

Bittium Corporation

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CEO Johan Westermarck

SVP, Defense & Security Tommi Kangas

Bittium

Agenda

- 1 | 2023 – the Year of Changes
- 2 | 1Q 2024 Financial Development and Outlook 2024
- 3 | Medical Business Segment
- 4 | Engineering Services Business Segment
- 5 | Defense & Security Business Segment



Johan Westermarck

Chief Executive Officer

Previous Work History

Citec Group Oy Ab, CEO, 2017-2022

Maintpartner Group Oy, CEO, 2012-2017

Maintpartner Oy, CEO, 2010-2012

Maintpartner Ab, CEO, 2009-2010

Eltel Group Oy, VP, Business Development, 2007-2008

Eltel Networks GmbH, CEO, 2006-2007

Eltel Group Oy, VP, Business Development, 2004-2006

Elcoteq Oyj, VP, Sales and Marketing, 2001-2004

Ahlstrom Machinery Oy: Regional Director, Service Business

1997-2001, Manager, Marketing Development 1995-1997,

Project Engineer 1992-1995

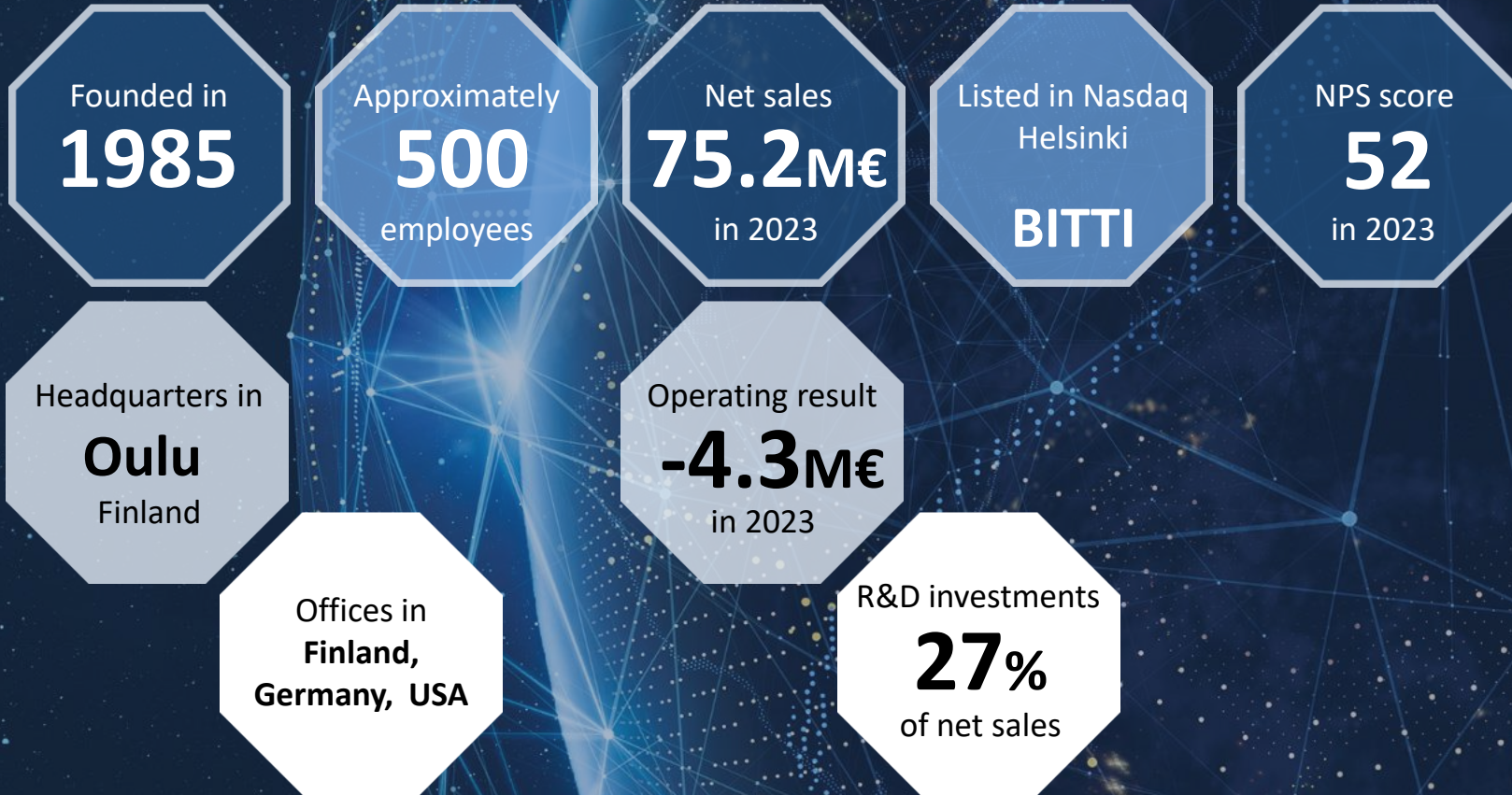
Positions of Trust

Consti Oyj, Member of the Board 2020-.

