Bittium Corporation
(Defense & Security)

Handelsbanken visit Bittium ESPOO

Karoliina Malmi, VP Communications & ESG
Tommi Kangas, SVP, Defense & Security
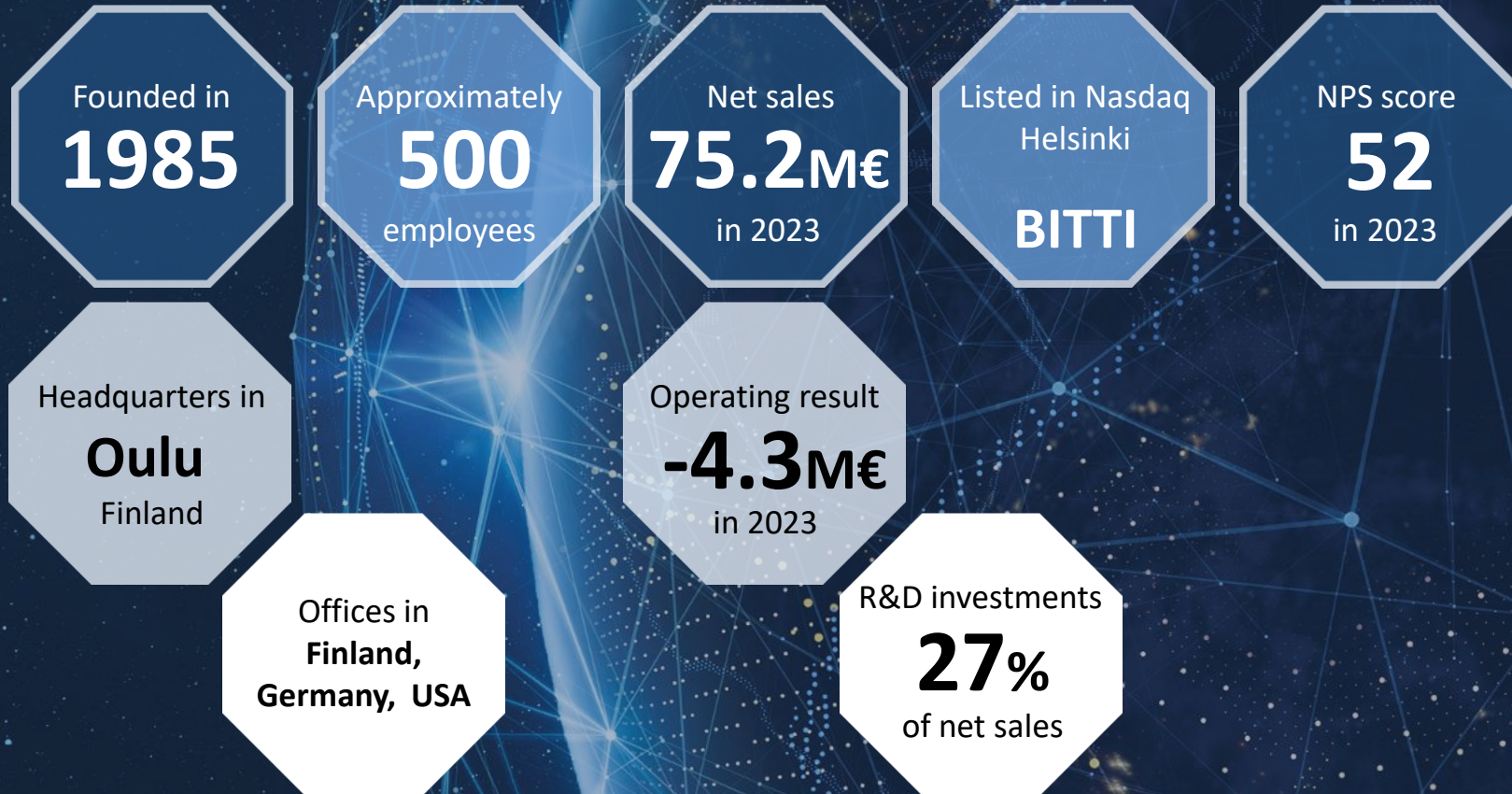Johan Westermarck, CEO

30.8.2024

Bittium

Bittium

Agenda

1 | Bittium in Short

2 | 2023 – the Year of Changes

3 | 2024 – towards Profitable Growth

4 | Defense & Security Business Segment

5 | Discussion

About Bittium

Bittium is a high-tech company specializing in tactical and secure communications, engineering services, and medical technologies.

