Bittium in 2017

Annual Report 2017

Bittium

Contents

CEO's Review

The year 2017 was financially challenging for Bittium. Net sales decreased 19.6 percent year-on-year and was EUR 51.6 million. Operating loss was EUR -6.2 million. This loss was caused by the decrease in the net sales and significant R&D investments to enable the Company's long-term growth.

The share of the services-based net sales decreased significantly, as expected, and remained at EUR 34.9 million, being EUR 16.9 million less than in the last year. The decrease in the services business net sales was mainly caused by the termination of a significant customer cooperation with a global network equipment manufacturer. Bittium has won new R&D services projects for wireless products, however, it has not been able to replace the decrease in the net sales in total.

The share of the product-based net sales grew to EUR 16.3 million which was EUR 4.4 million more than in the last year. The increase in the net sales resulted from the product portfolio extension to medical remote monitoring and measuring of biosignals as well as from the increased deliveries of Bittium Tough Mobile™ LTE smartphones. However, the product-based net sales was below our targets due to the changed schedule of the startup of the deliveries of the mobile devices designed for the Mexican governmental authorities from the year 2017 to 2018.

In line with our strategy, we continued investments into our product business to enable future growth. The year 2017 was significant for us in terms of R&D investments. The investments in own products and product platforms were EUR 15.0 million, which is 29.1 percent of net sales. The investments focused mainly on extending the tactical communication product offering targeted for defense industry as well as

on different terminal products and their related software development, targeted for Mobile Security and Public Safety markets. We started the development of new software-defined radio based Bittium Tough SDR™ product family that includes tactical handheld and vehicle radios and continued the development of the secure Bittium Tough Mobile smartphone and the research and development its next generation. We also launched a new software version for our Bittium SafeMove® product family.

Product development of products for measuring and monitoring of biosignals was also continued. Bittium Faros™ ECG-measuring devices' built-in algorithms for detection of arrhythmias have received medical device approval in Europe. We continued to develop our new Medical Technologies product and service area and started cooperation with a Finnish health care service provider Coronaria Hoitoketju's subsidiary Coronaria Analyysipalvelut Oy. 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.

The cooperation with the Finnish Defense Forces continued. The development of the tactical communication system Bittium Tactical Wireless IP Network™ (TAC WIN), used by the Finnish Defence Forces, continued and the product deliveries for this communication system were continued. The use of the Bittium TAC WIN system within the Finnish Defence Forces' branches expands to the Air Force. In addition we made two important agreements with the Finnish Defence Forces for the coming years; a Framework Agreement that continues the deliveries of Bittium TAC WIN products in the years 2018–2020 and a Letter of Intent concerning the purchase of new

Software-Defined Radio (SDR) based tactical radios and the preparations of the purchase.

The new phase of the ESSOR (European Secure Software defined Radio) programme was started, where the operational capabilities of ESSOR High Data Rate Waveform (HDR WF), meant for joint operations between defense forces of different countries, will be enhanced further. Bittium is part of the ESSOR programme and will bring the new functionalities of the radio wave form also to the new Bittium Tough SDR radios.

The development of Bittium Tough Mobile smartphone continued further and the National Cyber Security Centre-Finland of the Finnish Communications Regulatory Authority granted approval for the Mobile Security and Public Safety targeted Bittium Tough Mobile LTE smartphone and related back-end system to process material that is classified nationally as Confidential. Bittium Tough Mobile's unique dual-boot functionality for the Confidential classification level makes it possible to operate the device with two completely separate operating systems: Public and Confidential. The operating system classified as Public is meant for personal communications with access to e.g. Google programs, and Confidential is completely isolated and hardened for secure authority. We signed a contract with the Finnish Defence Forces for the delivery of Bittium Tough Mobile LTE smartphones and related Bittium Secure Suite™ back-end system classified for Confidential level. Although the cyber security threats are increased, the development of Bittium Tough Mobile's markets have been slower than expected.

We continued the development of our operations, and we were awarded with ISO 13485:2016 certificate, which covers the

design, development, manufacturing and related services for the entire product life cycle of medical devices. The quality management system based on ISO 13485:2016 standard is a major competitive advantage and supports Bittium's strategy for Connectivity Solutions' product and service area.

We have continued to build this Company to enable long-term growth. We will continue investments in enabling organic growth and in searching for inorganic growth opportunities in all our product and service areas.

I want to thank our personnel and partners for the remarkable investments and numerous great achievements during 2017. I want to express my thanks to our customers for their loyalty and trust, as well as our shareholders for supporting the Company's long-term growth.