About Bittium

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

Key Figures



2023 – the Year of Changes

New management

Updated strategy

More independent Business Segments

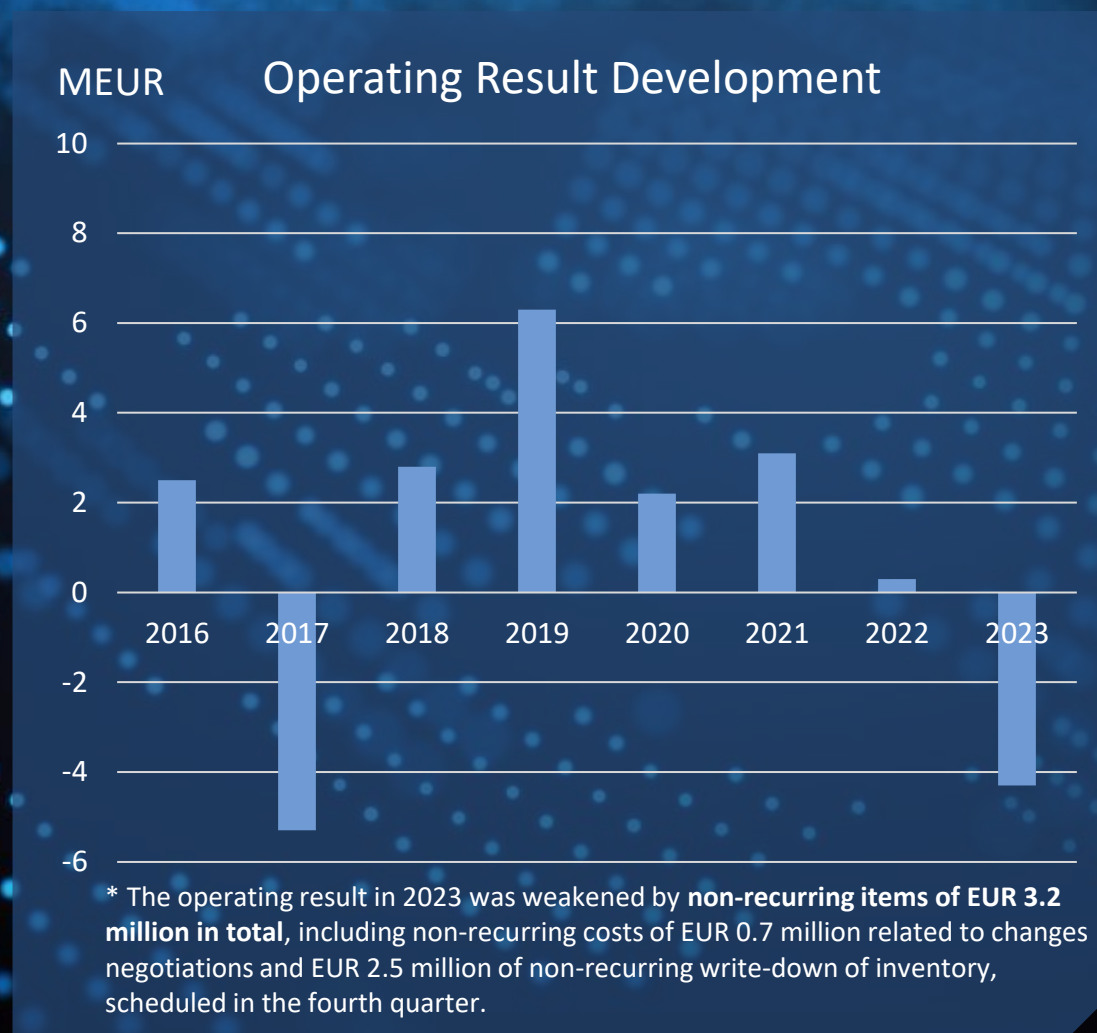
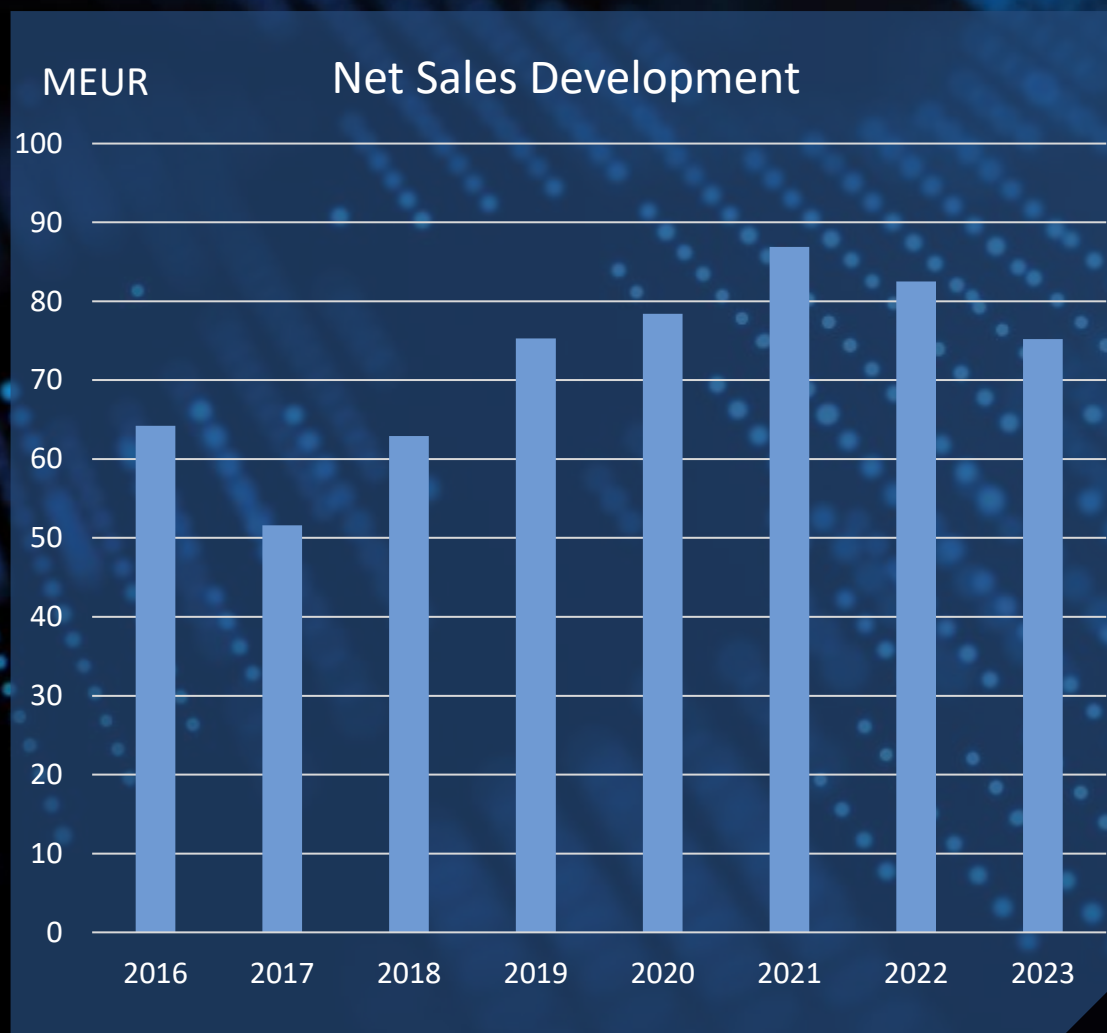
Efficient way of working with updated processes and practices