Key Figures

Founded in
1985

Approximately
500
employees

Net sales
75.2ᴍ€
in 2023

Listed in Nasdaq Helsinki
BITTI

NPS score
52
in 2023

Headquarters in
Oulu
Finland

Operating result
-4.3ᴍ€
in 2023

Offices in
Finland, Germany, USA

R&D investments
27%
of net sales

Bittium

Excellent Know-How, Products, and Services

Defense & Security

Engineering Services

Medical

Megatrends to Support Solid Foundation for Profitable Growth

Geopolitical Uncertainty
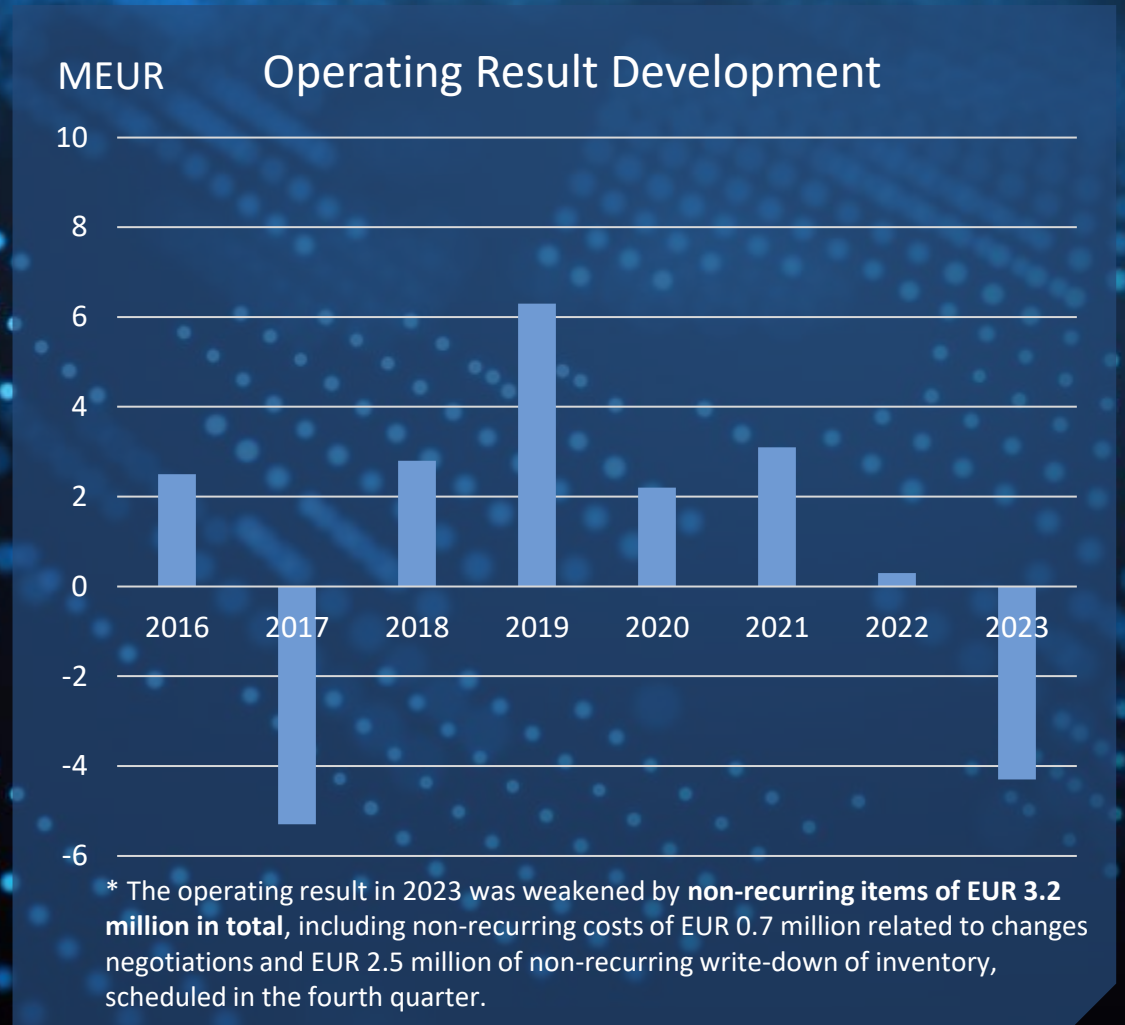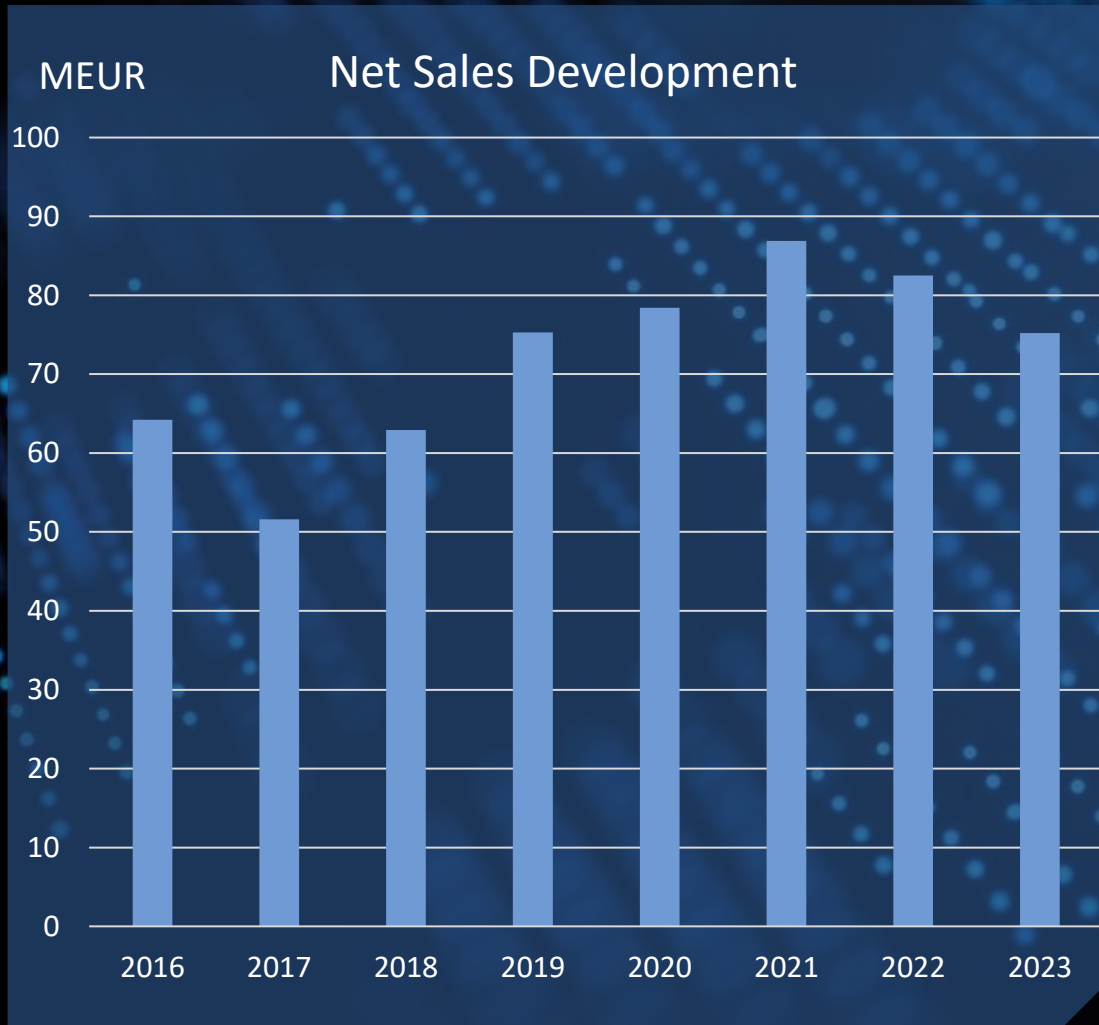
Information Security

