. The resulting products form the basis for wider distribution and export.

One focus of development activities in 2018 was the expansion of the Group-wide software platform in order to provide user interfaces and modification tools on traditional PC workstations (rich clients), as web applications (thin clients) and on mobile devices from a uniform application. PSI has established a Group-wide development community and developed a modern software platform that will form the basis for all products in the medium term. All relevant products in the Production Management segment and a third of the Energy Management products already run on the platform. The objective is to further increase reuse of the same software modules in the Group and to standardise software tools and the programming language for all employees worldwide. The software platform improves the conditions for further export growth and also reduces development costs.

In 2018, the PSI Group's research and development expenses (costs recognised directly as expenses and capitalised software development costs) amounted to EUR 22.0 million, up 18.9% from EUR 18.5 million in the previous year. This amount did not include any relevant purchased services.

Development work in 2018 focused on:

- the new version 4.6 of the PSIcontrol grid control system with enhanced functions for failure analysis, overhead line monitoring and management of decentralised feed-in
- the new product PSI Intelligent Grid Operator as an active sub-system for grid automation at a local level
- the expansion of the depot management system with charging and load management for electric buses
- the combination of fuzzy logic optimisation with machine learning to create a self-learning decision engine
- stronger interconnection and functional extension of the logistics suite
- the expansion of the metal production software PSImetals with functions for graphic modelling of processes, simple configurability of user-specific views and mobile support for logistics
- ongoing further development of the Group-wide software platform and its roll-out in additional products. This further development relates particularly to the Click Design technology for designing user interfaces by mouse-click or gesture control, which can considerably reduce development and implementation expenses

In the Production Management segment, the first projects based on the software products migrated to the Group platform were started in 2018. At the 2018 Hanover Trade Fair, PSI presented a comprehensive Industry 4.0 software scenario from the production of electric vehicles, as well as practical examples of the successful use of artificial intelligence in industrial applications that arose as part of a Group-wide AI initiative.

In addition to product development, PSI has also been involved in state-subsidised research projects for fundamental technology development for many years. One focus of this research is projects dedicated to implementing the future-oriented Industry 4.0 project initiated by the German federal government. This includes developing platforms for creating adaptable production systems, implementing autonomous transport and logistics concepts and optimising series production. In this latter project, conveyor belts are replaced with swarm manufacturing concepts in which intelligent work pieces manage themselves.

Another focus of PSI's research is projects that deal with the development of technologies for the digital transformation of energy supply. This includes the development of smart grid technologies, intelligent integration of electric mobility in municipal distribution grids, grid restoration taking account of future generation structures, marketing of energy flexibilities of industrial consumers, and mathematical methods for the simulation of power grids taking account of future integrated energy scenarios.

The knowledge gained in the projects is used in accordance with the cooperation or consortium agreements concluded between the parties involved in the respective research association. The subsidies cover around 40% to 50% of the personnel expenses and operating expenses incurred for these research projects in the PSI Group. The use of the funding must be accounted for vis-à-vis the funding body on an ongoing basis and on completion of the project. In the 2018 financial year, the PSI Group received state subsidies totalling EUR 0.9 million.

Economic report

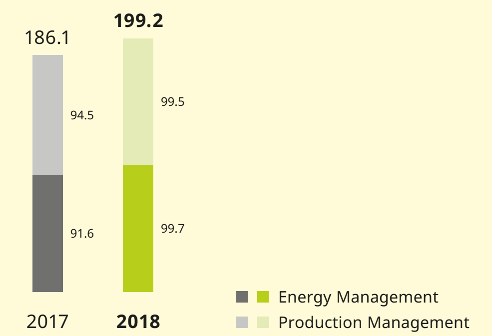
Business performance and general conditions

Global steel market displays regional differences

For a focused software provider like PSI, the economic development in its key target sectors is particularly important. According to the World Steel Association, the global steel market, in which PSI is one of the main software suppliers, recorded a 4.6% increase in global crude steel production in 2018 after growth of 5.3% in the previous year. The EU was the only region in the world to record a decrease, which came to 0.3%. Despite significant growth in North America, the EU is still PSI's main market. PSI therefore could not quite match the previous year's new orders for steel software in this environment, although it did start off the new year with its biggest order from China to date. As oil and gas prices continued to stabilise, PSI's Gas and Oil division saw growing demand again after two years and increased its new orders.

In the Electrical Energy division, the positive trend of the previous years continued with another year-on-year increase in new orders.

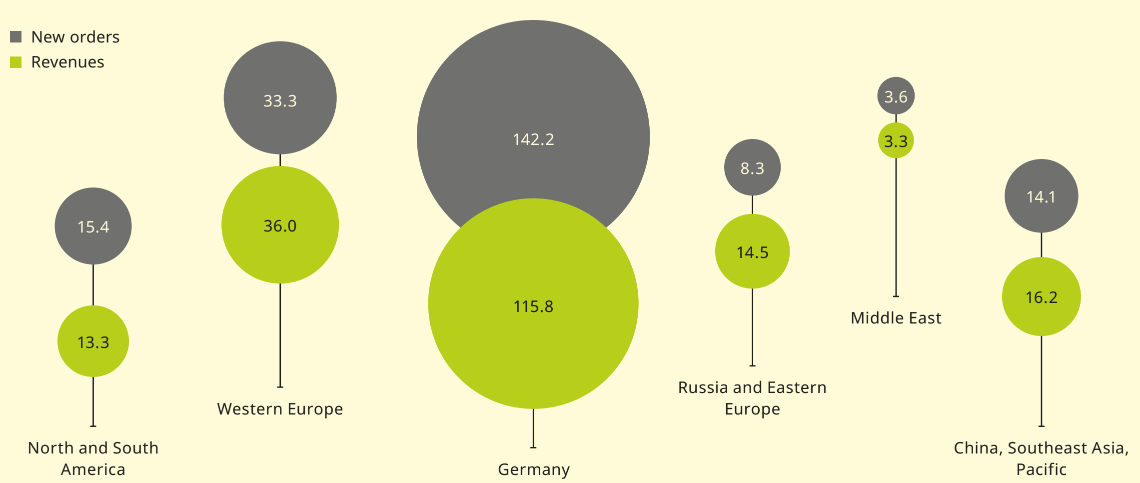
Further growth in PSI's revenues
(in EUR million)



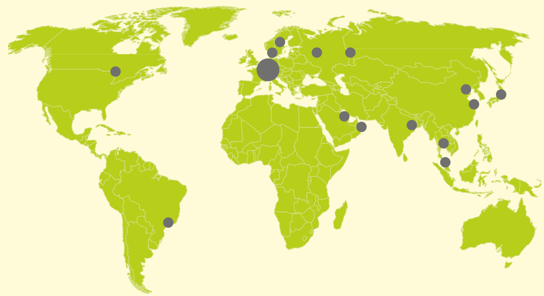
Revenues and earnings increase in Energy segment

Primarily thanks to the substantial recovery in earnings in Southeast Asia, PSI continued the previous year's positive trend. Consolidated revenues were increased further, as were the operating result and the Group net result. At EUR 217 million, new orders were 14.2% higher than the previous year's level of EUR 190 million. The order backlog at the end of the year was up 8.6% year-on-year at EUR 139 million.

New orders and revenues by region
(in EUR million)



International presence and locations in Europe and worldwide



• **PSI locations:** Austria, Bahrain, Belgium, Brazil, China, Denmark, Germany, India, Japan, Malaysia, Oman, Poland, Russia, Sweden, Switzerland, Thailand, United Kingdom, USA

In the Production Management segment, the Automotive & Industry division increased its new orders, revenues and earnings. The Metal Production division improved its revenues and earnings, but received fewer orders than in the previous year, while the Logistics division invested in further growth. In the energy market, the Electrical Energy division significantly increased its new orders, revenues and earnings, while the Gas and Oil division posted growth in new orders and revenues again for the first time after decline caused by oil prices in the previous years.

In 2018, PSI acquired its first pilot order for a depot management system with integrated charging management for electrically powered buses and posted a very strong overall increase in new orders in public transport business.

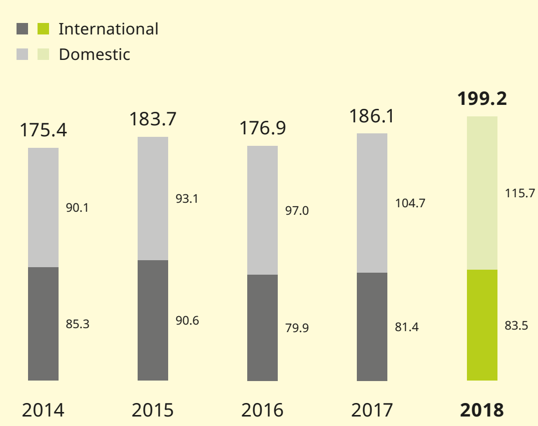
With the acquisition of Moveo Software GmbH in July 2018, PSI strengthened its public transport business. Moveo Software's core business is a program system for planning, scheduling and accounting at transport companies.

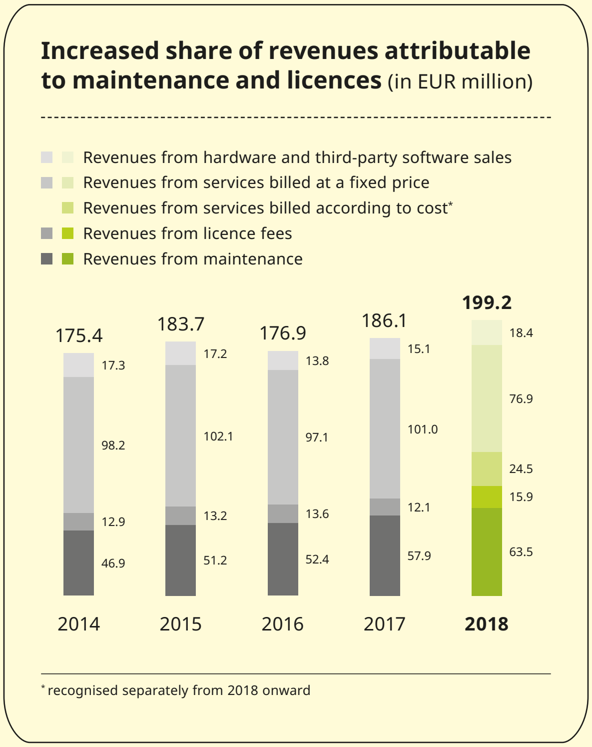
In December 2018, PSI agreed the acquisition of BTC Business Technology Consulting AG's grid control software division "Smart Grid" with the products PRINS and GRIDAGENT in an asset deal with effect from 1 January 2019. The PRINS division is a provider of grid control software for electrical distribution grids and local sub-grids that focuses on the German market.

Overall assessment of the business performance

With a 15.7% increase to EUR 15.5 million, PSI slightly exceeded its 2018 target of a double-digit percentage rise in its operating result. As a result, the EBIT margin improved further from 7.2% in the previous year to 7.8%. PSI achieved the targeted growth in consolidated revenues in the high single-digit percentage range with a 7% increase in revenues. The share of total revenues attributable to licence business climbed from 7% to 8%, while that of maintenance business rose from 31% to 32%. A very positive business performance in Energy Management – particularly with German grid operators – was accompanied by a stable earnings performance in Production Management. Overall, business continued to develop positively in the industrialised countries of Northern and Western Europe in particular, while in emerging economies it generally stagnated and was negatively impacted by currency effects. With a broadened customer base in industrialised countries in Europe, the PSI Group continued its positive earnings and growth trend.

Domestic revenues grow faster than exports (in EUR million)





Result of operations

Consolidated revenues up 7%

Consolidated revenues amounted to EUR 199.2 million in 2018, up 7% on the previous year's level of EUR 186.1 million. Energy Management generated an 8.8% increase in revenues as against the previous year, while Production Management achieved revenue growth of 5.3%. Revenues per employee, based on the average number of people employed in the Group including countries with lower labour costs, increased slightly from EUR 113,000 to EUR 114,000.

Rise in personnel expenses

Expenses for purchased goods and services rose by EUR 1.7 million to EUR 28.9 million. Expenses for project-related procurement of hardware and licences increased by EUR 0.6 million, while expenses for purchased services increased by EUR 1.1 million. At EUR 121.3 million, personnel expenses were up 8% year-on-year.

Group structure as of 31 December 2018

Energy Management	
PSI Software AG Electrical Energy Gas/Oil	
PSI Nentec GmbH	100%
PSIAG Scandinavia AB	100%
PSI Incontrol Group	100%
PSI Energy Markets GmbH	100%
Time-steps AG (Switzerland)	100%
PSI Transcom GmbH	100%
Moveo Software GmbH	100%
OOO PSI (Russia)	100%
OOO OREKHsoft (Russia)	49%
OOO Gazavtomatika dispetcherskije sistemy (Russia)	33%
caplog-x GmbH	31.3%

Production Management	
PSI Mines&Roads GmbH	100%
PSI Automotive & Industry GmbH	100%
PSI Automotive & Industry Austria GmbH	100%
PSI Metals GmbH	100%
PSI Metals Austria GmbH	100%
PSI Metals Belgium NV	100%
PSI Metals Non Ferrous GmbH	100%
PSI Information Technology Shanghai Co. Ltd. (China)	100%
PSI Metals North America Inc.	100%
PSI Metals Brazil Ltda.	100%
PSI Metals UK Ltd.	100%
PSI Metals India Private Ltd.	100%
PSI Logistics GmbH	100%
PSI AG (Switzerland)	100%
PSI FLS Fuzzy Logik & Neuro Systeme GmbH	100%
PSI Polska Sp. Z o.o.	100%

Further improvement in operating result and Group net result

The Group's operating result climbed by 15.7% from EUR 13.4 million in the previous year to EUR 15.5 million. The Group net result increased from EUR 9.5 million to EUR 10.6 million in the year under review. Earnings per share accordingly improved from EUR 0.61 to EUR 0.68. Electrical Energy, Metal Production, Automotive & Industry and Logistics made a particularly strong contribution to earnings.

New orders up on previous year

New orders amounted to EUR 217 million in 2018, up 14.2% on the previous year's figure of EUR 190 million and thus 9% higher than revenues. The order backlog as at the end of the year was up 8.6% year-on-year at EUR 139 million.

Significant growth on German market; share attributable to maintenance business increases

Revenues generated outside Germany increased by 2.6% from EUR 81.4 million in the previous year to EUR 83.5 million. Due to the higher increase in consolidated revenues, this meant that the export share declined from 44% to 42%. The share of international orders decreased from 44% to 34%, mainly due to very substantial growth in Germany.

Maintenance revenues were increased from EUR 57.9 million to EUR 63.5 million, causing the share attributable to maintenance to rise from 31% to 32%. Licence revenues posted an increase from EUR 12.1 million to EUR 15.9 million. In line with the focus on increasing software product business, maintenance and long-term upgrade contracts in particular are to be increased further. Licence revenues are expected to record further growth in 2019.

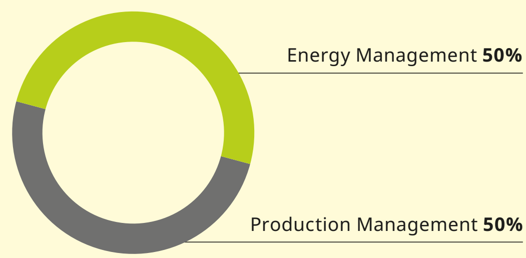
Energy Management generated higher revenues, causing the share of consolidated revenues attributable to this segment to rise slightly from 49% in the previous year to 50%. The share attributable to Production Management accordingly declined from 51% to 50%. Since the first quarter of 2018, Energy Management has also included public transport business and business in Southeast Asia. Production Management has also included business in Poland since the first quarter of 2018.

Energy Management segment posts significant improvement in earnings in 2018

In 2018, Energy Management was characterised by significant growth in revenues and earnings in the Electrical Energy division, growth along with slightly weaker earnings in the Gas and Oil division, and a return to a break-even operating result at the PSI subsidiary in Southeast Asia. Overall, revenues were increased by 8.8% to EUR 99.7 million, thus exceeding expectations. Since the first quarter of 2018, the segment has also included the areas of electricity grids, gas grids, oil pipelines, energy trading, public transport and business in Southeast Asia. The operating result improved to a greater extent than expected, rising from EUR 4.4 million in the previous year to EUR 6.8 million. Public transport business is experiencing a boom in demand thanks to the trend towards electrification and also due to subsidies. The Energy Trading division gained several new customers and increased its revenues and earnings.

Revenues allocation by segment

(in %)



Slight improvement in revenues and earnings in Production Management

Revenues in Production Management were increased by 5.3% to EUR 99.5 million in 2018, in line with expectations. In this segment, PSI develops solutions for efficient planning and controlling of production and logistics processes. PSI is continuing to invest heavily here in the future-oriented topic of Industry 4.0 and is developing interesting unique selling points and growth potential as a result. The segment's operating result rose slightly from EUR 9.9 million in the previous year to EUR 10.0 million and was thus in line with expectations. The highest margins were generated by PSI FLS Fuzzy Logik & Neuro Systeme, PSI Metals and PSI Automotive & Industry. After strong growth in the previous years, PSI Logistics invested in expanding its capacity and once again increased its new orders.

Financial position

PSI's monthly liquidity planning and the measures derived on this basis ensure that the financial requirements for operating business and investments are covered. Risk Management prepares a rolling monthly forecast that covers all companies and has a planning horizon of twelve months. This minimises taking up bank loans by the individual Group companies and optimises net finance costs. Current financial liabilities fell from EUR 2.6 million to EUR 1.8 million in 2018.

Financing from operating business as far as possible

PSI's investing activities are focused on further development of its products on the basis of the Group-wide technology platform and international expansion of its business, both of which are intended to be financed from operating business as far as possible. With regard to both internationalisation and the development of new products and functionalities, PSI focuses on major pilot customers and reliable partnerships.

On 31 December 2018, PSI had guarantee and cash credit facilities totalling EUR 106.7 million for financing its operating business. In the previous year, guarantee and cash credit facilities had amounted to EUR 106.9 million. Utilisation related entirely to the guarantee credit facilities and increased from EUR 35.7 million in the previous year to EUR 40.0 million as at the end of the reporting period. In the 2018 financial year, the Group was able to meet its payment obligations at all times. The Group has internal ratings from its principal banks that roughly correspond to the rating categories between BBB and A−.

Significant improvement in cash flow from operating activities

Cash flow from operating activities improved significantly from EUR 1.2 million in the previous year to EUR 19.0 million. It was primarily influenced by a lower increase in working capital as compared to the previous year.

Cash flow from investing activities declined from EUR -4.1 million to EUR -7.4 million. It was affected by the acquisition of Moveo Software and by replacement investments in property, plant and equipment and intangible assets.

Cash flow from financing activities declined from EUR -1.1 million to EUR -4.8 million, chiefly as a result of the change in short-term loans.

Cash and cash equivalents at the end of the year climbed from EUR 38.1 million to EUR 44.6 million.

Net asset situation

Asset structure: slight decrease in goodwill

In 2018, the PSI Group invested a total of EUR 6.2 million in intangible assets and property, plant and equipment. The investments primarily related to intangible assets and property, plant and equipment acquired from third parties. In the previous year, investments had amounted to EUR 4.4 million.

The carrying amount of goodwill increased from EUR 48.3 million to EUR 49.4 million due to the acquisition of Moveo Software GmbH and currency effects.

Structure of the balance sheet: equity ratio improves to 41.5%

Total assets of the PSI Group rose from EUR 194.0 million to EUR 208.7 million in 2018.