Strong focus at all levels

Measures towards healthier cost structure



Bittium Group – Challenges in Growth and Profitability



Megatrends to Support Solid Foundation for Profitable Growth

Geopolitical Uncertainty



Information Security



Accelerating Technology Development and IoT



Digitalization of Healthcare and Aging Population



Excellent Know-How, Products, and Services

Defense &
Security

Engineering
Services

Medical

Good Foundation for Profitable Growth

Updated strategy towards profitable growth

Committed and highly skilled people

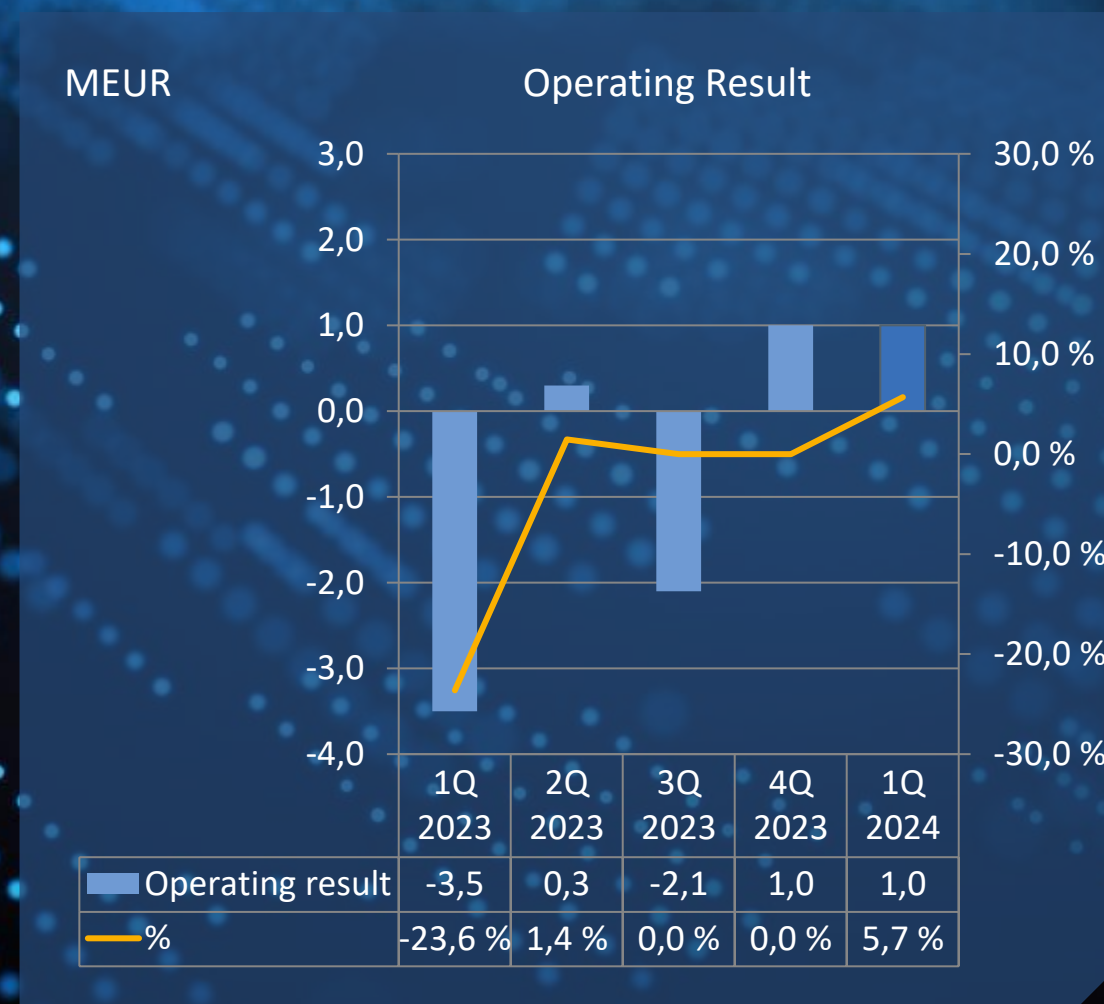
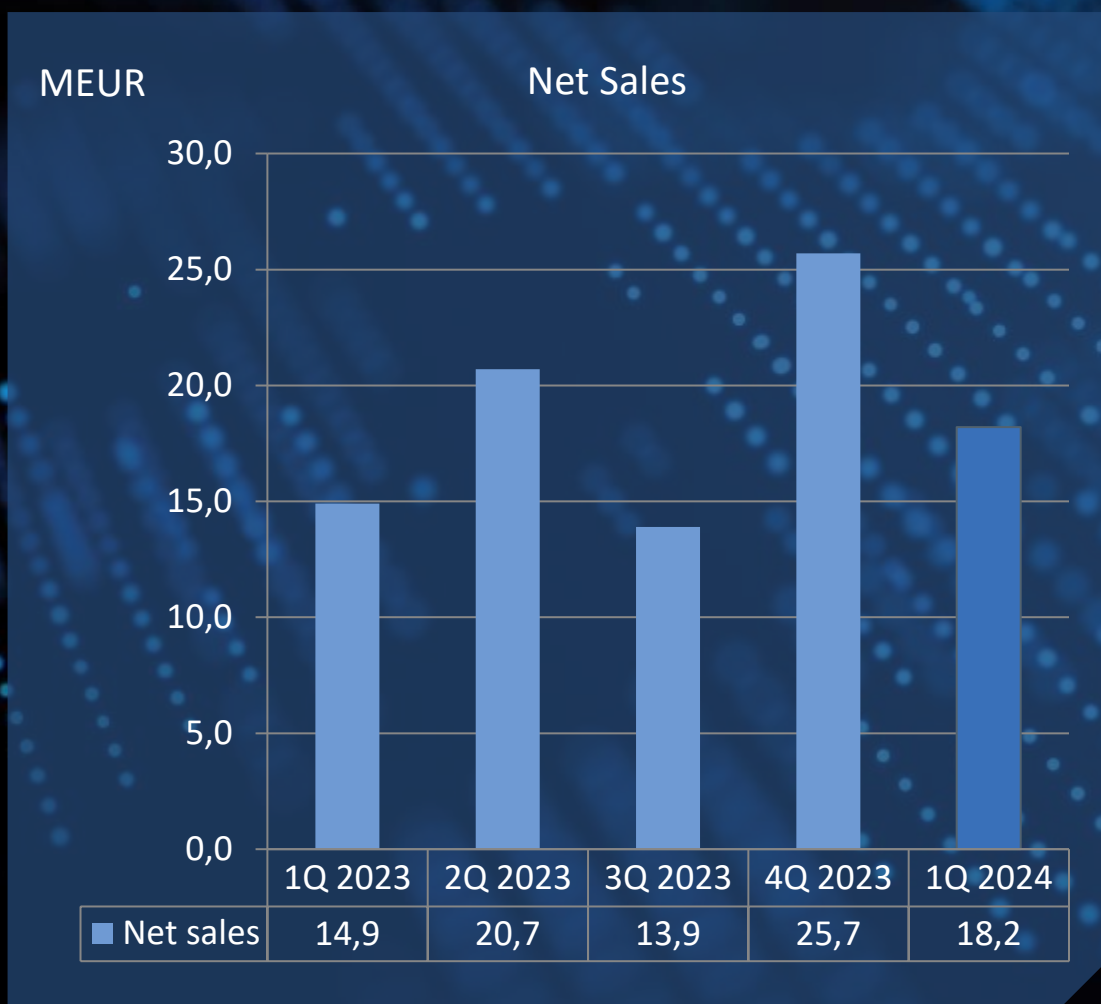
World-class products and services

Strong customer base

Megatrends supporting the growth

Solid foundation for profitable growth has been built

Bittium Group Financial Development in 1Q 2024



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.