Accelerating Technology Development and IoT

Digitalization of Healthcare and Aging Population

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Bittium Group – Challenges in Growth and Profitability

Net Sales Development (MEUR): 2016 ≈ 65, 2017 ≈ 52, 2018 ≈ 63, 2019 ≈ 76, 2020 ≈ 79, 2021 ≈ 87, 2022 ≈ 83, 2023 ≈ 75

Operating Result Development (MEUR): 2016 ≈ 2.5, 2017 ≈ -5, 2018 ≈ 3, 2019 ≈ 6.2, 2020 ≈ 2.2, 2021 ≈ 6, 2022 ≈ 0.5, 2023 ≈ -4

* The operating result in 2023 was weakened by **non-recurring itemes of EUR 3.2 million in total**, including non-recurring costs of EUR 0.7 million related to changes negotiations and EUR 2.5 million of non-recurring write-down of inventory, scheduled in the fourth quarter.

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2023 – the Year of Changes

New management

Updated strategy

More independent Business Segments

Efficient way of working with updated processes and practices
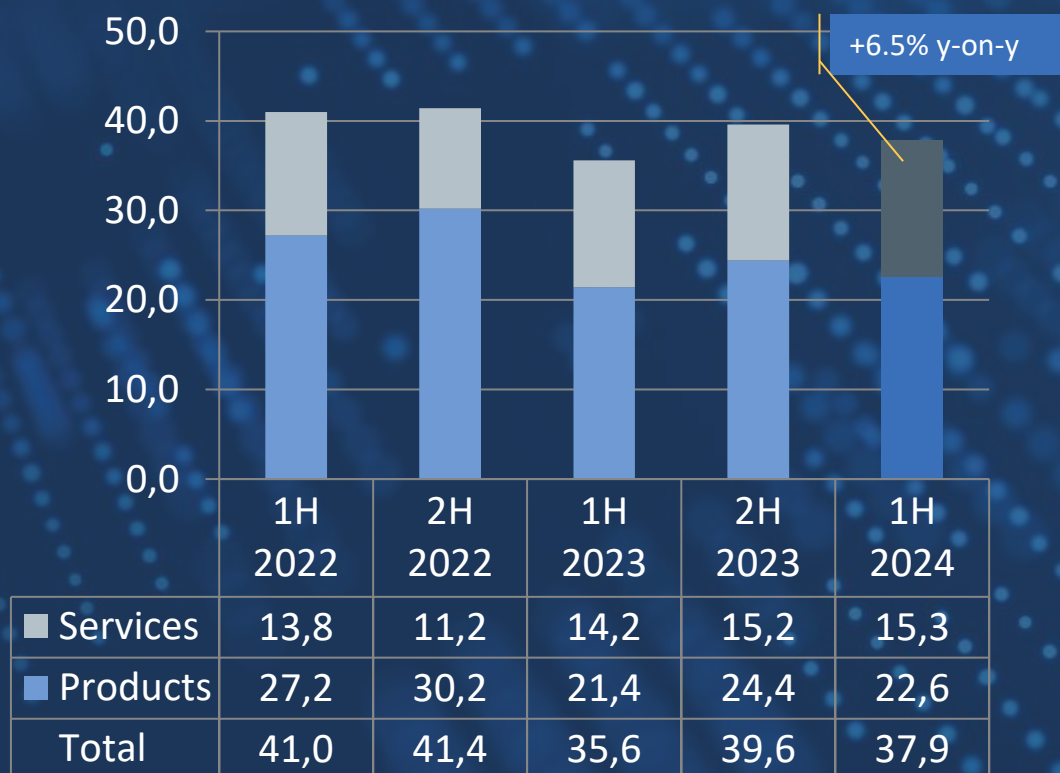
Strong focus at all levels

Measures towards healthier cost structure
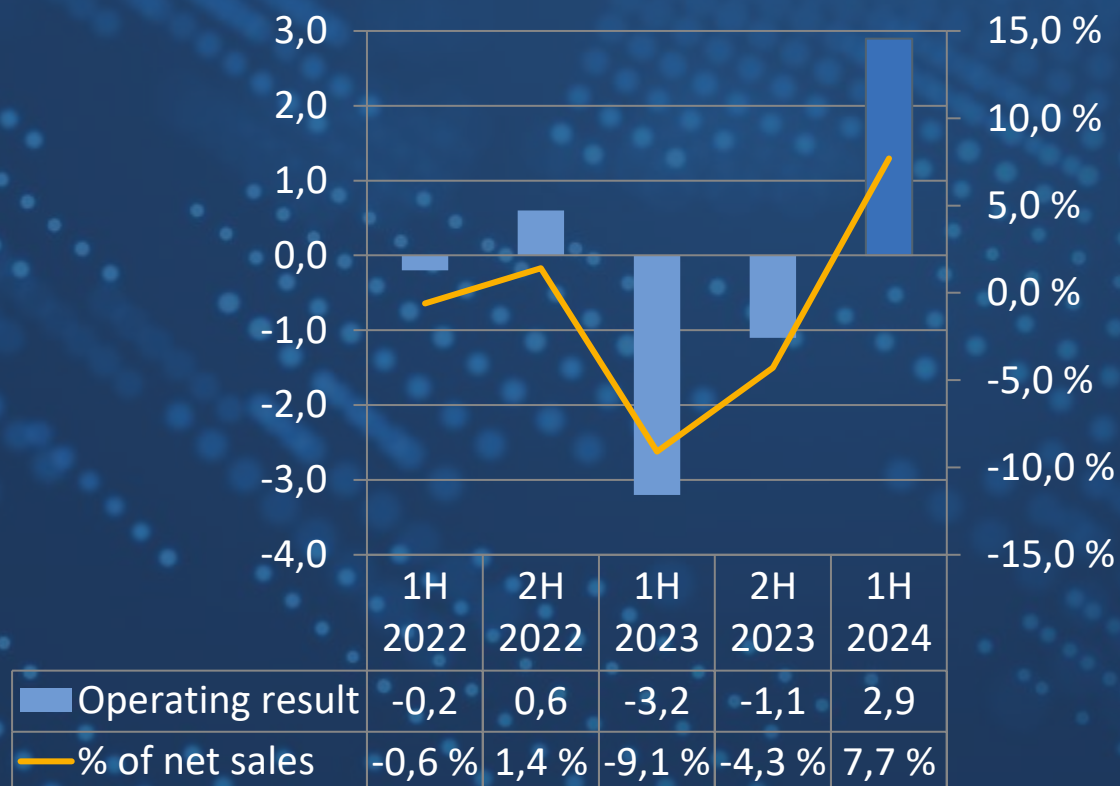
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Group Half-Yearly Financial Development