Hannu Huttunen
CEO
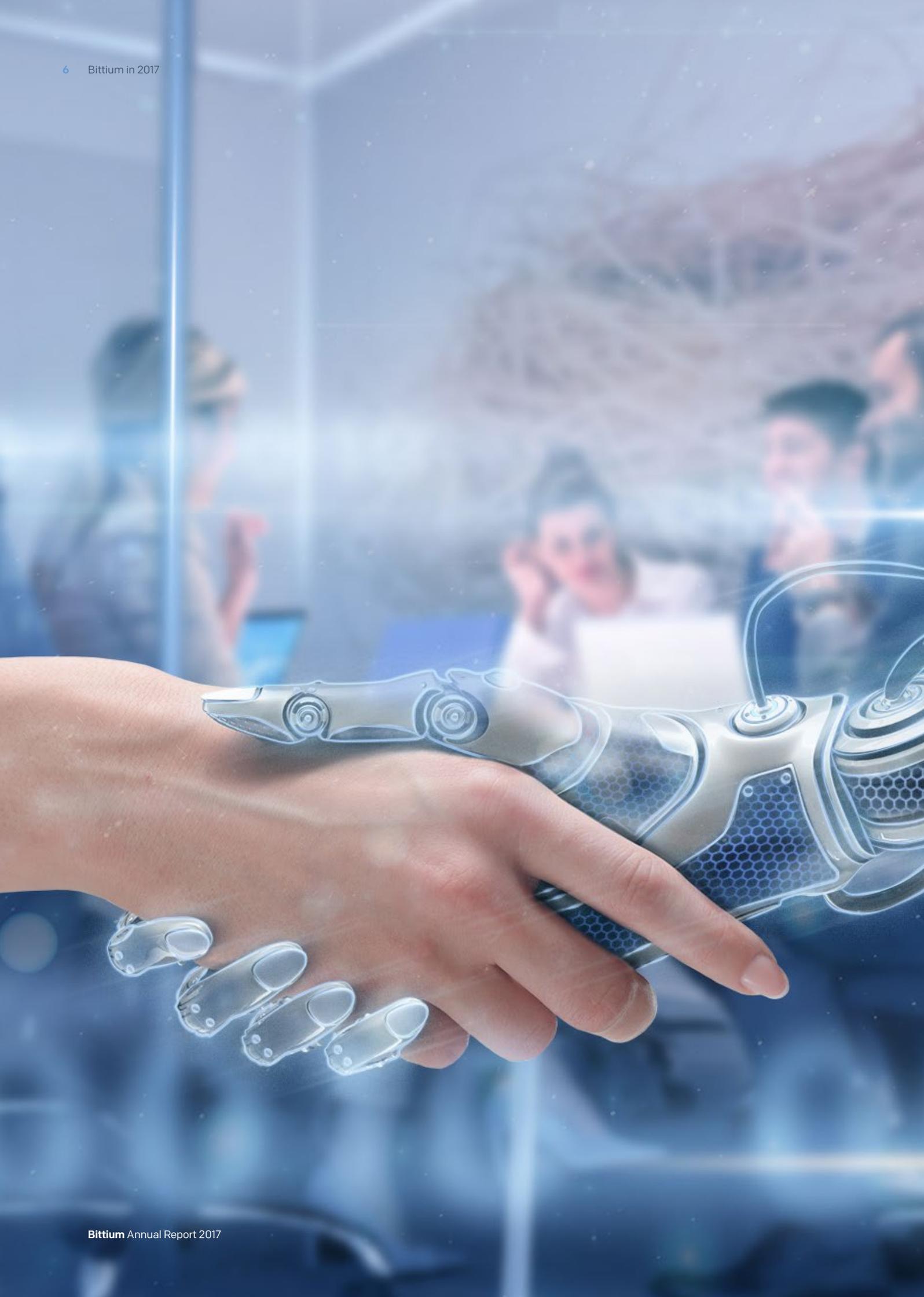
Bittium in 2017

Financial Performance

Bittium's net sales in January-December 2017 decreased by 19.6 percent year-on-year to EUR 51.6 million (EUR 64.2 million, in 2016).

The share of the product-based net sales was EUR 16.3 million (EUR 11.9 million, in 2016), which resulted mainly from the product deliveries of the tactical communication system, product deliveries of Bittium Tough Mobile LTE smartphones and related security software, and deliveries of products for measuring and monitoring biosignals. The increase in the product-based net sales year-on-year resulted mainly from product sales in the medical business acquired at the end of 2016 and increased deliveries of Bittium Tough Mobile LTE smartphones.

The share of the services-based net sales decreased significantly and was EUR 34.9 million (EUR 51.8 million, in 2016). The decrease in the services business net sales was caused by the termination of significant customer cooperation with a global network equipment manufacturer. Bittium has won new R&D services projects for wireless products, however, it has not been able to replace the decrease in the net sales in total.

Operating loss was EUR -6.2 million (operating profit of EUR 2.5 million, in 2016). This loss was caused by the significant decrease in the net sales and significant R&D investments.

Cash flow from operating activities was EUR -0.0 million (EUR -1.7 million, in 2016). Net cash flow was EUR -32.0 million, in-

cluding the EUR 10.7 million dividend payment in April and the investments made into the Company's new office building in Oulu, Finland and into own product development (EUR -27.9 million, in 2016, including the EUR 10.7 million dividend payment and the investments made into the Company's new office building in Oulu, Finland). Equity ratio was 85.6 percent (87.0 percent, December 31, 2016). Net gearing was -52.9 percent (-70.3 percent, December 31, 2016).

Bittium continued R&D investments in its own products and product platforms and the amount of R&D investments increased significantly during 2017. R&D investments in 2017 were EUR 15.0 million (EUR 6.9 million in 2016) which was 29.1 percent of net sales (10.8 percent of net sales in 2016). EUR 5.8 million were capitalized (EUR 0.9 million in 2016). The amount of capitalized R&D in-

Consolidated Financial Statements

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME, MEUR	2017 12 months	2016 12 months
Net sales	51.6	64.2
Operating profit / loss	-6.2	2.5
Financial income and expenses	0.4	0.6
Result before tax	-5.8	3.1
Result for the period from continuing operations	-4.8	3.5
Result for the period from discontinuing operations	1.7	
Result for the period	**-3.1**	**3.5**
Total comprehensive income for the period	**-3.2**	**3.5**
Result for the period attributable to:		
Equity holders of the parent	-3.1	3.5
Total comprehensive income for the period attributable to:		
Equity holders of the parent	-3.2	3.5
Earnings per share from continuing operations, EUR	-0.133	0.098

Bittium Tough Mobile™

vestments in the balance sheet at the end of 2017 were EUR 11.9 million (EUR 6.4. million in 2016).

Bittium's Products and Services

Bittium is specialized in the development of reliable and secure connectivity and communication solutions and mobile information security solutions leveraging its 30 years legacy of expertise in advanced radio communication technologies.

Bittium offers its customers also healthcare technology products and services in biosignal measuring in the areas of cardiology, neurology, rehabilitation, occupational health and sports medicine based on its over 30 years of expertise in measurement technologies.

Bittium's business operations are divided into three product and service areas: Defense & Security, Connectivity Solutions and Medical Technologies.

Defense & Security

In the Defense & Security product and service area Bittium offers globally leading products and services for its customers in the defense, security and public safety markets. Bittium's competitiveness in these markets is based on trust and reliability, hi-quality products and services, as well as on advanced technology and security know-how developed within the company during more than 30 years.

Bittium Tough Mobile™ is a secure and durable Android-based LTE smartphone combining the latest information security and commercial device technologies. Bittium Tough Mobile incorporates a hardware-based security platform, which enables strong device security as well as deep integration of both customers' own and third-party software security solutions. This dedicated hardware is essential for building layered mobile security solutions.

In addition, Bittium Tough Mobile's features include for example a programmable Push-to-Talk button (PTT), glove-usable 5" full HD display, IP67 level water and dust protection, and MIL-STD-810G level shock resistance. Bittium Tough Mobile and related management system and VPN encryption solution have received official Confidential level encryption product classification in Finland from the Finnish Communications Regulatory Authority where material can be transferred between a smartphone and connected back end solutions on top of creating and processing of classified information.

Bittium Secure Suite™ is a device management and encryption software product that complements Bittium Tough Mobile smartphone with a scalable set of new software services for remote management, remote attestation and securing the network connections of the device. Bittium Tough Mobile smartphone and Bittium Secure Suite form a unique, complete, reliable system for processing and transferring sensitive and classified material and securing critical communication.

Bittium Specialized Device Platform™ is a versatile device platform leveraging latest mass market mobile device hardware and software technologies. The platform enables companies to roll-out fully customized mobile devices in various form factors (incl. module, smartphone, tablet and smart watch) faster and with lower development risks. The platform has been productized to public safety, security, industrial and smart watch markets. One of the major products based on this platform is the Bittium Tough Mobile secure smartphone.

Bittium SafeMove® Mobile VPN software enables the utilization of all IP based applications and networks by securing the connections between the work station and corporate services immediately from startup of the phone. With Bittium SafeMove, for

instance home care workers are allowed to have full access to the same systems and applications they would have on a hospital desktop, enabling safe and real-time access to patient records.

Bittium SafeMove® Analytics is an advanced monitoring and reporting module that helps organizations to monitor network connectivity and performance to improve productivity and user experience. The Analytics tool continuously gathers connectivity data such as connectivity status, speed, throughput and bytes transferred, network type and Wi-Fi network information. It is also easy to enhance the tool with positioning information if GPS data is available. In addition the new security features enable immediate report of possible security deviations in the mobile phones used by the employees. This enables reacting to the cyber threats without any delay, for example by disconnecting device that reported the deviation, from the company network for the time of clearance of the situation.

Bittium Tactical Wireless IP Network™ (TAC WIN) is a Software-Defined Radio based wireless broadband network system intended for military and public safety use. With the system MANET (mobile ad hoc network), link, and connection networks can be formed into one logical IP network quickly, no matter where location is. Bittium TAC WIN is compatible with existing fixed and wireless network infrastructures. The core of the system is a tactical router that enables users to freely form both wired and wireless broadband data transfer IP connections. Tactical router enables also connections to different types of terminals and other communication systems connecting them into one communication network. In addition to the router, the system comprises of three types of radio heads, and each radio head covers its own frequency band area and can be used for flexible formation of optimized network topologies for different communication needs. All the products of the system are designed for harsh conditions, and thanks to the system's automated functions the implementation of the system can be done quickly. Due to the

Bittium Tough SDR Handheld™ and Bittium Tough SDR Vehicular™

software-based functionality of the Bittium TAC WIN system, it can be easily updated with additional performance cost-efficiently during the whole lifespan of the system.

Bittium Tough VoIP™ product family's products enable tactical IP calls and broadband data transfer even in demanding conditions. Products are easily integrated to existing IP infrastructure. The product family consists of a range of tactical IP-based communication products, including distributed VoIP service network for tactical environment, Bittium Tough VoIP Service; Voice over IP clients, Bittium Tough VoIP Field Phone and Bittium Tough VoIP Terminal; and network extension unit, Bittium Tough VoIP Network Extender; and Bittium Tough VoIP Service software.

Bittium Tough VoIP Field Phone™ is a SIP (Session Initation Protocol) compliant client that provides interoperability with other SIP clients and server implementations available in the market, and incorporates functionality that enables introduction of VoIP services in dynamic self-forming networks independent from server.

Bittium Tough VoIP Terminal™ is a wireline VoIP phone that can be operated either as an part of Bittium Tough VoIP solution or as an IP terminal together with a third-party equipment.

With the **Bittium Tough VoIP Network Extender™**'s SHDSL (Symmetric-High-Speed Digital Subrsciber Line) connectivity, an IP network can be extended over long distances using conventional field wire. The Network Extender also features Ethernet and SHDSL connections to external networks and devices. With these products it is possible to provide wired connectivity and enhanced reliability of VoIP services regardless of availability of network services. The products are also easily integrated to existing IP infrastructure and are fully interoperable with commercial equipment.

Bittium Tough VoIP Service™ is a software product, which can be used to connect both fixed data network users and wireless tactical data network users to the same voice service network.

Bittium Tactical LTE Access Point™ is a solution providing LTE access to the Bittium TAC WIN network. With the solution, different troops can benefit from cost-efficient and high-speed multimedia data and VoIP services by using commercial smartphones as well as special terminals intended for authority use.

Bittium Tough Comnode™ fulfills the data transfer needs for mobile troops by functioning for example as a VoIP phone (Voice over IP), an IP router (Internet Protocol), and an SHDSL repeater (Symmetrical Highspeed Digital Subscriber Line). Additionally, Bittium Tough Comnode also provides SIP (Session Initiation Protocol) server functionalities of the tactical voice network for commercial VoIP terminals and enables using also legacy Combat Net Radios (CNR) as part of the IP-based tactical communication system (Radio over IP, RoIP).

New Bittium Tough SDR™ Product Family in Development

Bittium Tough SDR product family consists of **Bittium Tough SDR Handheld™** and **Bittium Tough SDR Vehicular™** radios. The new product family expands Bittium's offering from the current Bittium Tactical Wireless IP Network (TAC WIN), used for forming a tactical broadband mobile IP backbone network, to individual soldier and vehicular level tactical radios. This enables bringing broadband data transfer and voice to all mobile troops starting from brigade level and all the way across the battlefield to an individual soldier.

Connectivity Solutions

In the Connectivity Solutions product and service area Bittium provides professional design services and technology expertise in the areas of wireless devices, network infrastructure, and IoT solutions. Bittium also conducts R&D in the technology areas of 5G, Artificial Intelligence (AI), Robotic Process Automation (RPA), and Cloud Solutions. Bittium has long experience in

system design, technology integration, wireless radio and antenna technologies, and power optimized, small form-factor device development. The understanding of industry-specific requirements, strong competence in R&D services, wireless devices, digitalization and information security along with the ISO 13485:2016 quality certificate, covering the devices, and equipment for health care (issued in autumn 2017) enable Bittium to create solutions which bring clear added value to our customers and partners.

Bittium Wearable Platform for Health Monitoring™ is a wearable device platform integrated with four sensors: 3-axis accelerometer, Optical Heart Rate (OHR), skin temperature and EmoGraphy skin conductance sensor. These sensors allow the measurement of person's stress level, fatigue and sleeping quality. The wearable platform provides an easy way to develop and test new healthcare-specific products and services such as remote patient monitoring or professional driving applications.

Medical Technologies

In the Medical Technologies product and service area Bittium offers its customers healthcare technology products and solutions in biosignal measuring in the areas of cardiology, neurology, rehabilitation, occupational health and sports medicine. Combining healthcare technologies with Bittium's long-term experience and competence in wireless and security technologies gives Bittium good conditions to serve its customers in healthcare sector by offering them new kinds of products and services.

Bittium Faros™

Bittium Faros™ is a versatile ECG device that is used for early detection of cardiac abnormalities in everyday life. Bittium Faros is ultra-small and lightweight,

Bittium
Cardiac
Navigator™

which enables precise long-term full disclosure ECG measurements for long-term Holtering, cardiac event monitoring, mobile cardiac telemetry and assessing autonomic nervous system functions.

Bittium Faros outpatient monitoring solutions include several software options for cardiac monitoring. The built-in arrhythmia detection algorithms of the Bittium Faros device are used for event recording and mobile event monitoring. This technology enables earlier repatriation of patients and even better ability to react to potentially emerging arrhythmias faster.

Bittium Cardiac Rehabilitation System™ is a solution for cardiac rehabilitation real-time monitoring for up to 16 patients simultaneously. The system offers safety and efficiency for cardiac rehabilitation by showing each patient's heart rate, ECG and changes in ST-segment. Utilization of the latest wireless technology allows complete freedom to choose different exercises in various training environments.

Bittium Cardiac Navigator™ is a completely new type of solution for the analysis of clinical Holter ECG recordings. Its user-friendly and informative data presentation and intuitive analysis tools make the software efficient and easy to use when analyzing multiple days of ECG recordings. Bittium Cardiac Navigator is designed for scanning longer measurements efficiently in a shorter time and thus speeding up the final diagnosis.

Bittium Cardiac Explorer™ offers a quick and flexible way of working with event-based ECG arrhythmia analysis. The biggest benefits of the software are having full disclosure ECG always available, full access to the events identified by the device, total control on the reporting content and the ability to analyze an unlimited amount of measurement data.

Bittium NeurOne™ is one of the quickest and most accurate EEG measuring devices in the world designed for clinical and research use. Bittium NeurOne system enables fully synchronized group measuring of up to 30 persons simultaneously for example in different types of psychological studies. The solution is optimized for use with transcranial magnetic stimulators (TMS-EEG), with optional possibility to use it during magnetic resonance imaging procedures (fMRI-EEG).

Bittium BrainStatus™ is a wireless compact EEG amplifier, which is used together with a disposable easy and quick to wear Bittium BrainStatus electrode headband for example to diagnose epileptic seizure and brain stroke. Bittium BrainStatus enables quick measurement in field conditions as well as in hospitals, thus making the treatment process of the patient faster. Bittium Brain-Status can be used for remote and wireless real-time EEG monitoring or data can be recorded in the device memory.

Business Development in 2017

Loss of a Big Customer Case in Service Business

In the year 2017, the share of the services-based net sales decreased as expected caused by the termination of significant customer cooperation with a global network equipment manufacturer during the first half of the year. Despite of decreased net sales caused by the termination of the cooperation the demand for Bittium's R&D services developed positively, however, it wasn't able to replace the decrease in the net sales in total.

The product development project, started in May 2015, to develop Android-based mobile devices that use both terrestrial and satel-

lite connection for the MEXSAT system of the Mexican Ministry of Communication and Transportation, was completed in summer 2017. The first product orders were expected to come during 2017, but due to the internal reasons of Mexican governmental customers, the first phase of the product deliveries was delayed to be mainly started in 2018. Therefore Bittium had to lower its financial guidance for the year 2017.

ISO 13485:2016 Quality Certificate for Design, Development and Manufacturing of Medical Devices and Equipment

Bittium was awarded the ISO 13485:2016 certificate, which covers the design, development, manufacturing and related services for the entire product life cycle of medical devices. The quality management system based on ISO 13485:2016 standard is a major competitive advantage and supports Bittium's strategy in Connectivity Solutions' product and service area. Medical technologies combined with strong expertise in wireless technologies and security provides Bittium with excellent opportunities to serve its customers in the healthcare sector with offering them new R&D services that meet the quality system standard requirements.

Product Business Grew Significantly

Bittium continued significant investments in developing its product business and the share of the product-based business turned to growth. Bittium aims at growth in international defense, public safety and mobile security markets.

New Version of Bittium Tough Mobile™ for the Confidential Classification

Bittium Tough Mobile and related management system and VPN encryption Bittium Secure Suite have generated a lot of interest in the information security and public safety markets. Bittium has been actively seeking for, and has found a few suitable partners

and resellers who have taken Bittium Tough Mobile as part of their own product portfolio and/or solution for their customers. The product deliveries of Bittium Tough Mobile continued during the whole year.

The awareness of information security risks is growing and the interest towards secure mobile devices is increasing, however, the development of the public safety and information security markets have been somewhat slower than expected. Bittium estimated that Bittium Tough Mobile sales volume will be somewhat lower than expected.

In January, Bittium signed a contract with the Finnish Defence Forces for the delivery of Bittium Tough Mobile LTE smartphones and related Bittium Secure Suite back-end system classified for Confidential level. The contract signifies a strategic decision to reinforce the information security of the wireless communications of the Finnish Defence Forces. In order for a phone and a related back-end system to achieve the Confidential level classification, there are specific information security requirements regarding the processing of classified information, secure wireless transfer of files, and other possible communication, which need to be met.

At the Critical Communications Europe exhibition in February, Bittium launched a new Confidential classification level version of the Bittium Tough Mobile C's with its back-end system. Bittium Tough Mobile's unique dual-boot functionality for the Confidential classification level makes it possible to operate the device with two completely separate operating systems: Public and Confidential. The operating system classified as Public is meant for personal communications with access to e.g. social media applications. The operating system classified as Confidential is completely isolated and hardened for secure authority and information security use. The entity enables the user to have only one device for calls and messaging for both personal and for demanding information security needs, thus eliminating the need to carry two separate devices. In September, the National Cyber Security

Centre-Finland of the Finnish Communications Regulatory Authority granted approval for the Mobile Security and Public Safety targeted Bittium Tough Mobile LTE smartphone and related Bittium Secure Suite back-end system to process material that is classified nationally as Confidential. Bittium's mobile solution is the first one in the world to receive official Confidential level encryption product classification. The mobile solution can be used for creating and processing classified information, as well as for transferring it between smartphone and connected back-end solutions.

Bittium Tough Mobile C smartphone was showcased at Cyber Security Nordic event in Helsinki, Finland in the end of September.

New Software Version for Bittium SafeMove® Product Family

The investments in product development of Bittium SafeMove product family were also continued and in November Bittium released the new version of the Bittium SafeMove® software product portfolio. The latest software version introduces an intuitive user interface and further enhances information security for demanding environments. The new functionalities enable faster response to security threats; and efficient implementation of broadband applications with mission-critical data on moving vehicles.

The Bittium SafeMove® security solutions were exhibited at HETT Show 2017 in London, UK in September.

Efforts to Bring Bittium's Product Portfolio Tactical Communications Products to International Defence Markets Continued

Bittium continued efforts to bring its products and services, targeted to defense industry, to the international defense markets, and Bittium received purchase orders for a tactical communications system from its customers in Asia and Europe and delivered a pilot system to a new European customer.

Bittium's products targeted to defense industry were showcased e.g. at DSEI exhibition in UK, Defence Communications event in Poland, and at Milipol exhibition in France.

The Development of Bittium TAC WIN System Continued

The cooperation with the Finnish Defence Forces continued. The development of the tactical communication system Bittium Tactical Wireless IP Network (TAC WIN), used by the Finnish Defence Forces, continued as well as the product deliveries for this communication system.

In March, Bittium received a purchase order from the Finnish Defence Forces for further development of the software package (waveform) for the Bittium TAC WIN system. Bittium also received a purchase order from the Finnish Defence Forces for the Bittium TAC WIN system products, which are meant for tactical communications. Both orders are part of the renewal of the Finnish Army's M18 command, control and communications system, where the Software-Defined Radio based Bittium TAC WIN system forms the core of the Army's tactical wireless IP network.

In June, Bittium received a purchase order for supplying the Finnish Air Force with Bittium TAC WIN system. The order is part of the modernization of the radio network performance of the Air Force's bases with a Software-Defined Radio based IP radio system. With the order the use of the Bittium TAC WIN system within the Finnish Defence Forces' branches expanded to the Air Force.

In July, the Finnish Minister of Defence Jussi Niinistö authorized Finnish Defence Forces to purchase Bittium TAC WIN system products. Bittium and the Finnish Defence Forces signed a Framework Agreement for the purchase of Bittium TAC WIN system products in August. The Framework Agreement covers the years 2018–2020, and if materialized in full, the total value of the agreement is EUR 30 million (excl. VAT). According to the Framework Agreement, Finnish Defence Forces will issue separate purchase orders for the products each year.

The New Bittium Tough SDR™ Product Family

Bittium started the development of the new tactical Software-Defined Radio Based Bittium Tough Mobile product family that includes the tactical Bittium Tough SDR handheld for individual soldier use and Bittium Tough SDR vehicle radios for vehicular level tactical use. The new product family expands Bittium's tactical communication product portfolio from Bittium TAC WIN and its products that form a mobile tactical IP network to radios that bring broadband data transfer and voice to all mobile troops; from combat vehicles to all the way to an individual soldier. This enables bringing broadband data transfer and voice to all mobile troops starting from brigade level and all the way across the battlefield.

At the time of the launch, Bittium and the Finnish Defence Forces signed a Letter of Intent concerning the purchase of new Software-Defined Radio (SDR) based tactical radios and the preparations of the purchase. The Letter of Intent encompasses products belonging to the new Bittium Tough SDR product family: tactical handheld radio Bittium Tough SDR Handheld and tactical vehicular radio Bittium Tough SDR Vehicular. The products are intended for renewing the Finnish Defence Forces' existing stock of field radios with modern, SDR based broadband data transfer radios to support the reformed combat doctrine. The tactical radios are compatible with Bittium Tactical Wireless IP Network(TAC WIN) SDR based system already used by the Finnish Defence Forces.

According to the Letter of Intent, Bittium will develop the products with its own R&D investments and the Finnish Defence Forces will support the development work by ensuring that the products are suitable for their purposes and by making preparations for the purchase of the products. The Letter of Intent does not bind the parties entering into a purchase agreement. Entering into purchase agreement requires that the Finnish Ministry of Defence first authorizes the purchase, based on which Bittium and the Finnish Defence Forces would then make a separate purchase agreement. Based on the Letter of Intent, if materialized in full, the total value of the purchase agreement would be approximately EUR 130 million distributed over about 10 years. The Letter of Intent is in force until the binding purchase agreement comes into effect or until December 31, 2019. Should the purchase materialize in full, it would have a significant impact on Bittium's net sales from the year 2019 onwards.

The New Bittium Tough Comnode™

Bittium expanded its tactical communications offering by launching a versatile Bittium Tough Comnode terminal. The device fulfils the data transfer needs for mobile troops by functioning for example as a VoIP phone (Voice over IP), an IP router (Internet Protocol), and an SHDSL repeater (Symmetrical High-speed Digital Subscriber Line). Bittium Tough Comnode is compatible with Bittium Tactical Wireless IP Network(TAC WIN) system, Bittium Tough SDR tactical radios, and Bittium Tough VoIP products, as well as offers diverse connectivity options also to third-party equipment and systems.

In December, Bittium received a purchase order from the Finnish Defence Forces for versatile Bittium Tough Comnode terminal. The purchase order concerns the final phase of the terminal's productization over a duration of nine months and the delivery of a batch of the terminals to the Finnish Defence Forces after the end of the productization phase. Bittium Tough Comnode will fulfill the data transfer needs of the Finnish Defence Forces' mobile troops by functioning for example as a VoIP phone (Voice over IP), an IP router (Internet Protocol), and an SHDSL repeater (Symmetrical High-speed Digital Subscriber Line).

ESSOR (European Secure Software Defined Radio) Program Continued to the Second Phase

Bittium has been part of the European ESSOR programme since it started in 2009. The aim of the programme is to develop the European Software Defined Radio technology in order to improve the capabilities for cooperation in coalition operations.

In November, the joint venture a4ESSOR (Alliance for ESSOR) was awarded a contract by OCCAR (Organisation Conjointe de Coopération en matière d'ARmement) to start a new phase of the ESSOR (European Secure Software defined Radio) programme, called ESSOR Operational Capability 1 (OC1). Bittium is part of the OC1 phase that continues the ESSOR programme. During the OC1 phase, the operational capabilities of ESSOR High Data Rate Waveform (HDR WF), meant for joint operations between defense forces of different countries, will be enhanced.

With the development of the operational capabilities of the ESSOR HDR WF during the OC 1 phase the new functionalities will be available also for the Bittium Tough SDR family of radios. The duration of the ESSOR OC1 phase is 45 months and the value of the contract is around EUR 50 million. The value of the contract will be divided along the duration of the OC1 phase and between the five participant companies: Bittium, Indra, Leonardo, Radmor, and Thales. The contract did not change Bittium's financial outlook for the year 2017.

The Development of Medical Technologies Products and Solutions Continued

In November 2016, Bittium acquired companies specialized in healthcare technology and services. During 2017 Bittium continued to develop its products and solutions of its Medical Technology product and services area and sales efforts to bring the products abroad was continued. Bittium exhib-

ited these innovative products and solutions for neuroscience at Society for Neuroscience 2017 conference in the U.S.A and the Bittium Faros ECG device and software for analyzing cardiac event-based ECG and long-term Holter measurements at Medica exhibition in Germany.

In June, Bittium sold its remote diagnostic service business to Coronaria Analyysipalvelut Oy, a subsidiary of Coronaria Hoitoketju. According to the agreement Bittium supplied its web-based service kardiolog.fi used in monitoring cardiac abnormalities to Coronaria's use. Kardiolog.fi service is used by more than 70 Finnish health centers and private medical centers. The net sales of Bittium Medanalytics Ltd in 2016 was EUR 0.4 million. Further, Bittium Technologies Ltd, part of Bittium group, acquired 25 percent of the shares in Coronaria Analyysipalvelut Oy. 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.

In May, Bittium Faros ECG-measuring devices' built-in algorithms for detection of arrhythmias received medical device approval in Europe. The algorithms can be used to automatically identify sequences in the heart measurement data. Early detection of atrial fibrillation can be used to predict the risk of brain stroke and to prevent its emergence with timely treatment initiation.

Bittium launched new software for analyzing cardiac event-based ECG measurements and long-term Holter measurements at ESC Congress in Barcelona, Spain. The new software, together with the versatile Bittium Faros ECG measuring device, allows the follow-up and detection of cardiac arrhythmias as well as in-depth analysis of long-term recordings.

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 and measuring 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.

The following factors are expected to create demand for Bittium's products and services in 2018 and beyond:
- In the mobile telecommunications, the investments to develop 5G technology increases, which creates demand for Bittium's R&D services. There is a wide range of frequencies allocated for this 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.
- As the digitalization evolves, the secure IoT (Internet of Things) has become a significant development area in many industries. 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. There is a need for secure connected devices for consumers' free-time applications and demanding industrial usage that collect information through their sensors and connect the devices securely to the internet and cloud services. Also the integration of different systems and technologies play an important role in enabling 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.
- The use of LTE technology, smartphones and applications continues to increase in special verticals such as public safety cre-

ating 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. Also the interest towards LTE-SAT-hybrid devices with terrestrial and satellite connections has grown to further improve the functionality of authorities' critical connections. The implementation of LTE-based devices in Public Safety markets has been slower than expected due to the delay of the device processor functionalities required by the authorities. 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 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 2018. Due to the long sales cycles driven by purchasing programs of national governments, it takes time to receive significant purchase orders.

• Heart problems and brain strokes are among the most frequent causes of death. Recognizing the symptoms early on, based on information gathered by measuring, enable the start of effective treatment fast. 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 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. One of the growing application areas in the IoT segment is healthcare technology that enables implementing these changes for its part. 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 heart remote monitoring and Bittium NeurOne product family for measuring the electrical activity of brain.

Press Releases and Significant Orders in 2017

DECEMBER 8, 2017
Bittium received a purchase order from the Finnish Defence Forces for versatile Bittium Tough Comnode terminal

NOVEMBER 27, 2017
Bittium SafeMove's latest software version introduces an intuitive user interface and further enhances information security for demanding environments

NOVEMBER 20, 2017
Bittium exhibits products and solutions for authority and soldier communications at Milipol exhibition in Paris

NOVEMBER 07, 2017
Bittium brings enhanced capabilities of ESSOR waveform, developed in the next phase of ESSOR programme, to the new Bittium Tough SDR tactical radios

NOVEMBER 07, 2017
ESSOR (European Secure SOftware defined Radio) programme continues into the development of Operational Capability 1 (OC1)

NOVEMBER 02, 2017
Bittium exhibits Bittium Faros ECG device and software for analyzing cardiac event-based ECG and long-term Holter measurements at Medica

NOVEMBER 02, 2017
Bittium exhibits its innovative products and solutions for neuroscience at the Society for Neuroscience 2017 Conference

SEPTEMBER 26, 2017
Bittium exhibits SafeMove® Security Solutions that meet the cyber security challenges in healthcare at HETT Show 2017 exhibition

SEPTEMBER 25, 2017
Bittium exhibits new Bittium Tough SDR tactical radios and Bittium Tough Comnode terminal at Defence Communications event

SEPTEMBER 25, 2017
Bittium exhibits Confidential level version of Bittium Tough Mobile smartphone at Cyber Security Nordic event

SEPTEMBER 18, 2017
Bittium has received national Confidential level information security classification for Bittium Tough Mobile smartphone

SEPTEMBER 12, 2017
ISO 13485:2016 Certification supports the offering of Bittium's design and product development services to the healthcare and medical sector

SEPTEMBER 11, 2017
Bittium exhibits new Bittium Tough SDR tactical radios and Bittium Tough Comnode terminal at DSEI defense exhibition

SEPTEMBER 06, 2017
Bittium launches versatile Bittium Tough Comnode terminal for tactical communications

AUGUST 24, 2017
Bittium launches new software for analyzing cardiac event-based ECG measurements and long-term Holter measurements at ESC Congress 2017

AUGUST 09, 2017
Bittium Wireless Ltd, subsidiary of Bittium Corporation, and Finnish Defence Forces have signed Framework Agreement for Bittium TAC WIN products (Stock Exchange Release)

AUGUST 08, 2017
Bittium expands its tactical communications offering to tactical radios targeted for combat troops and vehicles

■ Press Release   ■ Stock Exchange Release

AUGUST 08, 2017
Bittium Wireless Ltd, subsidiary of Bittium Corporation, and Finnish Defence Forces have signed a Letter of Intent for purchase of new tactical radios (Stock Exchange Release)

JULY 06, 2017
Finnish Defence Forces plans to purchase Bittium TAC WIN Software-Defined Radio system products (Stock Exchange Release)

JUNE 16, 2017
Bittium and Coronaria co-operate to further develop medical remote diagnostic services

JUNE 15, 2017
Bittium exhibits its innovative products and solutions for cardiology at EHRA Europace - Cardiostim 2017

JUNE 14, 2017
Bittium to supply Finnish Air Force with Bittium TAC WIN system for tactical communications of their bases

MAY 24, 2017
Bittium exhibits its innovative products and solutions for neuroscience at the Second Moscow International Conference

MAY 15, 2017
Bittium exhibits Bittium Tough Mobile smartphone and related products and solutions at Critical Communications World exhibition

MAY 04, 2017
Bittium Faros ECG-measuring devices' arrhythmia detection algorithms received medical device approval in Europe

MAY 02, 2017
Bittium exhibits secure and durable Bittium Tough Mobile smartphone at Virve User Days event

APRIL 24, 2017
Bittium exhibits its innovative IoT design and R&D services; and the new Safe-Move® Zone solution at Hannover Messe 2017 industrial fair

MARCH 29, 2017
Bittium exhibits its innovative products and solutions for cardiology at EuroPrevent 2017

MARCH 21, 2017
Bittium exhibits renewed Bittium Tough Mobile smartphone and Bittium Secure Suite device management and encryption software at British APCO exhibition

MARCH 14, 2017
Bittium exhibits its products and solutions for neuroscience at Nordic Congress of Clinical Neurophysiology & Kuopio Epilepsy Symposium

MARCH 06, 2017
Bittium received a purchase order from the Finnish Defence Forces for Bittium TAC WIN system products meant for tactical communications

MARCH 06, 2017
Bittium received a purchase order from the Finnish Defence Forces for further software development for the Bittium TAC WIN system

MARCH 02, 2017
Bittium exhibits its innovative IoT design and R&D services; and Medical Technology products at Wearable Technology Show 2017 in London

FEBRUARY 24, 2017
Bittium exhibits renewed Bittium Tough Mobile smartphone, its device management and encryption software and IoT services at Mobile World Congress

FEBRUARY 23, 2017
Bittium exhibits its innovative products and solutions for neuroscience at the 2nd International Brain Stimulation Conference

FEBRUARY 20, 2017
Bittium exhibits its innovative IoT design and R&D services at Industry of Things World USA conference in San Diego

JANUARY 27, 2017
Bittium to deliver Bittium Tough Mobile smartphones and related back-end system for the Finnish Defence Forces

JANUARY 27, 2017
Bittium launches a new high-security level version of the Bittium Tough Mobile smartphone at Critical Communications Europe exhibition

JANUARY 26, 2017
Bittium exhibits its products and solutions for Tactical Communications at IDEX defense exhibition

JANUARY 25, 2017
Bittium exhibits its innovative products and solutions for cardiology and neurology at Arab Health 2017 exhibition

JANUARY 16, 2017
Bittium presents its DevOps expertise at the Reset event in Helsinki

Purpose

We adapt our deep knowledge to deliver superior innovations and reliable, secure communications and connectivity solutions.

Vision

Bittium's vision is to become a global enabler of secure and reliable connectivity for people and things.

Strategic Guidelines

In November 2016, Bittium Corporation updated its strategy to strengthen its position in the global markets and to speed up its growth. During 2017 Bittium made no updates or changes in its strategy and continued systematically on its path towards the Company's strategic goals.

Bittium's Strategic Guidelines, as Published in November 2016
The Company plans to make significant investments in the future by increasing significantly the R&D investments in its own products and solutions in the year 2017. In line with the nature of the defense and public safety markets, the investments will pay back in a longer time period and therefore Bittium plans to activate the most of the R&D investments to its balance sheet. The Company has a strong balance sheet and financial position.

Bittium decided to establish a new product and service area around healthcare technology. Combining healthcare technologies with Bittium's long-term experience and know-how in wireless and security technologies give the Company good conditions to serve its customers in healthcare sec-

tor by offering them new kinds of products and services. As the first step to build the competencies in healthcare technology on November 10, 2016 Bittium acquired Mega Electronics Ltd, a company specialized in measuring and monitoring biosignals.

Bittium continues to search for inorganic growth opportunities in all its product and service areas and is prepared to invest in acquisitions that strengthen the Company's growth strategy.

According to its updated strategy the Company's business is divided into three product and service areas effective as of December 1, 2016: Defense & Security, Connectivity Solutions and Medical Technologies.

Defense & Security
In the Defense & Security product and service area Bittium offers globally leading products and services for its customers in the defense, security and public safety markets. Bittium aims to significantly increase investments in various authority and special terminals as well as in related software development and extend its tactical communication product portfolio for defense industry. Growth in the net sales is sought especially from own products and product platforms that Bittium offers for international defense and public safety markets.

Bittium's competitiveness in these markets is based on trust and reliability, hi-quality of the products and services, as well as on advanced technology and security know-how developed within the Company during the last 30 years. Bittium offers its customers in the defense market new kind of efficiency for their management systems with products that enable faster data transfer, bet-

ter mobility, and superior compatibility with other communication systems.

