



# **Bittium Continues Development of ESSOR Waveform as Part of the a4ESSOR Joint Venture Towards True Operational Collaboration in Tactical Communications**

**Bittium Corporation**  
Press Release

## **Bittium Continues Development of ESSOR Waveform as Part of the a4ESSOR Joint Venture Towards True Operational Collaboration in Tactical Communications**

**a4ESSOR and OCCAR signed a new procurement contract for the next stage of development of ESSOR technology**

*Bittium Corporation press release on November 3, 2025, at 6.30 p.m. (CET+1)*

Bittium, a leading supplier of resilient communications solutions based on software-defined radio technology, continues development of interoperable ESSOR waveform for tactical communications as part of the multinational a4ESSOR joint venture. a4ESSOR S.A.S (Alliance for ESSOR - European Secure Software Defined Radio) develops European secure software-defined radio (SDR) technology for military use and has signed a new procurement contract with the intergovernmental Organisation for Joint Armament Cooperation (OCCAR) for the next, fourth stage of development of ESSOR technology. The contract covers capability development for the ESSOR High Data Rate Waveform (EHDRWF) that can be ported to national software-defined radios. Through this unique approach, any nation can use its own radio and be interoperable with other nations in their tactical communications. The contract for the ESSOR Development Stage #4 (ES4) is valued in excess of EUR 47 million. Work will be shared, in relation to the shares of the member states, between the six companies participating in a4ESSOR: Bittium (Finland), