Report by the Board of Directors and Financial Statements 2019

Bittium

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Year 2019 in Brief

Net Sales Grew and Operating Result Improved in 2019

Bittium's net sales in January–December 2019 grew by 19.7 percent year-on-year to EUR 75.2 million (EUR 62.8 million).

The share of the product-based net sales increased to 65.6 percent and was EUR 49.4 million (EUR 30.8 million). The net sales resulted mainly from the deliveries of the tactical communication system and products, Bittium Faros ECG devices, and secure Bittium Tough Mobile smartphones and their related security software. The growth of the product-based net sales was driven in particular by increased sales of Faros devices.

The share of the services-based net sales decreased to 34.4 and was EUR 25.9 million (EUR 32.1 million). The decrease in the services business net sales was caused by the company's own significant large R&D projects that tie experts into internal product development.

Operating profit was EUR 6.3 million (EUR 2.8 million).

Significant Events during the Reporting Period

February 14, 2019–Bittium Wireless Ltd, a subsidiary of Bittium Corporation, received a purchase order from the Finnish Defence Forces for products included in the Software Defined Radio based Bittium Tactical Wireless IP Network™ (TAC WIN) system and Bittium Tough Comnode™ terminals, which are meant for tactical communications. The total value of the purchase order is EUR 11.5 million of which the share of the Bittium TAC WIN system's products is EUR 9.9 million and the share of the Bittium Tough Comnode terminals is EUR 1.6 million.

The share of the purchase order including Bittium TAC WIN system's products is based on the Framework Agreement signed by Bittium and the Finnish Defence Forces on August 9, 2017. According to the Framework Agreement, the Finnish Defence Forces will order products included in the Software Defined Radio based Bittium TAC WIN system during the years 2018–2020. If materialized in full, the total value of the Framework Agreement is EUR 30 million. Finnish Defence Forces will issue separate purchase orders for the products each year. The products ordered in February will be delivered to the Finnish Defence Forces during the year 2019.

The share of the purchase order including Bittium Tough Comnode terminals is based on the Framework Agreement signed by Bittium and the Finnish Defence Forces on November 5, 2018. According to the Framework Agreement, the Finnish Defence Forces will order Bittium Tough Comnode terminals and related accessories during the years 2018–2022. If materialized in full, the total value of the Framework Agreement is EUR 8.3 million. Finnish Defence Forces will issue separate purchase orders in several batches during the validity of the Framework Agreement. The products ordered in February will be delivered to the Finnish Defence Forces during the year 2019.

On March 1, 2019 Mr. Klaus Mäntysaari, Senior Vice President Connectivity Solutions of Bittium Corporation, a member of Bittium Management Group, decided to leave to another company. Mr. Mäntysaari has been working for Bittium since 2004 in several positions in the wireless services business. He continued at Bittium until April 30, 2019. Temporarily Mr. Hannu Huttunen, CEO of the company, was leading the Connectivity Solutions business. As of May 1, 2019 Bittium management group consisted of following persons: Mr. Hannu Huttunen, CEO (chairman); Mr. Pekka Kunnari, CFO; Mr. Kari Jokela, CLO; Ms. Karoliina Fyrstén, Director, Corporate Communications and Marketing; Mr. Sammy Loitto, Senior Vice President, Sales; and heads of product and service areas: Mr. Jari Sankala, Senior Vice President, Defense and Security; Mr. Arto Pietilä, Senior Vice President, Medical Technologies; and Mr. Jari-Pekka Innanen, Vice President, Engineering.

On September 5, 2019 Mr. Tommi Kangas (48) was appointed as Senior Vice President, Connectivity Solutions product and services area at Bittium Corporation and as a member of the Bittium Corporation's Management Group, effective immediately. Previously at Bittium, he has been responsible for Connectivity Solutions product and services area's significant key customers as well as worked in several management positions in telecom business and sales. Mr. Kangas reports to Mr. Hannu Huttunen, CEO of Bittium Corporation. As of September 5, 2019 Bittium management group consists of following persons: Mr. Hannu Huttunen, CEO (chairman); Mr. Pekka Kunnari, CFO; Mr. Kari Jokela, CLO; Ms. Karoliina Fyrstén, Director, Corporate Communications and Marketing, Mr. Sammy Loitto, Senior Vice President Sales, and heads of product and service areas: Mr. Jari Sankala, Senior Vice President, Defense and Security; Mr. Arto Pietilä, Senior Vice President, Medical Technologies; and Mr. Tommi Kangas, Senior Vice President, Connectivity Solutions, and Mr. Jari-Pekka Innanen, Vice President, Engineering.

Financial Performance in January–December 2019

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME, MEUR	2019 12 months	2018 12 months
Net sales	75.2	62.8
Operating profit / loss	6.3	2.8
Financial income and expenses	-0.4	-0.1
Result before tax	5.9	2.7
Result for the period	**7.6**	**4.0**
Total comprehensive income for the period	**7.7**	**4.1**
Result for the period attributable to:		
Equity holders of the parent	7.6	4.0
Total comprehensive income for the period attributable to:		
Equity holders of the parent	7.7	4.1
Earnings per share from continuing operations, EUR	0.214	0.113

- Cash flow from operating activities was EUR 9.6 million (EUR -0.5 million).
- Net cash flow during the period was EUR 4.3 million. As the most significant items the net cash flow includes withdrawing a EUR 20.0 million bank loan, EUR 15.6 million investments made into own product development and the EUR 5.4 million dividend payment (EUR -32.0 million, including as the most significant items EUR 15.1 million investments made into own product development and the EUR 10.7 million dividend payment).
- Equity ratio was 73.4 percent (84.7 percent).
- Net gearing was -11.2 percent (-26.7 percent).

Half Year Figures

GROUP'S NET SALES AND OPERATING RESULT, MEUR	2H/19	1H/19	2H/18	1H/18
Net sales	42.2	33.1	34.5	28.3
Operating profit (loss)	4.7	1.7	3.7	-0.8
Result before taxes	4.4	1.5	3.5	-0.8
Result for the period	6.1	1.5	4.8	-0.8

DISTRIBUTION OF NET SALES BY PRODUCT AND SERVICES, MEUR AND %	2H/19	1H/19	2H/18	1H/18
Product based net sales	30.8	18.6	19.0	11.8
	73.1%	56.1%	54.9%	41.8%
Services based net sales	11.4	14.5	15.6	16.5
	27.1%	43.9%	45.1%	58.2%

DISTRIBUTION OF NET SALES BY MARKET AREAS, MEUR AND %	2H/19	1H/19	2H/18	1H/18
Asia	0.1	0.2	0.4	0.5
	0.3 %	0.5 %	1.1%	1.7%
Americas	12.7	5.8	5.0	3.0
	30.2%	17.5%	14.6%	10.6%
Europe	29.3	27.1	29.1	24.8
	69.6%	82.0%	84.3%	87.7%

Research and Development

Bittium continued significant investments in its own products and product platforms. In January–December 2019 the investments were EUR 25.1 million, representing a 33.4 percent of net sales.

The investments focused mainly on the development of the tactical communication system and its products targeted to the defense industry, different authorities' and special terminal products and their related security software, and medical technology products.

A significant part of the capitalized R&D investments is related to developing software defined radio based tactical communication handheld and vehicle radios (Bittium Tough SDR product family), further development of tactical networks, development of the secure smartphones and related security software, as well as development of medical technology products.

R&D INVESTMENTS, MEUR	2019 12 months	2018 12 months
Total R&D investments	**25.1**	**21.6**
Capitalized R&D investments	-15.6	-15.1
Depreciations and impairment of R&D investments	3.1	0.4
Cost impact on income statement	12.6	6.9
R&D investments, % of net sales	**33.4%**	**34.4%**

CAPITALIZED R&D INVESTMENTS IN BALANCE SHEET, MEUR	2019 12 months	2018 12 months
Balance sheet value in the beginning of the period	26.6	11.9
Additions during the period	15.6	15.1
Depreciations and impairment of R&D investments	-3.1	-0.4
Balance sheet value at the end of the period	39.1	26.6

Statement of Financial Position and Financing

The figures presented in the statement of financial position of December 31, 2019, are compared with the statement of the financial position of December 31, 2018 (MEUR).

	Dec. 31, 2019	Dec. 31, 2018
Non-current assets	80.5	65.9
Current assets	73.8	66.5
Total assets	154.2	132.4
Share capital	12.9	12.9
Other capital	99.4	97.1
Total equity	112.3	110.0
Non-current liabilities	22.1	1.9
Current liabilities	19.9	20.5
Total equity and liabilities	154.2	132.4

CASH FLOW OF THE REVIEW PERIOD	Jan.–Dec. 2019	Jan.–Dec. 2018
+ profit of the period +/- adjustment of accrual basis items	14.3	7.9
+/- change in net working capital	-4.2	-8.4
- interest, taxes and dividends	-0.4	-0.0
= net cash from operating activities	9.6	-0.5
- net cash from investing activities	-18.6	-19.8
- net cash from financing activities	13.2	-11.7
= net change in cash and cash equivalents	4.3	-32.0

The amount of gross investments in the period under review was EUR 21.3 million. Net investments for the review period totaled to EUR 21.3 million. The total amount of depreciation during the period under review was EUR 8.0 million. The amount of interest-bearing debt, including finance lease liabilities, was at the end of the reporting period EUR 22.6 million (EUR 1.5 million). Bittium's equity ratio at the end of the period was 73.4 percent (84.7 percent).

Cash and other liquid assets at the end of the reporting period were EUR 35.2 million (EUR 30.9 million). Net cash flow during the period was EUR 4.3 million. The net cash flow resulted as the most significant items from the withdrawal of a EUR 20.0 million bank loan, the EUR 15.6 million investments made into own product development and the EUR 5.4 million dividend payment (EUR -32.0 million including EUR 15.1 million investments made into own product development and the EUR 10.7 million dividend payment as most significant items).

Bittium has a EUR 20.0 million senior loan and a EUR 10.0 million committed overdraft credit facility agreement with Nordea Bank Finland Plc. Maturity date for the senior loan is May 24, 2024 and the credit limit agreement is valid until May 24, 2024. Bittium has EUR 10.0 million committed overdraft credit facility agreement with OP Corporate Bank Plc valid until May 24, 2022. At the end of the review period, EUR 0.0 million of these facilities were in use.

Bittium follows a hedging strategy that has an objective to ensure the business margins in changing market circumstances by minimizing the influence of exchange rates. According to the hedging strategy principles, the net position in the currency is hedged when it exceeds the euro limit defined in the hedging strategy. The net position is determined on the basis of accounts receivable, accounts payable, order book and budgeted net currency cash flow.

Business Development in January–December 2019

During the first half of the year, Bittium launched a new ultra secure Bittium Tough Mobile 2 smartphone. The core of the information security of the new Bittium Tough Mobile 2 is its multilayered security structure, which is based on the hardened Android™ 9 Pie operating system, unique hardware solutions, and the information security features and software integrated in the source code. The multilayered information security ensures that both the data stored in the device and data transfer are protected as effectively as possible.

The customer deliveries of the Bittium Tough Mobile 2 smartphone started during the second half of the year. Modern smartphone design combined with the world's highest security has attracted market interest. Continuous cyber security attacks raise awareness of the importance of mobile security. Also the deliveries of the first generation Bittium Tough Mobile smartphones continued to the customers.

Bittium announced a new Multicontainer feature for the Bittium Tough Mobile smartphone. It enables the use of several secure container workspaces. The users of secure workspaces can safely download approved applications from their own organizations' application libraries. It enables the users to easily handle confidential information of several organizations as well as their personal data and applications with the same Bittium Tough Mobile smartphone.

Also a new version of Bittium SafeMove® software with important new features to support cyber resilient field operations under disruptions was launched.

The delivery volumes of the satellite smartphone developed to the Mexican authorities fell short of last year's target. However, in 2020, Bittium aims at volume deliveries of the products.

The development work of the new Bittium Tough SDR soldier and vehicle radios has taken slightly longer than expected. Field tests of the products have been conducted during the last half of 2019, and the actual product deliveries to the customers are expected to begin in the early 2020. The products have been designed to operate under extreme conditions. They have a very wide frequency range with unique interference tolerance and strong security.

In the defense business the product deliveries of tactical communication system to Austrian Defence Forces began in the second half of the year. This cooperation has been a major step in the internationalization of Bittium's tactical communication product portfolio. Bittium's tactical backbone network forms the core of the Austrian Defence Forces' new tactical communication system. In addition, Bittium also deploys Bittium Tough Comnode and Bittium Tough VoIP products.

Cooperation with the Finnish Defence Forces continued strong and Bittium received multiple orders from the Finnish Defense Forces during 2019.

The first purchase order was EUR 3.4 million, for maintenance and further development of Bittium TAC WIN™ and Bittium Tough VoIP™ systems during 2019–2020. The second purchase order was EUR 11.5 million in total, for Bittium TAC WIN™ products and Bittium Tough Comnode™ terminals. The third purchase order was for porting the European ESSOR (European Secure SOftware-defined Radio) program's OC1 (Operational Capability 1) phase wideband waveform to the Bittium Tough SDR radios that will be delivered to the Finnish Defence Forces. The porting of the waveform to the national software-defined radios enables compatibility between radios used in European coalition operations, in accordance with the goals of the ESSOR programme. The value of the purchase order was approximately EUR 1.1 million. The purchase order also included options for the years 2020–2021 with the total value of approximately EUR 2.5 million. The fourth order was narrowband waveform development work for the tactical Bittium Tough SDR radios. Along with the ordered waveform development work, the Finnish Defence Forces can start field tests with the radios and further waveform development in co-operation with Bittium for the needs of the Finnish Defence Forces.

From the Estonian Defence Forces Bittium received an order for the Bittium Tough SDR radios and Bittium TAC WIN system products. Bittium Tough SDR radios and Bittium TAC WIN products complement the tactical communications system that has been delivered to the Estonian Defence Forces already previously.

Bittium was granted the ISO 27001:2013 Information Security Management Certificate that includes Bittium's business and support processes, information security, personnel and premises safety, as well as continuous improvement methods. ISO 27001:2013 specifies the requirements for establishing, implementing, maintaining and continually improving an information security management system within the context of the organization. It also includes requirements for the assessment and treatment of information security risks tailored to the needs of the organization.

Cooperation with the major US cardiac remote monitoring provider Preventice continued to be significant. Bittium and Preventice have together developed a solution that enhances doctor and patient experience in remote cardiac monitoring. The deliveries of ECG devices based on Bittium Faros ECG technology to Preventice for this complete solution, continued to be significant during the year. In addition Bittium won several new customers in Australia, Asia and Europe.

Bittium launched Bittium HolterPlus™ remote cardiac monitoring solution. Bittium HolterPlus solution extends the physician's reach outside of the hospital or medical institution by remotely monitoring the discharged patient from for example home or nursing home. Bittium HolterPlus allows the remotely monitored patient's ECG measurement data to be stored and transferred securely from the monitoring device to the medical remote diagnosis service platform. From the platform the ECG recording can be downloaded to analysis software for a cardiologist to diagnose, after which the treating physician receives the diagnosis and possible instructions for further patient care.

Bittium continued to develop 5G technology and various connectivity solutions for its customers, mainly in Europe. Along with its innovative product development services, Bittium launched a software robotics solution based on its own secure platform. Robotic Process Automation (RPA) is a method for streamlining business processes by automating laborious manual tasks, which are time-consuming, repetitive and prone to errors.

In a total, the sale of the product development services decreased year-on-year affected by the company's own significant large R&D projects that tie experts into internal product development.

Significant Events after the Reporting Period

There were no significant events after the reporting period.

Outlook for 2020

The amount of wireless data transfer applications is expanding and diversifying. Also the amount of data transfer and the need for secure data transfer are growing. These all create demand for Bittium's leading edge technology products and solutions. The digitalization of healthcare and the increasing use of remote care, make the healthcare services more efficient, creating demand for Bittium's medical technology products and solutions. During the next years, Bittium aims at strong growth especially in the international markets.

Bittium expects that the net sales in 2020 will grow from the previous year (EUR 75.2 million in 2019) and the operating profit to be at the same level than in the previous year (6.3 million in 2019). The level of the operating profit in 2020 will be impacted by the investments in the international growth and depreciations of the R&D investments.

More information about Bittium's market outlook is presented in the section "Market outlook" in this report.

More information about other uncertainties regarding the outlook is presented in this report in the section "Risks and uncertainties" and on the company's internet pages at **www.bittium.com**.

Market Outlook

Bittium's customers operate in various industries, each of them having their own industry specific factors driving the demand. A common factor creating demand among the whole customer base is the growing need for higher quality and secure data transfer. Due to the technology competences accrued over time and long history in developing mobile communication solutions, Bittium is in a good position to offer customized solutions for its customers. Over thirty years of experience and extensive competence in measuring of biosignals also act as a basis for medical technology solutions.

The following factors are expected to create demand for Bittium's products and services in 2020 and beyond:

- In the defense sector's tactical communication market, the governments' defense forces and other authorities need networks that troops, who are more and more constantly on the move, can use for transferring growing amounts of data securely. This creates demand for Bittium Tactical Wireless IP Network (TAC WIN) broadband network and for other Bittium's IP-based (Internet Protocol) tactical communications solutions, as well as for Bittium's new tactical communication handheld and vehicle radios that fulfill the needs of data transfer of moving troops or individual soldiers. Bittium continues its efforts to bring its defense market targeted products and services also to the international defense markets and aims to get new international customers for its tactical communication system in 2020. Due to the long sales cycles driven by purchasing programs of national governments, it takes time to receive purchase orders.

- The use of LTE technology, smartphones and applications continue to increase in special verticals such as public safety creating demand for Bittium Tough Mobile secure LTE smartphone and other customized special terminals based on Bittium's own product platform. The awareness of mobile security risks is growing and the interest towards secure mobile devices is increasing. The implementation of LTE-based devices in Public Safety markets has been slower than expected due to the delay of the device functionalities required by the authorities and due to the slow progress of the market. The sale of the secure terminal products is expected to develop moderately according to the nature of public safety markets.
- Using public network connections in portable devices is increasing also in demanding professional use, such as in the public sector. This creates requirements for network connections to be easy to use and secure. The products in the Bittium SafeMove product family enable the ease of use of the devices and security in demanding use.
- In the mobile telecommunications, the demand for 5G technology development work has stabilized and the implementation of 5G is accelerating in pace. Investments in developing new features continue and the importance of software development in the 5G network development expands. This creates demand for Bittium's R&D services. There is a wide range of frequencies allocated for the 5G technology thus creating the need to develop multiple products to cover the market and creating demand for R&D services for development of product variants. Also the development of new devices utilizing 5G technology increases the demand for Bittium's services.
- As the digitalization evolves, the secure IoT (Internet of Things) has become a significant development area in almost every industry. The increasing need of companies to digitalize their operations, collect data wirelessly and transfer it to the internet and cloud services generate need for Bittium's services and customized solutions. The new radio systems customized to IoT are being used all over the world and the amount of digitalized devices increase continuously. Along with the 5G technology is being used, there will also be new features in the IoT that enable i.e. remote control of machines. Therefore the integration of different systems and technologies play an important role in enabling the complete digitalization service. To ease and speed up the processing of large data amounts, there are different kinds of learning systems and devices under development that use different kinds of artificial intelligence (AI) technologies.
- Changes in the digitalization of the automotive industry and new business models and automation of automotive operations create a need for technological development. Most significant technology trends such as intelligent mobility, self-driving cars, electric cars and connectivity are guiding need for innovative software development. The share of software in cars is increasing in speed and software is becoming a major enabler and a differentiator. The use of Android™ Automotive operating system in the In-Vehicle Infotainment (IVI) systems is strongly entering the market. Several carmakers have announced the launch of cars with Android Automotive. Bittium's more than a decade of experience with the Android operating system and the Google ecosystem combined with security know-how creates good business opportunities for this market.
- The heart and brain failures are among the most frequent causes of serious complications and recognizing those symptoms early on, based on information gathered by measuring, enables the start of the effective treatment in time. Also the prevention of diseases and health problems are being increasingly invested in.
- In the healthcare technology market, there is ongoing a significant change in the patient care both inside the hospitals as well as in homecare. The repatriation of patients is being pursued earlier than before which may enable significant cost savings in the healthcare. A perquisite for early repatriation is the enabling of accurate and precise follow-up and measurement in home conditions through remote monitoring. For this purpose Bittium offers its Bittium Faros product family for remote heart monitoring and Bittium BrainStatus for measuring the electrical activity of the brain. One of the growing application areas in the wireless and remote systems is healthcare technology that enables implementing these changes for its part. Remote monitoring and remote diagnostics together with wireless and remote-controllable systems bring effectiveness to the healthcare performance and cut costs as the diagnoses from specialists are available regardless of time and place. Various diagnostic solutions have been introduced to facilitate and speed up the work of physicians. These are for example Bittium's analytics software in the field of cardiology and neurology. This enables also new service providers to enter the chain of medical treatment services offering wider availability of medicine, without bargaining the quality of specialists i.e. cardiologists and neurologists.

Risks and Uncertainties

Bittium has identified a number of business, market and finance related risk factors and uncertainties that can affect the level of sales and profits.

Market Risks
The global economic uncertainty may affect the demand for Bittium's services, solutions and products and provide pressure on e.g. pricing. In the short term such uncertainty may affect, in particular, the utilization and chargeability levels and average hourly prices of R&D services. Growing political uncertainty may also affect the demand for Bittium's services, solutions and products and the price competitiveness in the different geographical areas. Bittium is also increasingly exposed to legal, economic, political and regulatory risks related to the countries in which its suppliers and other cooperation partners are located. Such risks may result in delays in deliveries, currency losses, elevated costs, or litigations and related costs.

As Bittium's customer base includes, among others, companies operating in the field of telecommunication, defense and other authorities, as well as companies delivering products to them, and companies operating in the healthcare sector, the company is exposed to market changes in these industries.

A significant part of Bittium´s net sales accumulates from selling products and R&D services to defense and other authorities, as well as companies delivering products to them. Deviation in anticipated business development with such customer concentrations may translate as a significant deviation in Bittium's outlook, both in terms of net sales and operating result, during the ongoing financial period and thereafter.

Bittium seeks to expand its customer base on a longer term and reduce dependence on individual companies and hence the company would thereby be mainly affected by the general business climate in the industries of the companies belonging to Bittium's customer base instead of the development of individual customer relationships. The more specific market outlook has been presented in this report in the "Market Outlook" section.

Business Related Risks
Bittium's operative business risks are mainly related to following items: uncertainties and short visibility on customers' product program decisions, their make or buy decisions and on the other hand, their decisions to continue, downsize or terminate current product programs, execution and management of large customer projects, ramping up and down project resources, availability of personnel in labor markets, accessibility on commercially acceptable terms and on the other hand successful utilization of the most important technologies and components, competitive situation and potential delays in the markets, timely closing of customer and supplier contracts with reasonable commercial terms, delays in R&D projects, realization of expected return on capitalized R&D investments, obsolescence of inventories and technology risks in product development causing higher than planned R&D costs, and risks related to the ramp-up of product manufacturing. Revenues expected to come from either existing or new products and customers include normal timing risks. Bittium has certain significant customer projects and deviation in their expected continuation could result also significant deviations in the company's outlook. In addition, there are typical industry warranty and liability risks involved in selling Bittium´s services, solutions and products.

Bittium's product delivery business model faces such risks as high dependency on actual product volumes, timing risks and potential delays in the markets. The above-mentioned risks may manifest themselves as lower amounts of products delivered or higher costs of production, and ultimately, as lower profit. Bringing Bittium's products to international defense and other authorities markets may take longer than anticipated because the projects are typically long and the purchasing programs are prepared in the lead of national governments and within the available financing. Once a supplier has been selected, product deliveries are typically executed over several years.

Some of Bittium's businesses operate in industries that are heavily reliant on patent protection and therefore face risks related to management of intellectual property rights, on the one hand related to accessibility on commercially acceptable terms of certain technologies in the Bittium's products and services, and on the other hand related to an ability to protect technologies that Bittium develops or licenses from others from claims that third parties' intellectual property rights are infringed. Additionally, parties outside of the industries operate actively in order to protect and commercialize their patents and therefore in their part increase the risks related to the management of intellectual property rights. At worst, claims that third parties' intellectual property rights are infringed could lead to substantial liabilities for damages. In addition, the progress of the customer projects and delivery capability may be also affected by potential challenges in global accessibility of key technologies and components on commercially acceptable terms, as well as by the acceptance of the necessary export licenses. The company changed its name to Bittium

Corporation as of July 1, 2015 and started using the new trademark. The registration and the use of the new trademark can include customary risks involved in taking in use a new trademark.

Financing Risks

Global economic uncertainty may lead to payment delays, increase the risk for credit losses and weaken the availability and terms of financing. To fund its operations, Bittium relies mainly on income from its operative business and may from time to time seek additional financing from selected financial institutions. In May 2019 Bittium Corporation has agreed with Nordea Bank Finland Plc and OP Corporate Bank Plc on financing arrangement where total financing amount has been raised from EUR 30.0 million to EUR 40.0 million. With the financing arrangement, Bittium has EUR 20.0 million senior loan and EUR 10.0 million committed overdraft credit facility agreement with Nordea. Maturity date for the senior loan is May 24, 2024 and the credit limit agreement is valid until May 24, 2024. Bittium has EUR 10.0 million committed overdraft credit facility agreement with OP Corporate Bank Plc valid until May 24, 2022. These agreements include customary covenants related to, among other things, equity ratio, transferring property and pledging. There is no assurance that additional financing will not be needed in case of investments, networking capital needs or clearly weaker than expected development of Bittium's businesses. Customer dependency in some parts of Bittium's business may translate as an accumulation of risk with respect to outstanding receivables and ultimately with respect to credit losses.

Environmental Factors

Bittium´s business operations focus mostly on the design, assembly provided by the manufacturing partners and marketing of products. This represents only a minor part of the environmental impacts over the entire life cycle of the products. Products of the Company have only minor general environmental impacts.

Bittium Corporation renewed its global environmental management system certification according to ISO 14001.2015 standard in June 2016. Company is monitoring globally the environmental requirements for products and derived national regulations to the extent that they are related to the company operations. Bittium has also observed and applied the requirements of the ROHS (use of hazardous substances) and WEEE (recycling of electrical and electronic equipment) directives in design since 2002.

The applied environmental standards and regulations in company operations have been consolidated as uniform Bittium substance list, applicable also to Bittium´s significant suppliers. The biannually updated substance list includes, in addition to the compliance of ROHS (I, III and III) and REACH directives, the substance requirements applicable in different market areas against which identification of materials is made if needed. Further, materials declaration list observes certain customer specific requirements. Company has further updated the requirements mainly on a biannual basis and applied the proper environmental requirements to the products or solutions, in which Bittium has partial or total responsibility depending on the application scope. The imposed requirements will be observed in business operations on a country-specific basis.

During 2019 Bittium´s energy efficiency system was updated to cover also international ISO 50001.2018 energy efficiency standard requirements. In addition, environmental management system ISO 9001.2015 was recertified to extend the certification validity until June 2022. Energy efficiency system certification is going to be updated according to ISO 50001.2018 standard during 2020. Bittium has also official energy efficiency review responsible person in its service authorized by Finnish Energy Office.

Bittium has further developed company environmental reporting, based on which the 2019 environmental objectives have been followed. Company has observed the sustainability reporting requirements and published the environmental information as part of its sustainability report. The energy efficiency of Bittium´s Oulu facilities has been clearly improved due to new site opened in October 2017. As an example of the energy efficiency actions the energy powered by solar cells was reaching over ten percent of the whole energy consumption at its best during 2019. In the other Bittium facilities no major impacts to energy efficiency were observed during the reporting period. The waste recycling ratio was reaching high level of 99.9% in Bittium´s Finnish offices during 2019.

Personnel

The Bittium group employed an average of 665 people in 2019. At the end of December 2019, the company had 655 employees (674 employees at the end of 2018).

Changes in the Company's Management

On March 1, 2019 Mr. Klaus Mäntysaari, Senior Vice President, Connectivity Solutions of Bittium Corporation, a member of Bittium Management Group, decided to leave to another company. Mr. Mäntysaari has been working for Bittium since 2004 in several positions in the wireless services business. He continued at Bittium until April 30, 2019. Temporarily Mr. Hannu Huttunen, CEO of the company, was leading the Connectivity Solutions business.

On September 5, 2019 Mr. Tommi Kangas (48) was appointed as Senior Vice President, Connectivity Solutions product and services area at Bittium Corporation and as a member of the Bittium Corporation's Management Group, effective immediately. Previously at Bittium, he has been responsible for Connectivity Solutions product and services area's significant key customers as well as worked in several management positions in telecom business and sales. Mr. Kangas reports to Mr. Hannu Huttunen, CEO of Bittium Corporation. As of September 5, 2019 Bittium management group consists of following persons: Mr. Hannu Huttunen, CEO (chairman); Mr. Pekka Kunnari, CFO; Mr. Kari Jokela, CLO; Ms. Karoliina Fyrstén, Director, Corporate Communications and Marketing; Mr. Sammy Loitto, Senior Vice President Sales, and heads of product and service areas: Mr. Jari Sankala, Senior Vice President, Defense and Security; Mr. Arto Pietilä, Senior Vice President, Medical Technologies; Mr. Tommi Kangas, Senior Vice President, Connectivity Solutions; and Mr. Jari-Pekka Innanen, Vice President, Engineering.

Incentive Systems

Variable Pay
Variable pay is paid based on the achievement of the set targets. In 2019, earning period for the variable pay was the calendar year. The targets are determined separately for each earning period. The setting of targets and the review of their achievement is decided on a one-over-one basis. The criteria for the short-term merit pay are the financial and strategic targets of the Company. In 2019, gross margin and cash flow formed the financial targets. In addition, part of the targets may be other Company objectives or personal targets. Personal targets vary between duties.

Authorizations of the Board of Directors at the End of the Reporting Period

Authorizing the Board of Directors to Decide on the Repurchase of the Company's own Shares
The General Meeting held on April 10, 2019 authorized the Board of Directors to decide on the repurchase of the Company's own shares as follows.

The amount of own shares to be repurchased shall not exceed 3,500,000 shares, which corresponds to approximately 9.81 percent of all of the shares in the company.

Only the unrestricted equity of the company can be used to repurchase own shares on the basis of the authorization. Own shares can be repurchased at a price formed in public trading on the date of the repurchase or otherwise at a price formed on the market.

The Board of Directors decides how own shares will be repurchased. Own shares can be repurchased using, inter alia, derivatives. Own shares can be repurchased otherwise than in proportion to the shareholdings of the shareholders (directed repurchase).

The authorization canceled the authorization given by the General Meeting on April 11, 2018 to decide on the repurchase of the company's own shares.

The authorization is effective until June 30, 2020.

Authorizing the Board of Directors to Decide on the Issuance of Shares as well as the Issuance of Special Rights Entitling to Shares
The General Meeting held on April 10, 2019 authorized the Board of Directors to decide on the issuance of shares and special rights entitling to shares referred to in Chapter 10 Section 1 of the Companies Act as follows. The amount of shares to be issued shall not exceed 7,000,000 shares, which corresponds to approximately 19.61 percent of all of the shares in the company.

The Board of Directors decides on all the conditions of the issuance of shares and of special rights entitling to shares. The authorization concerns both the issuance of new shares as well as the transfer of treasury shares. The issuance of shares and of special rights entitling to shares may be carried out in deviation from the shareholders' pre-emptive rights (directed issue).

The authorization canceled the authorization given by the General Meeting on April 11, 2018 to decide on the issuance of shares as well as the issuance of special rights entitling to shares referred to in Chapter 10 Section 1 of the Companies Act.

The authorization is effective until June 30, 2020.

Shares and Shareholders

The shares of Bittium Corporation are quoted on Nasdaq Helsinki. The Company has one series of shares. All shares entitle their holders to dividends of equal value. Each share has one vote. The share does not have a nominal value. The Company's shares have been entered into the Euroclear Finland Ltd's book-entry securities system.

At the end of the financial period, the fully paid share capital of the Company entered into the Finnish Trade Register was EUR 12,941,269.00 and the total number of the shares was 35,693,166. The accounting par value of the Company's share is EUR 0.10. The Company does not have its own shares in its possession.

Shareholding and control related information is presented in section 36 of the notes to the Financial Statement.

Flagging Notifications

There were no changes in the ownership during the period under review that would have caused flagging notifications which are obligations for disclosure in accordance with Chapter 2, section 9 of the Securities Market Act.

Notifications of Managers' Transactions

There were no managers' transactions during the reporting period.

The Board, Board Committees and the Auditor

The Annual General Meeting held on April 10, 2019 decided that the Board of Directors shall comprise six (6) members. Ms. Riitta Tiuraniemi, Mr. Seppo Mäkinen, Mr. Juha Putkiranta, Mr. Petri Toljamo and Mr. Erkki Veikkolainen were re-elected as members of the Board of Directors for a term of office expiring at the end of the next Annual General Meeting. Further, Mr. Pekka Kemppainen was elected as the new member of the Board of Directors for a corresponding term of office.

At its assembly meeting held on April 10, 2019, the Board of Directors has elected Mr. Erkki Veikkolainen Chairman of the Board. Further, the Board has resolved to keep the Audit Committee. Ms. Riitta Tiuraniemi (Chairman of the committee) and Mr. Juha Putkiranta were elected as members of the Audit Committee and authorized public accountant Seppo Laine was invited to the Audit Committee as external advisor of the Board of Directors.

Ernst & Young Oy, authorized public accountants, was re-elected auditor of the Company for a term of office ending at the end of the next Annual General Meeting. Ernst & Young Oy has notified that Mr. Jari Karppinen, authorized public accountant, will act as responsible auditor.

Corporate Governance Statement

The Board of Directors has issued the corporate governance statement separate from this report.

Dividend from 2018

The Annual General Meeting held on April 10, 2019 decided in accordance with the proposal of the Board of Directors to pay EUR 0.05 per share as dividend based on the adopted balance sheet for the financial period of January 1, 2018–December 31, 2018, representing approximately half of the result of the financial period, and in addition, EUR 0.10 per share as additional dividend, totaling altogether to EUR 0.15 per share. The dividend was paid to the shareholders who were registered as shareholders in the Company's register of shareholders as maintained by Euroclear Finland Ltd on the dividend record date Friday, April 12, 2019. The dividend was paid on April 23, 2019.

Consolidated Statement of Comprehensive Income

Continuing operations, 1000 EUR	Notes	Jan. 1– Dec. 31, 2019	Jan. 1– Dec. 31, 2018
NET SALES	1, 3	**75,216**	**62,840**
Other operating income	4	923	1,263
Change in work in progress and finished goods			
Work performed by the undertaking for its own purpose and capitalized		170	337
Raw materials		-17,148	-10,214
Personnel expenses	7	-31,531	-29,717
Depreciation	6	-7,999	-4,650
Other operating expenses	5	-13,447	-17,120
Share of results of the associated companies	15	143	105
OPERATING PROFIT		**6,326**	**2,845**
Financial income and expenses	9	-415	-136
PROFIT BEFORE TAX		**5,912**	**2,709**
Income tax	10	1,733	1,315
PROFIT FOR THE YEAR FROM CONTINUING OPERATIONS		**7,644**	**4,024**
Profit for the year from discontinued operations	2		
PROFIT FOR THE YEAR		**7,644**	**4,024**
Other comprehensive income:			
Items that may be reclassified subsequently to the statement of income			
Exchange differences on translating foreign operations		29	46
TOTAL COMPREHENSIVE INCOME FOR THE YEAR		**7,673**	**4,070**
Profit for the year attributable to			
Equity holders of the parent		7,644	4,024
Total		**7,644**	**4,024**
Total comprehensive income for the year attributable to			
Equity holders of the parent		7,673	4,070
Total		**7,673**	**4,070**
Earnings per share for profit attributable to the shareholders of the parent company	11		
Earnings per share from continuing operations, EUR			
Basic earnings per share		0.214	0.113
Diluted earnings per share		0.214	0.113
Earnings per share from discontinued operations, EUR			
Basic earnings per share			
Diluted earnings per share			
Earnings per share from continuing and discontinued operations, EUR			
Basic earnings per share		0.214	0.113
Diluted earnings per share		0.214	0.113
Average number of shares, 1000 pcs		35,693	35,693
Average number of shares, diluted, 1000 pcs		35,693	35,693

Consolidated Statement of Financial Position

Assets, 1000 EUR	Notes	Dec. 31, 2019	Dec. 31, 2018
Non-current assets			
Property, plant and equipment	12	24,238	23,448
Goodwill	13	5,825	5,821
Intangible assets	13	41,803	29,691
Investments in associated companies	15	1,661	1,480
Other financial assets	16	112	112
Non-current receivables	19	1,353	1,578
Deferred tax assets	17	5,473	3,747
Total		**80,465**	**65,877**
Current assets			
Inventories	18	18,219	14,585
Trade and other receivables	19	20,412	21,061
Financial assets at fair value through profit or loss	20	5,675	21,576
Cash and short-term deposits	21	29,479	9,305
Total		**73,785**	**66,527**
Total assets		**154,250**	**132,404**
Equity and liabilities			
Equity attributable to equity holders of the parent	22		
Share capital		12,941	12,941
Translation differences		1,112	1,083
Invested non-restricted equity fund		25,953	25,953
Retained earnings		72,321	70,058
Total		**112,327**	**110,035**
Total equity		**112,327**	**110,035**
Non-current liabilities			
Deferred tax liabilities	17	337	405
Interest-bearing loans and borrowings (non-current)	25	21,351	769
Other non-current liabilities, non-interest bearing	27	374	685
Total		**22,062**	**1,859**
Current liabilities			
Trade and other payables	27	16,859	18,121
Provisions	24	1,754	1,643
Interest-bearing loans and borrowings (current)	25	1,247	747
Total		**19,861**	**20,510**
Total liabilities		**41,922**	**22,369**
Total equity and liabilities		**154,250**	**132,404**

Consolidated Statement of Cash Flows

1000 EUR	Notes	Jan. 1– Dec. 31, 2019	Jan. 1– Dec. 31, 2018
Cash flow from operating activities			
Profit for the year from continuing operations		**7,644**	**4,024**
Profit for the year from discontinued operations			
Adjustments			
Effects of non-cash business activities	29	8,003	5,018
Finance costs	9	765	1,412
Finance income	9	-350	-1,276
Income tax	10	-1,733	-1,315
Change in net working capital			
Change in short-term receivables	19	870	-4,284
Change in inventories	18	-3,545	-3,909
Change in interest-free short-term liabilities	27	-1,572	-175
Interest paid on operating activities		-741	-1,412
Interest and dividend received from operating activities		350	1,276
Income taxes paid		-43	92
Net cash from operating activities		**9,649**	**-548**
Cash flow from investing activities			
Acquisition of business unit, net cash acquired	14		
Purchase of property, plant and equipment	12	-2,277	-3,697
Purchase of intangible assets	13	-16,141	-15,958
Sale of property, plant and equipment	12	8	
Sale of intangible assets	13	15	31
Purchase of investments/associated companies	15	-182	-208
Net cash from investing activities		**-18,578**	**-19,832**
Cash flows from financing activities			
Share option plans exercised	23		
Proceeds from borrowings	25	20,000	
Repayment of borrowing	25		-5
Payment of finance lease liabilities	25, 26	-1,444	-944
Dividend paid and capital repayment		-5,354	-10,708
Net cash from financing activities		**13,202**	**-11,657**
Net change in cash and cash equivalents	21	**4,273**	**-32,038**
Cash and cash equivalents at 1 January		30,881	62,919
Change in fair value of investments			
Cash and cash equivalents at the end of the year		**35,154**	**30,881**

Cash and cash equivalents include liquid and low risk financing securities.

Consolidated Statement of Changes in Equity

	Equity attributable to equity holders of the parent					
1000 EUR	**Share capital**	**Invested non-restricted equity fund**	**Translation difference**	**Retained earnings**	**Non-controlling interests**	**Total**
Shareholders' equity Jan. 1, 2019	**12,941**	**25,953**	**1,083**	**70,058**	**0**	**110,035**
Comprehensive income for the period						
Profit for the period				7,644		7,644
Exchange differences on translating foreign operations			29			29
Total comprehensive income for the period	**0**	**0**	**29**	**7,644**	**0**	**7,673**
Transactions between the shareholders						
Dividend distribution				-5,354		-5,354
Other changes				-27		**-27**
Shareholders' equity Dec. 31, 2019	**12,941**	**25,953**	**1,112**	**72,321**	**0**	**112,327**
Shareholders' equity Jan. 1, 2018	**12,941**	**25,953**	**1,036**	**76,747**	**0**	**116,678**
Comprehensive income for the period						
Profit for the period				4,024		4,024
Exchange differences on translating foreign operations			46			46
Total comprehensive income for the period	**0**	**0**	**46**	**4,024**	**0**	**4,070**
Transactions between the shareholders						
Dividend distribution				-10,708		-10,708
Other changes				**-5**		**-5**
Shareholders' equity Dec. 31, 2018	**12,941**	**25,953**	**1,083**	**70,058**	**0**	**110,035**

Notes to the Consolidated Financial Statements

Corporate Information

The company's field of activities is the development, production and selling of software, equipment and other products for the automotive and electronics industry, the production of R&D services and other services as well as other industrial operations. The company may administer product and other rights and conduct research and development operations, hold and trade securities and real-estate and conduct other investment activities.

The parent company of the Group is Bittium Corporation, which is a Finnish public company. The parent company is domiciled in Oulu and its registered address is Ritaharjuntie 1, 90590 Oulu.

Accounting Principles for the Consolidated Accounts

Basis of Preparation

The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as well as the SIC and IFRIC interpretations in force at December 31, 2019. The financial statements are presented in thousands of euro. The consolidated financial statements have been prepared on a historical cost basis unless otherwise indicated.

Consolidation Principles

The consolidated financial statements of Bittium include the financial statements of the parent company Bittium Corporation and its subsidiaries.

Subsidiaries

The consolidated financial statements include Bittium Corporation and its subsidiaries financial statements. Subsidiaries are companies in which the Bittium Corporation has a controlling interest. A controlling interest arises when the Group holds more than half of the voting rights or it otherwise has the power to govern the financial and operating policies of the entity. The existence of potential voting rights is taken into account in assessing the conditions under which control arises whenever instruments conferring potential voting rights can be exercised at the review date.

Associated Companies

An associated company is a company in which the Group has a significant influence. A significant influence exists, when the Group has a right to participate in the decision making in regards of financing or operative business of the associated company but has no sole or common control of such decisions. In the consolidated financial statements the investments in the associated companies are accounted for using the equity method according to the IFRS 11: Joint Arrangements standard. The investment in associated companies is recorded using the acquisition price, adjusted for the Groups' share of changes in the associated companies' equity after the date of acquisition. If the Groups' share of associated companies' losses exceeds the carrying amount of the investment, the investment in the associated company in the balance sheet shall be written off. The losses exceeding the carrying amount are consolidated only if the Group has a binding obligation of covering the associated companies' liabilities. Investments in the associated companies include the goodwill emerging upon the acquisition. The unrealized profits or losses between the Group and the associated companies are eliminated according to the share of Groups' ownership.

The Groups' share of results in the associated companies is recorded as an item above the operating result if the result arises from the operative business. The Groups' share of associated companies' other comprehensive income is recorded in the other items of comprehensive income in the consolidated statement of profit and loss.

The carrying value of investments in the associated companies is tested by comparing the carrying amount and the recoverable amount of the associated companies. An impairment loss is recognized if the carrying amount of the investment in associated companies exceeds the recoverable amount. An impairment loss is recognized in the income statement.

Elimination of Intra-Group Transactions

Intra-Group share ownership has been eliminated by means of the purchase method. Acquired subsidiaries are included in the consolidated financial statements from the time when the Group has obtained control, and divested subsidiaries up to the time when control ceases. The excess of the acquisition cost of the subsidiary shares over fair value of the net assets acquired is allocated partly to the identifiable assets and liabilities. Any excess is recorded as goodwill. Business combinations that occurred before the implementation of IFRS, in 2004, the carrying amount of the goodwill has been treated according to the Finnish GAAP in accordance with the exemption under IFRS 1. According to IFRS goodwill is not amortized but tested annually for impairment.

Intra-Group transactions, receivables, liabilities and margins are eliminated in preparation of the consolidated financial statements.

Foreign Currency Transactions

Figures relating to the financial statements of Group entities are measured in the currency that is the currency of each entity's main operating environment ("functional currency"). The consolidated financial statements are presented in euros, which is the functional currency of the Group's parent company.

Transactions denominated in foreign currency are recorded in euros using the exchange rate on the date of the transaction. Monetary items denominated in foreign currency are translated to euros using the European Central Bank exchange rates at the balance sheet date. Gains and losses arising from transactions denominated in foreign currency and the translation of monetary items are recorded in the income statement.

Income statements and cash flows of subsidiaries, whose functional and reporting currency is not the euro, are translated into euros at the average exchange rates during the financial period. Their balance sheets are translated at the exchange rates prevailing at the balance sheet date. Translating the profit for the period using different rates in the income statement and the balance sheet leads to a translation difference that is recorded in equity. The translation differences arising from the elimination of the cost of foreign subsidiaries are recorded in equity. When a subsidiary is sold, the cumulative translation differences are entered in the income statement as part of the capital gain or loss.

Cumulative exchange differences arising from the translation of internal long term loans, which are in actual terms net investments in foreign operations, are taken directly to a separate component of equity.

The goodwill arising from the acquisition of foreign operations as well as fair value adjustments made to the carrying amounts of the assets and liabilities of said foreign operations in connection with an acquisition are treated as the assets and liabilities of said foreign operations and translated to euros using the exchange rates at the balance sheet date.

Property, Plant and Equipment

Property, plant and equipment are measured at historical cost less depreciation and impairment losses. Assets of acquired companies are stated at their fair values at the date of acquisition. Assets are depreciated using the straight-line or reducing balance method over their useful life.

The residual value of assets and their useful life are reviewed periodically in connection with each set of financial statements and the interim report and, if necessary, they are adjusted to reflect changes that have occurred in the expectations for the asset's useful life. Ordinary repair and maintenance costs are charged to the income statement during the financial year in which they incurred. Gains and losses on sales and disposals are determined by comparing the received proceeds with the carrying amount and are included in operating profit.

Intangible Assets

Goodwill
After January 1st, 2004 the cost of goodwill is the excess of the cost of the business combination over the acquirer's interest in the net fair value of the identifiable assets. The goodwill arising from the business combinations prior to this represents the amount recorded under previous GAAP, which has been used as the deemed cost. The classification and accounting treatment of these business combinations has not been adjusted when the Group's opening IFRS balance sheet has been prepared.

Goodwill is tested annually or, if necessary, more frequently to determine any impairment. For this purpose, goodwill has been allocated to cash-generating units. The recoverable amount of a cash generating unit is compared to its carrying amount and an impairment loss is recognized if the carrying amount of the assets exceeds the recoverable amount. An impairment loss is recognized in the income statement.

Research and Development Expenditure
Research expenditures are recorded as an expense as they are incurred. Expenditure on development activities is capitalized if they meet the criteria defined in IAS 38 Intangible Asset. Capitalized development expenses include mainly materials, supplies and direct labor costs. They are amortized on a systematic basis over their expected useful lives.

Capitalized development expenses are reviewed for potential impairment regularly by comparing the carrying amount to their recoverable amount. Significant changes in the technological environment are taken into account. If the carrying amount of the development expenses is greater than the recoverable amount, an impairment loss is recognized immediately.

Other Intangible Assets
Patents, trademarks, licenses and other intangible assets having a finite useful life are entered in the balance sheet and the amortized expense is recorded in the income statement over their useful life. If indications on possible impairment exist, the recoverable amount is determined and an impairment loss is recognized if necessary. Intangible assets with an indefinite useful life are not amortized but tested annually or, if necessary, more frequently to determine any impairment.

Inventories

Inventories are stated at the lower of initial cost or net realizable value. Net realizable value is the estimated selling price in the normal course of business less the estimated costs of sale.

The value of raw material inventory is determined using a weighted average cost formula. The initial cost of finished and semi-finished products comprises of raw material, direct labor and other direct expenses as well an appropriate share of fixed and variable production overheads, based on the normal capacity of the production facilities.

Borrowing Costs

Borrowing costs are recognized in the income statement as they accrue.

Government Grants

Government grants are recognized when there is reasonable assurance that Group will comply with the conditions attaching to them and the grant will be received. Government grants received from public corporations are presented as other income in the income statement.

Leases

IFRS 16 Leases standard has come into force on 1st of January 2019. According to the standard in principle all lease contracts of the Group are recognized as assets and liabilities in Group's Balance Sheet. Bittium adopted the standard using the retrospective approach and did not restate the comparative periods.

When the Group is a lessee, lease liabilities are recognized at the present value of the future lease payments at the contact date which the leased asset is available for use by the group. Lease payments are discounted by using lessee's incremental borrowing rate. Corresponding asset to the lease liability is recognized on the historical cost basis. According to the historical cost basis model, depreciation and amortization costs are deducted from the initially recognized right-of -use asset. When adjustments to lease payments take effect, the lease liability is reassessed and adjusted against the right-of-use asset.

The Group determines the lease term as a period when a lease contract cannot be terminated. In determining the lease term, all facts and circumstances are considered that create an economic incentive to exercise an extension option, or not exercise a termination option. The Group adjusts the lease term if the period when a lease contract cannot be terminated changes. Payments associated with short-term leases and all leases of low-value assets may be recognized on a straight-line or other systematic basis as an expense in profit or loss. The right-of-use assets are presented within the same line item as the corresponding underlying assets would be presented if they were owned. Lease liabilities are included in interest-bearing liabilities.

Impairment of Assets

At each balance sheet date (including interim reports) the Group estimates whether there is any indication that an asset may be impaired. If any such indication exists, the recoverable amount of the asset is estimated. The recoverable amount is estimated annually regardless of any indication of impairment to the following assets: investments, goodwill, intangible assets with an indefinite useful life and for intangible assets which are not yet ready for use. The recoverable amount is based on the future discounted net cash flows, which are equivalent with the expected cash flows generated by the asset.

An impairment loss is recognized whenever the carrying amount of an asset exceeds its recoverable value. The loss is booked to the income statement. A previously recognized impairment loss is reversed only if there has been a change in the estimates used to determine the recoverable amount. However, the reversal must not cause that the adjusted value is higher than the carrying amount that would have been determined if no impairment loss had been recognized in prior years. Impairment losses recognized for goodwill will under no circumstances be reversed.

Employee Benefits

Pension Liabilities

Group companies in different countries have pension plans in accordance with local conditions and practices. The plans are classified as either defined contribution plans or defined benefit plans.

In Finland, the Group has organized pension coverage for its staff through independent pension insurance companies. The Finnish system under the Employees' Pensions Act and the disability portion are treated as a defined contribution plan. The contributions to defined contribution plans are charged to the income statement in the year to which they relate. After this the Group has no other obligations for additional payment. Also the pension arrangements of the foreign subsidiaries are classified as defined contribution plans.

Share-Based Payment

The Group has applied IFRS 2: Share-Based Payment standard. Part of the remuneration for the Board of Directors is paid in shares of Bittium. Share-based incentives are measured at fair value at the time they are granted and entered as an expense in the income statement when right is granted.

Provisions

A provision is recognized when the Group has a legal or constructive obligation as a result of a past event, it is probable that a payment obligation will be realized or cause a financial loss and the amount of the obligation can be estimated reliably. Provisions can arise from restructuring plans, onerous contracts, warranty repairs and allowances and from environmental, litigation or tax risks.

The amount recognized as a provision is the best estimate of the expenditure required to settle the present obligation at the balance sheet date. If the time value of money is material, provisions will be discounted.

If a reimbursement can be obtained from a third party for part of the obligation, the reimbursement is treated as a separate asset when it is virtually certain that the reimbursement will be received.

Taxes

Tax expense in the Group's income statement comprises the current tax and change in deferred taxes of each group company. Current tax is calculated based on the taxable income using the tax rate that is enacted in each country at the balance sheet date.

Deferred tax liability is calculated on the temporary differences between the carrying amounts and the amounts used for taxation purposes. Deferred tax assets are recognized for deductible temporary differences and tax losses to the extent that it is probable that taxable profit will be available against which tax credits and deductible temporary differences can be utilized. In calculating deferred tax liabilities and assets, the tax base which is in force at the time of preparing the financial statements or which has been enacted by the balance sheet date for the following period, has been applied.

Revenue Recognition

Bittium identifies and reviewes the customer contracts and the revenue recognition principles for the different contract elements using the five step method presented in IFRS 15. According to Bittium principles the signed contracts and purchase orders are customer contracts in accordance with IFRS 15. Frame contracts and Letters of intent can be classified as customer contracts only when the conditions of the contract are otherwise fully in accordance with the IFRS 15..

Bittium has recognized following IFRS 15 contract elements: product and license sales, sales of R&D services, maintenance and support services of products and extended warranties of the products. Bittium has listed prices for the products and their maintenance and support services as well as for their extended warranties. If the contract does not define a single price of a contract element, the price can be estimated using the market price method or using a cost base method. The prices for the sales of services are defined in each service contract. Bittium has not activated any costs of gaining a contract nor has it allocated them for the projects or products as part of the revenue to be recognized. These additional costs have been minor and the possible assets borne as a result would have a depreciable lifetime of less than one year.

The revenue of the services is recognized as the service has been performed. In this case the contract element is delivered over time. Revenue from long-term construction contracts is recognized based on the stage of completion when the outcome of the project can be reliably measured. The stage of completion is measured by using the cost-to-cost method under which the percentage of completion is defined as the ratio of costs incurred to total estimated costs. This requires an accurate forecasting of future sales and costs during the lifetime of the contract. The forecasts are a basis for the revenue recognized and they contain the latest estimates of the contract sales, costs, and the risks related to the contract. The forecasts are also subject to remarkable changes due to possible changes in contract scope, cost estimate changes and change in customers' plans as well as other factors affecting the forecast.

The revenue of product sales is recognized when the significant risks and rewards normally connected with ownership, have been transferred to the buyer. Neither the Group retains a continuing managerial involvement to the degree usually associated with ownership, nor effective control of these goods. In this case the contract element is transferred in a point in time. Sales are presented net of indirect sales taxes and discounts.

The following matrix states the different aspects of estimating and classifying the revenue recognition of different contract elements:

Type of Contract	Contract Element	The Principle for Revenue Recognition and Possible Estimates
Sales of services	Customer contract, fixed price	Percentage of completion defined as the ratio of costs incurred to total estimated costs.
Sales of services	Customer contract based on time, price per hours	Revenue based on the work performed, recognition based on regular invoicing.
Product/licence sales	Product, off shelf	The revenue based on product delivery as the customer has achieved the control of the goods delivered.
Product/licence sales	Product, customized	The revenue based on product delivery as the customer has achieved the control of the goods delivered. The customization work is accrued over time according to the percentace of completion or based on the time as mentioned above in the sales of services.
Product/licence sales	Product + maintenance	The revenue based on product delivery as the customer has achieved the control of the goods delivered. Maintenance accrued over the maintenance period.
Product/licence sales	Product support services	Over time, based on the work done.
Other contracts	Rental agreements	During the rental period, according to the rental agreement.

In case Bittium receives prepayments from customers, the income related to them is recognized according to above mentioned principles. For the product warranties Bittium makes warranty provisions that are reversed over time during the warranty periods. The extended warranties paid separately are accrued as income over time during the warranty period.

Assets Held for Sale and Discontinued Operations

The Group classifies a non-current asset or disposal as held for sale if its carrying amount will be recovered principally through a sale transaction rather than through continuing use. Non-current assets and asset items related to discontinued operations, which are classified as held for sale, are measured at the lower of their carrying amount and fair value less costs to sell. Depreciation and amortization on these asset items is discontinued at the time of classification.

Financial Assets, Financial Liabilities and Derivative Contracts

The hedge accounting according to the IFRS 9 Financial Instruments standard has not been applied for the financial statement period or for the comparative period.

As presented in IFRS 9, Bittium has three classes of financial assets and liabilities: those measured at amortized cost, financial assets and liabilities at fair value through other comprehensive income and financial assets and liabilities at fair value through statement of income. The classification is made based on the business models and based on the analysis of cash flows. The financial assets and liabilities are classified as they are initially recorded. After this no reclassifications are made unless the business model of asset management changes.

At the financial statement date Bittium had a marginal amount of financial assets other than those measured at amortized cost. As an exception to this, the cash and short-term deposits include a low risk short-term investment portfolio that is assessed at fair value through statement of income.

The financial assets are written off when:
- The agreement based right for the cash flows of the financial asset is terminated or;
- The group has either transferred all the relevant risks and rewards related to the financial assets or it has transferred their control outside the group.

The Impairment of Financial Assets

IFRS 9 had a small effect on assessment of group financial assets. Based on the simplified approach allowed by IFRS 9 standard the group assesses and writes off the amount of expected credit losses from accounts receivables. There are no significant financing components contained into Bittium's accounts receivables.

For assessing the expected credit losses, Bittium applies a provision matrix that is based on historical realized loss rates adjusted by forward looking estimates of lifetime of accounts receivables. All the components of the provision matrix are updated for each reporting date. The expected credit losses are presented in the group of provisions in the balance sheet. The changes in the expected credit losses are presented in the profit and loss statement.

Cash and Short-Term Deposits

Cash comprises cash on hand, bank deposits and other highly liquid investments with low risk. Assets classified as cash and short-term deposits have a maximum maturity of three months from the date of acquisition. Cash and bank deposits are measured at amortized cost, the short-term investment portfolio is assessed at fair value through statement of income.

Financial Liabilities

Financial liabilities include trade and other payables, loans and other financial liabilities. All financial liabilities are measured at amortized cost. The loans are initially recognized at fair value. Transaction costs are entered in the profit and loss. Subsequently the loans are measured at the amortized cost by using the effective interest rate.

Financial liabilities are not reclassified after the initial recognition. Non-current financial liabilities are due after one year whereas the current financial liabilities are due within one year.

Financial liabilities are disposed as the liability related to the contract is declared void, cancelled or due. As the terms of the financial liability are substantially changed or when a new contract with the existing creditor is made, the change is entered as disposal of the old liability and as an entry of a new liability. The changes in the balance sheet values are entered through profit and loss.

Significant Accounting Estimates and Judgments

The preparation of financial statements requires management to make estimates and assumptions about the future that affects the reported amounts. Used estimates and assumptions are based on prior experience and presumptions, which reflect the circumstances and expectations prevailing at the time of the preparation of the financial statements. Materiality and judgment in assessing the effect of uncertainties and the application of accounting principles have been observed in the preparation of the financial statements.

The management has exercised judgment during the financial year in applying e.g. in assessing the future cost forecasts in the percentage of completion projects, assessing the value of intangible assets in business acquisitions and also when assessing the future prospects of Group companies in conjunction with standards IAS 12: Income Taxes and IAS 36: Impairment of Assets. Based on the management judgment, the majority of the capitalized R&D investments are depreciated over their expected useful lives. Part of the capitalized R&D investments is depreciated based on production amounts of the goods.

Financial statements may include non-recurring income or expenses that are not related to normal operative business or that occur only infrequently. Such items are among others sales profits or losses, substantial changes in asset values, like impairment or reversal of impairment, substantial restructuring costs or other substantial items that are considered as non-recurring by the management. Substantiality of the item is based on the item's euro amount and the relative share of total value of the asset.

The Application of New and Revised IFRS Regulations

The consolidated financial statements are prepared in accordance with International Financial Reporting Standards (IFRS) effective at the end of the period.

The Application of IFRS 16 Leases Standard

IFRS 16 Leases standard has come into force on 1st of January 2019. It replaced the former IAS 17 standard and it's interpretations. The standard constructs a common model for the accounting treatment of all lease contracts in both lessee's and lessor's financial statements. Bittium adopted the standard using the retrospective approach and did not restate the comparative periods. According to the standard, basically all the Group lease agreements are presented as assets and liabilities in the balance sheet. The adoption of the standard increased the value of assets in the opening balance sheet 1 January 2019 by EUR 1.5 million. The adoption of the IFRS 16 standard did not have material effect on Bittium EBITDA (EUR 0.5 million) nor Bittium operating profit (EUR 0.0 million). The adoption of the IFRS 16 standard increased cash flow from operating activities in the reporting period by EUR 0.5 million and interest-bearing liabilities by EUR 1.1 million.

The other forthcoming revisions or amendments of the standards are not expected to have significant impact on the consolidated financial statements.

Notes to the Consolidated Financial Statements

1. OPERATING SEGMENTS

Bittium has one reporting business segment, the Wireless business, that includes three product and service areas supporting each other. These areas are as follows: Defence & Security, Connectivity Solutions and Medical Technologies.

Wireless business is focused on creating reliable and secure communication and connectivity solutions, as well as on developing healthcare technology solutions for biosignal measuring. For its customers Bittium offers innovative products and solutions based on its product platforms, and R&D services. Bittium also offers high quality information security solutions for mobile devices and portable computers. For customers in biosignal measuring in the areas of cardiology, neurology, rehabilitation, occupational health and sports medicine Bittium offers healthcare technology products and services.

The highest operative decision-making body of the company is the Board of Directors of Bittium which is responsible for allocating resources to and evaluating the results of Bittium's operating segment. Income statement and balance sheet information of the Wireless business are equivalent to corresponding information of the Bittium group.

Wireless

Geographical areas

Bittium operates in three geographical areas which are Europe, Americas and Asia. In presenting the geographical information, the revenue is based on the geographical location of customers. Geographical assets are based on the geographical location of the assets.

Geographical areas
Jan. 1–Dec. 31, 2019

1000 EUR	Finland	Other Europe	Americas	Asia	Eliminations	Group total
Net sales						
Sales to external customers	41,389	15,039	18,501	288		75,216
Non-current assets	74,632		359			74,991
Total non-current assets *)	**74,632**		**359**			**74,991**
*) does not include deferred tax assets						
Capital expenditure						
Tangible assets	733		56			790
Intangible assets	12,113					12,113
Investments	181					181
Goodwill			3			3
Non-current receivables	-225					-225

Geographical areas
Jan. 1–Dec. 31, 2018

1000 EUR	Finland	Other Europe	Americas	Asia	Eliminations	Group total
Net sales						
Sales to external customers	48,637	5,311	8,041	851		62,840
Non-current assets	61,828		303			62,131
Total non-current assets *)	**61,828**		**303**			**62,131**
*) does not include deferred tax assets						
Capital expenditure						
Tangible assets	1,509		-7			1,503
Intangible assets	14,742					14,742
Investments	27	210				237
Goodwill	-8		9			1
Non-current receivables	1,368					1,368

Information of primary customers

Group's revenues from the 10 largest customers in period 1.1.–31.12.2019 were EUR 65.0 million (EUR 51.9 million in 2018) representing 86.4 per cent of the net sales (82.6 per cent in 2018).

Notes to the Consolidated Financial Statements

2. DISCONTINUED OPERATIONS

1000 EUR	2019	2018
Other operating income	0	0
Profit for the year from discontinued operations (ASW)	**0**	**0**
Cash received	0	221
Cash flow impact	**0**	**221**
The cash received 2018 includes VAT returns related to sale of Automotive-segment shares (2015) which have been returned due to changes in legal interpretation.		

3. NET SALES

1000 EUR	2019	2018
Services	25,849	32,068
Products	49,368	30,772
Other		
Total	**75,216**	**62,840**

The services include the project sales with fixed prices and with hourly rates.
The product sales includes all the sales affected by products:
the sales of products, the product maintenance, extendes warranties and licence sales.

Construction contracts

The contract revenue is recognized in the income statement in proportion to the stage of completion of the contract. The stage of completion is defined as the ratio of costs incurred to total estimated costs. The turnover of construction contracts is, depending on the contract elements, recognized over time or at point in time. The principles of revenue recognition based on IFRS 15 are presented in detail in the accounting principles of the consolidated financial statements.

	2019	2018
Income recognized from construction contracts	11,638	12,293
Net sales other	63,578	50,547
Total	**75,216**	**62,840**
Income recognized over time based on the stage of completion of long-term construction contracts	11,638	12,293
Revenue recognized from long-term construction contracts in progress amounted to	9,943	5,511
Advances received from long-term construction contracts recognized in the balance sheet amounted to	246	100
Receivables recognized from long-term construction contracts amounted to	2,505	1,909

The net sales by geographical areas is presented in the note 1.

4. OTHER OPERATING INCOME

1000 EUR	2019	2018
Government grants	816	1,193
Other income	106	69
Total	**923**	**1,263**

5. OTHER OPERATING EXPENSES

External services	2,077	2,779
Voluntary staff expenses	1,027	984
Premises expenses	863	1,386
Travel expenses	1,426	1,318
IT expenses	2,989	3,080
Other expenses	5,065	7,572
Total	**13,447**	**17,120**
Expense relating to short-term leases under IFRS 16	15	
Auditor's charges		
Ernst & Young		
Auditing	66	66
Tax advice		9
Other services	15	5
Total	**81**	**81**
Others		
Auditing	26	24
Tax advice	7	7
Other services		1
Total	**33**	**31**

Notes to the Consolidated Financial Statements

1000 EUR	2019	2018
6. DEPRECIATIONS AND IMPAIRMENTS		
Depreciations		
Intangible assets		
Capitalized development expenditure	3,117	371
Intangible rights	456	432
Customer relations and technology	253	221
Other intangible assets	187	169
Tangible assets		
Buildings and constructions	879	439
Machinery and equipment	3,107	3,018
Total	**7,999**	**4,650**
Depreciation on property, plant and equipment acquired by leases		
Buildings and constructures	440	
Machinery and equipment	980	941
7. EMPLOYEE BENEFIT EXPENSES AND NUMBER OF PERSONNEL		
Number of personnel		
Average number of personnel during the fiscal period		
Continuing operations	665	660
Personnel expenses 1000 EUR		
Personnel expenses		
Managing Director	322	333
Board of Directors *	169	169
Other salaries and wages	24,283	22,305
Total	**24,774**	**22,808**
Pension expenses, defined contribution plans	5,776	5,781
Other personnel expenses	981	1,128
Total	**31,531**	**29,717**

*Including the share-based incentives. Further information in the note 32.

1000 EUR	2019	2018
8. RESEARCH AND DEVELOPMENT EXPENSES		
The research and development expenses total	25,112	21,596
Capitalized to the balance sheet	-15,641	-15,105
Recognition as an asset	3,135	371
The expensed research and development expenses recognized in the income statement amounted to	**12,606**	**6,862**
9. FINANCIAL EXPENSES (NET)		
Interest expenses	-225	-98
Interest income	0	2
Dividend income	0	0
Exchange gains and losses	-126	-120
Change of financial assets and liabilities at fair value through profit or loss	275	1,257
Other financial expenses	-414	-1,193
Other financial income	75	17
Total	**-415**	**-136**
Interest expenses on lease liabilities under IFRS 16	38	
10. INCOME TAXES		
Income taxes, current year	-118	-58
Other taxes	-24	
Income taxes, previous years	-13	-2
Deferred taxes	1,888	1,376
Total	**1,733**	**1,315**

A reconciliation between the effective tax rate and domestic tax rate (20.0 percent) of the Group:

	2019	2018
Profit before taxes	**5,912**	**2,709**
Tax at the domestic tax rate	-1,250	-544
Effect of tax rates of foreign subsidiaries	-5	-1
Taxes for prior years	-13	-2
Tax free income	202	50
Non-deductible expenses	-206	-2,088
Utilization of deferred tax assets from previous years	1,220	2,622
Reassessment of deferred tax assets	1,888	1,374
The deferred tax assets from tax losses	-79	-96
Others	-24	
Income taxes in the consolidated income statement	**1,733**	**1,315**

Notes to the Consolidated Financial Statements

	2019	2018
11. EARNINGS PER SHARE		
Basic		
Basic earnings per share amounts are calculated by dividing net profit for the year attributable to ordinary equity holders of the parent by the weighted average number of ordinary shares outstanding during the year.		
Profit attributable to the equity holders of the parent, continuing operations (1,000 EUR)	7,644	4,024
Profit attributable to the equity holders of the parent, discontinued operations (1,000 EUR)	0	0
Profit attributable to the equity holders of the parent, continuing and discontinued operations (1,000 EUR)	7,644	4,024
Weighted average number of ordinary shares during the financial year (1,000 PCS)	35,693	35,693
Basic earnings per share, continuing operations, EUR	**0.214**	**0.113**
Basic earnings per share, discontinued operations, EUR	**0.000**	**0.000**
Basic earnings per share, continuing and discontinued operations, EUR	**0.214**	**0.113**
Diluted		
Diluted earnings per share is calculated by dividing the net profit attributable to ordinary equity holders of the parent by the weighted average number of ordinary shares outstanding during the year plus the weighted average number of ordinary shares that would be issued on the conversion of all the dilutive potential ordinary shares into ordinary shares. The Group had no share-based payment schemes which would have a diluting effect on the number of shares.		
Profit attributable to the equity holders of the parent, continuing operations (1,000 EUR)	7,644	4,024
Profit attributable to the equity holders of the parent, discontinued operations (1,000 EUR)	0	0
Profit attributable to the equity holders of the parent, continuing and discontinued operations (1,000 EUR)	7,644	4,024
Weighted average number of ordinary shares during the financial year (1,000 PCS)	35,693	35,693
Effect of dilution (1,000 PCS)		
Weighted average number of ordinary shares during the financial year (1,000 PCS)	35,693	35,693
Diluted earnings per share, continuing operations, EUR	**0.214**	**0.113**
Diluted earnings per share, discontinued operations, EUR	**0.000**	**0.000**
Diluted earnings per share, continuing and discontinued operations, EUR	**0.214**	**0.113**

12. PROPERTY, PLANT AND EQUIPMENT

The Group has not revalued property, plant and equipment, hence the Group has not recognized any impairment losses directly to equity or recorded any reversals of those.

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Land and water		
Acquisition cost Jan. 1	1,091	1,091
Additions during the period		
Acquisition cost at the end of the period	**1,091**	**1,091**
Carrying amount at the end of the period	**1,091**	**1,091**
Buildings and constructures		
Acquisition cost Jan. 1	17,445	17,284
Translation differences	5	3
Additions during the period	1,631	159
Acquisition cost at the end of the period	**19,081**	**17,445**
Accumulated depreciations Jan. 1	-3,317	-2,878
Translation differences	0	0
Depreciation for the period	-855	-439
Depreciations on disposals	-27	
Carrying amount at the end of the period	**14,881**	**14,128**

No revaluations or capitalizations of interest costs have been done.

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Machinery and equipment		
Acquisition cost Jan. 1	54,603	49,813
Translation differences	-1	-9
Additions during the period	3,180	4,800
Disposals during the period	-39	
Acquisition cost at the end of the period	**57,744**	**54,603**
Accumulated depreciations Jan. 1	-46,462	-43,452
Translation differences	3	11
Depreciation for the period	-3,119	-3,022
Depreciations on disposals	11	
Carrying amount at the end of the period	**8,178**	**8,141**
Other tangible assets		
Acquisition cost Jan. 1	88	88
Acquisition cost at the end of the period	**88**	**88**
Carrying amount at the end of the period	**88**	**88**

Notes to the Consolidated Financial Statements

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Property, plant and equipment total		
Acquisition cost Jan. 1	73,227	68,097
Translation differences	4	-6
Additions during the period	4,811	5,008
Acquisition of business unit	0	0
Disposals during the period	-39	0
Transfer to assets	0	0
Acquisition cost at the end of the period	**78,003**	**73,099**
Accumulated depreciations Jan. 1	-49,779	-46,201
Translation differences	3	11
Depreciation for the period	-3,973	-3,461
Depreciations on disposals	-16	0
Carrying amount at the end of the period	**24,238**	**23,448**

Leases

The Group had the following amounts of property, plant and equipment acquired by finance leases:

Machinery and equipment		
Acquisition cost	8,814	7,807
Accumulated depreciations	-7,294	-6,317
Carrying amount at the end of the period	1,520	1,490
Buildings and constructures		
Acquisition cost	1,487	
Accumulated depreciations	-441	
Carrying amount at the end of the period	1,046	

Additions of property, plant and equipment include assets acquired by leases of EUR 2.5 million in 1.1.–31.12.2019 (EUR 0.9 million in 2018).

13. INTANGIBLE ASSETS

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Capitalized development expenses		
Acquisition cost Jan. 1	31,724	16,619
Additions during the period	15,641	15,105
Acquisition cost at the end of the period	**47,366**	**31,724**
Accumulated depreciations Jan. 1	-5,122	-4,751
Depreciation for the period	-3,117	-371
Carrying amount at the end of the period	**39,127**	**26,602**
Intangible rights		
Acquisition cost Jan. 1	4,888	4,244
Additions during the period	225	649
Disposals during the period	-7	-5
Transfer to assets		
Acquisition cost at the end of the period	**5,107**	**4,888**
Accumulated depreciations Jan. 1	-3,437	-3,005
Depreciation for the period	-456	-432
Carrying amount at the end of the period	**1,213**	**1,452**
Customer relations and technology		
Acquisition cost Jan. 1	1,780	1,688
Acquisition of business unit		92
Acquisition cost at the end of the period	**1,780**	**1,780**
Accumulated depreciations Jan. 1	-635	-414
Depreciation for the period	-253	-221
Carrying amount at the end of the period	**892**	**1,145**

Notes to the Consolidated Financial Statements

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Other intangible assets		
Acquisition cost Jan. 1	4,050	3,955
Translation differences	2	5
Additions during the period	265	91
Acquisition cost at the end of the period	**4,317**	**4,050**
Accumulated depreciations Jan. 1	-3,558	-3,385
Translation differences	-2	-5
Depreciation for the period	-187	-169
Carrying amount at the end of the period	**570**	**492**
Intangible assets total		
Acquisition cost Jan. 1	42,443	26,506
Translation differences	2	5
Additions during the period	16,131	15,845
Acquisition of business unit	0	92
Disposals during the period	-7	-5
Transfer to assets	0	0
Acquisition cost at the end of the period	**58,570**	**42,443**
Accumulated depreciations Jan. 1	-12,752	-11,555
Translation differences	-2	-5
Depreciation for the period	-4,013	-1,193
Carrying amount at the end of the period	**41,803**	**29,691**
Goodwill		
Acquisition cost Jan. 1	5,822	5,820
Translation differences	3	9
Disposals during the period		-8
Carrying amount at the end of the period	**5,825**	**5,821**

Impairment Test

The cash flow forecasts employed in impairment test calculations are based on the budgets for 2020 and the Long Range Plans (LRP) for 2021–2022 approved by management for the strategical period and management estimations for 2023–2024. Cash flows beyond five-year period are calculated by using the terminal value method. Future cash flows are exposed to the risks that are discussed in section "Risks and uncertainties" in the Report by the Board of Directors.

The used discount rate in impairment testing is Weighted Average Cost of Capital (WACC) before tax defined for Bittium. WACC defines average costs of equity and debt by noticing the risks belonging to the each component. The components of WACC are risk-free interest rate, market risk premium, beta, cost of debt, corporate income tax rate and target capital structure. WACC calculated according to these parameters amounted to 9.8% (9.8% in 2018).

In 2019, Wireless business did not reach the cash flow forecasted in the impairment test calculation in 2018. This was mainly because of greater than expected additions in capitalized development expenses, slower than expected growth in the business and increase in working capital. There were no fundamental changes in the business environment that would make an impact to the cash flow expectations compared to the previous financial year.

The impairment test is done when needed, but at least once a year. Impairment tests made in December 2019 did not indicate need for impairment bookings. Recoverable amounts exceed significantly the book value of goodwill and other assets. The terminal value represents 79% of business value. Product business market grew slower than expected and also investments to the development of a new products move focus of forecasted net present value based cash flows from the near future to further in the future.

Sensitivity analysis was also carried out during the impairment test. Cash flow forecast was either decreased by 20% or the discount factor was increased by 5%. It was noticed that cash flows are relatively sensitive to increase in discount factor. However, there are no expectations for impairment losses in the future.

Notes to the Consolidated Financial Statements

14. ACQUISITIONS

Acquisitions in 2019

In 2019 or oin the comparative period 2018 the Group did not have acquisitions to be reported according to the IFRS standards.

15. SHARES IN ASSOCIATED COMPANIES

Bittium Group owns 25% of Coronaria Analyysipalvelut Oy shares in the end of 2019. Through this joint ownership Bittium and Coronaria aim at gaining synergies from Bittium's device and system development and the interfaces formed by Coronaria's clinical medicine and services. Coronaria Analyysipalvelut Oy has been consolidated using the equity method using the information that was available for the Bittium financial statements. The domicile of the company is Oulu.

Bittium has expanded its medical remote diagnostics service offering to Switzerland by investing during years 2018 and 2019 in evismo AG, a Swiss medical remote diagnostics service provider. Evismo AG has been consolidated using the equity method using the information that was available for the Bittium financial statements. The domicile of the company is Zurich and Bittium group has 25% of the shares of the company in the end of 2019.

1000 EUR	2019	2018
Shares in associated companies		
Coronaria Analyysipalvelut Oy	1,347	1,271
evismo AG	292	187
Other associated companies	22	22
Assets total	**1,661**	**1,480**
Coronaria Analyysipalvelut Oy		
Current assets	1,237	1,597
Non-current assets	1,358	1,385
Non-current liabilites	153	217
Turnover	5,846	5,003
Net profit	1,203	936
evismo AG		
Current assets	93	112
Non-current assets	80	93
Non-current liabilites	24	23
Turnover	115	21
Net profit	-247	-142
Shares in associated companies		
Acquisition cost Jan. 1	1,480	1,242
Translation differences	-1	
Additions during the period	372	314
Disposals during the period	-190	-77
Carrying amount at the end of the period	**1,661**	**1,480**

Notes to the Consolidated Financial Statements

16. OTHER FINANCIAL ASSETS

1000 EUR	2019	2018
At 1 January	112	112
At the closing date	**112**	**112**

17. DEFERRED TAX LIABILITIES AND ASSETS

1000 EUR	Jan. 1, 2019	Recognized in the income statement	Acquisitions and disposals of subsidiaries	Dec. 31, 2019
Deferred tax assets				
Unutilized losses in taxation	523	3		526
Other items	3,224	1,723		4,947
Total	**3,747**	**1,726**	**0**	**5,473**

On December 31, 2019 the Group had EUR 79.7 million tax losses and non-depreciated depreciations of which it had not booked deferred tax receivables in full amount due to the uncertainty of the future profits, their timing, taxation or location. The amount of these non booked deferred tax receivables is approximately EUR 15.9 million. The aging of these tax losses begins from year 2020.

1000 EUR	Jan. 1, 2019	Recognized in the income statement	Acquisitions and disposals of subsidiaries	Dec. 31, 2019
Deferred tax liabilities				
Customer and technology assets	405	-68	0	337
Total	**405**	**-68**	**0**	**337**

1000 EUR	Jan. 1, 2018	Recognized in the income statement	Acquisitions and disposals of subsidiaries	Dec. 31, 2018
Deferred tax assets				
Unutilized losses in taxation	523	0		523
Other items	1,940	1,284		3,224
Total	**2,463**	**1,284**	**0**	**3,747**

On December 31, 2018 the Group had EUR 83.9 million tax losses and non-depreciated depreciations of which it had not booked deferred tax receivables in full amount due to the uncertainty of the future profits, their timing, taxation or location. The amount of these non booked deferred tax receivables is approximately EUR 16.8 million. The aging of these tax losses begins from year 2019.

1000 EUR	Jan. 1, 2018	Recognized in the income statement	Acquisitions and disposals of subsidiaries	Dec. 31, 2018
Deferred tax liabilities				
Customer and technology assets	377	-57	85	405
Total	**377**	**-57**	**85**	**405**

Notes to the Consolidated Financial Statements

18. INVENTORIES

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Raw materials and supplies	11,210	8,635
Work in progress	4,760	4,188
Finished products	1,575	1,132
Other inventories	674	631
Total	**18,219**	**14,585**

19. TRADE AND OTHER RECEIVABLES (CURRENT)

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Non-current receivables	1,353	1,578
Non-current receivables total	**1,353**	**1,578**
Current receivables:		
Trade receivables	15,397	16,125
Receivables from construction contracts	2,505	1,909
Prepaid expenses and accrued income	1,639	2,213
Other receivables	872	814
Current receivables total	**20,412**	**21,061**

Receivables are valued at nominal value or probable current value, whichever is lower.

During the financial year, Group has booked impairment losses from accounts receivable EUR 0.0 million (EUR 0.1 million 2018)

Age distribution of accounts receivable		
Current	14,877	11,894
Aged Overdue Amounts		
0-3 months	132	3,454
4-6 months	23	291
7-12 months	14	485
> 12 months	351	1
Total	**15,397**	**16,125**

20. FINANCIAL ASSETS AT FAIR VALUE THROUGH PROFIT OR LOSS

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Interest rate funds		
Balance sheet value on Jan. 1	21,576	56,401
Disposals	-16,012	-34,952
Changes in fair value	112	127
Balance sheet value at the end of the period	**5,675**	**21,576**
Financial assets at fair value through profit or loss total		
Balance sheet value on Jan. 1	21,576	56,401
Disposals	-16,012	-34,952
Changes in fair value	112	127
Balance sheet value at the end of the period	**5,675**	**21,576**

21. CASH AND SHORT-TERM DEPOSITS

Cash and short-term deposits	29,479	9,305
Total	**29,479**	**9,305**
Cash and cash equivalents at consolidated cash flow statement consist of:		
Interest rate funds	5,675	21,576
Cash and short-term deposits	29,479	9,305
Total	**35,154**	**30,881**

Fair value of cash and cash equivalents does not significantly differ from the carrying amount.

Notes to the Consolidated Financial Statements

22. ISSUED CAPITAL AND RESERVES

	Shares 1000 PCS	Share premium 1000 EUR	Premium fund 1000 EUR	Invested non-restricted equity fund 1000 EUR	Total 1000 EUR
On December 31, 2018	35,693	12,941	0	25,953	38,894
On December 31, 2019	35,693	12,941	0	25,953	38,894

Shares and the Share Capital

The shares of Bittium Corporation are listed on the NASDAQ Helsinki Ltd. The Corporation has one series of shares. All the shares entitle their holders to dividends of equal value. Each share has one vote. The share does not have a nominal value. The company's shares have been entered into the Finnish Central Securities Depository Ltd's book-entry securities system.

At the end of the financial period, the fully paid share capital of the company entered into the Finnish Trade Register was EUR 12,941,269.00 and the total number of the shares was 35,693,166. The accounting per value of the company's share is EUR 0.10. The company is not in the possession of its own shares.

Translation Differences

The translation reserve comprises all foreign exhange differences arising from the transition of the financial statements of foreign subsidiaries.

Dividends

The Board of Directors proposes that the Annual General Meeting resolve to pay EUR 0.10 of dividend per share based on the adopted balance sheet for the financial period of January 1, 2019–December 31, 2019.

23. SHARE-BASED PAYMENT PLANS

During the financial year 2019 the group did not have share-based payments.

During the financial year 2018 the Group has paid 40 percent of total remuneration of the Board of Directors of Bittium Corporation by the shares of Bittium. The shares were acquired from the stock exchange. The main terms of the remuneration arrangment are presented in the table below.

Share-based remuneration of the Board of Directors

Form of the reward	Shares
Grant date	Nov. 28, 2018
Total amount of the executed shares	9,699
Share price at the grant date, EUR	6.68
Total expenses of the reward, EUR million	0.1
Vesting conditions	Ownership of the shares was transferred to the recipients at once but the recipients have agreed the lock-up undertaking until the membership in the board have ceased.
Execution	In shares

24. PROVISIONS

1000 EUR	Guarantee provisions	Expected credit losses	Others	Total
December 31, 2018	1,479	158	6	1,643
Increase in provisions	658	0		658
Utilized provisions	-96	-7	-6	-109
Reversal of untilized provisions	-437			-437
Dec. 31, 2019	**1,604**	**151**	**0**	**1,754**
Current provisions	1,604	151	0	1,754
Total	**1,604**	**151**	**0**	**1,754**

Notes to the Consolidated Financial Statements

25. FINANCIAL LIABILITIES

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Non-current loans		
Non-current loans from financial institutions	20,000	
Finance lease liabilities	1,351	769
Total	**21,351**	**769**
Current loans		
Lease liabilities	1,247	747
Total	**1,247**	**747**
Repayment schedule of long-term loans:		
2020		467
2021	747	171
2022	398	109
2023	108	23
Later	20,098	
Total	**21,351**	**769**

The interest-bearing non-current loans are distributed by currency as follows:

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
EUR	21,315	769
MXN	36	
Total	**21,351**	**769**

The interest-bearing current loans are distributed by currency as follows:

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
EUR	1,191	747
MXN	57	
Total	**1,247**	**747**

Maturities of the finance lease liabilities:

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Lease liabilities - minimum lease payments		
Within one year	1,300	780
After one year but no more than five years	1,304	793
After five years	108	0
Lease liabilities - Present value of minimum lease payments	2,598	1,516
Within one year	1,247	747
After one year but no more than five years	1,267	769
After five years	83	0
Future finance charges	114	58
Total amount of finance lease liabilities	2,711	1,573

Notes to the Consolidated Financial Statements

26. CHANGES IN LIABILITIES ARISING FROM FINANCING ACTIVITIES

1000 EUR	Jan. 1, 2019	Cash flows	New leases	Dec 31, 2019
Lease and financing contracts	1,516	-1,444	22,526	22,598
Total	**1,516**	**-1,444**	**22,526**	**22,598**

27. TRADE AND OTHER PAYABLES

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Non-current liabilities		
Other non-current liabilities, non-interest bearing		
Non-current advances received		155
Other non-current liabilities, non-interest bearing	374	530
Total	**374**	**685**
Current liabilities		
Trade and other payables		
Trade liabilities	4,747	5,707
Accrued liabilities, deferred income	8,674	7,450
Other liabilities	3,438	4,964
Total	**16,859**	**18,121**

Material of accrued expenses and deferred income consist of personnel expenses and other accruals.

Fair value of the other liabilities than derivatives doesn't significantly differ from the initial carrying value, because the impact on discounting is not significant when taking into account the maturities of the loans.

Financial liabilities at fair value through profit or loss		
Liabilities based on derivates		
Balance sheet value on Jan. 1		
Changes in fair value		
Balance sheet value at the end of the period	**0**	**0**

28. FINANCIAL RISK MANAGEMENT

Under its normal business activities, Bittium Corporation is exposed to several financial risks. The primary financial risks are foreign exchange rate risk, interest rate risk, investment risk and default risk. The goal of the Group's financial risk management function is to reduce adverse effects of price fluctuations and other uncertainties on earnings, balance sheet and cash flows as well as to ensure sufficient liquidity. In its risk management, the Group uses financial instruments such as forward exchange agreements and interest rate swaps. External professional portfolio managers are employed for investing activities.

The Group's general risk management principles are approved by the Board of Directors. The responsibility for their implementation lies with the group finance department together with operational units. The group finance department identifies and assesses risks and obtains relevant financial instruments for hedging them in close co-operation with the operative units. Management evaluates risk concentrations from the viewpoint of business activities, taking into consideration shared factors between underlying variables such as those arising from changes in economic conditions or other variables. Operations and funding programs executed in the financial markets are mainly concentrated into the parent company. Subsidiaries are mainly funded through intra-company loans and group account overdraft credit limits.

The Group's financial risks are divided into market, default and liquidity risk.

Market risks
Market risks are caused by changes in foreign exchange rates, interest rates and the price of securities. Fluctuations in these may have an impact on the Group's income statement, cash flow or balance sheet.

Foreign exchange rate risk
The Group operates globally and is exposed to transaction risk from foreign exchange positions as well as to risks due to the translation of investments in different currencies to the functional currency of the parent company. The most relevant currencies for the Group are the Euro and the US dollar. Foreign exchange rate risk is caused by commercial activities, monetary items on the balance sheet and net investments in foreign subsidiaries. A business unit's functional currency or generally used currencies (EUR, USD) are used as invoicing currency. Additional information on functional currency and foreign currency conversion is available in the accounting principles section of the consolidated financial statements.

The Group follows a currency strategy that aims at securing the margin of business activities in changing market conditions by minimizing the effect of fluctuations in foreign exchange rates. According to the principles of the currency strategy, surely considered and the most probable net cash flow in a particular currency is hedged as net position. The cash flow is defined based on the net position of the trade receivables, trade payables, order intake and forecasted net currency cash flow. According to the currency strategy the degree of hedging can vary from approximately 50% to 100% of the forecasted net position when net position exceeds EUR 1 million. The Group could also apply hedge accounting as defined in the IFRS 9 standard. Hedge accounting was not applied during 2019. At the end of the financial period the counter value of the hedged net position was EUR 1.5 million. During the financial year the amount of the hedged position has been EUR 1.5 million.

The Group has hedged the transaction risk related to its income statement and the translation risk related to equity on the balance sheet or economic risk has not hedged. Foreign currencies denominated equities of foreign subsidiaries on December 31, 2019 was EUR 2.8 million (EUR 2.2 million in 2018) from which dollar denominated equities of foreign subsidiaries was EUR 1.9 million (EUR 1.2 million in 2018).

Notes to the Consolidated Financial Statements

On the closing date, the Group had the following foreign exchange derivative contract nominal amounts outstanding (the nominal amounts do not represent the amounts exchanged by the parties):

1000 EUR	2019	2018
Forward contracts		
Market value	26	0
Nominal value	1,500	0

Dollar denominated assets and liabilities translated to euros using the closing date's value:

1000 EUR	2019	2018
Long-term assets	0	0
Long-term liabilities	0	0
Current assets	4,007	4,004
Current liabilities	2,064	2,789

The table below describes the 10 percent appreciation or depreciation of the Euro against the US dollar, other variables remaining constant. The sensitivity analysis is based on foreign currency denominated assets and liabilities as of the closing date. The change in dollar denominated trade receivables and debt would primarily have been due to fluctuations in the foreign exchange rate.

	Changes in income statement before tax		Changes in equity before tax	
1000 EUR	2019	2018	2019	2018
EUR appreciates	-200	-100	-200	-100
EUR depreciates	200	100	200	100

Interest Rate Risk
Part of the Group's debt is tied to fixed interest rates.
At the closing date, the Group had the following fixed interest rate debts outstanding:

1000 EUR	2019	2019
Fixed interest rate debts	2,598	1,516

The table below describes the interest rate risk of debts should there have been a ±1 percent change in interest rates of short term reference interest rate debts, other variables remaining constant. The figures presented indicate the change in yearly interest expense calculated using the average amount of debt during the financial period.

	Changes in income statement before tax		Changes in equity before tax	
1000 EUR	2019	2018	2019	2018
Loan stock January, 1	1,500	1,200		
Loan stock December, 31	22,600	1,500		
Average loan stock	12,100	1,400		
Change in interest	+/- 100	+/- 0	+/- 100	+/- 0

Market Risk of Investment Activities
The Group's interest investments result in interest rate exposure, but their effect is not considered significant. The Group's revenue and operative cash flows are mainly independent of market rate fluctuations.

The Group invests in low-risk interest rate funds and therefore it has not been exposed to security price risk of fluctuations in the stock markets. According to the Group's principles, investments related to cash management are made in liquid and low-risk money market or bond instruments and thus have not been hedged using derivatives.

The table below describes the distribution of investments in securities at the closing date.

	2019	2018
Stock shares	0.0%	0.0%
Bonds	61.5 %	66.9%
Money market investments	38.5 %	33.1%
Total	**100.0%**	**100.0%**

Notes to the Consolidated Financial Statements

The combined value of the above instruments during the financial period has ranged from approximately EUR 5.6 million to EUR 21.6 million. At closing date their value was approximately EUR 5.7 million. This risk concentration has been managed by investing in well spread and low-risk money market funds.

The table below describes the price risk of the investments if they had exhibited a ±1 percent change in a market rate of interest, other variables remaining constant. Financial assets that are recognized at market value in the income statement affect net income. Changes in the value of for-sale financial assets affect equity. In the calculations it is presumed that the Group's investments change with the interest rate level in question. The sensitivity analysis describes the total market risk of investment activity because all investments are in the interest rate instruments.

	Changes in income statement before tax		Changes in equity before tax	
1000 EUR	2019	2018	2019	2018
Interest investments	+/- 0	+/- 100	+/- 0	+/- 100

Default risk
Group's credit risks are mainly related to accounts receivable, cash, financial investments and derivatives used in hedging. In it's deposit, financial investment and hedging activities Bittium operates only with well-known partners who have good credit rating.

About 85% of the Group's trade receivables are from ten customers. The other trade receivables are distributed among a wide customer base and across several geographical areas. Credit risk is mitigated for example by documentary credits or bank guarantees when needed. Default risk concentration is mainly assessed as a single customer's share of total trade receivables but also according to the receivable's date of maturity.

Bittium's significant default risk concentration is EUR 0.4 million which represents approximately 2.5% of the total accounts receivable.

During the past financial year the amount of recognized credit losses was approximately EUR 0.0 million (EUR 0.1 million in 2018). The amount of loans granted to affiliated companies were EUR 0.0 million at the end of 2019 (EUR 0.0 million in 2018). Group did not have capital loans granted outside of the Group at the end of 2019 (EUR 0.0 million in 2018).

The amount of the Group's counterparty default risk is consistent with the book value of financial assets at the closing date. For the maturity distri-bution of trade receivables, see note 19.

Liquidity risk
The Group and business segments strive to continuously evaluate and monitor the amount of liquid funds needed for business operations and loan repayments The Group strives to guarantee the availability and flexibility of financing by its strong financial position and liquid investments. Bittium has EUR 20.0 million senior loan and EUR 10.0 million committed overdraft credit facility agreement with Nordea Bank Finland Plc. Maturity date for the senior loan is May 24, 2024 and the credit limit agreement is valid until May 24, 2024. Bittium has EUR 10.0 million committed overdraft credit facility agreement with OP Corporate Bank Plc valid until May 24, 2022. These agreements include customary covenants related to, among other things, equity ratio, interest bearing debt to EBITDA, and transferring property and pledging. These credit facilities were in use EUR 0.0 million at the end of the reporting period. For the maturity distribution of the Group's debt, see note 25.

Capital structure management
The Group strives to optimize its capital structure and thus support business activities by ensuring normal operating conditions under all circum-stances. An optimal capital structure also ensures that the cost of capital is minimized.

The capital structure is affected by dividend policy and share issuance. The Group can alter and adjust dividends paid to shareholders as well as share repurchases. The Group can also alter and adjust the amount of shares issued, or make decisions on the sale of assets.

The management has continuously monitored the development of the Group's net gearing and solvency ratio. The Group's interest bearing net debt at the end of 2019 was EUR -12.6 million (EUR -29.4 million in 2018) and net gearing was -11.2% (-26.7% in 2018). The Group's solvency ratio at the end of 2019 was 73.4% (84.7% in 2018).

Fair Values of Financial Assets and Liabilities

This section presents the Group's fair valuing principles for all financial instruments.
The table below presents book values for each item in detail. Their fair values are not considered to materially differ from the book values presented in the consolidated balance sheets.

1000 EUR	Note	Book value 2019	Fair value 2019	Book value 2018	Fair value 2018
Financial assets					
Other financial assets	16	112	112	112	112
Deferred tax assets	17	5,473	5,473	3,747	3,747
Non-current receivables	19	1,353	1,353	1,578	1,578
Trade receivables and other receivables	19	20,412	20,412	21,061	21,061
Financial assets at fair value through profit or loss	20	5,675	5,675	21,576	21,576
Cash and cash equivalents	21	29,479	29,479	9,305	9,305
Currency forwards	28	26	26	0	0
Financial liabilities					
Bank loans	25	20,000	20,000		
Finance lease liabilities	25	2,598	2,598	1,516	1,516
Trade payables and other debts	17, 24, 27	19,325	19,325	20,854	20,854
Currency forwards	27	0	0	0	0

Investments in Shares and Funds and Other Investments
For-sale financial assets consist mainly of money market investments that fair values are based on the quotes of the closing day (IFRS 7: fair value hierarchy level 1; quoted prices (unadjusted) in active markets for identical assets or liabilities).

Derivatives
The fair values of forward contracts are defined based on publicly quoted currency and interest rate information and using commonly accepted valuation methods (IFRS 7 fair value hierarchy level 2; instruments whose fair value is observable either directly (i.e. as prices) or indirectly (i.e. derived from prices)). These calculations have been carried out by an outside professional party.

Bank Loans
Book values are considered to closely approximate fair values.

Finance Lease Liabilities
Book values are considered to closely approximate fair values.

Trade Receivables and Other Receivables
The original book value of receivables is considered to equal their fair values, since the effect of discounting is non-significant considering the maturities of the receivables.

Trade Payables and Other Debts
The original book value of payables and other debts is considered to equal their fair values, since the effect of discounting is non-significant considering the maturities of the receivables.

Notes to the Consolidated Financial Statements

29. ADJUSTMENTS TO NET CASH FROM OPERATING ACTIVITIES

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Business transactions without payments		
Depreciations	7,999	4,646
Share of profits in associated companies	-143	-105
Other adjustments	147	477
Total	**8,003**	**5,018**

30. OPERATING LEASE AGREEMENTS

The Group as Lessee
The total of future minimum lease payments under non-cancellable operating leases for each of the following periods:

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Not later than one year	6	554
Later than one year and not later than five years		748
After five years		128

The Group owns its facilities in Oulu and Kuopio. The facilities in other locations are rented. In average the maturities of the lease agreements are from 1 month to 5 years and normally they include an option to extend the rental period from originally agreed end date. IFRS 16 Leases standard has come into force on 1st of January 2019. According to the standard in principle all lease contracts of the Group are recognized as assets and liabilities in Group's Balance Sheet.

31. SECURITIES AND CONTINGENT LIABILITIES

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
Against own liabilities		
Floating charges		1,000
Guarantee limits at the maximum	108	135
Other contractual liabilities		
Falling due in the next year	1,921	2,414
Falling due after one year	847	2,132
Mortgages are pledged for liabilities totaled		
Other liabilities (guarantees issued)		135
Material purchase commitments	16,020	12,605

32. RELATED PARTY DISCLOSURES

The Group has the following structure:

	Country of incorporation	Owned by Parent %	Owned by Group %
Parent			
Bittium Oyj	Finland		
Subsidiaries			
Bittium Technologies Oy	Finland	100.00	100.00
Bittium Wireless Oy	Finland	0.00	100.00
Bittium Safemove Oy	Finland	0.00	100.00
Bittium Biosignals Oy	Finland	0.00	100.00
Bittium Medanalytics Oy	Finland	0.00	100.00
Kiinteistöosakeyhtiö Oulun Ritaharjuntie 1	Finland	0.00	100.00
Bittium Germany GmbH	Germany	0.00	100.00
Bittium Mexico S.A. de C.V.	Mexico	0.00	100.00
Bittium USA, Inc.	USA	0.00	100.00
Bittium Technology (Beijing) Co. Ltd.	China	0.00	100.00
Bittium Singapore Pte. Ltd.	Singapore	0.00	100.00

Information on the associated companies is presented in the note 15.

Related party transactions and balances:

1000 EUR		2019	2018
Associated companies			
	Net sales	489	319
	Receivables	1,692	2,101
	Debts	350	413

Notes to the Consolidated Financial Statements

1000 EUR	2019	2018
Employee benefits for key management		
Salaries and remuneration		
Managing director of the parent		
Hannu Huttunen 1.1.–31.12.2018, 1.1.–31.12.2019	322	333
Total	**322**	**333**
Remuneration of the members of the board of the parent,		
the financial committee and the managing directors of the business segments		
Staffan Simberg 1.1.–11.4.2018	0	5
Erkki Veikkolainen 1.1.–31.12.2018, 1.1.–31.12.2019	43	25
Kirsi Komi 1.1.–11.4.2018	0	5
Riitta Tiuraniemi 11.4.–31.12.2018, 1.1.–31.12.2019	28	12
Pekka Kemppainen 10.4.2019–31.12.2019	21	0
Petri Toljamo 11.4.–31.12.2018, 1.1.–31.12.2019	24	10
Juha Putkiranta 1.1.– 31.12.2018, 1.1.–31.12.2019	27	17
Seppo Mäkinen 1.1.–31.12.2018, 1.1.–31.12.2019	23	14
Tero Ojanperä 1.1.–31.12.2018, 1.1.–10.4.2019	4	14
Total	**169**	**103**
Share-based incentives		
Board of Directors	0	66
Total	**0**	**66**
There have not been any business transactions or open balances between the related parties.		
Members of the group executive board	**1,047**	**1,038**

Loans and guarantees to related party

There are no loans or guarantees granted between the related parties.

33. SIGNIFICANT EVENTS DURING THE FINANCIAL PERIOD 2019

February 14, 2019–Bittium Wireless Ltd, a subsidiary of Bittium Corporation, received a purchase order from the Finnish Defence Forces for products included in the Software Defined Radio based Bittium Tactical Wireless IP Network™ (TAC WIN) system and Bittium Tough Comnode™ terminals, which are meant for tactical communications. The total value of the purchase order is EUR 11.5 million of which the share of the Bittium TAC WIN system's products is EUR 9.9 million and the share of the Bittium Tough Comnode terminals is EUR 1.6 million.

The share of the purchase order including Bittium TAC WIN system's products is based on the Framework Agreement signed by Bittium and the Finnish Defence Forces on August 9, 2017. According to the Framework Agreement, the Finnish Defence Forces will order products included in the Software Defined Radio based Bittium TAC WIN system during the years 2018–2020. If materialized in full, the total value of the Framework Agreement is EUR 30 million. Finnish Defence Forces will issue separate purchase orders for the products each year. The products ordered in February will be delivered to the Finnish Defence Forces during the year 2019.

The share of the purchase order including Bittium Tough Comnode terminals is based on the Framework Agreement signed by Bittium and the Finnish Defence Forces on November 5, 2018. According to the Framework Agreement, the Finnish Defence Forces will order Bittium Tough Comnode terminals and related accessories during the years 2018–2022. If materialized in full, the total value of the Framework Agreement is EUR 8.3 million. Finnish Defence Forces will issue separate purchase orders in several batches during the validity of the Framework Agreement. The products ordered in February will be delivered to the Finnish Defence Forces during the year 2019.

On March 1, 2019 Mr. Klaus Mäntysaari, Senior Vice President Connectivity Solutions of Bittium Corporation, a member of Bittium Management Group, decided to leave to another company. Mr. Mäntysaari has been working for Bittium since 2004 in several positions in the wireless services business. He continued at Bittium until April 30, 2019. Temporarily Mr. Hannu Huttunen, CEO of the company, was leading the Connectivity Solutions business. As of May 1, 2019 Bittium management group consisted of following persons: Mr. Hannu Huttunen, CEO (chairman); Mr. Pekka Kunnari, CFO; Mr. Kari Jokela, CLO; Ms. Karoliina Fyrstén, Director, Corporate Communications and Marketing; Mr. Sammy Loitto, Senior Vice President, Sales; and heads of product and service areas: Mr. Jari Sankala, Senior Vice President, Defense and Security; Mr. Arto Pietilä, Senior Vice President, Medical Technologies; and Mr. Jari-Pekka Innanen, Vice President, Engineering.

On September 5, 2019 Mr. Tommi Kangas (48) was appointed as Senior Vice President, Connectivity Solutions product and services area at Bittium Corporation and as a member of the Bittium Corporation's Management Group, effective immediately. Previously at Bittium, he has been responsible for Connectivity Solutions product and services area's significant key customers as well as worked in several management positions in telecom business and sales. Mr. Kangas reports to Mr. Hannu Huttunen, CEO of Bittium Corporation. As of September 5, 2019 Bittium management group consists of following persons: Mr. Hannu Huttunen, CEO (chairman); Mr. Pekka Kunnari, CFO; Mr. Kari Jokela, CLO; Ms. Karoliina Fyrstén, Director, Corporate Communications and Marketing, Mr. Sammy Loitto, Senior Vice President Sales, and heads of product and service areas: Mr. Jari Sankala, Senior Vice President, Defense and Security; Mr. Arto Pietilä, Senior Vice President, Medical Technologies; and Mr. Tommi Kangas, Senior Vice President, Connectivity Solutions, and Mr. Jari-Pekka Innanen, Vice President, Engineering.

Notes to the Consolidated Financial Statements

34. SIGNIFICANT EVENTS AFTER THE REPORTING PERIOD

The Group management is not aware of any significant events after balance sheet date, that would have had impact on the consolidated financial statements.

35. KEY RATIOS

	IFRS 2019	IFRS 2018	IFRS 2017	IFRS 2016	IFRS 2015
INCOME STATEMENT, MEUR					
Net sales, MEUR *)	75.2	62.8	51.6	64.2	56.8
Net sales change, %	19.7	21.7	-19.6	13.0	7.8
Operating profit/loss, MEUR *)	6.3	2.8	-6.2	2.5	2.3
% of net sales	8.4	4.5	-12.0	4.0	4.1
Profit/loss for continuing operations before taxes, MEUR	5.9	2.7	-5.8	3.1	2.1
% of net sales	7.9	4.3	-11.3	4.9	3.7
Profit for the year from continuing operations, MEUR	7.6	4.0	-4.8	3.5	2.3
% of net sales	10.2	6.4	-9.2	5.5	4.1
Profit after tax for the year from discontinued operations, MEUR			1.7	0.0	539.0
% of net sales	0.0	0.0	3.2	0.0	948.7
Profit for the year attributable to equity holders of the parent, MEUR	7.6	4.0	-3.1	3.5	541.3
% of net sales	10.2	6.4	-6.0	5.5	952.8
BALANCE SHEET, MEUR					
Non-current assets	80.5	65.9	46.7	30.3	14.4
Inventories	18.2	14.6	10.6	4.1	2.2
Current assets	55.6	51.9	81.1	118.9	142.8
Shareholders' equity	112.3	110.0	116.7	130.6	137.6
Non-current liabilities	22.1	1.9	1.5	3.1	2.0
Current liabilities	19.9	20.5	20.2	19.6	19.8
Balance sheet total	154.2	132.4	138.4	153.3	159.4

	IFRS 2019	IFRS 2018	IFRS 2017	IFRS 2016	IFRS 2015
PROFITABILITY AND OTHER KEY FIGURES					
Return on equity % (ROE)	6.9	3.6	-3.9	2.6	2.0
Return on investment % (ROI)	5.0	3.7	-4.5	2.6	2.5
Interest-bearing net liabilities, (MEUR)	-12.6	-29.4	-61.7	-91.8	-121.4
Net gearing, %	-11.2	-26.7	-52.9	-70.3	-88.2
Equity ratio, %	73.4	84.7	85.6	87.0	90.5
Gross investments, (MEUR) *)	21.3	21.2	20.1	18.5	7.4
Gross investments, % of net sales	28.3	33.8	38.8	28.8	13.1
R&D costs, (MEUR) *)	25.1	21.6	15.0	6.9	7.3
R&D costs, % of net sales	33.4	34.4	29.1	10.8	12.9
Average personnel during the period, parent and subsidiaries *)	665	660	614	569	511
STOCK-RELATED FINANCIAL RATIOS					
Earnings per share from continuing operations, EUR					
Basic earnings per share	0.214	0.113	-0.133	0.098	0.020
Diluted earnings per share	0.214	0.113	-0.133	0.098	0.020
Earnings per share from discontinued operations, EUR					
Basic earnings per share			0.046	0.000	4.687
Diluted earnings per share			0.046	0.000	4.685
Earnings per share from continuing and discontinued operations, EUR					
Basic earnings per share	0.214	0.113	-0.087	0.098	4.708
Diluted earnings per share	0.214	0.113	-0.087	0.098	4.706
Equity per share, EUR	3.15	3.08	3.27	3.66	3.86
Dividend per share EUR **)	0.10	0.15	0.3	0.3	0.3
Dividend per earnings, %	46.7	132.7	-344.6	305.3	6.4
P/E ratio	30.4	53.0	-64.9	57.7	344.3
Effective dividend yield, %	1.5	2.0	5.3	5.3	4.3
Market values of shares (EUR)					
Highest	8.03	8.10	7.88	7.40	7.80
Lowest	5.91	4.71	5.55	5.15	3.27
Average	6.70	5.98	6.55	6.05	4.92
At the end of period	6.50	7.61	5.65	5.67	7.01
Market value of the stock, (MEUR)	232.0	271.6	201.7	202.4	249.6
Trading value of shares					
MEUR	51.5	75.4	83.1	126.4	837.1
1000 PCS	7,689	12,608	12,684	20,888	169,993
Related to average number of shares %	21.5	35.3	35.5	58.6	147.8
Adjusted number of the shares at the end of the period (1000 PCS)	35,693	35,693	35,693	35,693	35,600
Adjusted number of the shares average for the period (1000 PCS)	35,693	35,693	35,693	35,670	114,983
Adjusted number of the shares average for the period diluted with stock options (1000 PCS)	35,693	35,693	35,693	35,670	115,037

*) Continuing operations. Excluding Automotive business income statements from periods Jan. 1–July 1, 2015.

**) Proposal of the Board of Directors for 2019.

Notes to the Consolidated Financial Statements

CALCULATION OF KEY RATIOS

Return on equity % (ROE)	=	Profit for the year x 100 / Total equity (average for the accounting period)
Return on investment % (ROI)	=	Profit before tax + interest and other financial expenses x 100 / Balance sheet total - interest-free liabilities (average for the accounting period)
Net gearing, %	=	Interest-bearing liabilities - cash and cash equivalents x 100 / Total equity
Equity ratio, %	=	Total equity x 100 / Balance sheet total - advances received
Earnings per share	=	Profit attributable to equity holders of the parent / Share issue adjusted number of the shares average for the period
Equity per share	=	Equity attributable to equity holders of the parent / Share issue adjusted number of the shares at the end of the period
Dividend per share	=	Dividend for the period (Board's proposal) per share / Adjustment coefficient of post-fiscal share issues
Dividend per earnings, %	=	Dividend per share x 100 / Earnings per share
P/E ratio	=	Share issue adjusted share price at the end of the period / Earnings per share
Effective dividend yield, %	=	Dividend per share x 100 / Share issue adjusted share price at the end of the period

36. SHAREHOLDINGS AND SHARES

Breakdown of Shares by Shareholding, December 31, 2019

Number of shares	Number of shareholders	Percentage of shareholders	Number of shares	Percentage of shares and votes
1 - 100	9,310	42.7	434,420	1.2
101 - 500	6,973	32.0	1,835,114	5.1
501 - 1000	2,268	10.4	1,780,231	5.0
1001 - 5000	2,430	11.1	5,546,609	15.5
5001 - 10000	420	1.9	3,061,944	8.6
10001 - 50000	358	1.6	7,344,464	20.6
50001 - 100000	34	0.2	2,324,712	6.5
100001 - 500000	22	0.1	4,769,354	13.4
500001 - 999999999999	7	0.0	8,596,318	24.1
Total	**21,822**	**100.0**	**35,693,166**	**100.0**
Nominee-registered	9		1,002,014	2.8

Breakdown of Shareholders by Shareholder Type, December 31, 2019

Shareholders by shareholder type	Number of shareholders	Percentage of shareholders	Number of shares	Percentage of shares and votes
Non-financial corporations	494	2.3	3,034,713	8.5 %
Financial sector and insurance corporations	17	0.1	998,842	2.8 %
General government	5	0.0	3,162,817	8.9 %
Non-profit institutions	28	0.1	180,175	0.5 %
Households	21,211	97.2	27,241,628	76.3 %
Foreign owners	58	0.3	72,977	0.2 %
Nominee-registered shares	9	0.0	1,002,014	2.8 %
Total	**21,822**	**100.0**	**35,693,166**	**100.0 %**

Notes to the Consolidated Financial Statements

Major Shareholders, December 31, 2019

	Number of shares	Percentage of shares and votes
Number of shares total	**35,693,166**	**100.0**
1. Veikkolainen Erkki, Chairman of the Board	1,507,539	4.2
2. Hulkko Juha	1,506,870	4.2
3. Ponato Oy	1,501,300	4.2
4. Varma Mutual Pension Insurance Company	1,365,934	3.8
5. Ilmarinen Mutual Pension Insurance Company	1,296,529	3.6
6. Nordea Bank ABP (PUBL), Finnish Branch	760,146	2.1
7. Hildén Kai	658,000	1.8
8. Elo Mutual Pension Insurance	500,000	1.4
9. Hirvilammi Hannu	394,821	1.1
10. Karhunen Marko	341,000	1.0
Total	**9,832,139**	**27.5**
Others (incl. nominee-registered shares)	25,861,027	72.5
The Board and CEO		
Veikkolainen Erkki, Chairman of the Board	1,507,539	4.2
Kemppainen Pekka, Member of the Board	0	0.0
Mäkinen Seppo, Member of the Board	4,308	0.0
Putkiranta Juha, Member of the Board	14,308	0.0
Tiuraniemi Riitta, Member of the Board	1,437	0.0
Toljamo Petri, Member of the Board	1,437	0.0
Huttunen Hannu, CEO	10,000	0.0
Total	**1,539,029**	**4.3**

Income Statement, Parent

1000 EUR	Notes	2019	2018
NET SALES	1, 2	**811**	**704**
Other operating income	3	0	0
Personnel expenses	4	-1,232	-1,157
Depreciation and reduction in value	5	-12	-11
Other operating expenses	6	-709	-745
OPERATING PROFIT		**-1,142**	**-1,208**
Financial income and expenses	7	1,101	1,129
PROFIT (LOSS) BEFORE APPROPRIATIONS AND TAXES		**-40**	**-79**
Appropriations	8	**4,800**	**6,300**
PROFIT (LOSS) BEFORE APPROPRIATIONS AND TAXES		**4,760**	**6,221**
NET PROFIT FOR THE FINANCIAL YEAR		**4,760**	**6,221**

Balance Sheet, Parent

1000 EUR	Notes	Dec. 31, 2019	Dec. 31, 2018
ASSETS			
Non-current assets			
Intangible assets	9	92	71
Tangible assets	10	72	72
Investments	11	39,750	39,750
Non-current assets total		39,913	39,893
Current assets			
Receivables			
Current receivables	12	81,425	63,842
Receivables total		81,425	63,842
Financing securities	13	5,675	21,576
Cash and bank deposits		26,973	6,958
Current assets total		114,073	92,376
TOTAL ASSETS		**153,986**	**132,268**
SHAREHOLDERS' EQUITY AND LIABILITIES			
Shareholders' equity	14		
Share capital		12,941	12,941
Invested non-restricted equity fund		25,953	25,953
Retained earnings		86,046	85,179
Net profit/loss for the year		4,760	6,221
Shareholders' equity total		129,700	130,294
Provisions	15		
Provisions, non-current			
Provisions, current			
Liabilities	16		
Non-current liabilities		20,000	
Current liabilities		4,286	1,974
Liabilities total		24,286	1,974
SHAREHOLDERS' EQUITY AND LIABILITIES TOTAL		**153,986**	**132,268**

Cash Flow, Parent

1000 EUR	2019	2018
CASH FLOW FROM OPERATING ACTIVITIES		
Profit (loss) before taxes +/-	4,760	6,221
Adjustments		
Depreciation according to plan +	12	11
Effects of non-cash business activities	-4,993	-6,507
Financial income and expenses +/-	-1,101	-1,129
Cash flow before change in net working capital	-1,323	-1,404
Change in net working capital		
Change in interest-free short-term receivables	-3	-13
Change in interest-free short-term payables	-49	-28
Cash flow before financing activities	-1,375	-1,446
Interest paid -	-654	-1,331
Dividends received +	0	0
Interest received +	1,755	2,459
Net cash from operating activities	**-273**	**-317**
CASH FLOW FROM INVESTING ACTIVITIES		
Purchase of tangible and intangible assets -	-32	-13
Net cash used in investing activities	**-32**	**-13**
CASH FLOW FROM FINANCIAL ACTIVITIES		
Change in interest-free short-term financial receivables in Group	6,952	-21,019
Change in interest-free short-term financial payables in Group	2,281	7
Received Group contributions	540	540
Dividend paid and capital repayment	-5,354	-10,708
Net cash used in financial activities	**4,419**	**-31,180**
NET CHANGE IN CASH AND CASH EQUIVALENTS	**4,114**	**-31,510**
Cash and cash equivalents at beginning of period	28,534	60,044
Cash and cash equivalents at end of period	32,648	28,534
Change in cash and cash equivalents in balance sheet	4,114	-31,510

Cash and cash equivalents include liquid and low risk financing securities.

Accounting Principles for the Preparation of Financial Statements, Parent

The financial statements have been prepared in accordance with the Finnish Accounting Act.

Valuation Principles

Valuation of Non-current Assets
Non-current assets are capitalized in the balance sheet at the original acquisition cost deducted by accumulated depreciation. Depreciations according to the plan is calculated either using the straight-line method or the reducing balance method, taking into consideration of the useful life of assets. The depreciation periods are:

Intangible assets	3–10 years
Tangible assets	3–5 years

Valuation of Financial Securities
Financial securities are valued at fair value. The fair value of forward exchange are defined based on forward exchange prices on balance sheet date and option contracts are defined based on market prices on balance sheet date.

Pensions
The Company has organized pension coverage for its personnel through independent pension insurance companies. The pension insurance expenditures are included into personnel expenses.

Leasing Agreements
Leasing agreements and fixed-term rental agreements are reported as contingent liabilities off the balance sheet.

Income Tax
Taxes of the financial year have been reported in the income statement as income taxes. Deferred tax or liabilities or receivables has not been recorded on the financial statement.

Foreign Currency Items
The transactions in the income statement have been converted into euro using the exchange rate of the transaction date. Receivables and payables denominated in foreign currency have been converted into Euro by using the exchange rate of the European Central Bank at the balance sheet date.

Net Sales
Sales of goods is recorded when goods have been handed over to the customer or the services have been rendered. Sales are shown net of indirect sales taxes and discounts.

Notes to the Financial Statements of the Parent Company

1000 EUR	2019	2018
1. NET SALES BY SEGMENTS		
Other functions	812	704
Total	**812**	**704**
2. NET SALES BY MARKET AREAS		
Europe	706	671
Americas	106	33
Asia		
Total	**812**	**704**
3. OTHER OPERATING INCOME		
Other operating income	0	0
Total	**0**	**0**
4. NUMBER OF PERSONNEL AND PERSONNEL EXPENSES		
Average number of personnel during the period		
Other functions	8	7
Total	**8**	**7**
Number of personnel at the end of the year	8	7
Personnel expenses *		
Management salaries	322	333
Board of Directors	169	169
Other salaries and wages	589	531
Total	**1,080**	**1,034**
Pension expenses	141	113
Other social expenses	12	11
Total	**1,232**	**1,157**

* The Board of Directors salaries include the share-based compensation.

1000 EUR	2019	2018
5. DEPRECIATION AND REDUCTION IN VALUE		
Intangible rights	10	8
Other capitalized long-term expenditures	1	2
Machinery and equipment	0	1
Total	**12**	**11**

Notes to the Financial Statements of the Parent Company

1000 EUR	2019	2018
6. OTHER OPERATING CHARGES		
IT equipment and SW expenses	89	84
Premises expenses	16	15
Administrative services	274	265
Travel expenses	74	63
Voluntary staff expenses	32	21
Other business expenses	224	297
Total	**709**	**745**
Auditor's charges		
Auditing	23	23
Tax advice	0	9
Other services	1	5
Total	**24**	**37**
7. FINANCIAL INCOME AND EXPENSES		
Income from investments		
From Group companies		
From others	319	1,269
Total	**319**	**1,269**
Other interest and financial income		
From Group companies	1,404	1,084
From others	32	106
Total	**1,436**	**1,190**
Other interest and financial expenses		
To Group companies	4	2
To others	650	1,329
Total	**654**	**1,331**
Reduction in value of investment	0	0
Net financial income and expenses	1,101	1,129
Net financial income and expenses including exchange gains and losses	0	0
8. APPROPRIATIONS		
Received Group contributions	4,800	6,300

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
9. INTANGIBLE ASSETS		
Intangible rights		
Acquisition cost Jan. 1	288	275
Investments during the period	32	13
Acquisition cost at the end of the period	**320**	**288**
Accumulated depreciations Jan. 1	-218	-211
Depreciation for the period	-10	-8
Book value at the end of the period	**92**	**70**
Other capitalized long-term expenditures		
Acquisition cost Jan. 1	6	6
Investments during the period		
Acquisition cost at the end of the period	**6**	**6**
Accumulated depreciations Jan. 1	-5	-3
Depreciation for the period	-1	-2
Book value at the end of the period	**0**	**1**
Intangible assets total		
Acquisition cost Jan. 1	295	281
Investments during the period	32	13
Acquisition cost at the end of the period	**326**	**295**
Accumulated depreciations Jan. 1	-223	-213
Depreciation for the period	-11	-10
Book value at the end of the period	**92**	**71**

Notes to the Financial Statements of the Parent Company

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
10. TANGIBLE ASSETS		
Machinery and equipment		
Acquisition cost Jan. 1	5	5
Investments during the period	1	
Acquisition cost at the end of the period	**6**	**5**
Accumulated depreciations Jan. 1	-5	-4
Depreciation for the period	-1	-1
Book value at the end of the period	**0**	**1**
Other tangible assets		
Acquisition cost Jan. 1	71	71
Acquisition cost Dec. 31	**71**	**71**
Book value at the end of the period	**71**	**71**
Tangible assets total		
Acquisition cost Jan. 1	76	76
Investments during the period	1	
Acquisition cost at the end of the period	**77**	**76**
Accumulated depreciations Jan. 1	-5	-4
Depreciation for the period	-1	-1
Book value at the end of the period	**72**	**72**
11. INVESTMENTS		
Investments in subsidiaries		
Acquisition cost Jan. 1	39,749	39,749
Book value at the end of the period	**39,749**	**39,749**
Investments in other shares		
Acquisition cost Jan. 1	1	1
Book value at the end of the period	**1**	**1**
Investments total		
Acquisition cost Jan. 1	39,750	39,750
Book value at the end of the period	**39,750**	**39,750**

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
12. CURRENT RECEIVABLES		
Accounts receivable		
From Group companies	71	23
Total	**71**	**23**
Other receivables		
From Group companies	70,170	57,458
From others	48	46
Total	**70,219**	**57,504**
Prepaid expenses and accrued income		
From Group companies	11,100	6,300
From others	33	14
Total	**11,134**	**6,314**
Current receivables total	**81,424**	**63,842**

13. FINANCING SECURITIES

Cash and cash equivalents include liquid and low risk financing securities.

Financial assets at fair value through profit or loss	5,675	21,576

14. SHAREHOLDERS' EQUITY

Share capital at the beginning of the period	12,941	12,941
Share capital at the end of the period	**12,941**	**12,941**
Invested unrestricted equity fund at the beginning of the period	25,953	25,953
Share issue		
Invested unrestricted equity fund at the end of the period	**25,953**	**25,953**
Retained earnings at the beginning of the period	91,400	95,887
Dividend distribution	-5,354	-10,708
Net profit for the period	4,760	6,221
Retained earnings at the end of the period	**90,806**	**91,400**
Distributable earnings at the end of the period	116,759	117,353
Shareholders' equity total	**129,700**	**130,294**

Notes to the Financial Statements of the Parent Company

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
15. PROVISIONS		
Provisions		
Provisions, current		
Total		
16. LIABILITIES		
Current liabilities		
Accounts payable		
To Group companies	159	128
To others	40	93
Total	**200**	**221**
Other short-term liabilities		
To Group companies	3,660	1,379
To others	79	68
Total	**3,739**	**1,447**
Accrued expenses and deferred income		
To others	347	306
Total	**347**	**306**
Current liabilities total	**4,286**	**1,974**

1000 EUR	Dec. 31, 2019	Dec. 31, 2018
17. SECURITIES AND CONTINGENT LIABILITIES		
On behalf of Group companies		
Guarantee limits	115	86
of which guarantees in use total		86
Leasing liabilities		
Falling due in the next year	1,155	1,107
Falling due after one year	1,275	1,244
Rental liabilities		
Falling due in the next year	9	6
Contractual liabilities		
Falling due in the next year	62	73
Falling due in 1–5 years		0

1000 EUR	31.12.2019	31.12.2018
18. NOMINAL VALUE OF CURRENCY DERIVATES		
Foreign exchange forwards		
Market value	26	
Nominal value	1,500	

	Owned by Parent, %	Owned by Group, %	Book value 1000 EUR
19. SHARES AND HOLDINGS			
Subsidiaries			
Bittium Technologies Oy	100.00	100.00	39,749
Other holdings by Parent			
Partnera Oy			1

Proposal by the Board of Directors on the Use of the Profit Shown on the Balance Sheet and the Payment of the Dividend

According to the parent company's balance sheet at December 31, 2019, the distributable assets of the parent company are EUR 116,759,025.98 of which the profit of the financial year is EUR 4,759,958.60. The Board of Directors proposes that the Annual General Meeting to be held on April 1, 2020 resolve to pay EUR 0.10 per share as dividend based on the adopted balance sheet for the financial period of January 1, 2019–December 31, 2019. The dividend will be paid to the shareholders who are registered as shareholders in the company's register of shareholders as maintained by Euroclear Finland Ltd on the dividend record date, April 3, 2020. The Board of Directors proposes that the dividend be paid on April 14, 2020. Bittium Corporation follows a dividend policy that takes into account the Corporation's net income, financial status, need for capital and financing of growth. There have not been any substantial changes in the company's financial position after the financial year. Company has good liquidity and according to the Board of Directors, the proposed distribution of profits does not danger the company's solvency.

In Oulu, February 12, 2020

Erkki Veikkolainen
Chairman of the Board

Seppo Mäkinen
Member of the Board

Pekka Kemppainen
Member of the Board

Juha Putkiranta
Member of the Board

Riitta Tiuraniemi
Member of the Board

Petri Toljamo
Member of the Board

Hannu Huttunen
CEO

Auditor's Note

Auditor's Report has been issued today.

In Oulu, February 12, 2020

Ernst & Young Oy
Authorized Public Accountant Firm

Jari Karppinen, Authorized Public Accountant

Auditor's Report

(Translation of the Finnish original)

To the Annual General Meeting of Bittium Oyj

Report on the Audit of Financial Statements

Opinion

We have audited the financial statements of Bittium Oyj (business identity code 1004129-5) for the year ended 31 December, 2019. The financial statements comprise the consolidated balance sheet, statement of comprehensive income, statement of changes in equity, statement of cash flows and notes, including a summary of significant accounting policies, as well as the parent company's balance sheet, income statement, statement of cash flows and notes.

In our opinion

- the consolidated financial statements give a true and fair view of the group's financial position as well as its financial performance and its cash flows in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU.
- the financial statements give a true and fair view of the parent company's financial performance and financial position in accordance with the laws and regulations governing the preparation of financial statements in Finland and comply with statutory requirements.

Our opinion is consistent with the additional report submitted to the Audit Committee.

Basis for Opinion

We conducted our audit in accordance with good auditing practice in Finland. Our responsibilities under good auditing practice are further described in the *Auditors Responsibilities for the Audit of Financial Statements* section of our report.

We are independent of the parent company and of the group companies in accordance with the ethical requirements that are applicable in Finland and are relevant to our audit, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

In our best knowledge and understanding, the non-audit services that we have provided to the parent company and group companies are in compliance with laws and regulations applicable in Finland regarding these services, and we have not provided any prohibited non-audit services referred to in Article 5(1) of regulation (EU) 537/2014. The non-audit services that we have provided have been disclosed in note 5 to the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

We have fulfilled the responsibilities described in the *Auditor's responsibilities for the audit of the financial statements* section of our report, including in relation to these matters. Accordingly, our audit included the performance of procedures designed to respond to our assessment of the risks of material misstatement of the financial statements. The results of our audit procedures, including the procedures performed to address the matters below, provide the basis for our audit opinion on the accompanying financial statements.

We have also addressed the risk of management override of internal controls. This includes consideration of whether there was evidence of management bias that represented a risk of material misstatement due to fraud.

KEY AUDIT MATTER	HOW OUR AUDIT ADDRESSED THE KEY AUDIT MATTER
Revenue Recognition *We refer to the Group's accounting policies and to the note 3* Fixed price contracts in long-term construction contracts are part of the Group's business practice. These projects constitute a significant partion of the consolidated net sales. In the financial statements 2019 the revenue recognized from these projects was 11.6 million euro, which is 15 percentage of the total net sales. The group applies the percentage of completion method for recognizing revenue from long-term construction contracts, which involves the use of significant management estimates. E.g. the following estimates include significant management judgement for each project: stage of completion, total contract costs and the project margin. During the performance phase, the financial outcome of a project is based on the estimates made by the management and will come more accurate when the project advances. In the group net sales is a key performance indicator, which might generate an incentive to prematurely recognition of revenue. Revenue recognition was determined to be a key audit matter and a significant risk of material misstatement referred to in EU Regulation No 537/2014, point (c) of Article 10(2), because of the risk related to correct timing of revenue.	Our audit procedures in which risk of material misstatement on revenue recognition has been taken into account included, among other: • assessment of the accounting principles of the group on revenue recognition and comparing them with the applied accounting standards; • examination of the nature of revenue, stage of completion and financial contract terms behind the revenue recognized in the long-term projects; • tests of revenue recognition, which included testing of the calculations and the estimates used in the revenue recognition; • analytical procedures on revenue and • tests of the notes of revenue recognized.

Responsibilities of the Board of Directors and the Managing Director for the Financial Statements

The Board of Directors and the Managing Director are responsible for the preparation of consolidated financial statements that give a true and fair view in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU, and of financial statements that give a true and fair view in accordance with the laws and regulations governing the preparation of financial statements in Finland and comply with statutory requirements. The Board of Directors and the Managing Director are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Board of Directors and the Managing Director are responsible for assessing the parent company's and the group's ability to continue as going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting. The financial statements are prepared using the going concern basis of accounting unless there is an intention to liquidate the parent company or the group or cease operations, or there is no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of Financial Statements

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

As part of an audit in accordance with good auditing practice, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a materialmisstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the parent company's or the group's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of the Board of Directors' and the Managing Director's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may east significant doubt on the parent company's or the group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events so that the financial statements give a true and fair view.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with 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 relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, 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 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 or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Other Reporting Requirements

Information on Our Audit Engagement

We were first appointed as auditors by the Annual General Meeting on April 12, 2002, and our appointment represents a total period of uninterrupted engagement of 18 years.

Other Information

The Board of Directors and the Managing Director are responsible for the other information. The other information comprises information included in the report of the Board of Directors and in the Annual Report, but does not include the financial statements and our report thereon. We obtained the report of the Board of Directors prior to the date of the auditor's report, and the Annual Report is expected to be made available to us after the date of the auditor's report.

Our opinion on the financial statements does not cover the other information.

In connection with our audit of the financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. With respect to report of the Board of Directors, our responsibility also includes considering whether the report of the Board of Directors has been prepared in accordance with the applicable laws and regulations.

In our opinion, the information in the report of the Board of Directors is consistent with the information in the financial statements and the report of the Board of Directors has been prepared in accordance with the applicable laws and regulations.

If, based on the work we have performed, we conclude that there is a material misstatement in the information included in the report of the Board of Directors, we are required to report this fact. We have nothing to report in this regard.

Oulu, February 12, 2020
Ernst & Young Oy
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