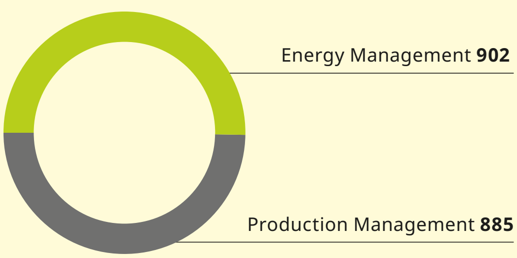
On the assets side, non-current assets increased from EUR 77.5 million to EUR 80.9 million. Current assets rose from EUR 116.5 million to EUR 127.8 million. Within this category, cash and cash equivalents increased by EUR 6.5 million, trade receivables were EUR 2.8 million higher and receivables from long-term development contracts rose by EUR 1.3 million.

On the equity and liabilities side, current liabilities increased from EUR 59.7 million to EUR 66.0 million, particularly due to higher liabilities from long-term development contracts. Non-current liabilities rose from EUR 54.0 million to EUR 56.1 million, driven primarily by higher deferred tax liabilities. Equity increased from EUR 80.3 million to EUR 86.6 million. The equity ratio was fairly stable with a slight improvement from 41.4% to 41.5%.

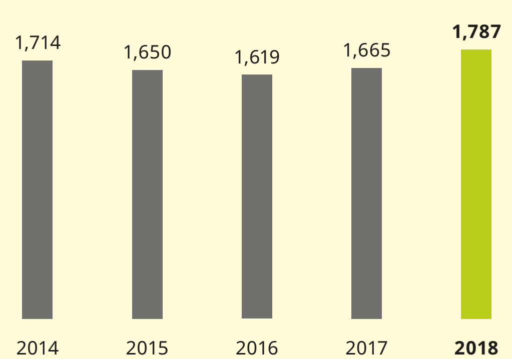
Overall assessment of net assets, financial position and results of operations

In the 2018 financial year, the Group's net assets, financial position and results of operations improved in comparison to the previous year. There were particularly significant improvements in cash flow from operating activities and in the liquidity position. For 2018, the management anticipates a further increase in earnings and a positive cash flow. As such, the Group still has the financial prerequisites to finance organic growth and selective acquisitions.

Breakdown of workforce to the segments
(number of employees)



Number of employees increased further
(employees on 31 December)



Sustainability and CSR

Ever since the Company was founded in 1969, social responsibility and sustainability have been a very important issue for PSI, both in customer projects and in its internal processes. In addition to environmental and social concerns, this particularly includes the areas of employees and customers.

Transparent and responsible corporate governance
PSI follows ethical principles in its dealings with customers, shareholders, employees, partners and competitors. These principles are set out in the Code of Conduct, which is publicly accessible on the Group's website at **www.psi.de**. Here, PSI commits to fair business practices and compliance with legal standards for fair working conditions, protection of natural resources, fair business conduct and protection of intellectual property.

In addition to the Code of Conduct, PSI has adopted a guideline system that governs many different aspects of sustainable and responsible corporate governance. PSI once again complied with the recommendations of the Government Commission on the German Corporate Governance Code in 2018, with a small number of exceptions that are discussed in the declaration of compliance. The declaration of compliance and the corporate government declaration are published on PSI's website at www.psi.de/en/psi-investor-relations/corporate-governance.

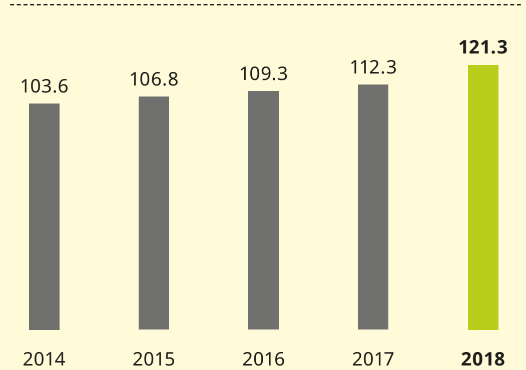
Sustainability in PSI products and internal processes
PSI's software products make a significant contribution to careful and sustainable use of energy, raw materials and labour in the energy industry and the production sector. For this reason, PSI's production management systems for the steel and aluminium industry incorporate functions for optimising the use of energy and using quantities of energy that are released during production.

PSI's control systems for managing major electricity grids have been and still are continuously expanded with functions that enable the feed-in of renewable energy to be managed intelligently. Together with partners from the energy industry and academia, PSI is actively involved in developing the intelligent energy supply infrastructure of the future. This includes products for virtual power plants, smart microgrids and the integration of charging infrastructure for electric vehicles into the existing electricity grids. PSI's gas management systems allow optimised control of the compressor stations required for grid operation and minimise technical losses. Leak detection and location systems help reduce losses when transporting gas and oil over long distances and avoid environmental damage.

In the field of logistics and transport, PSI has in recent years developed new solutions for dynamic control of optimised logistics networks that help reduce transport costs and emissions by up to 10%. Further functions include energy-optimised driving in rail transport and a depot management system with route and fuelling optimisation, as well as range management and charging management for electric buses. This gives customers effective support in reducing greenhouse gases and saving energy.

Due to the fact that PSI as a services company does not manufacture any physical products, the PSI business processes impact the environment and resources only in a marginal fashion. PSI works with green IT equipment and uses combined heat, cooling and power generation at its location in Aschaffenburg. To evaluate energy flows and potential for improvement in the area of energy efficiency, in 2016 PSI carried out an energy audit in line with DIN EN 162471. PSI has participated in the Carbon Disclosure Project since 2011 and was given the score D in 2018. As in previous years, PSI was again awarded the DZ Bank Seal of Quality for Sustainability in 2018. Implementation of environmental management is currently being evidenced by external energy audits and involvement in the Carbon Disclosure Project. Preparations are being made for certification in line with DIN EN ISO 14001.

Personnel expenses develop in line with growth in capacity (in EUR million)



Employees and social commitment

For a specialised software provider like PSI, the high qualifications and motivation of its employees are key success factors. For this reason, the PSI Group has for many years been characterised by a particularly high proportion of graduates with specialist industry expertise. The proportion of employees with a university degree averages approximately 80%. The largest share of these employees have an engineering degree.

Employee development and training are crucial for the functionality and innovativeness of the products developed by PSI. The main focus areas here are specialist training for new employees at the international locations and in Germany and employee development for internationalisation. This takes place in the form of sales, project management and contract law training and courses relating to Group software tools. Group-wide work teams focusing on the topics of technology, infrastructure, product management, maintenance, quality management, controlling and marketing promote knowledge transfer and standardisation within the Group. Employee training for the uniform Java technology platform is particularly important for the strategic development of the Group.

In order to make contact with graduates in the relevant courses of study at an early stage, PSI is involved in promoting education and research in science and engineering at many different levels. For example, at its main locations the PSI Group has formed university partnerships that range from offering internships to cooperating on dual courses of study.

Since autumn 2010, PSI has been involved as an industry partner of the logistics research cluster and as a project partner in the environmentally friendly and sustainable energy engineering cluster, while since the beginning of 2016 it has also acted as a technology partner at the new European 4.0 Transformation Centre on the RWTH Aachen Campus.

One special aspect at PSI is that a significant share of PSI stock amounting to around 20% is held by employees and managers. After PSI went public, a large number of employees joined together to form a consortium. Its main objectives are the coordination of uniform voting by the employee shareholders involved at the Annual General Meeting. Since 2011, PSI has issued staff shares to promote employee participation; these shares can be acquired for this purpose on the stock market, for example.

The number of employees as at the end of the year rose by 122 to 1,787. A total of 902 employees were allocated to the Energy Management segment and 885 to Production Management.

PSI has been involved in social activities for many years. Examples include various regional initiatives to support charitable organisations based near PSI locations. In addition, PSI supports team sports activities of various different employee groups by funding participation in competitions and equipment. In early 2018, PSI was ranked 14th in the telecommunications and IT sector in a large-scale survey of working conditions at 2,000 German companies conducted by the magazine FOCUS and was recognised as a top employer.

Non-financial statement

In an internal process, PSI assessed the non-financial topic areas of the environment, customers, employees, society, human rights and combating corruption in terms of their relevance to the Group and derived non-financial key performance indicators on this basis. Because PSI is a developer of specialised software solutions that does not manufacture any physical products, it is primarily employee commitment and long-term customer relationships that are key to the PSI Group's success. In order to measure its performance with regard to these parameters, PSI has been calculating an employee commitment index and a customer loyalty index since 2017.

Employee commitment shows the employees' motivation and loyalty and the extent to which they identify with PSI. The employee commitment index includes average employee turnover, employee satisfaction and the average sick leave rate in the Group, with targets being defined for all three criteria. In the subsequent calculation of the index based on the respective level of target achievement, employee turnover and employee satisfaction are given a higher weighting than the sick leave rate. The PSI Group achieved an employee commitment index score of 80% in 2018 after 82% in 2017, meaning that it remained below the target range. For 2019, PSI is aiming for an index value of between 80% and 84%.

Long-term customer relationships form the basis for the PSI Group's sustained positive economic performance. The customer loyalty index therefore takes account of customers' willingness to conclude long-term maintenance and upgrade contracts and to provide a reference. Targets are defined and their achievement is measured both for the share of consolidated revenues attributable to maintenance and upgrade contracts and for the level of willingness to provide a reference. The target achievement levels calculated in this way are included in the index with equal weightings. In 2018, the customer loyalty index score came to 84% after 83% in the previous year, thus reaching the target range. For 2019, PSI is aiming for an index value of between 82% and 86%.

Statutory disclosures

Disclosures in accordance with section 315a (1) of the German Commercial Code (HGB)

As at 31 December 2018, the share capital of PSI Software AG amounted to EUR 40,185,256.96 and was divided into 15,697,366 no-par-value shares with an accounting par value of EUR 2.56. Each share confers the right to one vote. There are no different classes of shares. The shareholders exercise their voting rights at the Annual General Meeting in accordance with the statutory requirements and the Articles of Association. There may be statutory restrictions on voting rights in accordance with section 136 of the German Stock Corporation Act (AktG) or, to the extent that the Company holds treasury shares, in accordance with section 71 b AktG. In the second half of 2017, PSI Software AG issued a total of 28,889 shares in PSI Software AG to employees as staff shares. A contractual prohibition on the sale of these shares until 29 September 2019 was agreed. In the second half of 2018, PSI Software AG issued a total of 42,276 shares in PSI Software AG to employees as staff shares. A contractual prohibition on the sale of these shares until 28 September 2020 was agreed. There are no further restrictions with regard to voting rights or transfers of shares.

In the 2018 financial year, Mr. Norman Rentrop, Germany, held a 20.65% interest in PSI Software AG, held via Investmentaktiengesellschaft für langfristige Investoren TGV, which he controls. According to the notification in accordance with section 27a (1) of the German Securities Trading Act (WpHG) dated 7 September 2017, the investment in PSI Software AG serves the long-term objective of generating trading profits.

In the 2018 financial year, innogy SE, Essen, Germany, held a 17.77% interest in PSI Software AG. According to PSI Software AG's knowledge, innogy SE is a company in which RWE AG, Essen, has a majority shareholding. innogy SE is a major distribution grid operator and an important customer of PSI Software AG in the Energy Management segment. According to the notification from RWE Aktiengesellschaft in accordance with section 43 (1) sentence 3 of the German Securities Trading Act (WpHG) dated 27 December 2018, the investment in PSI Software AG does not serve the purpose of implementing strategic goals or generating trading profits.

PSI Software AG has not issued any shares with special rights.

There are no voting right controls at PSI Software AG in relation to employee shares if employees have an investment in the Company's capital and do not exercise control rights directly.

In accordance with Article 8 (1) of the Articles of Association, members of the Board of Directors are appointed and dismissed by the Supervisory Board, which also determines the number of members of the Board of Directors. Sections 84 et seq. AktG also apply to the appointment and dismissal of Board of Directors members.

In accordance with Article 11 of the Articles of Association, the Supervisory Board is authorised to make amendments and additions to the Articles of Association that affect the wording only. Other than this, the Articles of Association are resolved by the Annual General Meeting with a simple majority of the votes cast and a simple majority of the share capital represented when the resolution is adopted, as stipulated in Article 19 of the Articles of Association. This applies except in cases where the law requires resolutions to be adopted with a majority of at least three-quarters of the share capital represented when the resolution is adopted.

PSI Software AG has authorised capital of EUR 8.0 million in place until 11 May 2020 that was created by resolution of the Annual General Meeting on 12 May 2015. This resolution authorises the Board of Directors, with the approval of the Supervisory Board and without requiring a further resolution by the Annual General Meeting, to increase the Company's share capital in exchange for cash or contributions in kind. In particular, this can be used as acquisition currency for acquiring companies. The Company has not yet exercised this authorisation to date.

PSI Software AG also has contingent capital of EUR 8.0 million in place until 15 May 2022. This serves the purpose of servicing convertible and warrant-linked bonds and profit-sharing certificates. The Company was authorised to issue this contingent capital in a total nominal amount of up to EUR 100 million by the Annual General Meeting on 16 May 2017. The Company has not yet exercised this authorisation to date.

The Board of Directors of PSI Software AG was authorised by the Annual General Meeting on 16 May 2017 to acquire treasury shares in the Company in a volume of up to 10% of the share capital until the end of 30 June 2020. Together with treasury shares acquired for other reasons that are owned by or attributable to the Company, the shares acquired on the basis of this authorisation must not exceed 10% of the Company's share capital at any time. Treasury shares may be acquired only if the Company was able to establish a reserve in the amount of the expenses for the acquisition without reducing the share capital or any reserve to be established in accordance with the law or the Articles of Association that must not be used for payments to the shareholders. The authorisation must not be used for the purpose of trading in treasury shares. In keeping with the principle of equal treatment, the Board of Directors shall choose to acquire the shares either on the stock market or by way of a public purchase offer to all shareholders of the company. The authorisation may be exercised one or more times in full or in partial amounts.

There are no significant agreements of the Company that are subject to the condition of a change of control following a takeover bid.

Supplementary report

By way of an agreement dated 10 December 2018, PSI acquired the assets and assumed the liabilities of the "PRINS network control software" business area of BTC Business Technology Consulting AG, Oldenburg, with effect from 1 January 2019. The number of employees consequently increased to more than 1,900 on 1 January 2019 and PSI has also been represented at the Oldenburg location since January 2019.

Risk report

The PSI Group's risk policy has the aim of securing the Group's success in the long term. This requires effective identification and analysis of business risks in order to eliminate or limit them by means of suitable control measures.

To this end, PSI has set up a risk management system that is used by the management of the Company as a tool for the early recognition and prevention of risks. This particularly applies to risks whose effects could jeopardise the continued existence of the PSI Group as a going concern. The risk management tasks comprise risk identification, risk assessment, risk communication, risk management and control, risk documentation and risk system monitoring. The Company's risk management system is developed further on an ongoing basis and the knowledge gained from the management system is integrated in corporate planning.

Description of the key features of the internal control and risk management system with regard to the Group accounting process (section 289 (4) and section 315 (4) HGB)

The PSI Group's risk management system covers all organisational regulations and measures for identifying and dealing with the risks and opportunities of its business activities.

The Board of Directors has overall responsibility for the internal control and risk management system with regard to the accounting processes of the consolidated companies and the accounting process in the Group. The Accounting department prepares the consolidated financial statements for the PSI Group based on the recognised separate financial statements of the companies and reports consolidated financial information to the Board of Directors. The separate financial statements are prepared on the basis of a Group-wide accounting manual. All companies and divisions included in the consolidated financial statements are integrated by way of a clearly defined management and reporting organisation.

With regard to the accounting processes of the consolidated companies and the group accounting process, we consider features of the internal control and risk management system to be material if they could have a significant impact on the group accounting and the overall view presented in the consolidated financial statements including the Group management report. This particularly includes the following elements:

- identification of key risk areas and control areas relevant to the Group-wide accounting process
- controls for monitoring the Group-wide accounting process and its results at Board of Directors level and division level
- preventive control measures in the Finance and Accounting departments of the Group and the divisions and in operational, performance-related business processes that generate significant information for the preparation of the consolidated financial statements and the Group management report, including a separation of functions and predefined approval processes in relevant areas
- measures that ensure proper IT-based processing of facts and data relating to Group accounting
- In addition, the Group has implemented a risk management system with regard to the accounting process that includes measures to identify and assess significant risks and corresponding measures to limit risks in order to ensure the correctness of the consolidated financial statements

PSI has identified the following key risks and integrated them in its early warning system:

- market: too low level of new orders/order backlog
- employees: lack of availability of the necessary qualifications
- liquidity: bad payment terms and insufficient credit facilities
- costs and revenues: deviation from planning figures, particularly in project implementation or development

When assessing the risks, the individual categories are regularly regarded at business unit level. Depending on the risk assessment and the importance of the business unit for the Group, the Board of Directors intensifies the dialogue with the management of the business unit and resolves specific measures as required.

In the 2018 financial year, the risks were classified as not jeopardising the Group's continued existence as a going concern, neither individually nor in combination.

The risk management guideline governs the areas of:

- risk strategy: explicit principles for minimising the main risks and general risk management principles
- risk management organisation: responsibilities of the management levels and controllers involved
- risk identification, control and monitoring: tools for identifying risks and monitoring the key figures used
- risk management system: application of the Group-wide commercial information system and a Group-wide issue tracking solution

These provisions are supplemented by a guideline on risk management in projects. This governs the implementation of risk management in the project, the identification, recording, analysis and assessment of risks and the planning, specification and monitoring of measures to minimise risks in the context of projects. This particularly relates to measures to limit prefinancing in projects.

The commercial information system has an integrated management information system (MIS) and serves as a uniform information and controlling tool for all levels of the Group. Regular MIS reports, which are generally prepared on a monthly basis, provide key figures from the divisions as defined in the guideline system:

- development of the order situation and capacity utilisation
- liquidity planning
- development of net asset situation and financial position
- forecast of key economic figures
- sales forecast and market development
- project controlling and contract management

Analysis of opportunities and risks

The PSI Group is exposed to a number of risks, including normal risks from its business operations, general economic risks, tax and financial risks, and risks that could arise from the shareholder structure. In the 2018 financial year, the risk profile changed mainly as a result of the stabilisation of business in Southeast Asia and the further stabilisation of the steel market and the oil price. There were no substantial changes in the risk profile with regard to the shareholder structure or the regulatory environment in the energy sector.

Opportunities and risks for the segments

In Energy Management, PSI increased its new orders, revenues and earnings in 2018. It was particularly the area of electricity grids that developed positively, while the gas grid business only slowly recovered. In the short term, there could be a decline in investments in electrical distribution grids in Germany due to the cyclical nature of the incentive regulation, while in the Gas and Oil division stabilising raw material prices provide the opportunity for a further upturn in demand in export business. In the long term, the transnational effects of the expansion of renewable energy, continuing digitalisation, innovative energy services, integrated energy, electric mobility and the expansion of storage technologies will result in additional business potential, as investments will be required for these purposes. The expansion of international business may result in an increased need for prefinancing and guarantee credit.

By their nature, major export projects involve implementation risks in relation to local partners and their training, differing performance interpretations and standards and sometimes also changes in customer policy. The existing international partnerships extend the sales reach and thus increase the opportunities for sales of PSI's products. At the same time, they also create new dependencies.

The Transport Systems division posted a decline in revenues and a significant increase in new orders. In this area, PSI is largely dependent on the financial situation of its predominantly public-sector clients. Over the last few years, PSI has developed unique selling points and consolidated its market position, particularly for depot management systems. As a result of the increasing deployment of electric vehicles in local public transport, this means there is growth potential in the shape of new functions such as range management and charging management.

With the PSI Incontrol Group, PSI has had direct access to the markets in Southeast Asia and the Middle East since 2009. PSI has access to inexpensive hardware and integration services. The cost of services and equipment can be reduced by using a relatively large pool of qualified specialists in the region. As a result of the high share of system integration business and the associated need to prefinance projects, business at PSI Incontrol also entails risks. In 2018, PSI continued to invest in training IT specialists and developing the software business, which is less strongly impacted than system integration business by fluctuations in the economic cycle.