Net Sales

MEUR

+6.5% y-on-y

	1H 2022	2H 2022	1H 2023	2H 2023	1H 2024
Services	13,8	11,2	14,2	15,2	15,3
Products	27,2	30,2	21,4	24,4	22,6
Total	41,0	41,4	35,6	39,6	37,9

Operating Result

MEUR

	1H 2022	2H 2022	1H 2023	2H 2023	1H 2024
Operating result	-0,2	0,6	-3,2	-1,1	2,9
% of net sales	-0,6 %	1,4 %	-9,1 %	-4,3 %	7,7 %

2H 2023 operating result was weakened by **non-recurring items f EUR 3.2 million in total**, including non-recurring costs of EUR 0.7 million related to changes negotiations and EUR 2.5 million of non-recurring write-down of inventory.

On Track towards Profitable Growth

Megatrends supporting the growth

Strong customer base – serving customers well is priority

World-class products and services – focus on increasing competitiveness

Committed and highly skilled people – strengthened organization

Strategy towards profitable growth – implementation
in full speed

Financial Outlook 2024

Net Sales

Bittium expects the net sales to be EUR 85 – 95 million
(net sales EUR 75.2 million in 2023)

Operating Result

Bittium expects the operating result to be EUR 7.0 – 9.5 million
(operating result EUR -4.3 million in 2023)

More Information

More information about Bittium's market outlook is presented
on the company's internet pages at www.bittium.com.

Defense & Security

Bittium

World-Class Technology for the Global Defense & Security Market

Tactical Communications

Seamless communications system across the battlefield

Secure Communications

Certified, ultra secure mobile communication solutions for governments and authorities

Bittium

Bittium TAC WIN™
Mobile broadband backbone network

Bittium Tough VoIP™
Routing, distributed voice service, clients, and applications

Bittium Tough SDR™
Next-generation tactical radios for soldiers and vehicles

Waveforms for tactical communications
- Bittium TAC WIN
- Bittium NBWF
- ESSOR HDRWF

Secure Mobile Communications

Systems for network and device management

Bittium

Backbone Network for Superior Situational Awareness

Bittium TAC WIN is a high-performance IP-based system that is designed for military use and peer-to-peer warfare

✓ Wide bandwidth

✓ Survivable

✓ Modular and scalable

✓ Mobile & quickly self-healing

✓ Low information latency < 20 ms

✓ Automated adaptation of routing, modulation & coding

Next-Level Performance with Tactical Radios

Bittium Tough SDR radios help to produce and share real time situational awareness to all levels of the organization.

✓ Versatile RF performance

✓ Uncompromised security

✓ Excellent interoperability with three different waveforms

✓ Superior IP MANET

✓ Application sandbox for building national applications easily

✓ World-class device and network management

Waveforms

Bittium TAC WIN Waveform™
Wide bandwidth & battleproof wireless MANET for
TAC WIN & Tough SDR

ESSOR High Data Rate Waveform
IP connectivity and interoperability, also for European coalition
troops (NATO STANAG 5651)

Bittium Narrowband Waveform™
Voice and BMS for fighting troops

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Effective Network Planning, Management & Analysis

✓ **Bittium Tactical Network Planner Tool™** - Verify connectivity of chosen network topology with coverage simulations

✓ **Bittium Tactical Network Manager Tool™** – Runtime control and follow up of the network

✓ **Bittium Network Analytics Tool™** - Analyze network behavior and debug past issues with the help of recordings

✓ Compatible with Bittium TAC WIN, Bittium Tough SDR and Bittium Tough Comnode networks and nodes, as well as Bittium waveforms and Tough VoIP Service

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Supporting Customers with Next-Generation Solutions

✓ **Finnish Defence Forces**
- Bittium's TAC WIN and Tough VoIP solutions significant part of the "M18" C5 system
- New Tough SDR radios in field testing phase

✓ **Austrian Armed Forces**
- Bittium's TAC WIN and Tough VoIP solutions significant part of the Austrian Tactical Communications Network (TCN)

✓ **Croatian Armed Forces**
- Bittium's TAC WIN system and Tough SDR Vehicular radios accepted for armament of Croatian Armed Forces. Implementation of the products for the renewal of the command and control system started with Navy and Land Forces

✓ **Estonian Defence Forces**
- Bittium's TAC WIN & Tough VoIP solutions significant part of the Estonian C5 system