In the public safety markets the transition towards LTE-based technology is expected to accelerate in the next few years. As the security threats are growing increasingly more security demands are set for the communication systems. Bittium increases investments in developing its product offering further for these markets. The Company also continues offering public safety markets R&D services to develop special terminals and related systems that use both terrestrial and satellite networks.

In the defense, security and public safety markets, there are signs of unification regarding technologies as well as in security demands. Also many customers, partners and supply chains are mostly the same and the trend towards this is strengthening. Bittium merged two separate product and service areas into one and with that synergy Bittium is able to better serve the customers in defense and security technology.

The defense, security and public safety markets are slowly evolving markets by their nature. They are characterized by long sales cycles driven by the national governments' long preparation periods of projects and purchase programs. The purchases of the selected products are typically executed over several years.

Connectivity Solutions
The development of wireless technology continues and digitalization creates growing need for wireless connections. Bittium offers R&D services and wireless connectivity solutions for its customers, and the demand is expected to increase within the

next few years. The competitiveness of the Company in these markets is based on the strong technology and security competence, as well as on trust, reliability and quality. The more critical the system is, the more significant role Bittium's strengths have.

The demand for developing 4G technology-based network equipment is decreasing as the technology and market reach their maturity. However, Bittium is already strongly involved in the development of 5G technology which in the long run gives the Company a good position to offer even more advanced connectivity solutions also for customers in other markets.

Medical Technologies

In the healthcare sector, remote monitoring and home care markets are growing strongly. Patient monitoring in the hospital environment is also changing into wireless. These trends create demand for the digitalization of services, wireless capability and secure connections. For these markets Bittium decided to establish a new product and service area around healthcare technology. As the first step to build the competencies in healthcare technology, on November 10, 2016 Bittium acquired Mega Electronics Ltd, a company specialized in measuring and monitoring biosignals.

Combining healthcare technologies with Bittium's long-term experience and competence in wireless and security technologies give Bittium good conditions to serve its customers in healthcare sector by offering them new kinds of products and services.

Bittium plans to strengthen its product and service offering for these markets also by searching for acquisition targets that complements the whole.

Financial Targets, as Published in November 2016

Bittium has announced earlier that it targets 10 percent annual growth in net sales and to reach EBIT level 10 percent of net sales in the year 2017 at the latest. The Company believes that in the coming years it is able to grow its net sales even more than the earlier announced target, and therefore sets up a target to exceed the annual 10 percent growth target of the net sales.

However, Bittium believes, that during the year 2017 it is not yet able to reach the targets set for the growth in the net sales and EBIT level. The reason for this is the termination of significant customer cooperation with a global network equipment manufacturer, of which Bittium announced earlier in October, that is expected to materialize faster and more extensively than the Company estimated earlier. According to the information received by Bittium, the net sales from this customer cooperation will end completely in the beginning of the second quarter of the year 2017. To this extend this kind of extensive and rapid decrease in the services business net sales is most likely difficult to be replaced in a short term. In addition, the operating profit level of the year 2017 is also affected by the planned investments to enable the future growth.

Bittium targets further to increase the share of net sales generated from own products and product platforms. According to the targets Bittium announced earlier, in the year 2017 the share of net sales generated

from own products and product platforms is clearly higher than in the year 2014, when the product based net sales was 26.7 percent of the net sales.

Personnel

Altogether 619 employees worked in Bittium in Finland, USA, Mexico, Great Britain and Singapore at the end of the year 2017. The average age of the personnel in Bittium was 42 years. R&D engineers constituted clearly the largest proportion of the personnel. The amount of personnel remained stable during the year 2017, but at the end of the year the need for recruitment was anticipated, and actions to meet this need were taken especially in the beginning of the year 2018.

Bittium´s core competences are strong and extensive know-how of information security, radio technology, embedded software, electronics and product integration as well as measuring of biosignals. At Bittium the way of working is based on the implementation of Lean and Agile methods. Regarding the way-of-working, the emphasis of development has been in digitalization of processes and operations, software lifecycle management, development and implementation of real-time feedback and visualization methods and non-functional quality requirements management (i.a. EU Horizon 2020 Program Q-Rapids). To support the engineering competence development Bittium utilized virtual competence teams, and several technology trainings were organizedbased on current needs.

According to the annual personnel survey BES (Bittium Employee Survey), Bittium is a good place to work; the staff engagement index strengthened significantly from theyear 2016. The specific strengths remained Bittium's culture and way of working as well as our good team spirit. Trust in management as well as supervisor communication improved.

One reason for improved supervisor communication has been the renewal implemented in 2016, in which the annual formal development discussion was discarded, and a new, more flexible and direct way for supervisors and their team members to interact was established. Now they meet in shorter, one-on-one meetings each quarter. This new method is in line with the coaching leadership principles and supports the effectiveness of supervisor work in a matrix organization better.

All of Bittium's staff was invited to a strategy session in Oulu in August, and the evening continued with the BitStock Elää 2017 festival at Koitelinkoski rapids, Kiiminki. Our global sales personnel were in Oulu to attend this event. At the scenic surrounding the staff enjoyed good company, dinner, live music and an engaging team competition which was won by the team called "Vamos Mexico".

At the end of year 2016, Bittium acquired the ownership of a Kuopio-based medical technology. The integration to Bittium Corporation was done during 2017 uncomplicated, also regarding the personnel practices.

Near the end of the year Bittium's staff in Oulu moved into the new headquarters in Ritaharjuntie 1. With the move to the new headquarters, nearly 450 employees got together under one roof, as previously the work was done in three office buildings at Tutkijantie. The personnel took this change very positively, since now they are able to see their coworkers more often.

The new building has been designed as a multifunctional office, in which the staff has fixed personal desk locations, but the premises and its access rights can be easily adjusted and divided according to project situation changes. In this way, the customer requirements regarding confidentiality of R&D and optimal team functionality can be met without compromising the staff's convenience. After moving to the new headquarters, nearly every Bittium staff member has an electrically adjustable desk. The ergonomics has been a priority in the new premises. New Bittium values; Trust, Courage and Innovation were introduced at the consecration of the premises.

Shares and Shareholders

Shares

The shares of Bittium Corporation are quoted on the 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 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 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.

Share Price and Trading Volumes in 2017

The closing price of Bittium Corporation's share was EUR 5.65 at the end of 2017; the share reached a high of EUR 7.88 and a low of EUR 5.55. During the year, a total of 12.7 million shares with the value of EUR 83.1 million changed hands on the Nasdaq Helsinki. This is 35.5 percent of the share

capital. Bittium Corporation´s market capitalization on December 31, 2017 was EUR 201.7 million.

Dividend and Dividend Policy

Bittium Corporation follows a dividend policy that takes into account the group´s net income, financial situation, need for capital and financing growth.

In 2017, Bittium Corporation paid EUR 0.05 per share as dividend based on the adopted balance sheet for the financial period January 1, 2016–December 31, 2016 and EUR 0.25 per share as additional dividend. 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, April 18, 2017. The dividend was paid on April 25, 2017.

The Board of Directors proposes that the Annual General Meeting to be held on April 11, 2018 resolve to pay EUR 0.30 per share as additional dividend based on the adopted balance sheet for the financial period of January 1, 2017–December 31, 2017. 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 13, 2018. The Board of Directors proposes that the dividend be paid on April 20, 2018.

Trading Codes

Bittium Corporation has been listed on Nasdaq Helsinki since 1998. Bittium Corporation´s company code and trading code in the Nasdaq Helsinki INET system is BITTI and the trading code BITTI.

Trading codes are:

Nasdaq Helsinki	BITTI
Reuters	BITTI.HE
Bloomberg	BITTIFH

Shareholders

At the end of 2017, Bittium Corporation had 21,985 shareholders. The ten largest shareholders owned 28.4 percent of the shares. Private ownership was 74.6 percent. The percentage of foreign and nominee-registered shareholders was 3.3 percent at the end of 2017.

Trading Volume and Average Share Price 2012–2017

Trading volume (EUR/month) ■ Average share price (EUR)

Shareholding of the Board of Directors and CEO

At the end of 2017, the shareholding of the Board of Directors, CEO and the companies controlled by them was 1,588,756 shares, corresponding to 4.5 percent of all shares.

Information to Shareholders

Press releases, reports, earnings estimates, share price ticker, contact details of analysts and other current investor material can be found on the Company´s website at **www.bittium.com**. An email-based subscription service for press releases and publications can be found from the Company's website as well.

Financial Reports 2018

Bittium reports its financial development with financial reports that are published semi-annually. In 2018, Bittium will publish financial reports as follows:

February 22, 2018
Financial Statement Bulletin 2017
August 8, 2018
Half Year Financial Report, Jan.–Jun. 2018

Financial reports will be published simultaneously in Finnish and in English at 8.00 a.m. (CET+1) on Bittium´s web pages at **www.bittium.com/investors**. The Company will hold press conference regarding the reports on dates to be specified later.

Silent Period

Bittium Corporation observes a Silent Period prior to announcing its results. The Silent Periods in 2018 are as follows:

February 1–February 22, 2018; and
July 18–August 8, 2018.

## The Annual General Meeting 2018 of Bittium Corporation

The Annual General Meeting of Bittium Corporation will be held on Wednesday April 11, 2018 at 1.00pm at the University of Oulu, Saalastinsali, at the address Pentti Kaiteran katu 1, 90590 Oulu, Finland.

Shareholders Registered in the Shareholders' Register

Each shareholder, who is registered on March 28, 2018 in the shareholders' register of the Company held by Euroclear Finland Ltd, has the right to participate in the General Meeting. A shareholder, whose shares are registered on his/her personal Finnish book-entry account, is registered in the shareholders' register of the Company.

A shareholder, who is registered in the shareholders' register of the Company and who wants to participate in the General Meeting, shall register for the meeting no later than on April 6, 2018 by 10.00am by giving a prior notice of participation. The notice has to be received by the Company before the end of the registration period.

Share Price Development in Nasdaq Helsinki 2012–2017

Legend: ■ Bittium Corporation ■ OMX Helsinki PI ■ OMX Helsinki Technology PI
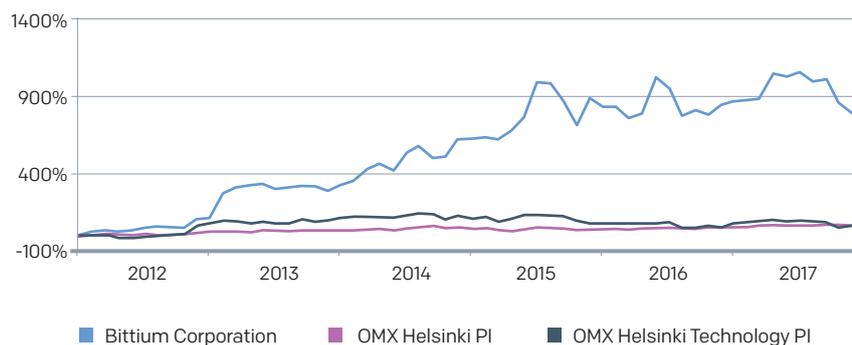
Such notice can be given:

a) on the Company's website at www.bittium.com, as from February 22, 2018 at 10.00am;

b) by telephone +358 40 344 3322 or +358 40 344 5425 on weekdays between 9.00am and 3.00pm;

c) by telefax; +358 8 343 032; or

d) by regular mail to the address Bittium Corporation, General Meeting, Ritaharjuntie 1, 90590 Oulu, Finland.

In connection with the registration, a shareholder shall notify his/her name, personal identification number or business identity code, address, telephone number and the name of a possible assistant or proxy representative and the personal identification number of a proxy representative. The personal data given to Bittium Corporation is used only in connection with the General Meeting and with the processing of related registrations.

The shareholder, his/her authorized representative or proxy representative shall, where necessary, be able to prove his/her identity and/or right of representation at the General Meeting.

Holders of Nominee-registered Shares

A holder of nominee registered shares has the right to participate in the General Meeting by virtue of such shares, based on which he/she on March 28, 2018 would be entitled to be registered in the shareholders' register of the Company held by Euroclear Finland Ltd. The right to participate in the General Meeting requires, in addition, that the shareholder on the basis of such shares has been registered into the temporary shareholders' register held by Euroclear Finland Ltd. at the latest on April 6, 2018 by 10.00am. As regards nominee registered shares this constitutes due registration for the General Meeting.

A holder of nominee registered shares is advised to request without delay the necessary instructions regarding registration in the temporary shareholder's register, the issuing of proxy documents and registration for the General Meeting from his/her custodian bank. The account management organization of the custodian bank has to register a holder of nominee registered shares, who wants to participate in the General Meeting, into the temporary shareholders' register of the Company at the latest by the time stated above.

Further information on the General Meeting and participation in the General Meeting is available on the Company's website at www.bittium.com.

Proxy Representative and Powers of Attorney

A shareholder may participate in the General Meeting and exercise his/her rights at the meeting by way of proxy representation. A proxy representative shall produce a dated proxy document or otherwise in a reliable manner demonstrate his/her right to represent the shareholder. If a shareholder participates in the General Meeting by means of several proxy representatives representing the shareholder with shares at different securities accounts, the shares by which each proxy representative represents the shareholder shall be identified in connection with the registration for the General Meeting.

Possible proxy documents should be delivered in originals to the address Bittium Corporation, General Meeting, Ritaharjuntie 1, 90590 Oulu, Finland, before the end of the registration period.

Other Information

Pursuant to chapter 5, section 25 of the Companies Act, a shareholder who is present at the General Meeting has the right to request information with respect to the matters to be considered at the meeting.

On the date of this notice to the General Meeting February 22, 2018, the total number of shares and votes in Bittium Corporation is 35,693,166.

Documents of the General Meeting

The above-mentioned proposals for the decisions on the matters on the agenda of the General Meeting as well as this notice are available on Bittium Corporation's website at www.bittium.com.

This Annual Report includes the Company's annual accounts, the report of the Board of Directors and the Auditor's Report, as well as the Company's Corporate Governance Statement, and Sustainability Report has been available on said website no later than on March 21, 2018. The proposals for decisions and other documents mentioned above are also available at the General Meeting. Copies of these documents and of this notice will be sent to shareholders upon request. The minutes of the General Meeting will be available on the above-mentioned website as from April 25, 2018, at the latest.

Bittium

Connectivity to be trusted.
www.bittium.com