In Production Management, the Logistics, Metal Production and Automotive/Industry divisions benefited from the positive economic development, with the effect that the segment's revenues and earnings saw an increase overall. In the Metal Production division, the discussion regarding import duties led to uncertainty and postponed investments among European customers, as well as to considerably higher new order in the USA. Overall, however, PSI recorded a decline in new orders in the Metal Production division. Despite stabilisation in the global steel market, there is still a risk that investments here may be postponed as a result of uncertainty in connection with possible import duties. There are opportunities in the event of trade agreements between the USA and Europe or between the USA and China, as well as continuing opportunities due to growing demand from large metal producers for group roll-outs of PSI solutions. In some countries of East Asia, the risk remains as a result of a not completely developed awareness for quality and trademark protection.

The Logistics and Production Control/ERP divisions are particularly affected by fluctuations in the economic climate on account of their market position and customer structure. For this reason, there is a risk that new orders may be too low in the event of a weak domestic economy. In the Logistics division, PSI is therefore primarily focusing on solutions for logistics service providers, internet companies and the automotive industry.

In 2018, the Logistics division recorded a further increase in demand for its renewed products and gained a major order in the area of airport logistics. The positive consumer climate, growth in online mail order business and the increasing complexity of industrial logistics flows will give rise to further growth potential for PSI's logistics solutions in the short and medium term. The production software subsidiary PSI Automotive & Industry is increasingly focusing on the growth trend Industry 4.0 and received further orders from innovative electric vehicle manufacturers. This creates growth potential due to the establishment of additional electric vehicle production plants, but also results in implementation risks, particularly in export business.

Opportunities and risks of internationalisation

The share of international activities declined in 2018, as revenues in Germany rose faster than in export business. Overall, the export share of 41.9% indicates that PSI still has only a limited dependency on the domestic market and that there are further international growth opportunities. However, the international expansion will give rise to new risks from the integration of new subsidiaries into the Group and dependency on international partners, exchange rates and legal systems. On the other hand, opportunities and risks will be more broadly diversified as a result of the further expansion of international activities. Due to the low share of revenues in the UK, Brexit does not pose any relevant risk to the PSI Group.

Opportunities and risks from new products and technologies

In order to strengthen its competitive position, PSI constantly invests in new product versions and product enhancements. At the same time, PSI has brought products and components together on a joint platform as part of a Group-wide convergence process to enable it to benefit from high quantities. The future income and liquidity development of the PSI Group will largely depend on the market success of its new products and on its command of newly developed technologies.

Risks from the shareholder structure

If attendance of the Annual General Meeting is considerably below 100%, there is a risk that one of the major shareholders of PSI Software AG may exercise decisive influence on the Annual General Meeting and use this for its own interests, which may differ from the Company's aims. The same risk arises if there is high attendance at the Annual General Meeting but major shareholders coordinate their voting. In addition, an acquisition of shares with negative tax effects cannot be ruled out.

Tax risks

PSI cannot rule out the risk that external audits by the taxation authorities may lead to subsequent tax claims for which the Company has not recognised provisions or that result in an unforeseen liquidity requirement. The tax audit for the years 2010 to 2013 was completed in 2018.

The tax audit for the years 2005 to 2009 had determined that the short-term ownership and the resulting possible allocation of a total of 28.60% of the voting right shares in the Company by Kajo Neukirchen GmbH, Eschborn, and Mr. Kajo Neukirchen in the second quarter of 2009 resulted in the loss of 25.65% of the eligible tax loss carryforwards. In 2017, the German Federal Constitutional Court had declared the underlying law to be unconstitutional based on an order for reference submitted by the Hamburg Fiscal Court. With the approval of the 2018 German Annual Tax Act by the Bundesrat (German Federal Council), section 8c sentence 1 of the old version of the German Corporation Tax Act (KStG) was deleted without substitution for the period from 2008 to 2015, meaning that the tax loss carryforwards of PSI Software AG and its subsidiaries that were lost on a pro rata basis in the second quarter of 2009 are preserved.

Financial risks

To finance its operating business, PSI uses instruments that chiefly consist of trade receivables, cash and cash equivalents, liabilities to banks and guarantees. The main risks in this context are credit risks, liquidity risks and fair value risks. Credit risks and liquidity risks are managed by using credit facilities and monitoring procedures. There is no concentration of credit risk for PSI with individual counterparties or with a group of counterparties. The Group endeavours to ensure that it has sufficient liquidity and credit facilities to meet its obligations.

The PSI Group predominantly enters into transactions concluded in euro. In the 2018 financial year, the Group did not use any transactions to hedge currency risks.

Employees

With technically challenging tasks, we succeed in hiring, integrating and permanently retaining qualified employees at our Company. Our staff turnover rate is low. The remuneration structure includes performance- and earnings-related components. Since the freezing of the pension provisions as at the end of 2006, all future benefits have been specified, direct salary components and have been almost entirely covered by insurance policies.

Future risks

PSI's strategy for the coming years is focused on the Group's further transformation into an international software product provider and on ongoing internationalisation. If this does not succeed as planned, there is a risk that the PSI Group may not achieve its revenues and earnings targets. In addition, PSI would then still be dependent to a large extent on the general economic development and regulatory framework in Germany.

Forecast

PSI started 2019 with an increased order backlog of EUR 139 million and a strengthened market position in the Electrical Energy division. Despite continued high expenses for research and development, there was an improvement in the operating result. With the conclusion of numerous product migrations and pilot projects, the conditions were created for a broader-based marketing of the new product versions to existing and new customers.

The trend towards further digitalisation of business processes in energy supply, production and logistics continued in 2018 and provides further business potential for the years ahead. The increasing interconnection of the electricity, heating and transport sectors (integrated energy) and the associated trend towards expansion of electric mobility represent important driving factors. As a leading provider of cross-sector grid control systems, PSI is very well positioned in this market and has increased its market share in recent years. In production management, the development of production capacity for electric vehicles and vehicle components requires investments in new manufacturing processes and software, while in local public transport investments in infrastructure and infrastructure management are needed. PSI has developed new products and functions for these areas and will benefit from this in 2019. In the Electrical Energy division, PSI's focus in 2019 will be on the integration of the activities acquired as at 1 January and on export business, as the expansion of renewable energy is giving rise to additional sales opportunities in further export regions. In the Gas and Oil division, an upturn in oil-price-dependent export business can be observed following the stabilisation of raw material prices, meaning that demand is likely to pick up further in 2019. In Production Management, we intend to build on the previous year's good development and generate further growth in 2019, particularly in the areas of automotive production and logistics.

In continuing our strategy of specialisation and internationalisation, the focus has increasingly shifted from raw-material-producing countries to industrialised consumer countries. Consequently, we are aiming for further growth in Northern Europe and North America in particular over the coming years.

By means of the migration of further products to the new, uniform software platform and convergence of our technical base, we intend to further increase the quantities sold and expand the share of revenues attributable to licences, upgrades and maintenance. Customers also use the PSI software platform for their own developments, modifications and roll-outs. This reduces risks for PSI and increases the quantities sold. We will continue to selectively expand our portfolio in order to take advantage of opportunities and increase our efficiency. In this way, we will improve the basis for enabling us to generate double-digit returns in the future.

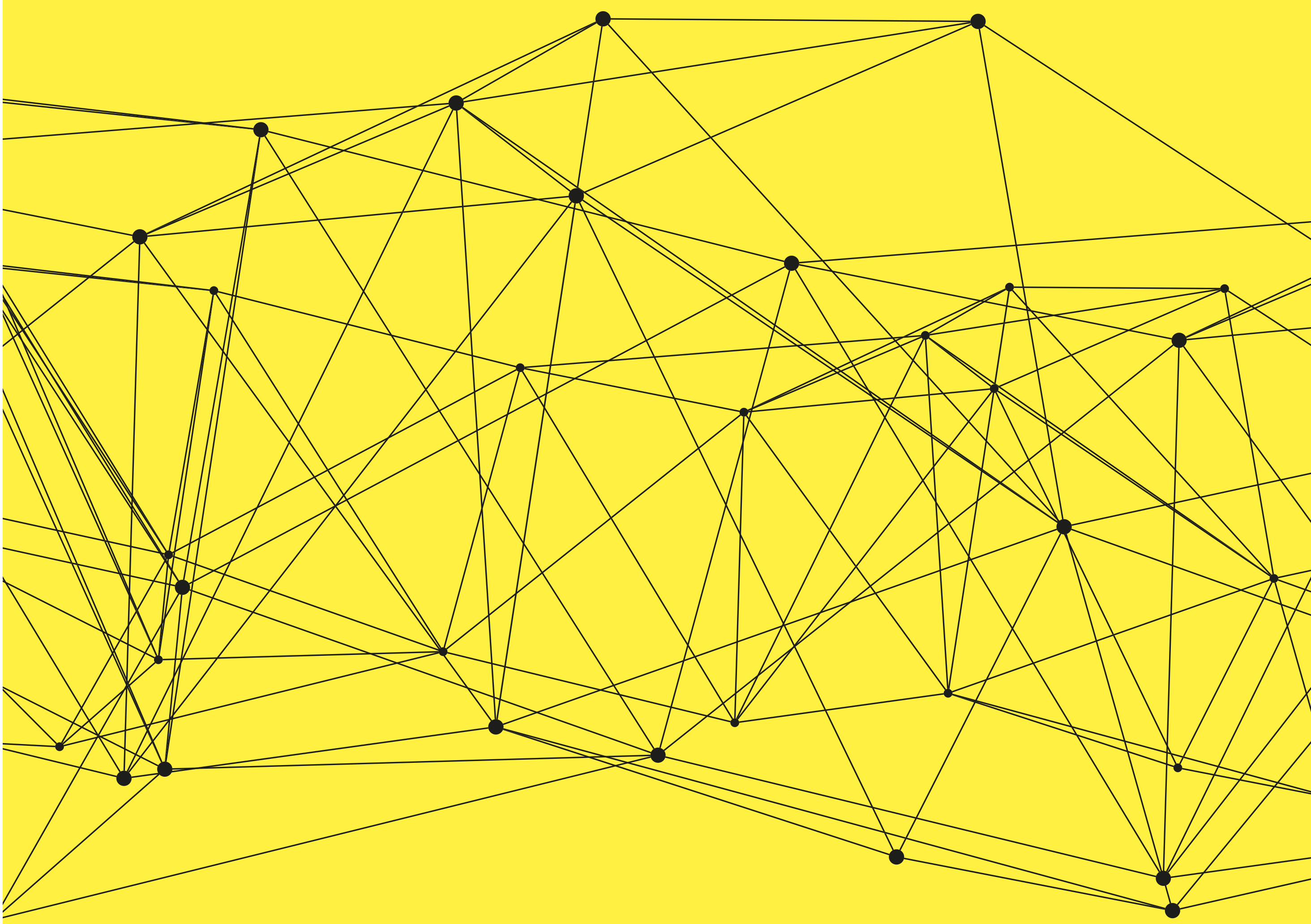
In the Energy Management segment, we anticipate a positive trend for Electrical Energy in 2019 and, in the event that oil and gas prices remain stable, a further upturn in demand in this business area. In Production Management, we are continuing to invest in the future-oriented topic of Industry 4.0 and software for industrial intelligence. We intend to increase our revenues and profitability further with the renewed product base. Overall, in 2019 we are aiming to increase consolidated revenues by just under 10% and improve the operating result by around 10% to more than EUR 17 million. Due to the ongoing risks in some export regions, we consider it appropriate to state a percentage range. We are also aiming for a slight increase in licence and maintenance revenues, with our focus here being on long-term maintenance and upgrade agreements and less on licences. In order to achieve our goals, we will continue to invest in the unique selling points and quality of our development and runtime platform and our products.

Berlin, 6 March 2019

Dr. Harald Schrimpf

Harald Fuchs

CONSOLIDATED FINANCIAL STATEMENTS (IFRS)



Consolidated balance sheet
as of 31 December 2018 (IFRS)

in EUR thousand	Note	**2018**	2017
ASSETS			
Non-current assets			
Property, plant and equipment	C. 1	13,592	12,531
Intangible assets	C. 1	58,885	56,489
Investments in associated companies	C. 2	440	150
Deferred tax assets	C. 11	7,967	8,377
		80,884	**77,547**
Current assets			
Inventories	C. 2	8,712	7,823
Net trade receivables	C. 3	34,407	31,611
Receivables from long-term development contracts	C. 4	34,367	33,118
Other assets	C. 5	5,722	5,779
Cash and cash equivalents	C. 6	44,579	38,132
		127,787	**116,463**
		208,671	**194,010**

in EUR thousand	Note	**2018**	2017
EQUITY AND LIABILITIES			
Shareholders' equity			
Share capital	C. 7	40,185	40,185
Capital reserves	C. 7	35,137	35,137
Reserve for treasury shares	C. 7	–88	–328
Other reserves	C. 7	–19,719	–18,823
Unappropriated surplus	C. 7	31,115	24,126
		86,630	**80,297**
Non-current liabilities			
Pension provisions and similar obligations	C. 8	51,284	50,540
Deferred tax liabilities	C. 11	4,797	3,494
		56,081	**54,034**
Current liabilities			
Other liabilities		16,440	14,564
Other liabilities	C. 10	31,194	29,206
Liabilities from long-term development contracts	C. 4	16,531	13,287
Financial liabilities	C. 9	1,795	2,622
		65,960	**59,679**
		208,671	**194,010**

Consolidated income statement

for the period from 1 January 2018 to 31 December 2018 (IFRS)

in EUR thousand	Note	**2018**	2017
Revenues	D. 12	199,156	186,096
Other operating income	D. 13	5,902	4,207
Cost of materials	D. 14	–28,919	–27,228
Personnel expenses	D. 15	–121,279	–112,343
Depreciation and amortisation	D. 16	–4,611	–4,351
Other operating expenses	D. 16	–34,799	–33,016
Operating result		**15,450**	**13,365**
Net finance costs	D. 17	–927	–841
Earnings before taxes		**14,523**	**12,524**
Income taxes	C. 11	–3,938	–3,027
Group net result		**10,585**	**9,497**
Consolidated earnings per share (basic and diluted) (in EUR)	D. 18	0.68	0.61
Average number of shares outstanding (in thousands)	D. 18	15,670	15,641

Consolidated statement of comprehensive income

for the period from 1 January 2018 to 31 December 2018 (IFRS)

in EUR thousand	**2018**	2017
Group net result	10,585	9,497
Items that are reclassified to consolidated net profit in subsequent periods **Currency translation of foreign operations**	**320**	**–1,652**
Items that are not reclassified to consolidated net profit in subsequent periods Actuarial losses (previous year: gains)	–1,733	592
Income tax effects	517	–175
	–1,216	**417**
Other comprehensive income after taxes	**–896**	**–1,235**
Consolidated total comprehensive income	**9,689**	**8,262**

Consolidated cash flow statement
for the period from 1 January to 31 December 2018 (IFRS)

in EUR thousand	**2018**	2017
1. Cash flow from operating activities		
Consolidated earnings before income taxes	**14,523**	**12,524**
Adjustment of annual earnings for non-cash transactions		
Amortisation of intangible assets	2,071	1,880
Depreciation of property, plant and equipment	2,540	2,471
Income from investments in associated companies	–134	–142
Interest income	–177	–153
Interest expense	1,084	943
Other non-cash income/expenses	766	811
	20,673	**18,334**
Change in inventories	–943	–1,424
Change in trade receivables and receivables from long-term development contracts	–3,711	940
Change in other assets	–623	–338
Change in provisions	–1,670	–1,523
Change in trade payables	1,811	2,038
Change in other liabilities	5,085	–14,302
	20,622	**3,725**
Interest paid	–252	–134
Income taxes paid	–1,381	–2,423
	18,989	**1,168**
2. Cash flow from investing activities		
Outflows for investments in intangible assets	–2,527	–1,353
Outflows for investments in property, plant and equipment	–3,649	–3,031
Outflows for investments in associated companies	–290	0
Outflows for investments in subsidiaries	–1,500	0
(less cash and cash equivalents acquired)	231	0
Inflows from distributions by associated companies	134	142
Interest received	177	153
	–7,424	**–4,089**
3. Cash flow from financing activities		
Outflows for the acquisition of treasury shares	–422	–297
Dividends paid to shareholders of the parent	–3,596	–3,439
Inflows/outflows from the repayment/borrowing of financial liabilities	–827	2,622
	–4,845	**–1,114**
4. Cash and cash equivalents at end of period		
Cash-effective change in cash and cash equivalents	6,720	–4,035
Exchange-rate-related changes in cash and cash equivalents	–273	–841
Cash and cash equivalents at beginning of period	38,132	43,008
	44,579	**38,132**

Consolidated statement of changes in equity

as of 31 December (IFRS)

in EUR thousand	Share capital	Capital reserve	Reserve for treasury shares
Balance as at 1 January 2017	**40,185**	**35,137**	**–528**
Group net result			
Other comprehensive income after taxes			
Consolidated total comprehensive income after taxes			
Dividend payment to shareholders of the parent			
Acquisition of treasury shares			–297
Issue of treasury shares			497
Total capital transactions	0	0	200
Balance as at 1 January 2018	**40,185**	**35,137**	**–328**
Group net result			
Other comprehensive income after taxes			
Consolidated total comprehensive income after taxes			
Dividend payment to shareholders of the parent			
Acquisition of treasury shares			–422
Issue of treasury shares			662
Total capital transactions	0	0	240
Balance as at 31 December 2018	**40,185**	**35,137**	**–88**

Consolidated segment reporting

for 2018 and 2017 (IFRS)

	Energy Management		**Production Management**	
in EUR thousand	31.12.2018	31.12.2017 *adjusted	31.12.2018	31.12.2017 *adjusted
Revenues				
Revenues with third parties	99,706	91,576	99,450	94,520
Revenues with other segments	2,917	2,562	8,651	6,391
Total revenues	**102,623**	**94,138**	**108,101**	**100,911**
Segment operating result before depreciation and amortisation	**9,056**	**6,604**	**12,184**	**11,941**
Segment operating result before depreciation and amortisation from purchase price allocation	**6,851**	**4,445**	**10,500**	**10,436**
Depreciation and amortisation from purchase price allocation	–85	–85	–496	–525
Segment operating result	**6,766**	**4,360**	**10,004**	**9,911**
Net finance costs	–449	–541	–343	–300
Segment result	**6,317**	**3,819**	**9,661**	**9,611**

* The amounts presented for 2017 differ from the amounts in the report as at 31 December 2017 as a result of adjustments to segment reporting (see page 76 of the notes, segment reporting).

Other reserves	Unappropriated surplus/ cumulative loss	Total
–17,588	**18,068**	**75,274**
	9,497	9,497
–1,235		–1,235
–1,235	**9,497**	**8,262**
	–3,439	–3,439
		–297
		497
0	–3.439	–3,239
–18,823	**24,126**	**80,297**
	10,585	10,585
–896		–896
–896	**10,585**	**9,689**
	–3,596	–3,596
		–422
		662
0	–3,596	–3,356
–19,719	**31,115**	**86,630**

Reconciliation		**PSI Group**	
31.12.2018	31.12.2017 *adjusted	31.12.2018	31.12.2017
0	0	199,156	186,096
–11,568	–8,953	0	0
–11,568	**–8,953**	**199,156**	**186,096**
–1,246	**–829**	**19,994**	**17,716**
–1,320	**–906**	**16,031**	**13,975**
0	0	–581	–610
–1,320	**–906**	**15,450**	**13,365**
–135	0	–927	–841
–1,455	**–906**	**14,523**	**12,524**

Development of fixed assets
for the period from 1 January to 31 December 2017 (IFRS)

in EUR thousand	Costs					
	1.1.2017	Exchange differences	Reclassifications	Additions	Disposals	**31.12.2017**
Intangible assets						
Other intangible assets	24,206	–20	0	539	812	23,913
Goodwill	51,172	–625	0	0	0	50,547
Capitalised software development costs	2,464	0	0	814	0	3,278
	77,842	**–645**	**0**	**1,353**	**812**	**77,738**
Property, plant and equipment						
Land and buildings	18,311	–11	0	191	0	18,491
Computers and computer accessories	15,598	–76	0	2,352	602	17,272
Other equipment, operating and office equipment	7,795	17	130	407	523	7,826
Advance payments	130	0	–130	81	0	81
	41,834	**–70**	**0**	**3,031**	**1,125**	**43,670**
Financial assets						
Investments in associated companies	150	0	0	0	0	150
	150	0	0	0	0	150
	119,826	**–715**	**0**	**4,384**	**1,937**	**121,558**

Development of fixed assets
for the period from 1 January to 31 December 2018 (IFRS)

in EUR thousand	Costs						
	1.1.2018	Exchange differences	Change in scope of consolidation	Reclassifi-cations	Additions	Disposals	**31.12.2018**
Intangible assets							
Other intangible assets	23,913	–10	815	0	2,354	541	26,531
Goodwill	50,547	399	729	0	0	0	51,675
Capitalised software development costs	3,278	0	0	0	173	0	3,451
	77,738	**389**	**1,544**	**0**	**2,527**	**541**	**81,657**
Property, plant and equipment							
Land and buildings	18,491	15	0	81	227	0	18,814
Computers and computer accessories	17,272	15	14	0	2,434	923	18,812
Other equipment, operating and office equipment	7,826	5	19	0	988	533	8,305
Advance payments	81	0	0	–81	0	0	0
	43,670	**35**	**33**	**0**	**3,649**	**1,456**	**45,931**
Financial assets							
Investments in associated companies	150	0	0	0	290	0	440
	150	0	0	0	290	0	440
	121,558	**424**	**1,577**	**0**	**6,466**	**1,997**	**128,028**

	Accumulated amortisation/depreciation					Carrying amounts	
	1.1.2017	Exchange differences	Additions	Disposals	**31.12.2017**	**31.12.2017**	31.12.2016
	16,958	–15	1,420	707	17,656	6,257	7,248
	2,258	0	0	0	2,258	48,289	48,914
	875	0	460	0	1,335	1,943	1,589
	20,091	**–15**	**1,880**	**707**	**21,249**	**56,489**	**57,751**
	10,704	–11	462	0	11,155	7,336	7,607
	12,964	–71	1,457	586	13,764	3,508	2,634
	6.013	–15	552	330	6,220	1,606	1,782
	0	0	0	0	0	81	130
	29,681	**–97**	**2,471**	**916**	**31,139**	**12,531**	**12,153**
	0	0	0	0	0	150	150
	0	0	0	0	0	150	150
	49,772	**–112**	**4,351**	**1,623**	**52,388**	**69,170**	**70,054**

	Accumulated amortisation/depreciation					Carrying amounts	
	1.1.2018	Exchange differences	Additions	Disposals	**31.12.2018**	**31.12.2018**	31.12.2017
	17,656	–8	1,455	541	18,562	7,969	6,257
	2,258	0	0	0	2,258	49,417	48,289
	1,335	0	617	0	1,952	1,499	1,943
	21,249	**–8**	**2,072**	**541**	**22,772**	**58,885**	**56,489**
	11,155	15	316	0	11,486	7,328	7,336
	13,764	18	1,686	913	14,555	4,257	3,508
	6,220	–20	537	439	6,298	2,007	1,606
	0	0	0	0	0	0	81
	31,139	**13**	**2,539**	**1,352**	**32,339**	**13,592**	**12,531**
	0	0	0	0	0	440	150
	0	0	0	0	0	440	150
	52,388	**5**	**4,611**	**1,893**	**55,111**	**72,917**	**69,170**

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

PSI Software AG, Berlin, as of 31 December 2018

A. General information on the Company

The parent company of the PSI Group is PSI Software AG (formerly PSI Aktiengesellschaft für Produkte und Systeme der Informationstechnologie) (PSI AG), headquartered at Dircksenstrasse 42–44 in 10178 Berlin, Germany. It is entered in the commercial register of Berlin-Charlottenburg with the number HRB 51463.

The Board of Directors prepared the consolidated financial statements as 31 December 2018 and the group management report for the 2018 financial year on 6 March 2019 and then approved them for submission to the Supervisory Board.

The business operations of the PSI Group comprise the development and sale of software systems and products that meet the specific needs and requirements of customers chiefly operating in the following industries and service sectors: energy supply, production, infrastructure, software technology, internet applications and business consultancy. In addition, the PSI Group performs services of all kinds in the field of data processing, sells electronic equipment and runs data processing systems.

The PSI Group is divided into two main business areas (segments), Energy Management and Production Management.

The Company is publicly listed in the Prime Standard on the German stock exchange in Frankfurt am Main (securities identification number (WKN), A0Z1JH).

B. Presentation of accounting policies and financial risk management methods

Basis of preparation of the financial statements

The consolidated financial statements of the PSI Group are generally prepared on the basis of the historical cost principle.

The consolidated financial statements of the PSI Group are prepared in accordance with International Financial Reporting Standards (IFRSs) as endorsed by the EU. The consolidated financial statements were prepared in euro. Unless specified otherwise, all figures are rounded up or down to the nearest thousand euro in line with commercial rounding.

Changes in accounting policies

The accounting policies applied in the 2018 financial year generally correspond to those applied in the previous year, with the exception of the new accounting standards presented below.

Effects of new accounting standards required to be applied in the financial year

On 24 July 2014, the IASB published the final standard IFRS 9 “Financial Instruments” (IFRS 9 [2014]), which incorporates the results of all phases of the IFRS 9 project and supersedes both IAS 39 “Financial Instruments, Recognition and Measurement” and all earlier versions of IFRS 9 “Financial Instruments”. The standard includes new regulations on classification and measurement, impairment and hedge accounting. IFRS 9 is to be applied for the first time for the financial year beginning on or after 1 January 2018. The PSI Group does not currently recognise any hedges. When classifying financial assets, the Group will maintain the previously applied method of trade receivables measured at amortised cost only. Due to the structure of trade receivables, it is not necessary to apply IFRS 9 to map statistically determined valuation allowance ratios. The first-time application of IFRS 9 therefore does not have any impact on the net assets, financial position and results of operations.

IFRS 15 was published in May 2014 and is to be applied for the first time for the financial year beginning on or after 1 January 2018. The standard is to be applied retrospectively. The standard introduces a new model for revenues recognition with five analysis steps that is to be applied to all revenues from contracts with customers. The key principle of the standard is that an entity must recognise revenues at the time of the transfer of goods or services to customers and in the amount of the consideration that the entity can expect in return for the transfer of these goods or services. The principles in IFRS 15 provide a structured approach for the measurement and recognition of revenues. The scope of the standard extends to all types of sectors and companies and therefore supersedes all existing provisions relating to revenues recognition (IAS 11 “Construction Contracts”, IAS 18 “Revenue”, IFRIC 13 “Customer Loyalty Programmes”, IFRIC 15 “Agreements for the Construction of Real Estate”, IFRIC 18 “Transfers of Assets from Customers” and SIC 31 “Revenue – Barter Transactions Involving Advertising Services”). The application of the new standard required more estimates and judgements, since the amount of revenues to be recognised is determined by the amount of the consideration that the entity can expect in return for the transfer of the goods or services.

The PSI Group started applying the new standard as at the required date on 1 January 2018, using the modified retroactive method.

- In the PSI Group, the timing of revenue recognition for individual performance obligations is affected by the transition to IFRS 15. The result of the contract review shows that proprietary licences, hardware and associated integration services contributed under long-term project contracts together represent a combined performance obligation in accordance with IFRS 15. Proprietary licences, hardware and services represent input factors for producing a contractually owed combined output.
- The vast majority of services under long-term project contracts that are accounted for using the percentage-of-completion method meet the requirement for period-based recognition. As part of the projects, an asset is created that does not have any alternative use (IFRS 15.35 c); while performing services, the PSI Group is legally entitled to payment for the services already performed. This did not result in any effects compared to the previous method.
- The PSI Group grants warranties in its ordinary course of business. These often represent an assurance for the customer that the services in question will conform to the contractually agreed specifications after acceptance. As before, these warranties are accounted for in accordance with IAS 37. Occasionally, an extension of the usual warranty period is agreed with individual customers. Such extended warranties are still recognised using a period-based method over the period for which they are granted beyond the usual warranty period. There were no effects in the PSI Group, as these extended warranties are often already priced individually and recognised using a period-based method.
- The application of the new standard did not have any impact on equity.

On 8 December 2016, the IFRS Interpretations Committee (IFRS IC) of the IASB issued the new interpretation IFRIC 22, Foreign Currency Transactions and Advance Consideration. IFRIC 22 contains application guidance with regard to determining the exchange rate to be used for prepayments in the context of foreign currency transactions. As announced in the Official Journal dated 3 April 2018, the European Union (EU) has incorporated IFRIC 22, Foreign Currency Transactions and Advance Consideration, into European law. IFRIC 22 clarifies the accounting for transactions that include the receipt or payment of advance consideration in a foreign currency. IFRIC 22 is effective for accounting periods beginning on or after 1 January 2018. In the PSI Group, contracts involving long-term development are affected by the application of this IFRIC. The contracts have been reviewed and measured accordingly. There was no impact on the net assets, financial position and results of operations.

Effects of new accounting standards that were not yet required to be applied in the financial year

The IASB has published the following standards and interpretations that were not yet required to be applied in the 2018 financial year. These standards and interpretations are not being applied early by the Group:

In January 2016, the IASB published the new standard IFRS 16 on accounting for leases, which has a significant impact on the presentation of the net assets, financial position and results of operations following its adoption in the Official Journal of the European Union on 31 October 2017. IFRS 16 introduces a single lessee accounting model and supersedes the existing guidance on leases, including IAS 17, Leases, and IFRIC 4, Determining Whether an Arrangement Contains a Lease. As a result, previously unrecognised leases must be recognised as assets (for the right of use) and lease liabilities in the future. There are exceptions for short-term leases and leases for low-value assets. IFRS 16 requires additional disclosures in the notes for both lessees and lessors. IFRS 16 applies for the first time to financial years beginning on or after 1 January 2019.

The PSI Group will apply the standard for the financial year beginning on 1 January 2019. As part of a Group-wide project for the implementation of the new standard, which has now been completed, the following decisions were made and the following findings were obtained:

- In accordance with the transitional provisions of IFRS 16, the transition will take place in line with the modified retrospective method. The comparative information therefore will not be restated.
- It is also intended to recognise the rights of use in the same amount as the lease liability when applying IFRS 16 for the first time.
- Leases with a term of less than 12 months will not be accounted for in accordance with IFRS 16; the option will be exercised. Leases with a low value will not be including in the measurement in accordance with IFRS 16; the option will not be exercised.
- The application of IFRS 16 will have the following effects on the presentation of the Group's net assets, financial position and results of operations:

  - The PSI Group mainly enters into leases as an operating lessee. The transition effect will mostly result from the properties leased by the PSI Group. With regard to the minimum lease payments from leased properties and movable assets, which are reported under other financial obligations, the first-time application will lead to an increase in non-current assets due to the recognition of rights of use (approximately EUR 22.6 million). Financial liabilities will accordingly increase due to the recognition of the corresponding liabilities. Because IFRS 16 specifies that the repayment portion of the lease payments is to be shown as part of the cash flow from financing activities, the operating cash flow in the cash flow statement will improve.
  - In the income statement, the previously recognised other operating rental expenses of approximately EUR 4.5 million will in future be replaced by additional expenses from amortisation of the rights of use and interest expenses from accrual of interest on the liability.
- The PSI Group does not currently act as a lessor.

In June 2017, IFRIC 23 “Uncertainty over Income Tax Treatments” was issued by the IASB. It clarifies recognition and measurement in relation to uncertain income tax items. The interpretation applies to taxable profits (tax losses), tax bases, unused tax losses, unused tax credits and tax rates in cases where there is uncertainty regarding the income tax treatment in accordance with IAS 12. IFRIC 23 is effective for accounting periods beginning on or after 1 January 2019. Earlier application is permitted. The PSI Group is currently examining what impact application of the interpretation will have on the consolidated financial statements.

The IASB and the IFRS IC published further pronouncements in the year under review. The standards and pronouncements required to be applied for the first time in the financial year did not have any significant effects on the consolidated financial statements of the PSI Group.

Significant judgements, estimates and assumptions

In preparing the consolidated financial statements, the management makes judgements, estimates and assumptions that affect the amount of reported income, expenses, assets and liabilities and the associated disclosures as well as the disclosure of contingent liabilities.

In applying the Group’s accounting policies, the management did not make any significant judgements that have a significant impact on the amounts in the consolidated financial statements.

The main assumptions regarding the future and other major sources of estimation uncertainty at the end of the reporting period that entail a risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are described below. The Group’s assumptions and estimates are based on parameters that were available when the consolidated financial statements were prepared. However, these situations and the assumptions regarding future developments may change as a result of market trends and market conditions that are beyond the control of the Group. Such changes are not taken into account in the assumptions until they occur.

Impairment of non-current assets: The PSI Group tests non-current assets for impairment once a year based on the provisions of IAS 36. The impairment tests are based on the future surplus cash generated for individual assets or for groups of assets combined in cash-generating units. An asset or a cash-generating unit is impaired if its carrying amount exceeds its recoverable amount. The recoverable amount of an asset or a cash-generating unit is the higher of its fair value less costs to sell and its value in use. Value in use is calculated using a discounted cash flow method. The recoverable amount depends on the discount rate used when applying the discounted cash flow method as well as on the expected future cash inflows and the growth rate used for extrapolation purposes. Significant non-current assets that are tested for impairment on an annual basis relate to the goodwill reported in the PSI Group. Further details with regard to impairment testing can be found in section C. 1 of the notes. The carrying amount of the goodwill tested for impairment amounted to EUR 49,417 thousand as at 31 December 2018 (previous year: EUR 48,289 thousand, see Goodwill, page 67).

Project valuation: The PSI Group recognises revenues on the basis of estimated performance in the projects. Performance estimates are based on an estimated hourly volume and estimated costs for purchased services or on contractually agreed milestones and are continuously updated. Further details on the income recognised for projects but not yet invoiced are provided in section C. 4 of the notes. Recognised partial profits amounted to EUR 14,166 thousand as at 31 December 2018 (previous year: EUR 15,028 thousand).

Deferred taxes: Deferred tax assets are recognised for all unused tax loss carryforwards and temporary differences to the extent that it is probable or there is convincing evidence that taxable income will be available for this purpose, meaning that the loss carryforwards can actually be used. To determine the amount of the deferred tax assets, the management must make an estimate based on the expected timing and amount of future taxable income and on the future tax planning strategy (timing of tax results, taking account of tax risks, etc.). As at 31 December 2018, the amount of non-capitalised tax benefits from loss carryforwards for corporation tax (including foreign companies) came to EUR 50.6 million, while those from loss carryforwards for trade tax came to EUR 49.0 million (previous year: EUR 42.0 million/EUR 29.9 million). No deferred tax assets have been accrued for these tax losses. Deferred tax assets attributable to temporary differences amounted to EUR 7,967 thousand as at 31 December 2018 (previous year: EUR 8,377 thousand), while deferred tax liabilities amounted to EUR 4,797 thousand (previous year: EUR 3,494 thousand). Further details are presented in section C. 11 of the notes.

Pensions and other post-employment benefits: The expenses from post-employment defined benefit plans and the present value of the pension liability are determined using actuarial calculations. The actuarial valuation is based on assumptions relating to discount rates, the expected retirement age, future increases in wages and salaries, mortality, and future pension increases. In view of the long-term nature of these plans, such estimates are subject to significant uncertainties. All assumptions are reviewed at the end of each reporting period. The management determines an appropriate discount rate based on the interest rates of corporate bonds that are denominated in the same currency as the post-employment benefit obligation and have a rating of at least AA from an internationally recognised rating agency. Where necessary, these interest rates are adjusted to the expected duration of the defined benefit obligation by way of extrapolation along the yield curve. The provision for pensions and similar obligations amounted to EUR 51,284 thousand as at 31 December 2018 (previous year: EUR 50,540 thousand). Further details can be found in section C. 8 of the notes.

Development costs: Development costs are capitalised using the accounting policy described on page 70. Initial capitalisation of the costs is based on the management's assessment that technical and commercial viability is demonstrated. For the purposes of determining the amounts to be capitalised, the management makes assumptions with regard to the amount of expected future cash flows from the project. The carrying amount of capitalised development costs amounted to EUR 1,499 thousand as at 31 December 2018 (previous year: EUR 1,943 thousand).

Principles of consolidation

a) Subsidiaries

The financial statements of the Group comprise PSI AG and the companies it controls. The consolidated financial statements include PSI AG and its subsidiaries over which it exercises control as defined in IFRS 10. PSI AG controls an investee when it has direct or indirect power over the investee, is exposed to variable returns from the investee and has the ability to affect the investee's variable returns through its power over it.

Company acquisitions are accounted for using the acquisition method in accordance with IFRS 3. Companies acquired or sold during the financial year under review are included in the consolidated financial statements starting from the date of the acquisition or sale.

The excess of the cost of an acquisition over the interest in the fair value of the identifiable assets and liabilities acquired as at the date of the acquisition transaction is referred to as goodwill and recognised as an asset. The identifiable assets and liabilities recognised are measured at their fair values as at the acquisition date.

The following changes occurred in the 2018 financial year with regard to the fully consolidated companies:

By way of an agreement dated 25 July 2018, 100% of the shares in Moveo Software GmbH, headquartered in Potsdam, Germany, were acquired. At the time of the acquisition, the Company had assets of EUR 918 thousand and liabilities of EUR 684 thousand. Net assets (at their carrying amounts) totalled EUR 234 thousand. As part of the purchase price allocation, these net assets were compared against the acquisition cost (cash purchase price of EUR 1,500 thousand). The resulting difference is attributable to intangible assets with a limited useful life and to goodwill. The intangible assets mainly result from the valuation of the "profahr" software product developed internally by Moveo. The goodwill particularly results from Moveo's position as a provider of software solutions for transport companies in Germany, Austria and Switzerland and the associated professional and technological expertise.

If the newly acquired subsidiary had already been included in the consolidated financial statements of PSI AG as at 1 January 2018, this would have resulted in consolidated revenues of EUR 200,250 thousand and consolidated net income of EUR 10,523 thousand.

The following overview shows the fair values of the assets acquired and the liabilities assumed as at the acquisition date:

	EUR thousand
Non-current assets	
Property, plant and equipment	33
Other intangible assets	815
Current assets	
Receivables from long-term development contracts	165
Trade receivables	400
Other assets	39
Cash and cash equivalents	231
Liabilities	
Deferred tax liabilities	228
Other liabilities	173
Other liabilities	382
Liabilities from long-term development contracts	129
Total identifiable net assets at fair value	**771**
Goodwill resulting from the acquisition	729
Consideration	**1,500**

As in the previous year – with the exception of Moveo Software GmbH, Potsdam, which was included in the consolidated financial statements for the first time – PSI AG and all companies that are controlled by PSI AG were included in the consolidated financial statements.

In the 2017 financial year, there were no significant changes with regard to the fully consolidated companies.

b) Associated companies

An associated company as defined in IAS 28 is a company in which the PSI Group generally holds more than 20% of the voting rights and over which the Group has significant influence. Investments in associated companies are accounted for using the equity method. In accordance with the equity method, investments in an associated company are recognised in the balance sheet at acquisition cost plus changes in the Group's share of the associated company's net assets that occurred after the acquisition. The consolidated income statement includes the share of the associated company's profit or loss attributable to the Group. Changes reported directly in the associated company's equity are recognised by the Group in the amount of its share in the statement of changes in equity where appropriate. Unrealised gains and losses from transactions between the Group and the associated company are eliminated in line with the share in the associated company.

The investments in the following associated companies are measured using the equity method:

- caplog-x GmbH, Leipzig ("caplog-x"), 31.3%
- OOO Gazavtomatika dispetcherskije sistemy, Russia, 33.0%

The carrying amount of the shares in the associated company caplog-x GmbH, Leipzig, changed due to an increase in the capital reserve in the financial year. This happened by way of the conversion of a portion of the loan granted in the financial year. The share in the company still amounts to 31.3%.

c) Consolidation measures and uniform measurement throughout the Group

The annual financial statements of the subsidiaries and associated companies included in the consolidated financial statements are based on uniform accounting standards and reporting periods/reporting dates.

Intragroup balances and transactions and resulting intra-Group gains and unrealised gains and losses between consolidated companies were eliminated in full. Unrealised losses were eliminated only if the transactions did not provide evidence of an impairment of the asset transferred.

Fair value measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. In a fair value measurement, it is assumed that the transaction in which the asset is sold or the liability is transferred takes place either in the

- principal market for the asset or liability or
- the most advantageous market for the asset or liability, if there is no principal market.

The Group must have access to the principal market or to the most advantageous market. The fair value of an asset or liability is measured based on the assumptions that the market participants would make when fixing a price for the asset or liability, assuming that the market participants act in their best economic interests. Measurements of the fair value of a non-financial asset take account of the market participant's ability to generate economic benefits from the highest and best use of the asset or from its sale to another market participant that finds the best use for the asset. The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available for measuring the fair value. In doing so, the use of relevant observable inputs is to be maximised and the use of unobservable inputs is to be minimised.

All assets and liabilities whose fair value is determined or reported in the financial statements are classified in the fair value hierarchy described below based on the lowest-level input that is significant to the entire fair value measurement:

- Level 1 – Quoted prices (unadjusted) in active markets for identical assets or liabilities
- Level 2 – Valuation methods in which the lowest-level input that is significant to the entire fair value measurement is directly or indirectly observable on the market
- Level 3 – Valuation methods in which the lowest-level input that is significant to the entire fair value measurement is not observable on the market

In the case of assets and liabilities that are recognised in the financial statements on a recurring basis, the Group determines whether there have been any transfers between the levels of the hierarchy by reviewing the classification at the end of each reporting period.

Currency translation

PSI's consolidated financial statements are prepared in euro, the functional currency and presentation currency of the Group. Each company within the Group determines its own functional currency. The items included in the respective company's financial statements are measured using this functional currency. Foreign currency transactions are initially translated at the spot exchange rate between the functional currency and the foreign currency at the date of the transaction. Monetary assets and liabilities in foreign currencies are translated into the functional currency at the closing rate. All associated exchange differences are recognised in the net profit or loss for the period. Nonmonetary items of the Group balance sheet in foreign currencies are updated at historical exchange rates.

The functional currency of the main foreign companies is generally the respective local currency. As at the end of the reporting period, the assets and liabilities of these subsidiaries are translated into the presentation currency of PSI AG (the euro) at the closing rate. Income and expenses are translated at the exchange rate on the date of the transaction. The exchange differences that arise on translation are recognised as a separate component of equity.

Non-current assets

a) Intangible assets

Intangible assets are initially measured at cost. Intangible assets are recognised if it is probable that the future economic benefits that are attributable to the asset will flow to the company and if the cost of the asset can be measured reliably. For the purposes of subsequent measurement, intangible assets are recognised at cost less accumulated amortisation and accumulated impairment losses (reported under depreciation and amortisation). The amortisation period and the amortisation method are reviewed at the end of each financial year.

Intangible assets comprise:

Goodwill

Goodwill from a business combination is initially measured at cost, which is calculated as the excess of the cost of the business combination over the PSI Group's interest in the fair values of the identifiable assets acquired and the identifiable liabilities and contingent liabilities assumed. After initial recognition, goodwill is measured at cost less accumulated impairment losses. Goodwill is tested for impairment at least once a year or when facts or changes in circumstances indicate that its carrying amount may have decreased. To check whether goodwill acquired in a business combination is impaired, this goodwill must be allocated to a cash-generating unit. If the recoverable amount of the cash-generating unit is lower than its carrying amount, an impairment loss must be recognised. Reversals of impairment losses are not recognised.

Industrial property rights and licences

Amounts paid to purchase industrial property rights and licence rights are capitalised and subsequently amortised on a straight-line basis over their expected useful lives (three to eight years).

The acquisition cost of new software is capitalised and treated as an intangible asset, provided it does not constitute an integral part of the related hardware. Software is amortised on a straight-line basis over a period of three to five years.

Costs incurred to restore or maintain the future economic benefits that the Company had originally expected are recognised as an expense.

Research and development costs

Research costs are recognised as an expense in the period in which they are incurred. Development costs for an individual project are capitalised as an intangible asset only if the criteria for capitalisation under IAS 38.57 are met, i. e. if the Group can demonstrate the following:

- the technical feasibility of completing the intangible asset
- the intention to complete the intangible asset and the ability to use or sell it
- how the asset will generate future economic benefits
- the availability of resources for completing the asset
- the ability to measure reliably the expenditure attributable to the intangible asset during its development

After their initial recognition, development costs are accounted for at cost less accumulated impairment losses. The amortisation period generally lasts five years, beginning when the development phase is completed and as soon as the asset is available for use. The asset is amortised over the period during which future use is expected and this amortisation is recognised under depreciation and amortisation. During the development phase, an impairment test is performed on an annual basis.

b) Property, plant and equipment

Property, plant and equipment is measured at cost less any accumulated depreciation and any accumulated impairment losses. For property, plant and equipment acquired as part of business combinations, cost corresponds to the fair value at the acquisition date. If items of property, plant and equipment are sold or scrapped or if no further economic benefit is expected from their use, then the corresponding cost and accumulated depreciation are derecognised. Any realised gain or loss on disposal is reported in the consolidated income statement.

The cost of an item of property, plant and equipment comprises the purchase price including the costs necessary to bring the item into condition for its intended use. Subsequent expenses such as servicing and maintenance costs that arise after the fixed assets have started being used are recognised as an expense when incurred. If it is likely that expenses will result in the Company receiving future economic benefits in excess of the originally assessed performance of the existing asset, these expenses are capitalised as additional costs of property, plant and equipment.

Depreciation is calculated on a straight-line basis over an estimated useful life, assuming a residual carrying amount of EUR 0. The following estimated useful lives are used for the individual asset groups:

Buildings	25–50 years
Exterior facilities, other constructions	10–20 years
Computer hardware	3–4 years
Leasehold improvements	Based on remaining term of the lease or actual useful life if shorter
Other office equipment	5–13 years

The useful lives and depreciation method for property, plant and equipment are reviewed on an annual basis to ensure that the depreciation method and depreciation period are consistent with the expected pattern of economic benefits from the items of property, plant and equipment.

c) Impairment of non-current, non-financial assets
Non-current assets are tested for impairment when facts or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. In the first step of the impairment test, the recoverable amount of the asset or cash-generating unit must initially be determined. This is defined as the higher of fair value less costs to sell and value in use. Fair value less costs to sell is defined as the price that can be achieved in a sale of an asset or cash-generating unit between two knowledgeable, willing and independent business partners, less the costs to sell. The value in use of an asset or a cash-generating unit is determined by its present value in its current use on the basis of expected cash flows. No impairment of non-current assets was recognised in the 2018 and 2017 financial years.

Financial assets

As at 31 December 2018 and 31 December 2017, the PSI Group only held financial assets in the form of originated loans and receivables.

Originated loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. These assets are measured at amortised cost using the effective interest method. Gains and losses are recognised in the net profit or loss for the period when the loans and receivables are derecognised or impaired.

Valuation allowances due to credit risk include a significant degree of estimates and judgements with regard to individual receivables; these are based on the creditworthiness of the customer in question and on current economic developments. In general, valuation allowances are recognised on the basis of customer ratings. These are based on customer information, as well as information from external rating agencies in significant cases. They also take account of country-specific credit risks.

As in the previous year, the carrying amounts of the financial assets generally correspond to their fair values.

Financial liabilities

The financial liabilities reported in the consolidated financial statements of the PSI Group were classified as other financial liabilities.

On initial recognition, financial liabilities are accounted for at cost, which corresponds to the fair value of the consideration given; transaction costs are also included.

Financial liabilities are no longer reported when they are repaid, i. e. when the obligations specified in the contract have been settled or cancelled or have expired.

As at 31 December 2018, the maturities of financial liabilities broke down as follows:

in EUR thousand	Payable on demand	Payable within 1 year	Payable within more than 1 year	**Total**
Trade payables	2,700	13,723	17	**16,440**
Other liabilities	735	29,515	944	**31,194**
Financial liabilities	0	1,795	0	**1,795**
	3,435	**45,033**	**961**	**49,429**

Trade payables due within one year include obligations for services that have yet to be performed in the amount of EUR 8,662 thousand.

As at 31 December 2017, the maturities of financial liabilities broke down as follows:

in EUR thousand	Payable on demand	Payable within 1 year	Payable within more than 1 year	**Total**
Trade payables	3,008	11,536	20	**14,564**
Other liabilities	371	28,196	639	**29,206**
Financial liabilities	0	2,622	0	**2,622**
	3,379	**42,354**	**659**	**46,392**

Trade payables due within one year include obligations for services that have yet to be performed in the amount of EUR 6,703 thousand.

As in the previous year, the carrying amounts of other financial liabilities generally correspond to their fair values.

Financial risk management objectives and methods

The main financial instruments used by the Company to finance its operating business consist of cash and cash equivalents, available-for-sale financial assets and current liabilities (overdrafts) and other liabilities. There are also current receivables and liabilities from long-term development contracts, which are also covered by financial risk management. The main risks result from credit and liquidity risks. The Group is exposed to currency risks as a result of its business operations and net investments in foreign subsidiaries. For significant loans issued within the Group, a sensitivity analysis in relation to exchange rates was performed in order to illustrate possible effects on the Group net result. If the EUR/MYR exchange rate had been 10% lower as at 31 December 2018, this would have resulted in a decrease in the Group net result of approximately EUR 407 thousand (previous year: EUR 407 thousand). Conversely, a 10% increase in the EUR/MYR exchange rate would have meant an increase in the Group net result of approximately EUR 407 thousand (previous year: EUR 407 thousand). Due to the low significance of interest-bearing liabilities, interest risks exist only to a limited extent.

a) Credit risk

Credit risk, or the risk that a counterparty may fail to meet its payment obligations, is managed by using credit facilities, defining order-specific prefinancing ratios and applying monitoring procedures. The Group enters into transactions only with creditworthy third parties. A credit assessment is performed for all customers wishing to enter into transactions with the Group on a credit basis. Where appropriate, the Company obtains collateral. Because most of the PSI Group's customers are well-known major companies from the energy and utilities sector or the steel and automotive industry that have good or very good credit quality, the Board of Directors believes that the overall receivables portfolio of the PSI Group has a lower than average risk profile in comparison to other software providers. Concentrations of risk may arise with individual customers or groups of customers that are exposed to the same risk scenarios or operate in the same type of environment (same sector, same customers, same sales region, same currency, etc.). For the PSI Group, there is no significant concentration of credit risk either with an individual counterparty or with a group of counterparties with similar features. The maximum credit risk corresponds to the amount of the carrying amounts reported in the balance sheet for the financial assets from trade receivables and other assets.

The Group continuously monitors the risk of a liquidity shortage using liquidity planning tools (maturity, expected cash flows). The aim of this monitoring is to maintain a balance between continuously covering financing requirements and ensuring flexibility. In monitoring the financial balance, it is particularly important to monitor project financing. The PSI Group endeavours to maximise the prefinancing ratio (ratio of advance payments received for projects to receivables from long-term development contracts) for each project. Because there are significant differences in customers' payment history in relation to prefinancing depending on the industry in which the customers operate, the PSI Group has not made any specifications with regard to the exact amount of prefinancing. In general, a sufficient prefinancing ratio is targeted in the Group as a whole. There are no further individual targets for key figures in the area of liquidity monitoring.

b) Capital management
The primary objective of the PSI Group's capital management is to ensure that a high credit rating and a good equity ratio are maintained so as to support business operations and maximise shareholder value.

The PSI Group manages its capital structure in line with the prevailing economic conditions. No adjustment measures or amendments to capital management goals and targets were made in the 2018 or 2017 financial years.

The PSI Group monitors its capital using the equity ratio on a consolidated basis.

Current assets

a) Inventories
Inventories are measured at the lower of cost and expected net disposal proceeds less costs to be incurred.

b) Cash and cash equivalents
Cash and cash equivalents comprise cash on hand, fixed term deposits and demand deposits. The cash and cash equivalents reported in the Group statement of cash flows are delimited according to the above definition.

Shareholders' equity

Shareholders' equity comprises the share capital, the capital reserve, retained earnings, treasury shares, other reserves and accumulated profit or loss.

The capital reserve includes premiums in accordance with section 150 of the German Stock Corporation Act (AktG) and offset loss carryforwards in line with resolutions on the allocation of earnings.

Retained earnings include earnings allocations in accordance with section 174 AktG.

If the PSI Group acquires treasury shares, these are deducted from shareholders' equity. The purchase, sale, issue or withdrawal of treasury shares is not recognised in profit or loss.

Other reserves include unrealised gains and losses from currency translation and actuarial gains and losses from the measurement of pension provisions.

Pension provisions

The PSI Group has several defined benefit pension plans. In some cases, there are plan assets in the form of pension liability insurance for the defined benefit plans. The expenses for benefits granted under the defined benefit plans are calculated separately for each plan using the projected unit credit method. Actuarial gains and losses are recognised directly in other comprehensive income.

Current liabilities

A provision is reported if the PSI Group has a present (statutory, contractual or constructive) obligation due to a past event, if it is likely that the settlement of the obligation will result in an outflow of resources that represent an economic benefit, and if the amount of the obligation can be estimated reliably. Provisions are reviewed at the end of each reporting period and adjusted to reflect the current best estimate. If the corresponding interest effect is material, the amount of the provision corresponds to the present value of the expenses likely to be required to settle the obligation. Where discounting is used, the increase in the provision to reflect the passage of time is recognised as borrowing costs.

Government grants

Government grants are recognised if there is reasonable assurance that the Company will comply with the conditions attaching to it. Government grants are recognised in profit or loss as scheduled in line with the recognition of the related costs which they are intended to compensate. Grants received for the acquisition of property, plant and equipment are reported under other liabilities as deferred income that is recognised as income in line with the reported depreciation during the use of the asset in question. Income generated in connection with the grants is reported as other operating income in the consolidated income statement.

In 2018 the PSI Group received subsidies totalling EUR 906 thousand (previous year: EUR 1,093 thousand) under various subsidy programmes, including programmes offered by the German federal government, the State of Berlin and the European Union. As in the previous year, the subsidies granted were recognised in profit or loss and reported as a reduction of the corresponding expenses. Besides the obligation to demonstrate the amount of the expenses for which the subsidies were granted, there are no further conditions or obligations arising from the subsidy projects.

Borrowing costs

No significant borrowing costs were incurred or capitalised as part of the production of qualifying assets in the financial year under review or in the previous year.

Research and development costs

Research and development costs amounted to EUR 21.8 million in the 2018 financial year (previous year: EUR 17.7 million).

Leases

Determining whether an arrangement is or contains a lease is based on the economic substance of the arrangement and requires an assessment as to whether the fulfilment of the contractual arrangement is dependent on the use of a specific asset or assets and whether the arrangement grants a right to use the asset.

A lease is classified as an operating lease if essentially all the risks and rewards associated with ownership remain with the lessor. Lease payments within an operating lease are recognised as expenditure on a straight-line basis over the term of the lease.

The PSI Group has mainly concluded leases for vehicles and hardware (servers). The term of these operating leases is generally three to four years.

Recognition of revenues and income

The PSI Group primarily generates its revenues from project business and from issuing licences for the use of its own software products to end customers, both with and without customer-specific adjustments. Revenues are also generated from the sale of third-party software, hardware and services such as installation, consultancy, training and maintenance. The PSI Group recognises revenues when control over definable goods or services is transferred to the customer, i.e. when the customer has the ability to determine the use of the transferred goods or services and primarily derives the remaining benefits from them. This is subject to the condition that there must be contract with enforceable rights and obligations and that receipt of the consideration must be probable, taking account of the customer's creditworthiness. The revenues correspond to the transaction price to which the PSI Group is expected to be entitled. Variable consideration is included in the transaction price if it is highly likely that there will not be a significant reduction in revenues once there is no longer any uncertainty in connection with the variable consideration. The amount of the variable consideration is determined either in line with the expected value method or at the most likely amount, depending on which value represents the most accurate estimate of the variable consideration. If there is a period of more than twelve months between the transfer of the goods or services and the payment date and if the financing results in a significant benefit for the customer or the PSI Group, the consideration is adjusted for the time value of money. If a contract includes multiple definable goods or services, the transaction price is allocated to the performance obligations based on the relative individual selling prices. If individual selling prices are not directly observable, the PSI Group estimates them in an appropriate amount. For each performance obligation, revenues are recognised either at a specific point in time or over a specific period.

a) Project business
Revenues are recognised over a specific period in line with the percentage-of-completion method based on the ratio of the costs already incurred to the estimated total costs or based on contractually defined milestones. An anticipated loss from a contract is immediately recognised as an expense. Invoices are issued in accordance with the contractual conditions; the payment terms usually stipulate payment within 30 days of the invoice being issued. With the percentageofcompletion method, the estimate of the percentage of completion is particularly important; in addition, it may include estimates regarding the scope of deliveries and services required to fulfil the contractual obligations. These significant estimates comprise the estimated total costs, total estimated revenues, order risks – including technical, political and regulatory risks – and other relevant parameters. Under the percentage-of-completion method, changes in estimates may increase or reduce revenues.
It must also be assessed whether the continuation of the contract in question or its termination represents the most likely scenario. For this assessment, all relevant facts and circumstances must be taken into account individually for each contract. In the previous financial years, revenue was also recognised in line with the percentage-of-completion method for long-term project contracts that met the requirements for applying the percentage-of-completion method in accordance with IAS 11.

b) Sale of licences
The PSI Group recognises its revenues on the basis of a corresponding contract as soon as the licence has been delivered, the selling price is fixed or determinable, there are no significant obligations to customers and collection of the receivables is considered probable.

c) Maintenance, other services
Income from maintenance agreements is recognised on a straight-line basis over the term of the agreement on the basis of past experience. Income from consultancy and training services is recognised as soon as the service is performed. Income from maintenance is reported as revenues from software development and maintenance in the notes to the consolidated financial statements, together with income from project business (less merchandise/hardware for which the costs are passed on).

d) Recognition of interest income
Interest is recognised on a time proportion basis, taking account of the effective yield on the asset.

Income taxes

Current tax assets and liabilities for the current and prior periods are to be measured at the amount expected to be recovered from or paid to the taxation authorities. This amount is calculated based on the tax rates and tax laws that are applicable or will soon be applicable as at the end of the reporting period.

Deferred taxes are accounted for using the liability method for all temporary differences as at the end of the reporting period between the carrying amount of an asset or liability in the balance sheet and its tax base. Deferred tax liabilities are recognised for all taxable temporary differences with the exception of:

- deferred tax liabilities from the initial recognition of goodwill or of an asset or liability in a transaction that is not a business combination and does not affect the accounting profit for the period or the taxable profit at the time of the transaction
- the deferred tax liability from taxable temporary differences relating to investments in subsidiaries, associated companies and interests in joint ventures that cannot be recognised if the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future

Deferred tax assets are recognised for all deductible temporary differences, unused tax loss carryforwards and unused tax credits to the extent that it is probable or there is convincing evidence that taxable income will be available against which the deductible temporary differences and the unused tax loss carryforwards and tax credits can be offset, with the exception of:

- deferred tax assets from deductible temporary differences arising from the initial recognition of an asset or liability in a transaction that is not a business combination and does not affect the accounting profit for the period or the taxable profit at the time of the transaction
- deferred tax assets from deductible temporary differences relating to investments in subsidiaries, associated companies and interests in joint ventures. These can be recognised only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and sufficient taxable profit will be available against which the temporary differences can be utilised.

The carrying amount of the deferred tax assets is reviewed at the end of each reporting period and written down to the extent that it is no longer probable that sufficient taxable profit will be available against which the deferred tax asset can be at least partially offset. Unrecognised deferred tax assets are reviewed at the end of each reporting period and recognised to the extent that it has become probable or convincing evidence has emerged that future taxable profit will allow the deferred tax asset to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply to the period when the asset is realised or the liability is settled, based on the tax rates (and tax laws) that are applicable or have been announced as at the end of the reporting period. Income taxes relating to items recognised directly in equity are recognised in equity and not in the consolidated income statement.

Deferred tax assets and deferred tax liabilities are offset against one another if they relate to income taxes of the same taxable entity levied by the same taxation authority and if it is not possible to offset the deferred taxes against one another.

Sales tax

Revenues, expenses and assets are recognised net of sales tax, except in the following cases:

- If the sales tax incurred when purchasing assets or services cannot be claimed from the taxation authority, the sales tax is recognised as part of the cost of the asset or as part of the expenses.
- Receivables and liabilities are recognised including the associated amount of sales tax.

The amount of sales tax reimbursed by or paid to the taxation authority is recognised in the consolidated balance sheet under receivables or liabilities.

Segment reporting

a) Business segments

The PSI Group is divided into two main business areas:

- Energy Management
- Production Management

Financial information on the business segments and geographical segments is presented in section F. of the notes and in the segment reporting table on page 58 et seq.

b) Transactions between business segments

Transfers between business segments are included in section F. of the notes and in the "Reconciliation" column in the segment reporting table.

C. Disclosures on the consolidated balance sheet

Non-current assets

1 Intangible assets and property, plant and equipment

With regard to the development of non-current assets in the financial years that ended on 31 December 2018 and on 31 December 2017, please refer to the attached information on the development of intangible assets and property, plant and equipment on page 60 et seq.

Goodwill

As at 31 December 2018 and 31 December 2017, the PSI Group performed an impairment test with regard to goodwill. For determining the value in use, the impairment test takes account of the following units with the attributable carrying amounts for goodwill. In contrast to the previous year, the impairment test as at 31 December 2018 was performed on the basis of the new segmentation and the associated discontinuation of the Infrastructure Management segment with a view to improving the presentation of the PSI Group's economic alignment and applying materiality aspects in financial reporting. In this context, individual units that had been tested for impairment before the restructuring were also restructured. In the Energy Management segment, goodwill of EUR 24,996 thousand is reported as at the end of the reporting period (previous year: EUR 5,941 thousand). Of this amount, EUR 17,647 thousand (previous year: EUR 1,493 thousand) was attributable to the Electrical Energy unit. The carrying amounts of the other units in this segment, none of which were significant individually, totalled EUR 7,529 thousand (previous year: EUR 4,448 thousand). In the Production Management segment, goodwill of EUR 24,421 thousand is reported as at the end of the reporting period (previous year: EUR 24,463 thousand). Of this amount, EUR 22,346 thousand (previous year: EUR 22,382 thousand) was attributable to the Metals Group unit. The carrying amounts of the other units in this segment, none of which were significant individually, totalled EUR 2,075 thousand (previous year: EUR 2,080 thousand). The goodwill reported in the Infrastructure Management segment in the previous year was reclassified to units in the Energy Management segment in the 2018 financial year.

The impairment test is based on cash flow projections for the individual cash-generating units and expectations with regard to the market development (growth rates in the relevant market segment, ratio of software project income to maintenance income, hourly and daily rates for employees, average personnel expenses, higher margins for sales of hardware and third-party licences). The three-year planning period reflects the long-term corporate planning. The cash flows recognised were derived from past information. The cash flows are adjusted by means of discounts to take account of current economic conditions. An increase in the operating margin of between 1.00% and 4.50% each year (previous year: between 1.00% and 2.00%) is planned in the budgets for subsequent years. The assumptions made by the management with regard to the general trend for business development in the software industry correspond to the expectations of industry experts and market observers.

Discount rates of 6.00% to 9.75% after taxes (previous year: 5.00% to 8.00%) and 7.50% to 12.50% before taxes (previous year: 6.25% to 9.50%) were applied. The adjustment of the interest rate compared to the previous year reflects the current economic conditions in each case (development of the real economy and financing conditions). Cash flows arising after the three-year period are extrapolated using a growth rate of 1.00% to 4.50% (previous year: 1.00% to 4.50%).

In the view of the management, only a change in the interest rates applied in determining the value in use of the cash-generating units could currently reasonably be expected to result in the carrying amount of the cash-generating unit significantly exceeding its recoverable amount and an adjustment of the interest rates would not give rise to any further changes in parameters (ceteris paribus). For example, an assumed increase of 2 percentage points in the interest rate used for discounting would result in possible impairment of EUR 0 thousand (previous year: EUR 1,282 thousand). The level of the interest rate used for discounting at which no impairment would occur is 4.25 percentage points (previous year: 1.75%).

The table below shows the underlying assumptions that were applied in the impairment tests of the groups of cash-generating units to which significant goodwill has been allocated:

in %	Long-term growth rate	Discount factor after taxes
PSI Incontrol Group	2.50 (previous year: 2.25)	7.50 (previous year: 6.25)
Metals Group	2.00 (previous year: 2.25)	6.50 (previous year: 5.50)

Current assets

2 Inventories

in EUR thousand	**2018**	2017
Hardware and third-party licences	6,771	6,603
Advance payments to subcontractors	1,941	1,220
	8,712	**7,823**

3 Net trade receivables

in EUR thousand	**2018**	2017
Gross trade receivables	37,350	34,717
Specific valuation allowances	–2,943	–3,106
	34,407	**31,611**

Trade receivables do not bear interest and are payable within 0 to 90 days. The specific valuation allowances recognised developed as follows:

in EUR thousand	**2018**	2017
As at 1 January	3,106	2,922
Addition recognised as expense	359	599
Reversal recognised as income	–522	–415
As at 31 December	**2,943**	**3,106**

As at 31 December, the maturity structure of trade receivables was as follows:

in EUR thousand	**2018**	2017
Neither past due nor impaired	**21,980**	**21,595**
Past due (after impairment)		
< 30 days	5,575	3.451
30–60days	1,651	1,530
60–90 days	738	406
90–120 days	741	146
> 120 days*	3,722	4,483
	12,427	**10,016**
As at 31 December	**34,407**	**31,611**

* Thereof paid by 20 February 2019: EUR 293 thousand (previous year: EUR 534 thousand)

4 Receivables and liabilities from long-term development contracts

Receivables in accordance with the percentage-of-completion method arise when revenues are recognised but cannot yet be invoiced according to the contractual conditions. These amounts are recognised on the basis of various performance criteria such as the achievement of specified milestones, the ratio of planned costs to accrued costs, the completion of specified units or the completion of the contract. This item of the balance sheet comprises directly attributable costs (personnel expenses and purchased services) as well as an appropriate portion of general overhead costs and profit shares.

The receivables measured according to the percentage-of-completion method/contract assets include the following components:

in EUR thousand	**2018**	2017
Costs incurred	88,882	88,768
Share of profits	14,166	15,028
Contract revenues	103,048	103,796
Advance payments received	–85,212	–83,965
Thereof offset against contract revenues	–68,681	–70,678
Receivables from long-term development contracts	34,367	33,118
Liabilities from long-term development contracts	16,531	13,287

Liabilities from long-term development contracts comprise advance payments received that exceed the corresponding receivables from long-term development contracts (contract liabilities).

Receivables from long-term development contracts in the amount of EUR 34,367 thousand (previous year: EUR 33,118 thousand) were neither past due nor impaired as at 31 December of the respective year.

With regard to the development contracts work accepted, there are warranty obligations in the ordinary course of business.

5 Other assets

in EUR thousand	**2018**	2017
Receivables from tax credits	2,937	3,468
Prepaid expenses	1,531	1,256
Loans to associated companies and external parties	357	64
Advance payments	255	317
Subsidies	180	135
Miscellaneous	462	539
	5,722	**5,779**

The prepaid expenses chiefly include accrued prepayments for maintenance and will be recognised as expenses within one year with the exception of EUR 322 thousand.

No specific impairment allowance was recognised for other assets; there are no past-due or impaired receivables.

6 Cash and cash equivalents

in EUR thousand	**2018**	2017
Bank balances	42,517	34,742
Fixed-term deposits	2,039	3,366
Cash in hand	23	24
	44,579	**38,132**

The fixed-term deposits and bank balances are not past due; specific valuation allowances are not required.

7 Shareholders' equity

With regard to the development of equity, please refer to the statement of changes in Group equity (page 58 et seq.)

a) Share capital

The fully paid-in share capital entered in the commercial register amounts to EUR 40,185,256.96 (previous year: EUR 40,185,256.96) and is divided into registered shares representing a pro rata amount of the share capital of EUR 2.56 per share.

b) Contingent capital and authorised capital

By way of resolution of the Annual General Meeting on 16 May 2017, the Board of Directors of the Company was authorised to issue convertible and warrant-linked bonds as well as profit-sharing rights and/or income bonds (or combinations of these instruments) on one or more occasions, with the option of disapplying subscription rights in each case, until 15 May 2022.

To fulfil any rights exercised in the above context, a new "Contingent Capital 2017" was created at the Annual General Meeting on 16 May 2017. Under the Contingent Capital 2017, the Company's share capital is contingently increased by up to EUR 8,035,840.00, divided into 3,139,000 shares.

The contingent capital from an authorisation from 7 May 2013 (CC 2013) was replaced by the new Contingent Capital 2017.

By way of resolution of the Annual General Meeting on 12 May 2015, new authorised capital (AC 2015) was created. The Board of Directors was authorised, with the approval of the Supervisory Board, to increase the Company's share capital on one or more occasions by a total of up to EUR 8,035,840.00 by issuing new registered shares in exchange for cash or contributions in kind in the period until 11 May 2020.

Contingent capital and authorised capital break down as follows:

in EUR thousand	**2018**	2017
Authorised capital (AC)		
AC 2015 (until 11 May 2020)	8,036	8,036
	8,036	**8,036**
Contingent capital (CC)		
CC 2017 (until 15 May 2022)	8,036	8,036
	8,036	**8,036**
	16,072	**16,072**

c) Capital reserves
The capital reserve includes the premium from capital increases. The costs attributable to issuing equity instruments were deducted directly from equity as a negative premium, taking account of tax effects.

d) Reserve for treasury shares
25,000 shares were repurchased in the financial year (previous year: 24,885). A total of 42,276 treasury shares were transferred as part of an employee share programme. As at 31 December 2018, the number of treasury shares came to 20,070 (previous year: 37,346).

e) Other reserves
Other reserves break down as follows:

in EUR thousand	**2018**	2017
Reserve for exchange differences	–2,013	–2,333
Actuarial losses	–25,849	–24,116
Deferred tax	8,143	7,626
	–19,719	**–18,823**

The deferred tax resulted from actuarial losses.

f) Dividends
The Annual General Meeting approved the Board of Directors' proposal for the appropriation of net profit for 2017. Based on this resolution, a dividend of EUR 3,596,054.60 was distributed for the 2017 financial year. This corresponds to EUR 0.23 per entitled share. In the previous year, a dividend of EUR 3,438,848.82 was distributed.

The Board of Directors is proposing the distribution of a dividend of EUR 0.25 per entitled share. This corresponds to an anticipated total payment of EUR 3,919 thousand. The payment of this dividend depends on the approval of the Annual General Meeting on 16 May 2019.

Non-current liabilities

8 Pension provisions
Pension provisions are recognised for obligations (old-age pensions, disability benefits, widows' and orphans' pensions) from future entitlements and from current benefits to eligible current and former employees of the PSI Group and their surviving dependants.

In the PSI Group, there are three different models of defined benefit pension commitments that grant retirement benefits to employees depending on their length of service at the Company and their remuneration before the start of the pension. On 5 December 2006, the Board of Directors of PSI AG and the Group Works Council concluded a Group works agreement governing the Company pension plans and compensation payments within the PSI AG Group, which covers all existing models of defined benefit pension commitments. As a Group works agreement, the agreement between the Board of Directors of PSI AG and the Group Works Council thus superseded the existing individual agreements.

The content of this agreement concerns the modification of the existing retirement benefit plans:

– The vested rights of the majority of employees as at 31 December 2006 were frozen as a fixed amount. This freezing means that the acquired entitlement to an old-age pension does not rise beyond the level reached as at 31 December 2006, neither as a result of future service nor due to future salary increases.
– As compensation for the loss of future increases in the Company pension (increases in entitlements), either steadily increasing contributions are paid into a provident fund with pension liability insurance until the end of the employment relationship, or at the latest until the employee reaches a certain age limit, or the employees are granted an increase in the gross cash compensation in the form of a steadily increasing annual lump sum payment. These compensation amounts are calculated in accordance with actuarial principles.
– In calculating the compensation amounts, the first step is to determine what constant annual premium would have to be paid to a notional insurer if this insurer had to continue paying the retirement benefits under the previous pension plans with no changes. In the first year, the amount of the compensation payment to the employees corresponds to 70% of the constant annual premium of a

notional insurer calculated in this way, and subsequently it is increased by a constant percentage each year. If an employee leaves the Company early and the contributions paid into the provident fund have not yet reached 100% of the employee's compensation entitlement, the PSI Group is not required to pay the difference to the employee.

The amount of the pension obligation (present value of the pension commitments) was calculated using actuarial methods based on the following assumptions:

in %	2018	2017
Discount factor		
Germany	1.70	1.70
Austria	1.80	1.80
Salary trend		
Germany	0.00/1.30[1]	0.00/1.30[1]
Austria	2.75	2.75
Pension trend		
Germany	1.50	1.50
Austria	0.00	0.00
Staff turnover		
Germany	0.00/4.50[2]	0.00/4.50[2]
Austria	0.00	0.00

Mortality tables used:	
Germany	RT Heubeck 2018 G (previous year: RT Heubeck2005 G)
Austria	AVÖ 2018-P (previous year: AVÖ 2008-P)

[1] A portion of the pension commitments was superseded on 31 December 2006. For this portion, salary trends are not relevant to calculating the obligation.
[2] A portion of the pension commitments was superseded on 31 December 2006. For this portion, staff turnover assumptions are not relevant with regard to calculating the obligation.

The salary trend comprises anticipated future salary increases that are estimated on an annual basis depending on factors such as inflation and length of service at the Company.

As at 31 December 2018, an age at the expiry of financing of 65 years and 5 months (previous year: 65 years and 5 months) was assumed when calculating the German pension obligation. The age at the expiry of financing is based on statistics on retirement ages in the PSI Group. For calculating the severance provision in Austria, the APG 04 (Austrian General Pension Act) applies.

Expenses for retirement benefits break down as follows:

in EUR thousand	2018	2017
Service cost reported under personnel expenses	25	39
Interest expense reported under net interest	832	806
Expenses for retirement benefits	**857**	**845**

The following overview shows the development of the net amount of the provision:

in EUR thousand	2018	2017
Present value of defined benefit obligation	63,703	62,118
Plan assets	–12,419	–11,578
Pension liability	**51,284**	**50,540**

The following overview shows the development of the present value of the defined benefit obligation:

in EUR thousand	2018	2017
Pension liability, start of period	62,118	64,397
Actuarial gains and losses from changes in demographical assumptions recognised in other comprehensive income	1,469	–727
Actuarial gains and losses from changes in financial assumptions recognised in other comprehensive income	187	83
Actuarial gains and losses based on experience-related assumptions and recognised in other comprehensive income	78	52
Pension payments	–1,847	–1,750
Expenses for retirement benefits	857	845
Present value of insured defined benefit obligation	841	–782
Pension liability, end of period	**63,703**	**62,118**

The following overview shows the development of the present value of the plan assets:

in EUR thousand	**2018**	2017
Present value of plan assets, start of period	11,578	12,360
Change in plan assets	841	–782
Present value	**12,419**	**11,578**

The table below shows a quantitative sensitivity analysis of the key assumptions as at 31 December 2018:

Assumption	**Interest rate sensitivity**		**Pension trend sensitivity**	
Scenario	Increase of 0.2 %	Decrease of 0.2 %	Increase of 0.2 %	Decrease of 0.2 %
Effects on defined benefit obligation (in EUR thousand)	–1,359	1,342	1,046	–1,086

As at 31 December 2017, the quantitative sensitivity analysis broke down as follows:

Assumption	**Interest rate sensitivity**		**Pension trend sensitivity**	
Scenario	Increase of 0.2 %	Decrease of 0.2 %	Increase of 0.2 %	Decrease of 0.2 %
Effects on defined benefit obligation (in EUR thousand)	–1,333	1,392	1,077	–1,043

The above sensitivity analysis was performed using a method that extrapolates the effect of realistic changes in the key assumptions as at the end of the reporting period on the defined benefit obligation.

The average term of the defined benefit obligation as at the end of the reporting period is shown below.

in years	**2018**	2017
Germany	13.14	13.24
Austria	5.70	5.90

The table below shows the expected payout structure for the coming years:

in EUR thousand	**2018**	2017
Pension payments made	1,847	1,750
Expected pension payments		
2019	2,058	2,011
2020	2,152	2,144
2021	2,236	2,227
2022	2,326	2,304
2023	2,344	n/a
Another 5 years	12,060	11,747

Current liabilities

9 Financial liabilities

The financial liabilities of EUR 1,795 thousand (previous year: EUR 2,622 thousand) consist of liabilities from overdrafts.

The PSI Group uses short-term, floating-rate overdrafts for financing purposes. The financial liabilities are repaid on a monthly basis and bear interest at a rate of between 2.73% and 3.25%. No special collateral is provided. Continuous refinancing of current financial liabilities is targeted. The fair values of the financial liabilities correspond to their carrying amounts. As at 31 December 2018, the PSI Group had undrawn borrowing facilities from overdrafts in the amount of EUR 23,565 thousand (previous year: EUR 24,278 thousand).

Expenses for interest from overdrafts amounted to EUR 75 thousand in the 2018 financial year (previous year: EUR 109 thousand).

10 Other liabilities

in EUR thousand	2018	2017
Personnel-related liabilities	16,517	14,974
Taxes payable	6,605	3,870
EUR 5,351 thousand in wage tax and sales tax (previous year: EUR 3,125 thousand)		
EUR 1,254 thousand in income tax (previous year: EUR 745 thousand)		
Deferred income	3,948	6,196
Social security liabilities	384	315
Miscellaneous	3,740	3,851
	31,194	**29,206**

Personnel-related liabilities mainly include obligations for holiday entitlements, overtime and special payments. The deferred income (primarily prepaid maintenance income) will affect profit or loss within one year, with the exception of EUR 187 thousand (previous year: EUR 159 thousand) that will affect profit or loss in the coming years.

11 Deferred taxes/income taxes

German trade tax is levied on the taxable profit of the German Group companies, which is calculated by deducting certain income that is not subject to trade tax and adding certain expenses that are not deductible for trade tax purposes. The effective trade tax rate depends on the municipality in which the respective German Group company operates. As in the previous year, the average trade tax rate in 2018 was approximately 15%. A corporation tax rate of 15% applied in the 2017 and 2018 financial years. In addition to corporation tax, a solidarity surcharge of 5.5% is levied on the corporation tax determined. This therefore results in an effective tax rate of 29.83% (previous year: 29.83%) for the calculation of current income taxes for the 2018 financial year.

Income tax expense for the current financial year breaks down as follows:

in EUR thousand	2018	2017
Current tax expense		
Current year	–1,936	–2,339
Deferred tax expense		
Change in intangible assets	106	111
Change in long-term development contracts	–598	–661
Partial retirement and anniversary bonus provisions	24	7
Changes in trade receivables	325	654
Change in pension provisions	–320	–300
Project-related provisions	–499	425
Other provisions	–88	98
Fixed assets	–197	11
Deferred income	–755	–1,033
	–2,002	–688
Income tax expense	**–3,938**	**–3,027**

The following overview shows a reconciliation of tax expense/income:

in EUR thousand	2018	2017
Earnings before taxes	14,523	12,524
Theoretical income tax expense (29.83%; previous year: 29.83%)	–4,332	–3,736
Non-capitalisation of tax losses	–771	–683
Non-deductible operating expenses and trade tax additions	–319	–427
Use of non-capitalised tax loss carryforwards	1,537	1,943
Effects from tax rate differences in foreign countries	500	–75
Tax expense for previous years	–257	–29
Tax-exempt foreign income	43	31
Write-downs on equity investments/securities	–123	–11
Miscellaneous	–216	–40
Current tax expense	**3,938**	**–3,027**

The deferred taxes reported in the PSI Group break down as follows:

in EUR thousand	2018	2017
Deferred tax		
Pension provisions	7,567	7,370
Intangible assets	–797	–675
Goodwill amortisation with impact on tax	–470	–470
Partial retirement and anniversary bonus provisions	63	39
Project-related provisions	575	1,074
Receivables from long-term development contracts	–5,006	–4,408
Fixed assets	–202	–5
Trade receivables	2,881	2,556
Other provisions	162	180
Deferred income	–1,595	–840
Miscellaneous	–8	62
	3,170	**4,883**
As at 1 January, net	4,883	5,746
Tax expense recognised in the reporting period	–2,002	–688
Tax income/(expense) recognised in other comprehensive income in the reporting period	289	–175
As at 31 December, net	**3,170**	**4,883**
Amounts recognised in balance sheet		
Deferred tax assets	7,967	8,377
Deferred tax liabilities	–4,797	–3,494

The PSI Group has the following tax loss carryforwards:

in EUR million	2018	2017
Loss carryforward for trade tax in Germany	35.7	29.9*
Loss carryforward for corporation tax in Germany	37.2	32.7*
Loss carryforwards for foreign countries	13.4	9.4

The loss carryforwards in Germany do not expire.

*) The disclosures on loss carryforwards in Germany take account of the fact that the acquisition that occurred in the 2009 financial year and the allocation of a total of 28.60% of the voting rights in the Company by Kajo Neukirchen GmbH, Eschborn, since 1 January 2009 resulted in the loss of 25.65% of the eligible tax loss carryforwards. In May 2017, the German Federal Constitutional Court declared the underlying law to be unconstitutional based on an order for reference submitted by the Hamburg Fiscal Court. As a result of this judgement, the legislators were required to draw up new regulations for loss deduction for corporations in compliance with the constitution by no later than 31 December 2018, with retroactive effect from 1 January 2008. On 23 November 2018, the Bundesrat (German Federal Council) gave its approval to the 2018 German Annual Tax Act and the previous regulation on pro rata forfeiture of losses was definitively removed. The loss carryforwards are therefore preserved.

D. Disclosures on the consolidated income statement

The consolidated income statement is prepared using the nature of expense method.

12 Revenues

in EUR thousand	2018	2017
Software development and maintenance	164,896	158,917
Licences	15,890	12,125
Merchandise	18,370	15,054
	199,156	**186,096**

13 Other operating income

in EUR thousand	2018	2017
Income from reversal of provisions	2,026	1,248
Income from currency translation	999	1,207
Non-cash remuneration	887	843
Income from written-off receivables	322	22
Miscellaneous	1,668	887
	5,902	**4,207**

14 Cost of materials

in EUR thousand	2018	2017
Cost of purchased services	15,833	14,685
Cost of purchased goods	13,086	12,543
	28,919	**27,228**

15 Personnel expenses

in EUR thousand	2018	2017
Wages and salaries	102,837	95,192
Social security contributions	18,442	17,151
	121,279	**112,343**

Personnel expenses include expenses for payments to private pension institutions of EUR 561 thousand (previous year: EUR 576 thousand) and payments to state pension funds of EUR 6,262 thousand (previous year: EUR 5,832 thousand) in connection with defined contribution pension commitments.

16 Other operating expenses

in EUR thousand	2018	2017
Travel costs	6,555	6,715
Rental, leasing of real estate	6,910	6,222
Project-related expenses	3,285	1,882
Advertising and marketing activities	4,190	4,145
Lease costs for moveable assets	1,944	1,980
Data line, IT and telephone costs	3,104	2,981
Legal and consulting costs	2,023	1,999
Miscellaneous	6,788	7,092
	34,799	**33,016**

17 Net finance costs

in EUR thousand	2018	2017
Financial income	329	206
Financial expenses	–1,390	–1,189
Net income from associated companies	134	142
	–927	**–841**

18 Earnings per share

In accordance with IAS 33, basic earnings per share are calculated by dividing the Group net result or loss by the weighted number of shares.

	2018	2017
Net profit or loss for the period (EUR thousand)	10,585	9,497
Weighted number of shares (thousands)	15,670	15,641
Basic/diluted earnings per share (EUR per share)	**0.68**	**0.61**

To calculate diluted earnings per share, the net profit attributable to ordinary shareholders and the weighted average number of shares outstanding are adjusted for the effects of all dilutive potential ordinary shares that could arise as a result of subscription rights being exercised.

E. Disclosures on the cash flow statement

The reported cash and cash equivalents are not subject to any restrictions on their availability due to third parties. During the year under review, a dividend of 23 euro cents per share (previous year: 22 euro cents per share) was distributed to the shareholders for the 2017 financial year. The breakdown of cash and cash equivalents is shown in the table under C. 6. Overdraft liabilities were not included in cash and cash equivalents.

F. Disclosures on segment reporting

The PSI Group has two main segments that are reportable and applies IFRS 8 "Segment Reporting". This standard includes regulations on the disclosure of information on business areas and geographical segments. To improve the presentation of the PSI Group's economic alignment and in connection with the application of materiality criteria in financial reporting, the "Infrastructure Management" segment reported in the previous year was discontinued and its activities were allocated to the two remaining major segments.

Description of the segments

- Energy Management: Intelligent solutions for utility companies in the electricity, gas, oil and water sectors. The focus here is on reliable and cost-effective solutions for grid management and for trade and distribution in liberalised energy markets.
- Production Management: Software products and individual solutions for production planning, particularly tasks relating to production control and efficient logistics. The focus is on optimising the use of resources and increasing quality and cost-effectiveness.

Reconciliation

Revenues from transactions with other segments are grouped in the "Reconciliation" column. Revenues between business segments amounted to EUR 11,568 thousand as at 31 December 2018 (previous year: EUR 8,953 thousand). Certain expenses are not allocated to the individual segments. The result from reconciliation amounts to EUR –1,455 thousand (previous year: EUR –906 thousand).

Additional geographical disclosures

In the 2018 financial year, the PSI Group generated revenues of EUR 115.7 million (previous year: EUR 104.7 million) in Germany and revenues of EUR 83.5 million (previous year: EUR 81.4 million) in foreign countries. Non-current assets of EUR 35,689 thousand (previous year: EUR 35,762 thousand) are attributable to foreign countries.

G. Other disclosures

Other financial obligations and contingent liabilities

Operating rental agreements and leases – PSI Group as lessee

Cars, office equipment, data processing systems and other equipment were rented under operating leases. In the 2018 financial year, rent and leasing fees of EUR 1,019 thousand (previous year: EUR 1,022 thousand) were incurred in this context.

PSI AG concluded a rental agreement for an office building in Berlin in the 1996 financial year. The rental agreement was renegotiated in 2010 and had a term until 31 March 2017. In June 2015, an option agreed in the rental agreement for its renewal was exercised. The rental agreement now has a term until 31 March 2022.

As at 31 December 2018, these and other rental agreements and leases resulted in the following rent and lease payments:

in EUR thousand	Rent payments	Lease payments	Maintenance	Obligation from purchase agreement	**Total**
2019	3,888	1,208	368	3,900	9,364
2020	3,394	709	70	0	4,173
2021	2,895	302	1	0	3,198
2022	1,479	65	1	0	1,545
2023	737	17	0	0	754
2024 and thereafter	1,344	8	0	0	1,352
Total	**13,737**	**2,309**	**440**	**3,900**	**20,386**

As at 31 December 2017, these and other rental agreements and leases resulted in the following rent and lease payments:

in EUR thousand	Rent payments	Lease payments	Maintenance	Obligation from committed loan	**Total**
2018	4,519	1,556	863	132	7,070
2019	3,450	855	68	0	4,373
2020	2,591	399	42	0	3,032
2021	803	82	29	0	914
2022	621	5	16	0	642
2023 and thereafter	225	0	0	0	225
Total	**12,209**	**2,897**	**1,018**	**132**	**16,256**

Bill of exchange guarantees

Bill of exchange guarantees of EUR 39,981 thousand (previous year: EUR 34,972 thousand) were assumed for the PSI Group by various insurance companies and banks as at the end of the reporting period. The table below shows the undiscounted maximum amount for which PSI AG was liable at the end of the reporting period:

in EUR thousand	**2018**	2017
Advance payment guarantee	29,059	25,845
Contract performance guarantee	6,124	3,982
Warranty guarantee	3,739	4,321
Rent guarantee	1,014	824
Bid guarantee	45	0
Total	**39,981**	**34,972**

Employees

The average number of employees in the PSI Group in the financial year under review was 1,745 (previous year: 1,641). The workforce breaks down by function as follows:

	2018	2017
Software development and maintenance	1,333	1,290
Administration	188	177
Sales	150	133
Development	74	41
Total	**1,745**	**1,641**

Equity statement

	Equity interest in %	Share-holders' equity[1] 31.12.2018 EUR thousand	Annual net profit[1] 2018 EUR thousand
PSI Automotive & Industry GmbH, Berlin	100	8,672	72
PSI Nentec GmbH (from 18 January 2019: PSI GridConnect GmbH), Karlsruhe	100	501	0[2]
PSI Metals GmbH, Düsseldorf	100	5,163	0[2]
PSI Transcom GmbH, Berlin	100	1,028	27
PSI Logistics GmbH, Berlin	100	–1,322	944
PSI Energy Markets GmbH, Hanover	100	1,330	0[2]
PSI Mines&Roads GmbH, Berlin	100	–1,703	–534
PSI FLS Fuzzy Logik & Neuro Systeme GmbH, Dortmund	100	378	0[2]
PSI Metals Non Ferrous GmbH, Aachen	100	1,005	0[2]
MOVEO Software GmbH, Potsdam	100	431	98[6]
PSI Information Technology (Shanghai) Co. Ltd., Shanghai, China	100	60	–312[3]
PSI METALS NORTH AMERICA Inc., Pittsburgh, USA	100	507	176
PSI AG für Produkte und Systeme der Informationstechnologie, Wil, Switzerland	100	1,587	579
PSI Polska Sp. z o.o., Poznan, Poland	100	2,101	1,634
PSI Automotive & Industry Austria GmbH, Leonding, Austria	100	1,207	271
OOO 'PSI', Moscow, Russia	100	1,085	–1,515
PSI Incontrol Sdn. Bhd., Selangor, Malaysia	100	8,784	1,072[3]
PSI Incontrol Private Limited, Chennai, India	100	–3	–22[3]
Incontrol Tech for Shares, Salmabad, Bahrain	100	1,021	121[3]
Incontrol Tech (Thailand) Ltd., Bangkok, Thailand	100	–1,326	–848[3]
Incontrol Tech Holdings (Thailand) Ltd., Bangkok, Thailand	100	–395	–2[3]
PSI Metals Austria GmbH, Graz, Austria	100	5,585	920
PSI METALS INDIA PRIVATE LIMITED, Kolkata, India	100	195	–15[3]
PSI Metals Belgium NV, Brussels, Belgium	100	1,563	977
PSI Metals Brazil Ltda, Rio de Janeiro, Brazil	100	845	589
Time-steps AG, Affoltern am Albis, Switzerland	100	339	–38
PSI Metals UK Ltd., Watford, United Kingdom	100	3,442	1,039
PSIAG Scandinavia AB, Karlstad, Sweden	100	26	80[3]
OOO OREKHsoft, Moscow, Russia	49	98	23
OOO Gazavtomatika dispetcherskije sistemy, Moscow, Russia	33	1	0[5]
caplog-x GmbH, Leipzig	31.3	627	427[4]

[1] Values according to legal and local accounting regulations before consolidation bookings
[2] Profit-pooling contracts
[3] Values according to IFRS before consolidation bookings
[4] Values as of 31 December 2017, as values as of 31 December 2018 were not available at the date of the financial statements
[5] Values as of 31 December 2016, as values as of 31 December 2018 were not available at the date of the financial statements
[6] Values according to legal and local accounting regulations before consolidation bookings, pro rata since 25 July 2018

Auditor's fees

The following fees were incurred in the financial year for services performed by the auditor:

in TEUR	**2018**	2017
Audit services	183	183
Tax consultancy services	268	402
Other consultancy services	0	5
Total	**451**	**590**

Audit fees comprise the audit of the financial statements of PSI AG and the PSI Group's consolidated financial statements.

Related party disclosures

Parties are considered to be related if they have the ability to control the PSI Group or exercise significant influence over its financial and operating policies. In determining whether related parties of the PSI Group exercise significant influence over its financial and operating policies, the existence of fiduciary relationships was taken into account as well as existing control relationships.

Related companies

The affiliated companies included in the Group financial statements are to be regarded as related companies. In addition, the associated companies caplog-x and OOO Gazavtomatika dispetcherskije sistemy are to be regarded as related companies. There are no other related companies.

Related persons

The members of the Board of Directors and the Supervisory Board are to be regarded as related persons.

Transactions with related parties

There are transactions between PSI AG and its subsidiaries in the context of supplies and services, cash management, central administrative services and personnel provision; these are eliminated on consolidation. There are transactions between PSI AG and the associated companies in the context of supplies and services and the granting of loans.

There were no business transactions between the related persons and the PSI Group in 2018 or in 2017.

Supervisory Board

The following persons were members of the Supervisory Board in the 2018 financial year:

Name	Profession	Domicile	Membership of Supervisory Boards of other companies
Karsten Trippel (Chairman)	Businessman	Großbottwar	1. Berlina AG für Anlagewerte, Berlin (Chairman) 2. Preussische Vermögensverwaltungs AG, Berlin 3. Riebeck-Brauerei von 1862 AG, Wuppertal (Chairman) 4. Ost-West Beteiligungs- und Grundstücksverwaltungs-AG, Köln (Deputy Chairman) 5. Fleischerei-Bedarf Aktiengesellschaft von 1923, Coburg (Chairman)
Prof. Dr.-Ing. Ulrich Wilhelm Jaroni (Deputy Chairman)	Engineering graduate	Aschau	None
Andreas Böwing	Lawyer	Herten	Thyssengas GmbH, Dortmund
Prof. Dr. Uwe Hack	Professor of International Finance and Accounting	Metzingen	None
Elena Günzler (employee representative)	Mathematics graduate	Berlin	None
Uwe Seidel (employee representative)	Chemistry graduate	Duisburg	None

Remuneration of Board of Directors and Supervisory Board

Remuneration totalling EUR 1,779 thousand (previous year: EUR 1,150 thousand) was granted to the Board of Directors of PSI AG for the 2018 financial year. EUR 392 thousand (previous year: EUR 58 thousand) of this total remuneration related to long-term remuneration.

Pension provisions of EUR 629 thousand (previous year: EUR 628 thousand) are reported for former Board of Directors members. Besides pension payments to former members of the governing bodies in the amount of EUR 56 thousand (previous year: EUR 55 thousand), no other benefits were paid in the 2018 financial year.

The Supervisory Board received remuneration of EUR 304 thousand (previous year: EUR 291 thousand) in the year under review.

Individualised information on the remuneration of the Board of Directors and the Supervisory Board is presented in the remuneration report, which forms part of the combined Group management report.

Events after the end of the reporting period

By way of an agreement dated 10 December 2018, PSI AG acquired the assets and assumed the liabilities of the “PRINS network control software” business of BTC Business Technology Consulting AG, Oldenburg, with effect from 1 January 2019. The acquisition constitutes a company acquisition pursuant to IFRS 3. Part 1 of the purchase price amounts to EUR 3,900 thousand, while part 2 will be calculated based on the spin-off balance sheet that is to be drawn up by the seller. Part 1 of the purchase price may change as a result of the value of part 2. Because the spin-off balance sheet has not yet been prepared and there was only a short time until the date of the preparation of the consolidated financial statements, it has not yet been possible to carry out a final purchase price allocation.

Disclosures on the German Corporate Governance Code

PSI AG issued the statements required in accordance with section 161 of the German Stock Corporation Act on 5 December 2018. They are permanently available to the shareholders in the investor relations section of PSI AG’s website (www.psi.de).

Berlin, 6 March 2019

Dr. Harald Schrimpf (CEO)

Harald Fuchs

REMUNERATION REPORT

This report is based on the recommendations of the German Corporate Governance Code (GCGC) and the requirements of the German Commercial Code (HGB), German accounting standards and International Financial Reporting Standards (IFRSs).

Remuneration of the Supervisory Board

In accordance with the resolution of the Annual General Meeting on 16 May 2017, the current remuneration of the Supervisory Board members consists of basic remuneration and a component that is dependent on attendance of meetings. The annual basic remuneration amounts to EUR 60,000 plus sales tax for the Chairman of the Supervisory Board, EUR 45,000 plus sales tax for the Deputy Chairman and EUR 30,000 plus sales tax for each other member of the Supervisory Board. In addition, remuneration is paid in the amount of EUR 7,000 for the committee chairman and EUR 4,000 for the other committee members for each position on a Supervisory Board committee. This does not apply if the committee member or committee chairman is the Chairman or Deputy Chairman of the Supervisory Board.

The component that is dependent on attendance of meetings amounts to EUR 1,000 per meeting for each Supervisory Board member. In total, the Supervisory Board received remuneration of EUR 304,000 in the 2018 financial year, which breaks down as follows:

EUR thousand	**2018**	2017
Andreas Böwing	44	41
Elena Günzler	44	42
Prof. Dr. Uwe Hack	47	28
Prof. Dr. Ulrich Wilhelm Jaroni	55	53
Uwe Seidel	44	42
Karsten Trippel	70	68
	304	**291**

Remuneration of the members of the Board of Directors

The remuneration system for the Board of Directors at PSI is aimed at providing an incentive for successful and sustainable corporate governance. Both intrinsically and also by way of the incentive system, the members of the Board of Directors are motivated to have a long-term commitment to the company and to develop and implement a permanently successful and robust corporate strategy. For this reason, a significant portion of the total remuneration is dependent on the long-term performance of the PSI share. Other remuneration targets are based on the annual increase in the company's profits. Special achievements are to be rewarded appropriately, while missed targets lead to a significant reduction in remuneration. The remuneration is intended to be attractive in comparison to the competition in order to attract and retain outstanding managers at our Company.

The system and amount of remuneration for the Board of Directors are defined and regularly reviewed by the full Supervisory Board at the suggestion of the Personnel Committee of the Supervisory Board. The appropriateness of the amount of remuneration is reviewed by the Supervisory Board on an annual basis. The following criteria are taken into account in this context: the economic situation, the Company's success and future prospects, the tasks and performance of the individual members of the Board of Directors, and the typical level of remuneration in view of the external comparative environment and the Company's internal remuneration structure. The ratio of the remuneration of the Board of Directors to that of the top management and the workforce is also taken into account, both as a whole and over time. The basic components of the remuneration system for the members of the Board of Directors that has been in place since the 2010 financial year has repeatedly been presented verbally at the Annual General Meetings and was approved by the Annual General Meeting on 3 May 2010. It consists of the following remuneration components: basic remuneration, variable remuneration (annual bonus) and long-term remuneration (target agreement over a three-year period). In addition, the Company can also pay each member of the Board of Directors a voluntary annual recognition bonus that is capped at a certain amount. However, there is no legal entitlement to this bonus, even if it is repeatedly paid. No voluntary recognition bonus has been paid since 2005.