Business Segments

Bittium

Medical – Remote Monitoring and Diagnostics



Bittium

Measuring and Monitoring Biosignals - ECG

*Reliable precision and flexibility for cardiac
monitoring and analyzing*

- *Compact and lightweight*
- *Simple and intuitive user interface*
- *SW analysis for the recorded data*

Cardiac Analysis
Analysis Software



Bittium Faros™
Waterproof ECG Devices



Measuring and Monitoring Biosignals – Sleep Apnea Test

Home Sleep Apnea Testing empowered with AI

Bittium Respiro™ Analyst
Analysis Software



- *Location Independent and AI-Empowered Analysis*
- *Cost Efficient solution with 1 in 3 configurations*
- *Latest technology*

Measuring and Monitoring Biosignals - EEG

Fast and Easy Wireless EEG for Intensive Care

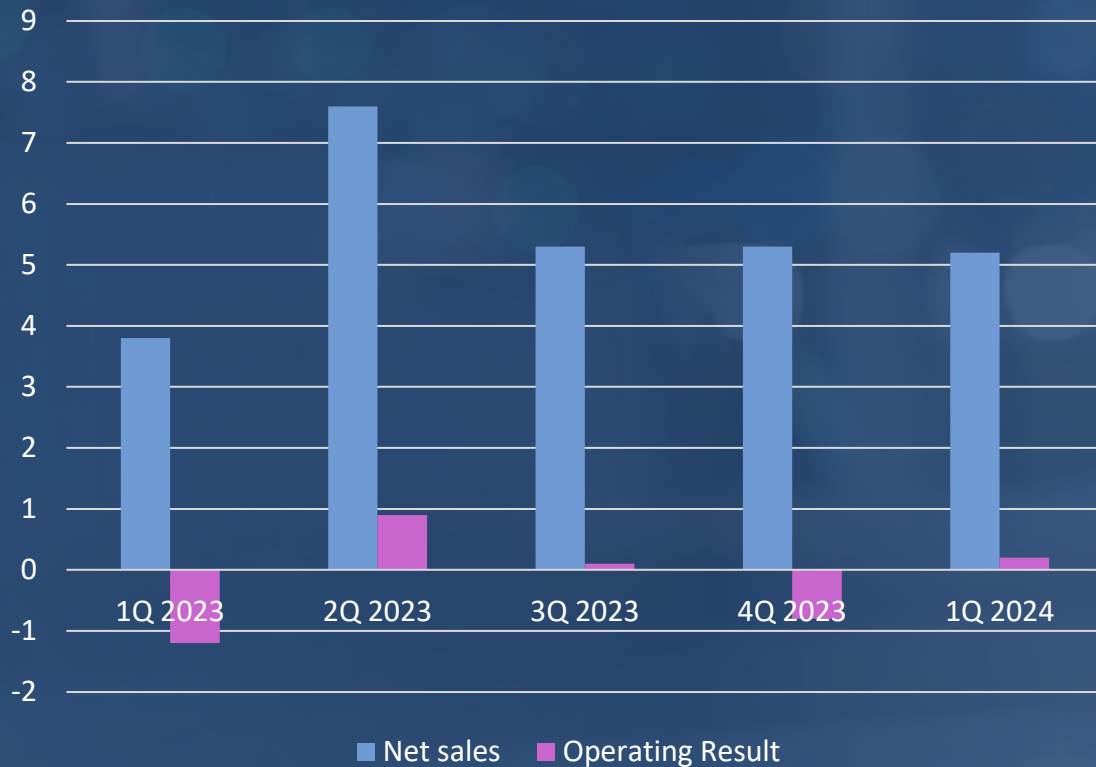
Bittium BrainStatus™

- *Easy and rapidly applicable*
- *High signal quality*
- *Location independent data analysis*



Financial Development and Highlights

MEUR



- The remote diagnostics market continues to grow
- Insurance policies related to treatment reimbursement vary between countries affecting the market growth
- Bittium has applied for medical device approvals in several different countries, but processes are slow
- Cooperation with Boston Scientific continued strong
- Customer trials of Bittium Respiro™ home sleep apnea measuring devices continued in Europe and the feedback has been positive
- Distributor Agreement regarding Respiro signed with ResMed
- Customer piloting with Bittium BrainStatus™ EEG measuring device are proceeding as planned

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

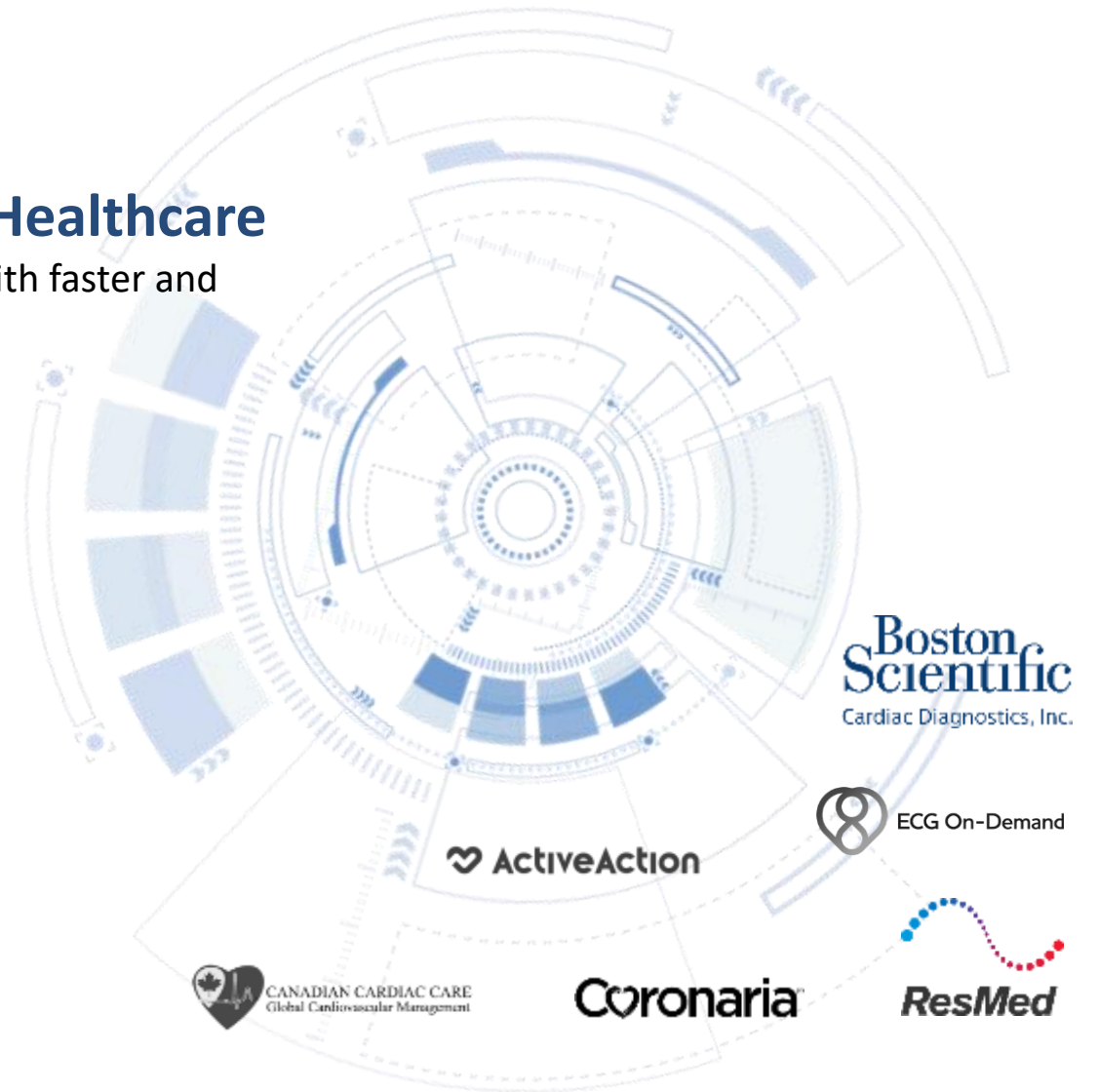
Focus on selected services

Develop our know-how and way of working constantly

3

Growth with key customers

Create strategic and long-term partnerships with customers



Engineering Services – for Wireless Embedded Solutions

Bittium

For Industry IoT OEM's

Embedded Connected Device Design Services

Customer needs: Development partner to create reliable, intelligent and secure products with wireless connectivity.

Value Proposition: Radio expertise, trusted strategic partner with transparent way of working. Bittium provides professional design services covering complete product development and life cycle.

Certified systems in place as enablers



GE Healthcare

Offering for Telecom

Network customers

Customer needs: Development services for radio units; HW, SW, integration and verification

Value Proposition: Development partner with extensive experience and know-how to strengthen customers competence and capacity

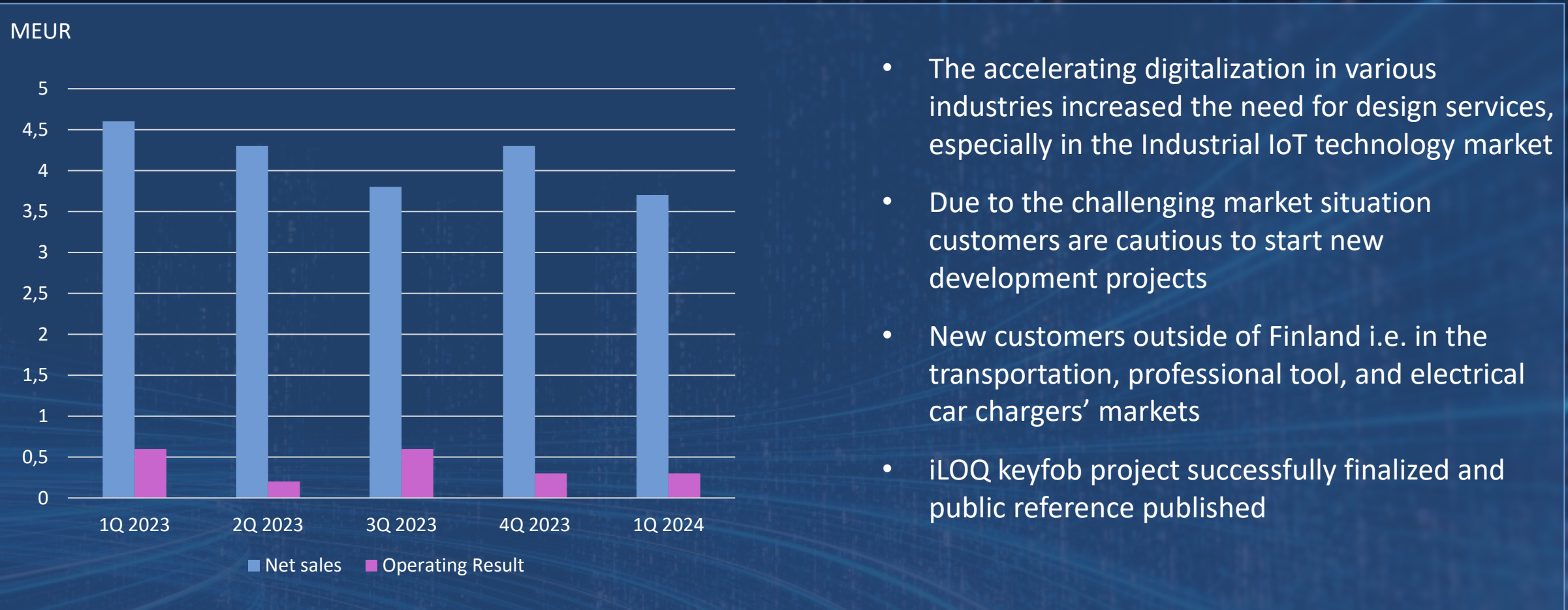
Mobile OEM customers

Customer needs: Development services for embedded HW, SW development, integration and verification

Value Proposition: Innovative and experienced team of professionals with wireless technology know-how

verizon^v NOKIA

Financial Development and Highlights



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



Defense & Security

Tommi Kangas
May 8, 2024

Bittium





Tommi Kangas

Senior Vice President
Defense & Security

Previous Work History

Bittium, SVP, Connectivity Solutions, 2019–2023.

Bittium, Sales Director, Connectivity Solutions Product and Service Area Sales, 2015-2019.

Elektrobit, Senior Account Manager, Wireless Solutions Business Segment, 2010-2014.

Elektrobit, Key Account and Business Line Manager, Mobile Infra Solutions Business Area, 2009-2010.

Elektrobit, Business Line Manager, Radio Network Solutions Business Unit, 2006-2008.

Elektrobit, Project Manager, Radio Network base station project, 2004-2005.

Elektrobit, Mechanical Chief Designer and Specialist, 1998-2004.

Positions of Trust

Oulu Chamber of Commerce, Member Of the Board, 2024-.

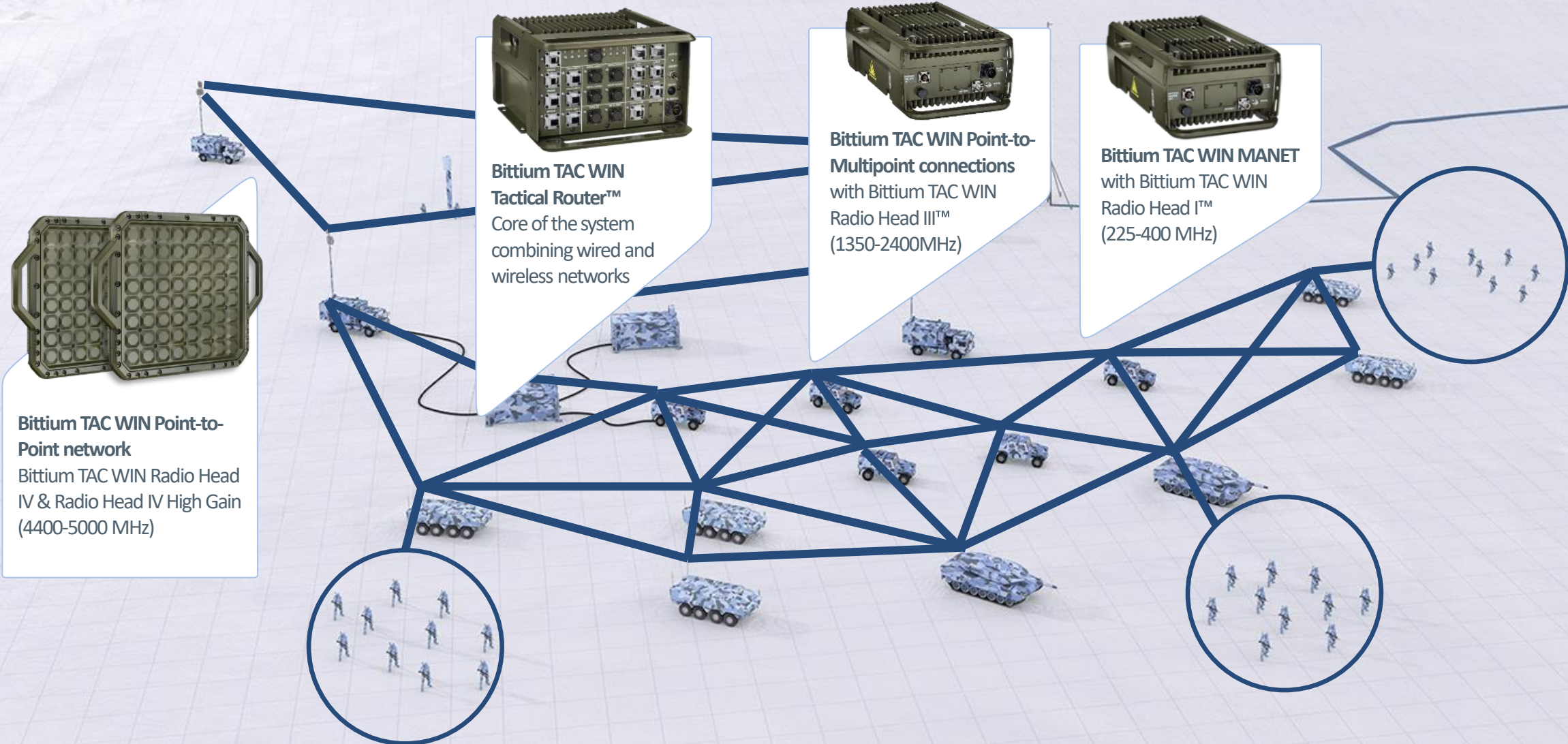
Market Trends Supporting Our Growth



Defense Tactical Communications



Broadband & Mobile IP Network as Backbone for Resilient Communications



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

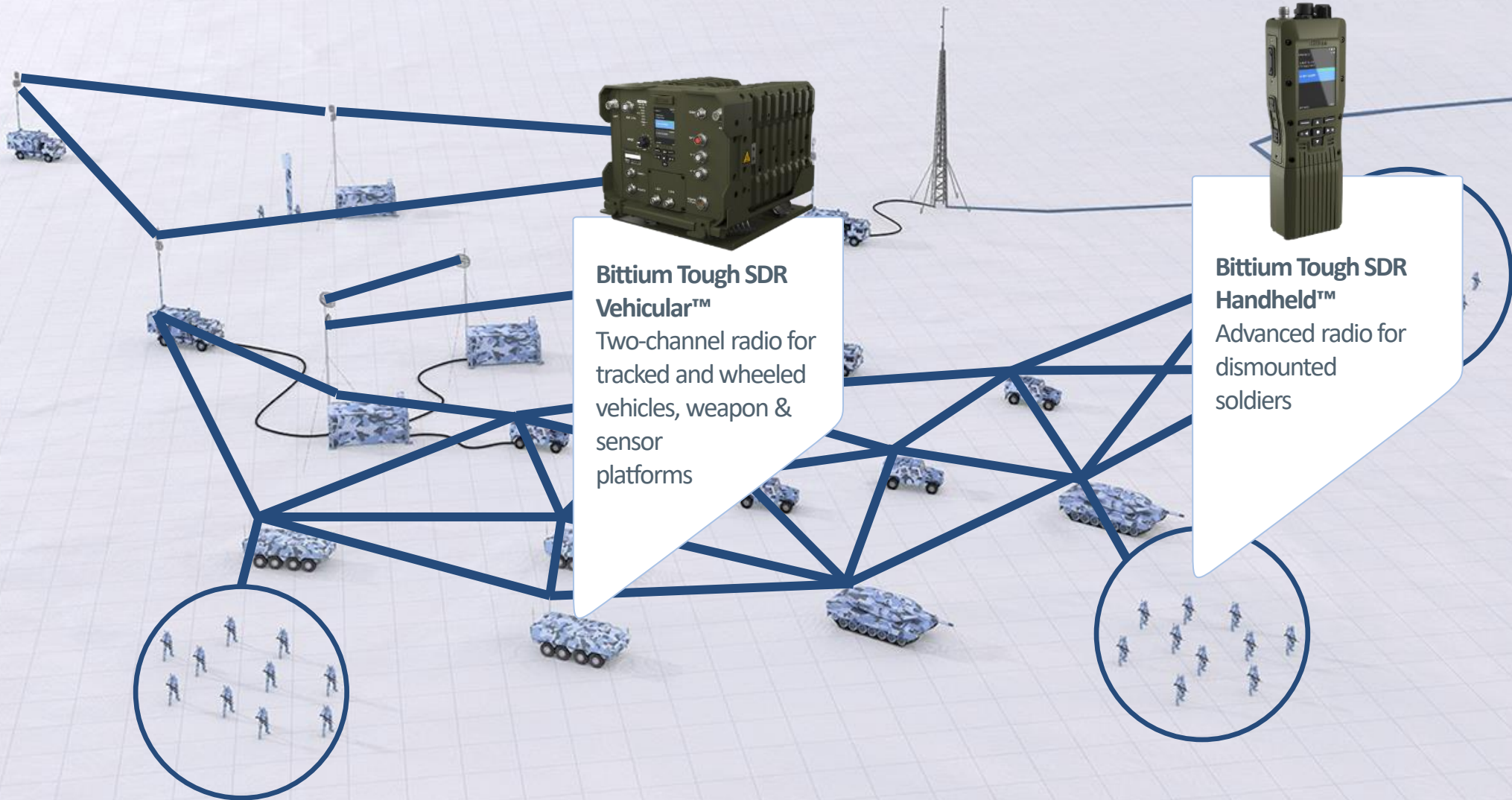
✓ Modular and scalable

✓ Mobile & quickly self-healing

✓ Low information latency < 20 ms

✓ Automated adaptation of routing, modulation & coding

Next-Generation High-Performance Tactical Radios for Resilient Communications



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



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

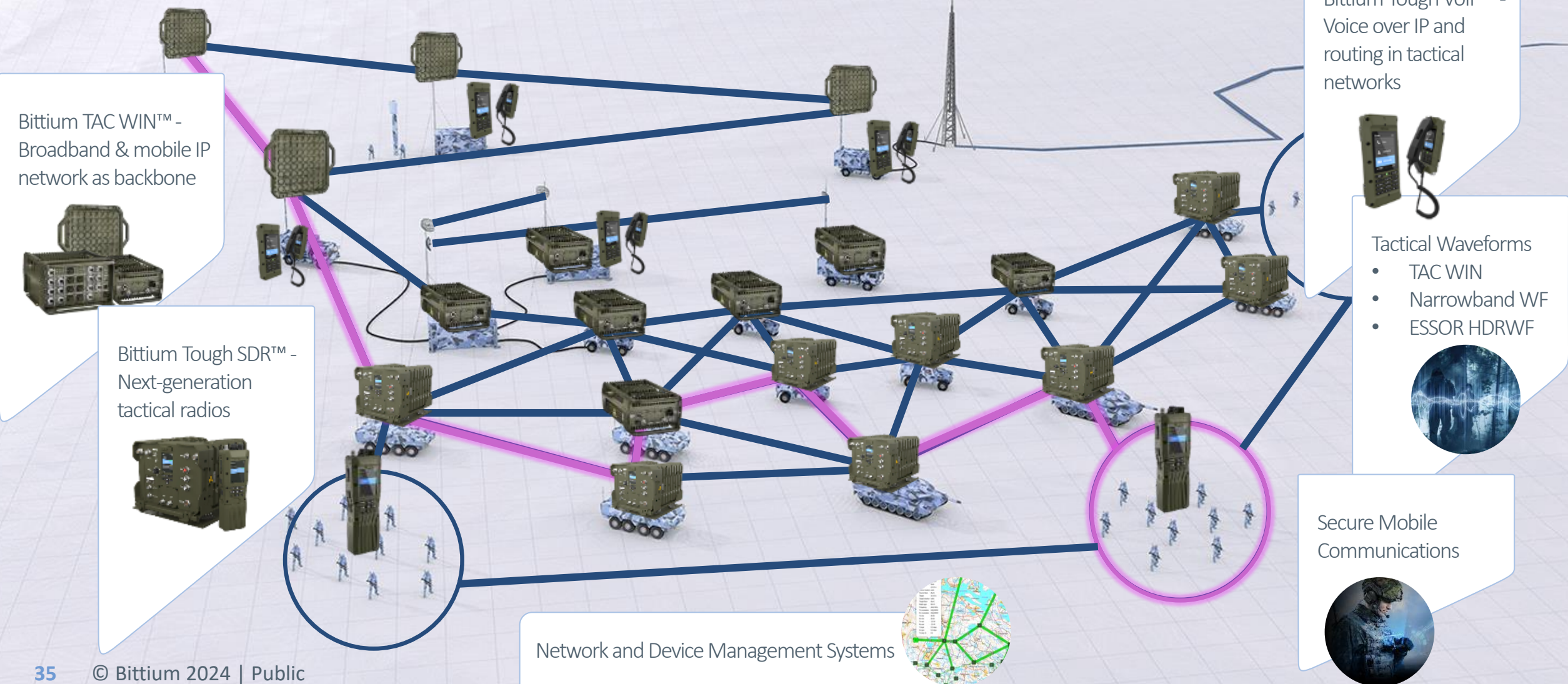
Bittium

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



Resilient Connectivity Across the Battlefield



Bittium TAC WIN™ -
Broadband & mobile IP
network as backbone



Bittium Tough SDR™ -
Next-generation
tactical radios



Bittium Tough VoIP™ -
Voice over IP and
routing in tactical
networks



Tactical Waveforms

- TAC WIN
- Narrowband WF
- ESSOR HDRWF



Secure Mobile
Communications



Network and Device Management Systems



Secure Mobile Communications



Bittium Tough Mobile 2

New Standard for
Ultra Secure Mobile
Communications



Bittium

Bittium Tough Mobile 2

- ✓ Designed for governmental and professional users with the highest security requirements
- ✓ Complete security from hardware to secure software and services
- ✓ Recognized and certified security solution from Europe
- ✓ Designed and manufactured in Finland
- ✓ Ultra secure communications without compromising usability
- ✓ Military grade durability
- ✓ Long device lifespan

Bittium Tough Mobile 2



with Google Apps



without Google Apps

Bittium Tough Mobile 2 C

Personal side
Android 11



Dual boot

Secure side
Bittium Secure OS
(Android app compatible)

Three Software Variants – Any Use Case and Security Requirement

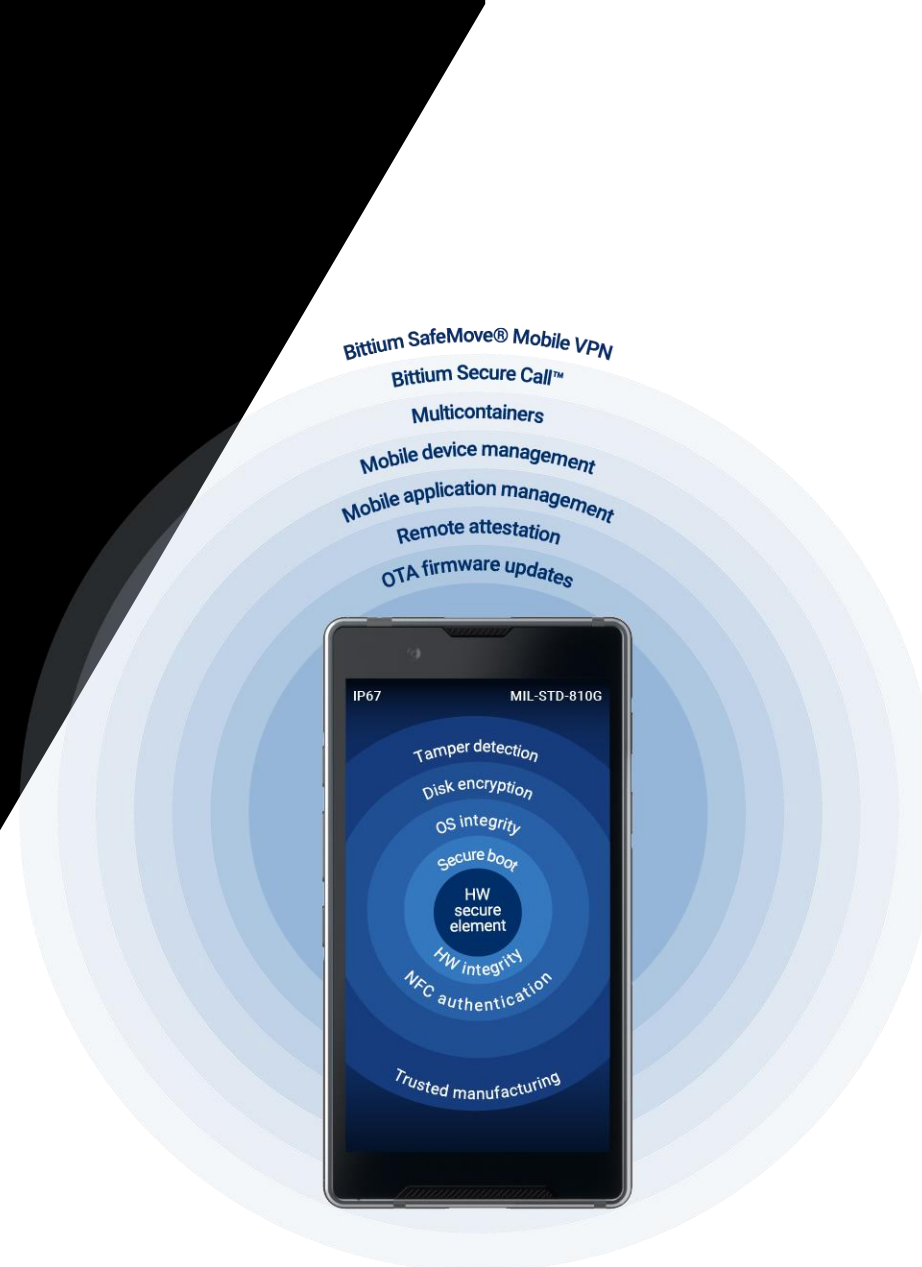
Data at Rest Secured

- ✓ Dedicated, tamper-proof **secure element**
- ✓ **Secure boot** with hardware and software integrity validation
- ✓ **Disk encryption** protected by secure element's authentication and security design



- ✓ User credentials and encryption **keys stored** to hardware secure element
- ✓ **Non-rootable** device firmware
- ✓ **Tamper-proofed** to prevent data theft and hardware manipulation
- ✓ **Trusted manufacturing** in Finland

Data in Transit Protected with Bittium Secure Suite™



- ✓ Network traffic secured with always-on VPN
- ✓ Efficient management and control of the device fleet with MDM
- ✓ Mobile application management
- ✓ Remote attestation of HW and SW integrity
- ✓ OTA firmware updates



Bittium Secure Call™

For end-to-end encrypted communication

- ✓ Voice calls, video calls, instant messaging with media attachments



Bittium Tough Mobile 2 C

Highest Level of Security for Mobile Communications



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

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

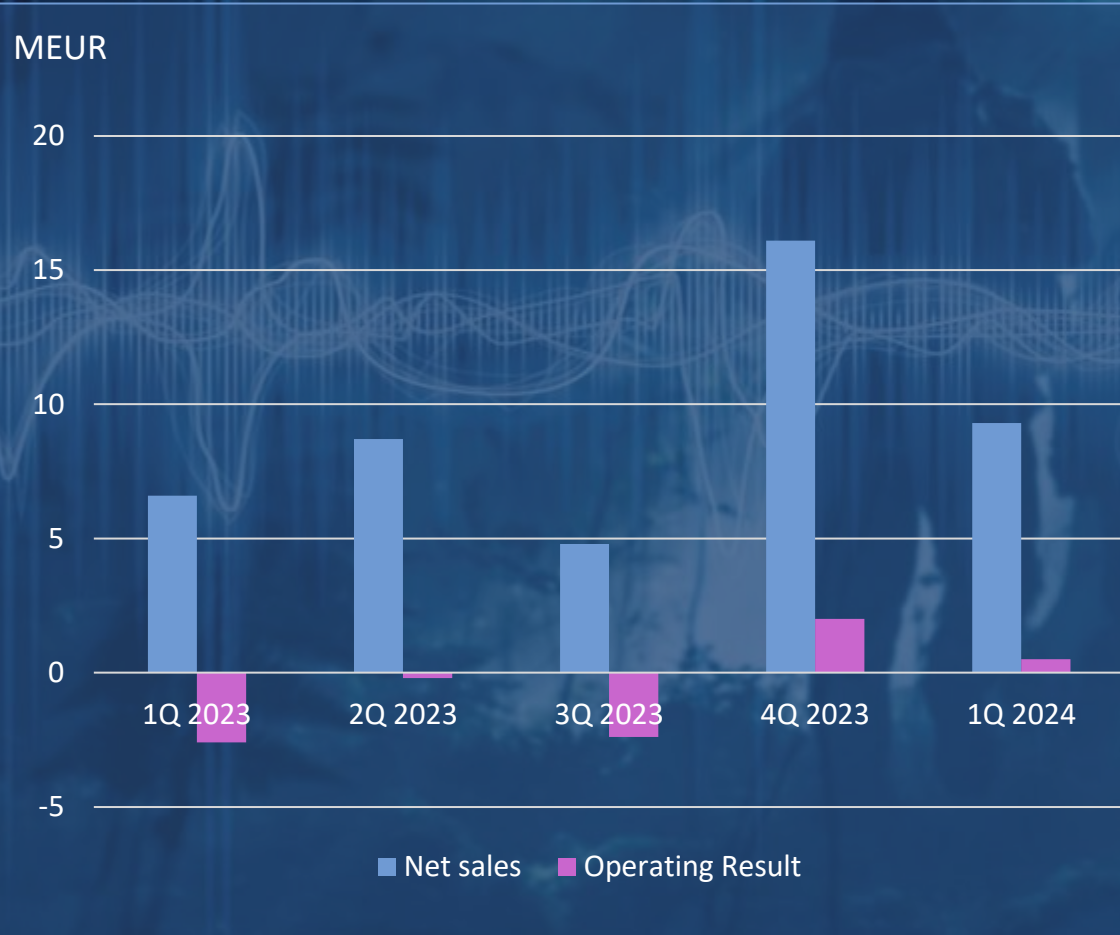
Routing Excellence

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

Financial Development and Main Events 1Q 2024



- Geopolitical uncertainty has led the states to increase their defense budgets
- Finland has joined the military alliance NATO
- Strong cooperation with the Finnish Defense Forces
- The Finnish MoD decided on partnership agreement
- Bittium Tough SDR radios' field tests proceeding as planned with Finnish Defense Forces
- A Consortium led by Bittium and Lockheed Martin have signed a Frame Agreement to develop tactical networks' situational awareness
- Discussions with international air defense and sensor system suppliers continued
- Mexsat orders delivered

Public Customer References



- ✓ **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
 - Finnish Ministry of Defence Decided on a Partnership Agreement with Bittium

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

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

- ✓ **Lockheed Martin**
 - Frame Agreement with Bittium to the development of tactical networks' situational awareness

Decades of Success with the Finnish Defence Forces



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





Thank You!

www.bittium.com

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Bittium