Cooperation with Global System Suppliers

✓ **BAE Systems**
- BAE Systems offers Bittium's tactical communication's products, services, and systems for the use by its customers both in the UK and abroad based on a Framework Agreement between the parties.
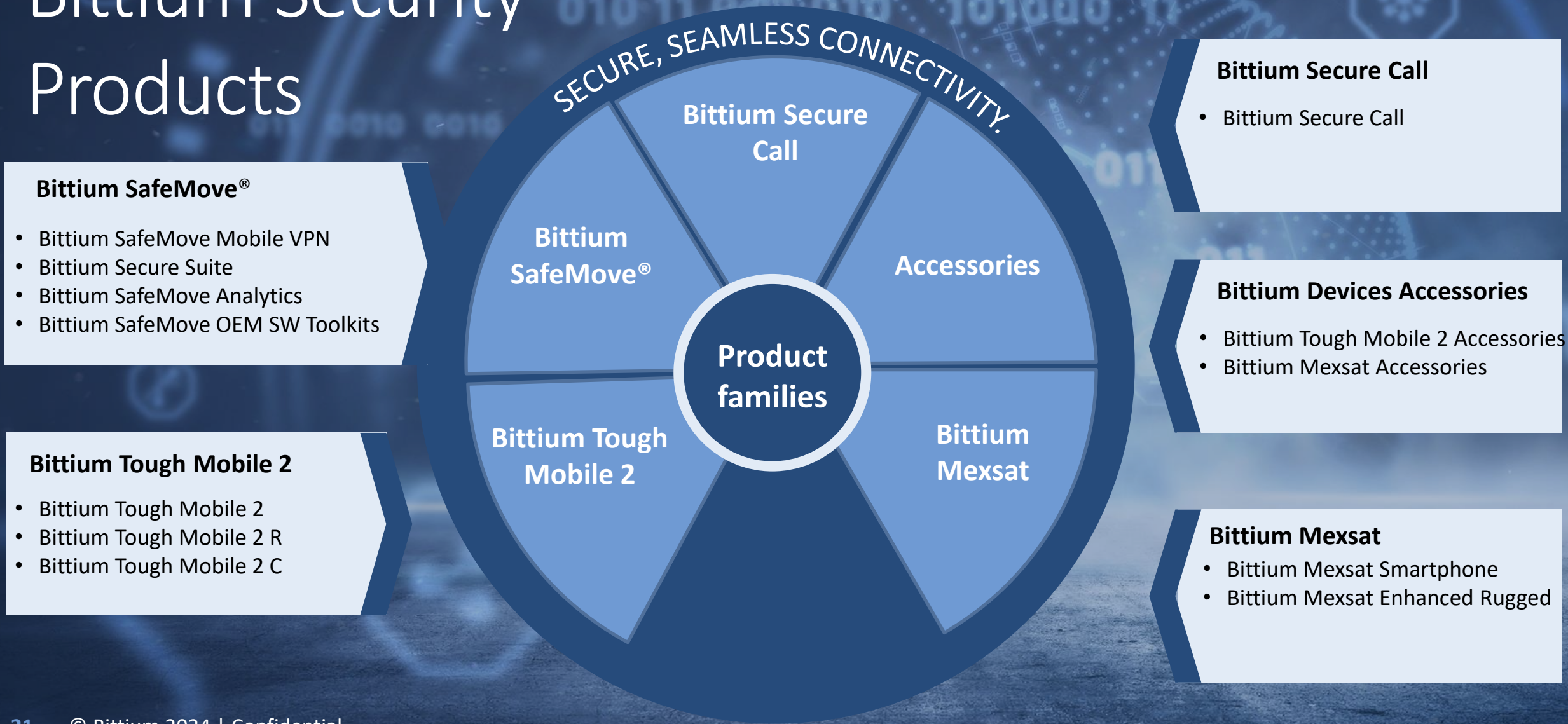
✓ **Lockheed Martin**
- Consortium led by Bittium and Lockheed Martin jointly develop tactical networks' situational awareness with methods and capabilities for spectrum usage and cyber situational awareness. The two three-year projects started in 2024.

Secure Mobile Communications

Bittium

Bittium Security Products

SECURE, SEAMLESS CONNECTIVITY.

Product families

- Bittium Secure Call
- Accessories
- Bittium Mexsat
- Bittium Tough Mobile 2
- Bittium SafeMove®

Bittium SafeMove®

- Bittium SafeMove Mobile VPN
- Bittium Secure Suite
- Bittium SafeMove Analytics
- Bittium SafeMove OEM SW Toolkits

Bittium Tough Mobile 2

- Bittium Tough Mobile 2
- Bittium Tough Mobile 2 R
- Bittium Tough Mobile 2 C

Bittium Secure Call

- Bittium Secure Call

Bittium Devices Accessories

- Bittium Tough Mobile 2 Accessories
- Bittium Mexsat Accessories

Bittium Mexsat

- Bittium Mexsat Smartphone
- Bittium Mexsat Enhanced Rugged

Certified, Ultra Secure Mobile Communications for Government and Authorities

Bittium Tough Mobile™ 2

Three phone variants for different security levels
Certified solution together with Secure Suite

Bittium Secure Suite™

Device management and encryption software

Bittium Secure Call™

End-to-end encrypted communications

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Bittium **Tough Mobile 2**

Bittium **Tough Mobile 2** C

with Google Apps

without Google Apps

Personal side
Android 11

Secure side
Bittium Secure OS
(Android app compatible)

Dual boot

Three Software Variants – Any Use Case and Security Requirement

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Bittium Tough Mobile 2 C

- **Dual boot** with two completely isolated operating systems: Android 11 and Bittium Secure OS

- **Tamper proof** to prevent data theft and hardware manipulation

- Dedicated **hardware backed secure element** for user credentials and encryption keys

- **Hardware based privacy mode** for disabling microphone, camera, Bluetooth and other sensors

- **Customizable for different security levels** with Bittium Secure Suite (included)

- **Two-factor authentication** with Yubikey 5 NFC dongle (included)

- **Multitude of security hardenings** for both data-at-rest and data-in-transit

Complete Solution for Soldier Mobile Communications

Bittium Tough Mobile™ 2 Tactical solution including Tough SDR Handheld

- ✓ Based on the ultra secure and rugged Bittium Tough Mobile™ 2 smartphone that is connected with Bittium Tough SDR Handheld™

- ✓ Compatible with different battle management systems (for example ATAK, SitaWare), which enables real-time & efficient creation and sharing of situational awareness in tactical networks

- ✓ Uninterrupted field use with Bittium Tactical Power Pack™

- ✓ Rugged tactical case designed for Tough Mobile 2 protects the phone and enables easy use and mounting to soldier gear together with its PALS/MOLLE mount

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Our Strengths

Superior Situational Awareness

Wide bandwidth, mobile, and survivable backbone network with TAC WIN

Next-Level Performance

Versatile RF performance, excellent interoperability and MANET networking with Tough SDR radios