In the 2018 financial year, the remuneration system for the Board of Directors consisted of the following components:

Non-performance-related components

Basic remuneration

The basic remuneration is paid out as a monthly salary. Since 1 July 2018, the basic remuneration of the Chairman of the Board of Directors, Dr. Harald Schrimpf, has been EUR 450,000 per year. The basic remuneration for Mr. Fuchs is EUR 302,281 per year.

Fringe benefits

Each member of the Board of Directors is provided with a leased vehicle for business and personal use for the duration of his or her actual term of office. A Board member may choose to do without this company car, in which case his or her basic remuneration increases. Other fringe benefits include various types of insurance such as statutory contributions to health and nursing insurance and a professional liability insurance policy that is taken out by the company for its executive bodies.

Performance-related components

Variable remuneration (annual bonus)

Variable remuneration (the annual bonus) is based on the Company's business performance in the past financial year. 50% of the annual bonus depends on the Group net result (IFRS), 25% depends on key figures for PSI's transformation into an international software product and SaaS cloud provider, and 25% depends on other strategic targets. Corresponding targets are also applied for senior executives, in addition to other employees, in order to achieve a consistent target system at the company. If the results fall significantly short of the targets, the variable remuneration may not be paid out at all (0%). The bonus is capped at 200%.

The annual bonus is paid entirely in cash.

Long-term remuneration

The long-term performance-related remuneration is based on a target agreement over a three-year period. The most recent long-term target agreement was concluded for the period from January 2016 to December 2018. In this case, the cumulative Group net results and the share price performance were agreed as the targets. Pro rata provisions are recognised each year and the remuneration is not paid until after the end of the three-year period. If the results fall significantly short of the targets, the long-term remuneration may not be paid out at all (0%). The long-term remuneration is capped at 200%.

The long-term remuneration is paid entirely in cash. For reasons of simplicity, there is no stock option programme.

Even though there is no stock option programme, both members of the Board of Directors hold shares in the Company. The exact amount of shares held by the Board of Directors is shown below.

Pension commitments

There are no pension commitments for the current members of the Board of Directors.

Commitments in connection with the termination of employment on the Board of Directors

In the event of premature termination of employment on the Board of Directors by mutual agreement and without good cause, the contracts of the members of the Board of Directors stipulate a compensation payment that is limited to a maximum amount of two times the annual remuneration and does not remunerate more than the remaining term of the employment contract (severance payment cap). The amount of the compensation payment is calculated based on the basic remuneration and the performance-related variable remuneration (annual bonus), the non-cash fringe benefits and the pro rata long-term remuneration.

In the event of a change of control that results in a significant change in the position of the individual member of the Board of Directors – for example, due to a change in the company's strategy or a change in the Board member's field of activity – the Board member has the right to terminate his or her employment contract. A change of control occurs, for example, if one shareholder or multiple shareholders acting jointly acquire 25% or 30% of the voting rights in PSI Software AG and exercise a controlling influence, if PSI Software AG becomes a dependent company as a result of concluding an intercompany agreement as defined in section 291 of the German Stock Corporation Act (AktG) or if it is merged with another company. If the Board member exercises this termination right, he or she is entitled to a severance payment for the remaining term of his or her contract. In addition to the basic remuneration and the target amount for the annual bonus, the calculation of the annual remuneration also includes an annual tranche of the long-term remuneration. To generally reflect discounting and other earnings, compensation or severance payments are reduced by 5% or 25% respectively.

Secondary activities of members of the Board of Directors

Decisions on whether to approve secondary activities of members of the Board of Directors, particularly supervisory board mandates outside the Group, are taken by the Supervisory Board. The performance of mandates at Group companies is considered to be compensated by the contractual remuneration for members of the Board of Directors. In the year under review, the members of the Board of Directors did not perform any secondary activities that required approval.

Remuneration of the members of the Board of Directors for the 2018 financial year

In the context of the annual financial statements, the Supervisory Board determined the level of target achievement for the variable remuneration (bonus) and the long-term remuneration.

Total remuneration

Based on the above stipulations of the Supervisory Board, total remuneration of the Board of Directors for the 2018 financial year amounted to EUR 1.8 million (previous year: EUR 1.2 million). EUR 0.4 million (previous year: EUR 0.1 million) of this total remuneration related to long-term remuneration. A detailed, individualised presentation of the remuneration for the 2018 financial year is provided below:

EUR thousand	**2018**	2017
Fixed remuneration		
Harald Fuchs	315	315
Dr. Harald Schrimpf	422	382
	737	**697**
Variable remuneration		
Harald Fuchs	175	180
Dr. Harald Schrimpf	475	215
	650	**395**
Long-term remuneration		
Harald Fuchs	168	25
Dr. Harald Schrimpf	224	33
	392	**58**
Total remuneration		
Harald Fuchs	658	520
Dr. Harald Schrimpf	1,121	630
	1,779	**1,150**

On 31 December 2018, the members of the Board of Directors and the Supervisory Board held the following numbers of PSI shares:

Number of shares	**2018**	2017
Board of Directors		
Harald Fuchs	7,023	6,023
Dr. Harald Schrimpf	67,000	67,000
Supervisory Board		
Andreas Böwing	0	0
Elena Günzler	1,905	1,739
Prof. Dr. Uwe Hack	600	0
Prof. Dr. Ulrich Wilhelm Jaroni	0	0
Uwe Seidel	415	100
Karsten Trippel	111,322	111,322

In 2018, three share transactions were executed by members of the executive bodies and were published on PSI's website under Directors' Dealings.

RESPONSIBILITY STATEMENT

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

Berlin, 6 March 2019

PSI Software AG

The Board of Directors

Dr. Harald Schrimpf

Harald Fuchs

INDEPENDENT AUDITOR'S REPORT

To PSI Software AG

Report on the audit of the consolidated financial statements and of the Group management report

Opinions

We have audited the consolidated financial statements of PSI Software AG, Berlin, and its subsidiaries (the Group), which comprise the consolidated balance sheet as of 31 December 2018, consolidated income statement, consolidated comprehensive income statement, consolidated statement of changes in equity and consolidated cash flow statement for the fiscal year from 1 January to 31 December 2018, and notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the Group management report of PSI Software AG for the fiscal year from 1 January to 31 December 2018. In accordance with the German legal requirements, we have not audited the content of the group statement on corporate governance included under the heading "Transparent and responsible corporate governance" in the "Sustainability and CSR" section of the Group management report, the declaration on the German Corporate Governance Code included under the heading "Transparent and responsible corporate governance" in the "Sustainability and CSR" section of the Group management report, or the non-financial statement included under the heading "Non-financial statement" in the "Sustainability and CSR" section of the Group management report.

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

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to Sec. 315e (1) HGB ["Handelsgesetzbuch": German Commercial Code] and, in compliance with these requirements, give a true and fair view of the assets, liabilities, and financial position of the Group as of 31 December 2018, and of its financial performance for the fiscal year from 1 January to 31 December 2018, and
- the accompanying Group management report as a whole provides an appropriate view of the Group's position. In all material respects, this Group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. Our opinion on the Group management report does not cover the content of the group statement on corporate governance, the non-financial statement or the declaration on the German Corporate Governance Code referred to above.

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

Basis for the opinions

We conducted our audit of the consolidated financial statements and of the Group management report in accordance with Sec. 317 HGB and the EU Audit Regulation (No. 537/2014, referred to subsequently as "EU Audit Regulation") and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the "Auditor's responsibilities for the audit of the consolidated financial statements and of the Group management report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Art. 10 (2) f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Art. 5 (1) of the EU Audit Regulation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the consolidated financial statements and on the Group management report.

Key audit matters in the audit of the consolidated financial statements

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the consolidated financial statements for the fiscal year from 1 January to 31 December 2018. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon; we do not provide a separate opinion on these matters.

Below, we describe what we consider to be the key audit matters:

1. Revenue recognition

Reasons why the matter was determined to be a key audit matter

The revenue recognised in the 2018 financial year chiefly stems from selling software products and solutions as well as rendering associated services. Revenue is recognised when the significant risks and rewards of ownership of the goods are transferred to the customer.

Revenue from maintenance agreements is recognised on a pro rata basis over the term of the agreement.

We consider revenue recognition to be a complex matter on account of the large number of different contractual agreements for the various services of the PSI Group in the various segments as well as the extensive effects of revenue recognition on disclosures of assets and liabilities as well as income and expense items. The complexity associated with an increased risk of accounting misstatements means that we identified revenue recognition as one of the key audit matters.

Auditor’s response

During our audit, we assessed the accounting and valuation principles applied for the recognition of revenue in the PSI Group’s consolidated financial statements using the criteria defined in IFRS 15. Our audit approach focused in particular on the question of whether the significant risks and rewards of ownership from selling software products and solutions as well as from rendering services had been transferred to the buyer as of the reporting date. In addition, we examined which different types of services were included in the contracts and whether these could be differentiated and thus accounted for separately. Based on the provisions of the contracts, we also assessed whether the decision to base the accounting on a point in time or on a period of time was appropriate. We analysed the processes implemented by the executive directors of the PSI Group as well as the accounting and valuation principles applied for the recognition of revenue. We also tested the effectiveness of the controls of the significant group entities regarding revenue recognition as well as the correct allocation of revenue.

In addition, we examined the significant revenue for fiscal year 2018 by correlating it with the associated trade receivables as well as the payments received. We also analysed revenue recognition by comparing the contractual agreements with the requirements of the current revenue recognition standards for services, licenses and construction contracts on a sample basis. We assessed whether revenue was allocated to the correct period by inspecting agreements, project documents such as correspondence with customers and evidence of hours booked as well as acceptance protocol for revenue transactions.

We examined the calculation of revenue allocation for transactions which have not yet been completed using analytical audit procedures as well as an analysis of the contractual bases and the effectiveness of the controls implemented in this area. In terms of proportional revenue recognition from prepaid services, we verified the development of prepaid expenses and deferred income on an analytical basis as well as the contractual bases on a sample basis.

Our audit procedures did not lead to any reservations relating to revenue recognition.

Reference to related disclosures

Disclosures on the accounting and valuation principles applied for revenue are contained in section B "Presentation of accounting policies and financial risk management method" under "Significant judgements, estimates and assumptions" and "Recognition of revenues and income" of the notes to the consolidated financial statements.

Information about the breakdown of revenue can be found in the "Disclosures on the consolidated income statement" section under D. 12 "Revenues" of the notes to the consolidated financial statements. Additional information is included in the "Disclosures on the consolidated balance sheet" section under C. 3 "Net trade receivables"; C. 4 "Receivables from long-term development contracts" of the notes to the consolidated financial statements.

2. Goodwill impairment test

Reasons why the matter was determined to be a key audit matter

Goodwill that makes up roughly 24% of total assets is reported under "Intangible assets" in the consolidated financial statements of the PSI Group. Goodwill is subject to an annual impairment test as of 31 December in order to determine any need to recognize an impairment loss. The impairment test is based on complex models covering multiple periods that use estimates based on judgement by the Board of Directors. The result of these tests is therefore highly dependent on the executive directors' estimate of future cash flows and the respective discount rates used.

Against the background of the complexity and the judgement exercised during valuation, the goodwill impairment test was a key audit matter.

Auditor's response

During our audit, we verified the procedure for performing impairment tests in terms of compliance with the requirements for an impairment test as defined by IAS 36 "Impairment of Assets" with the help of internal valuation experts. In this context, we analysed the planning process and had the executive directors explain the significant planning assumptions to us, and we compared this with the earnings and cash flows realized in the past. If we identified any significant differences, we examined the disclosures and evidence provided by the executive directors. In our assessment of the results of the impairment tests, we compared the general and industry-specific market expectations with the market models for the expected cash inflows and examined any differences. Based on our knowledge that even relatively small changes in the discount rates used can at times have significant effects on the amount of the business value calculated or the recoverable amount, we analysed the parameters used to determine the discount rates and verified them in terms of the requirements of IAS 36.

We also performed sensitivity analyses in order to estimate any potential impairment risk associated with a reasonably possible change in one of the significant assumptions used in the valuation.

Our audit procedures did not lead to any reservations relating to the goodwill impairment test.

Reference to related disclosures

Disclosures on the accounting and valuation principles applied for goodwill are contained in section B "Presentation of accounting policies and financial risk management method" under "Significant judgements, estimates and assumptions," "Goodwill" and "Impairment of non-current, non-financial assets" of the notes to the consolidated financial statements.

Information about the breakdown of goodwill and the impairment test can be found in the "Disclosures on the consolidated balance sheet" section under C. 1 "Intangible assets and property, plant and equipment" of the notes to the consolidated financial statements.

Other information

The Supervisory Board is responsible for the report of the Supervisory Board. In all other respects, the executive directors are responsible for the other information.

The other information comprises:

- the group statement on corporate governance contained under “Transparent and responsible corporate governance” in the Sustainability and CSR section of the Group management report
- the declaration on the German Corporate Governance Code contained under “Transparent and responsible corporate governance” in the Sustainability and CSR section of the Group management report
- the non-financial statement contained under “Non-financial statement” in the Sustainability and CSR section of the Group management report
- the responsibility statement and the report of the Supervisory Board
- the other parts of the annual report expected to be provided to us after the date of the auditor’s report, with the exception of the audited consolidated financial statements and Group management report as well as our independent auditor’s report

Our opinions on the consolidated financial statements and on the Group management report do not cover the other information, and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the Group management report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

Responsibilities of the executive directors and the Supervisory Board for the consolidated financial statements and the Group management report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Sec. 315e (1) HGB, and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position and financial performance of the Group. In addition, the executive directors are responsible for such internal control as they have determined 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, the executive directors are responsible for assessing the Group’s ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are responsible for the preparation of the Group management report that, as a whole, provides an appropriate view of the Group’s position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a Group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the Group management report.

The Supervisory Board is responsible for overseeing the Group’s financial reporting process for the preparation of the consolidated financial statements and of the Group management report.

Auditor’s responsibilities for the audit of the consolidated financial statements and of the Group management report

Our 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 whether the Group management report as a whole provides an appropriate view of the Group’s position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor’s report that includes our opinions on the consolidated financial statements and on the Group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Sec. 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgement and maintain professional scepticism throughout the audit. We also

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the Group management report, 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 opinions. 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 of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the Group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of these systems.
- Evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- Conclude on the appropriateness of the executive directors’ use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group’s ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor’s report to the related disclosures in the consolidated financial statements and in the Group management report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor’s report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Sec. 315e (1) HGB.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express opinions on the consolidated financial statements and on the Group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.
- Evaluate the consistency of the Group management report with the consolidated financial statements, its conformity with [German] law, and the view of the Group’s position it provides.

- Perform audit procedures on the prospective information presented by the executive directors in the Group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance 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.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence and where applicable, the related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

Other legal and regulatory requirements

Further information pursuant to Art. 10 of the EU Audit Regulation

We were elected as group auditor by the Annual General Meeting on 16 May 2018. We were engaged by the Supervisory Board on 5 December 2018. We have been the group auditor of PSI Software AG (formerly: PSI Aktiengesellschaft für Produkte und Systeme der Informationstechnologie) without interruption since fiscal year 1998.

We declare that the opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Art. 11 of the EU Audit Regulation (long-form audit report).

German Public Auditor responsible for the engagement

The German Public Auditor responsible for the engagement is Gunnar Glöckner.

Berlin, 19 March 2019

Ernst & Young GmbH
Wirtschaftsprüfungsgesellschaft

Glöckner	Beckers
German Public Auditor	German Public Auditor

PSI multi-year overview

in EUR million	2018	2017	2016	2015	2014
Order situation					
New orders	217	190	182	195	184
Order backlog	139	128	129	129	120
Consolidated income statement					
Revenues	199.2	186.1	176.9	183.7	175.4
thereof Energy Management***	99.7	91.6**	69.2	67.2	64.2
thereof Production Management***	99.5	94.5**	84.2	86.4	79.6
thereof Infrastructure Management***			23.5	30.1	31.6
Export share in %	41.9	43.7	45.2	49.3	48.6
Licence revenues	15.9	12.1	13.6	13.2	12.9
Licence share in %	8.0	6.5	7.7	7.2	7.4
R&D expenses	22.0	18.5	16.8	19.5	16.1
R&D ratio in %	11.0	9.9	9.5	10.6	9.2
Operating result (EBIT)	15.5	13.4	11.8	11.1	7.7**
EBIT margin in %	7.8	7.2	6.7	6.0	4.4**
Earnings before taxes (EBT)	14.5	12.5	11.2	9.4	5.7
Group net result	10.6	9.5	8.6	7.5	4.1
Return on sales in %	5.3	5.1	4.9	4.1	2.3
Cash flow					
Cash flow from operating activities	19.0	1.2	13.3	14.0	24.1
Cash flow from investing activities	–7.4	–4.1	–2.9	–2.2	–14.3
Cash flow from financing activities	–4.8	–1.1	–6.7	–2.1	–1.7
Investments*	7.8	4.4	3.2	2.9	13.3
Balance sheet					
Shareholders' equity	86.6	80.3	75.3	73.2	68.3
Equity ratio in %	41.5	41.4	37.8	36.7	35.5
Return on equity in %	12.2	11.8	11.4	10.2	6.0
Total assets	208.7	194.0	199.4	199.5	192.3**
Share					
Earnings per share in EUR	0.68	0.61	0.55	0.48	0.26
Closing price at end of year in EUR	15.65	18.51	12.2	12.90	11.91
Market capitalisation on 31 December	245.7	290.6	191.5	202.5	187.0
Employees					
Number of employees on 31 December	1,787	1,665	1,619	1,650	1,714
Personnel expenses	121.3	112.3	109.3	106.8	103.6

* Company acquisitions, intangible assets, property, plant and equipment
** Adjusted
*** Change in segment reporting from 2017 onward

PSI quarterly overview for 2018

in EUR million	Q1	Q2	Q3	Q4
Order situation				
New orders	93	42	41	41
Order backlog	174	165	159	139
Income statement				
Revenues	45.7	48.8	47.0	57.6
thereof Energy Management	22.4	24.5	22.0	30.8
thereof Production Management	23.3	24.3	25.0	26.8
Operating result (EBIT)	2.8	3.4	3.9	5.4
EBIT margin in %	6.1	7.0	8.3	9.4
Earnings before taxes (EBT)	2.6	3.4	3.4	5.1
Group net result	1.9	2.4	2.6	3.7
Return on sales in %	4.2	4.9	5.5	6.4
Share				
Earnings per share in EUR	0.12	0.15	0.16	0.25
Closing price at end of quarter in EUR	17.25	16.00	15.70	15.65
Employees				
Number of employees at end of quarter	1,701	1,722	1,775	1,787
Personnel expenses	29.9	30.3	29.4	31.7

Financial calendar for 2019

Publication of annual results	26.3.2019
Analyst conference	26.3.2019
Report on first quarter	29.4.2019
Annual General Meeting	16.5.2019
Report on first half of year	26.7.2019
Report on third quarter	30.10.2019
German Equity Forum analyst conference	25.–27.11.2019

The PSI share

Stock exchange segment	Prime Standard
Stock exchange symbol	PSAN
Securities identification number (WKN)	A0Z1JH
ISIN	DE000A0Z1JH9

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"2018 was a record year for PSI in terms of new orders, revenues and earnings. In the year of our fiftieth anniversary, we thus showed that our transformation into a specialised software product provider is successful and offers a lot of potential for the future."

We would be glad to add your name to our shareholder information mailing list. Please also get in touch if you would like a copy of the PSI AG Financial statements. For the latest investor news, please visit our website at **http://www.psi.de/en/psi-investor-relations/.**

PUBLICATION DETAILS

Publisher
PSI Software AG,
Berlin, Germany

Concept and layout
KorteMaerzWolff Kommunikation,
Hamburg, Germany

Photos
Freepik
istockphoto
MVG
Sebastian Vollmert (p. 2 and 6)
PSI Software AG: all other images

klimaneutral
gedruckt
www.klima-druck.de
ID-Nr. 1979025
bvdm.

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