Routing Excellence

Routing capabilities of the tactical networks optimized for large-scale deployment and mobile use

Highest Level of Security for Mobile Communications

Layered security built with Tough Mobile 2, Secure Suite, and Secure Call

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Defense & Security Business Segment

MEUR

+36.6% y-on-y

	1Q/23	2Q/23	3Q/23	4Q/23	1Q/24	2Q/24		1H/23	1H/24
Net sales	6,6	8,7	4,8	16,1	9,3	11,7		15,3	21,0
Operating Result	-2,6	-0,2	-2,4	2,0	0,5	1,9		-2,8	2,4

- 1H 2024 financial development was good

- Geopolitical uncertainty has led the states to increase their budgets to modernize their defense forces

- Good cooperation with Finnish Defence Forces
  - Partnership agreement under work
  - Orders: Tough SDR and TAC WIN products, system support, new IP protocol development

- Internationalization strategy is progressing as planned
  - Frame agreements signed with Lockheed Martin and with BAE Systems
  - Croatian Armed Forces ordered Bittium tactical communication products and system products
  - Tough Mobile 2C listed as NATO approved mobile device for restricted level communication

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Accelerating Growth

1 **Market need for modern tactical communication systems**
Digitalization, mobility of the troops, and increasing use of IP on the battlefield set a demand for high-performance tactical communications systems

2 **Active NATO membership**
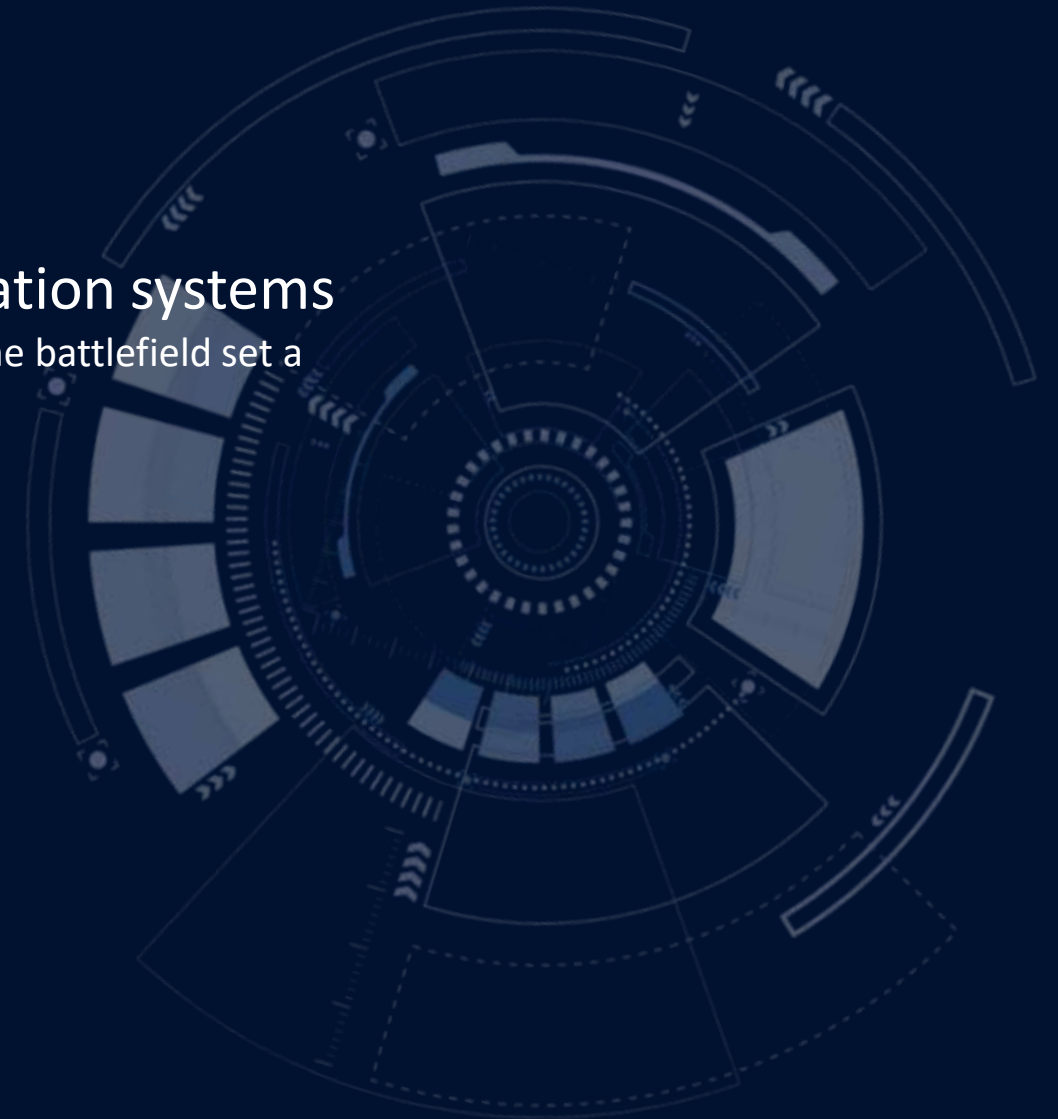Opportunity to expand product business in the long-term

3 **Growth with key customers**
Create strategic and long-term partnerships with customers

4 **Growth with the partners**
Joint go-to-market actions to acquire new customers

Additional slides

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World-Class Knowledge

Transforming passion for biosignals into superior technology products and services for healthcare professionals.

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Enabling Secure Remote Monitoring and Diagnostics

ECG monitoring

Solutions for short and long-term cardiac monitoring with analysis software and service platform.

Home Sleep Apnea Test

Solution empowered with AI: measuring device, analysis sw and web-based service platform.
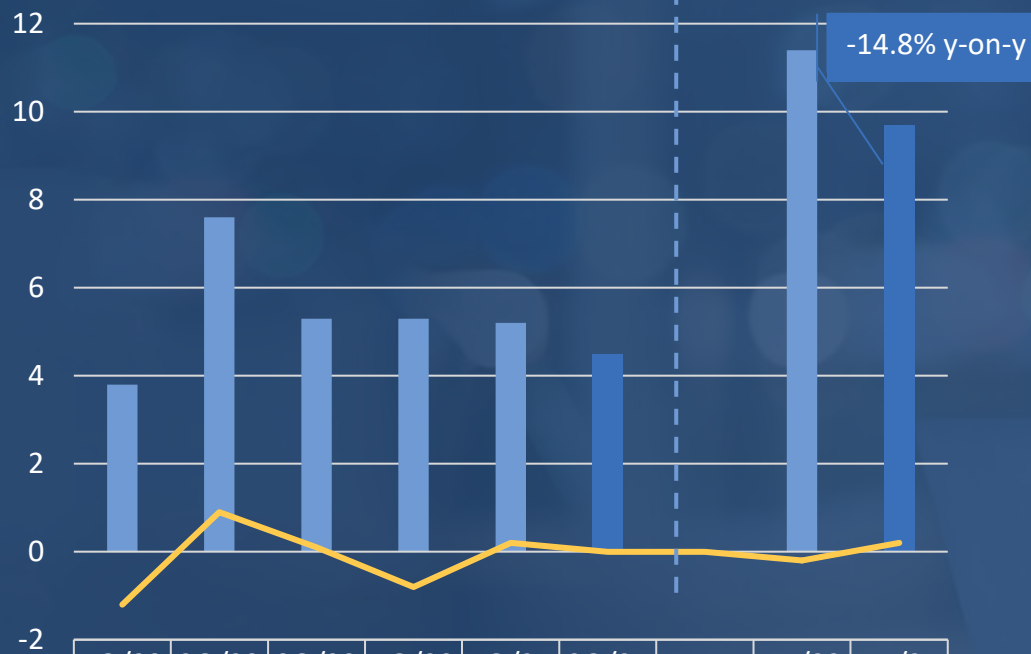
EEG monitoring

Fast and precise recording and evaluation of brain signals for ICU and ER

Bittium

Medical Business Segment

MEUR

-14.8% y-on-y

	1Q/23	2Q/23	3Q/23	4Q/23	1Q/24	2Q/24		1H/23	1H/24
Net sales	3,8	7,6	5,3	5,3	5,2	4,5		11,4	9,7
Operating Result	-1,2	0,9	0,1	-0,8	0,2	0		-0,2	0,2

- 1H 2024 net sales decreased y-on-y, operating result improved

- The stricter requirements in the regulatory approvals for medical devices and subsequent lengthening schedules are causing delay in building the growth

- To meet the current requirements, the organization in regulatory affairs is being strengthened

- Positive feedback from clinical trials of Respiro device

- Cooperation with Boston Scientific continued well

- The remote diagnostics market continues to grow

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Accelerating Growth

1 **Market needs for remote monitoring in Healthcare**
Remote monitoring, new home-based monitoring methods with faster and more efficient health data analysis are needed.
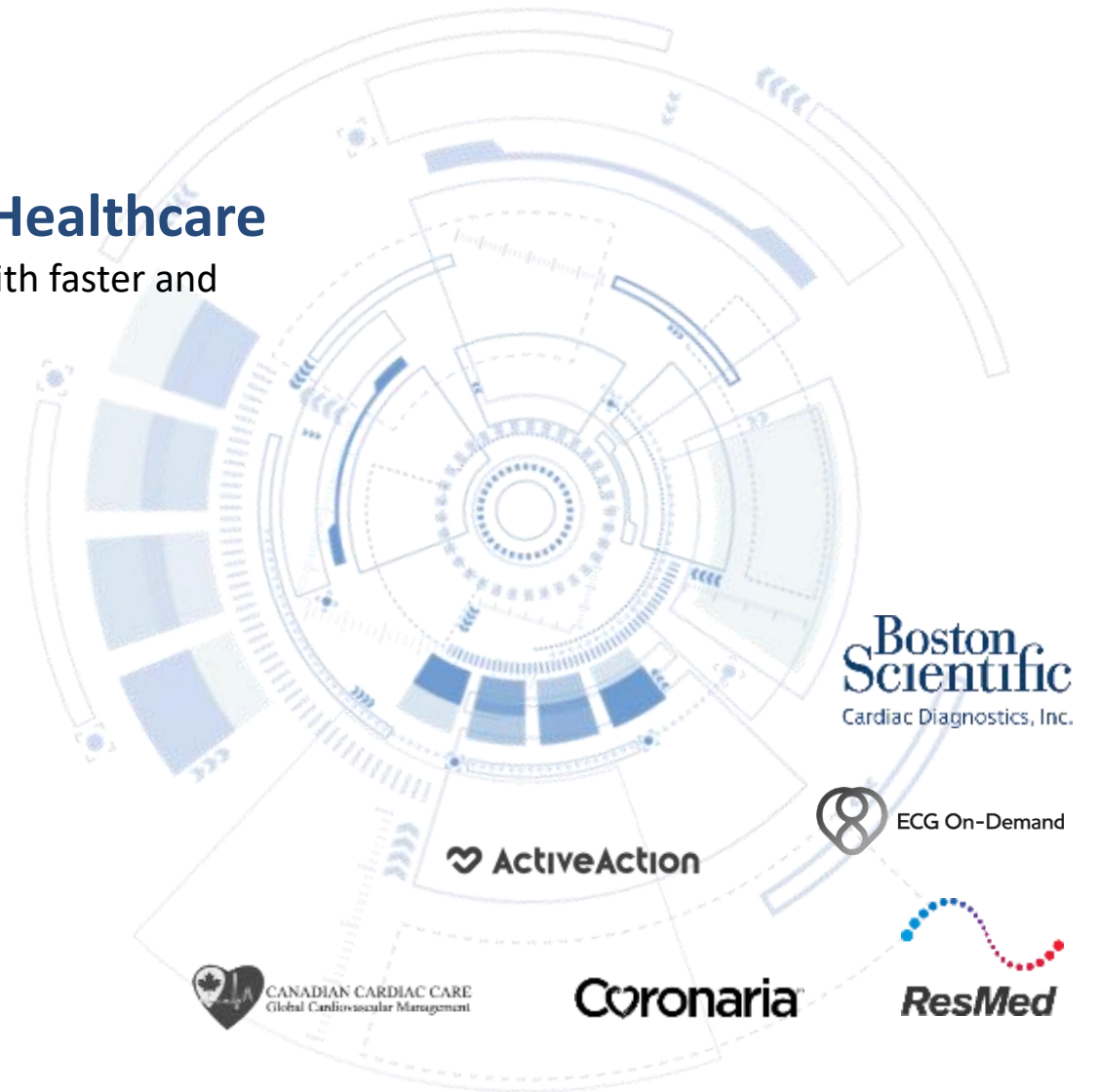
2 **Focus on selected services**
Develop our know-how and way of working constantly

3 **Growth with key customers**
Create strategic and long-term partnerships with customers

Boston Scientific Cardiac Diagnostics, Inc.

ECG On-Demand

ActiveAction

CANADIAN CARDIAC CARE Global Cardiovascular Management

Coronaria

ResMed

Bittium

Secure Product Design Services Covering Entire Product Lifecycle

ANALYSIS

SUPPORT AND MAINTENANCE

CONCEPTING

TRANSFER TO PRODUCTION

PRODUCT DEVELOPMENT

INTEGRATION, TEST AUTOMATION AND CERTIFICATION

Bittium

Smart and Secure Wireless Products

- Engineering services utilizes same technology know-how as Bittium product business segments to develop connected, smart and secure products to customers

- Our design service covers various customer applications e.g. Power Tools, Mobile Patient Monitor, e-Bike, Base Stations, Smart Locking, Elevators, Smart Watches

PHILIPS NOKIA

verizon✓ iLOQ KONE GE Healthcare adidas

Turnkey Product Development for iLOQ Smart Locking Systems

Customer Need

- Development partner for an next gen NFC-compatible, rechargeable digital key
- Expertise of secure product design
- Turn-key development project service

Bittium Services

- Product concepts evaluation with studies and measurements
- Electronics, mechanics, software, antenna, industrial design and usability
- Product verification testing and certifications
- Prototype manufacturing with quick prototyping
- Close co-operation with Bittium-customer-manufacturing

Customer Benefits

- Fast time to market
- High quality and cost efficient design
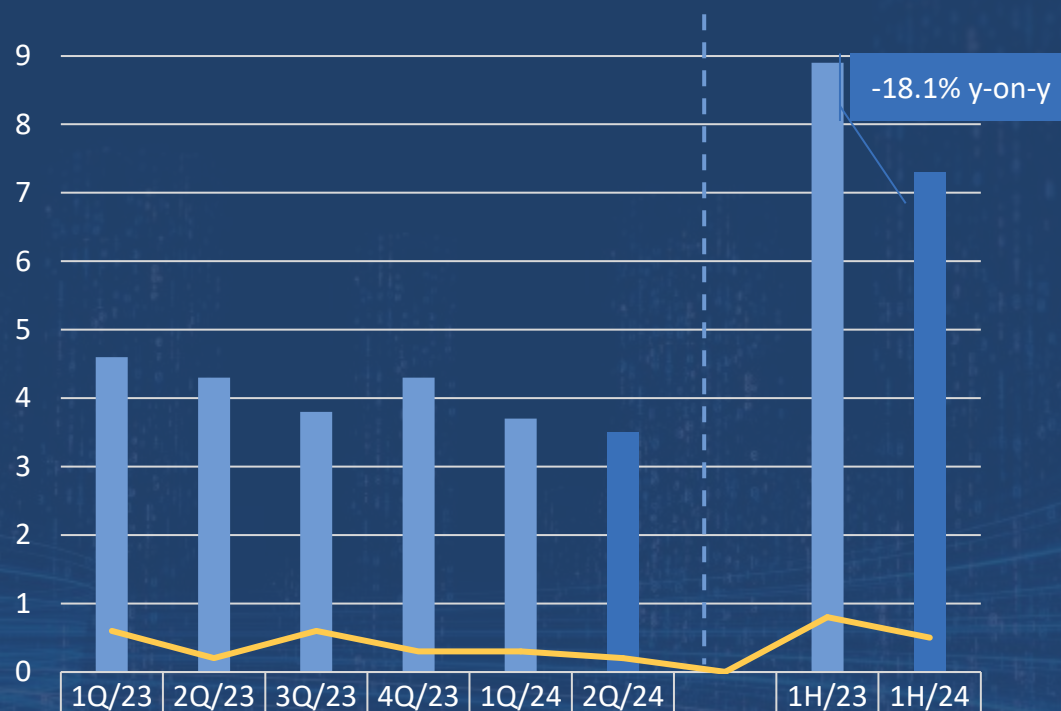- Joint and transparent project development model

"Finding a partner that could handle an end-to-end development process, from concept to production, was critical. Bittium stood out for their focus on security and comprehensive product development capabilities."

Timo Ainali, CTO of iLOQ

Bittium

Engineering Services Business Segment

MEUR

	1Q/23	2Q/23	3Q/23	4Q/23	1Q/24	2Q/24		1H/23	1H/24
Net sales	4,6	4,3	3,8	4,3	3,7	3,5		8,9	7,3
Operating Result	0,6	0,2	0,6	0,3	0,3	0,2		0,8	0,5

-18.1% y-on-y

- 1H 2024 net sales decreased y-on-y, however, operating result remained positive

- Customers are cautious to start new development projects due to the challenging market situation

- Market situation is expected to remain challenging in 2024

- Despite the market situation, 5G implementation creates demand for different product variants and accelerating digitalization increases the need for different IoT solutions

- New customers in telecom and construction markets

- New project started to design test terminal for satellite communication system testing

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Accelerating Growth

1 **Market needs wireless devices**
Demand of development services for wireless technology and devices

2 **Focus on selected services**
Develop our know-how and way of working constantly

3 **Growth with key customers**
Create strategic and long-term partnerships with customers

4 **Growth with the partners**
Joint go-to market actions to acquire new customers

Thank You!

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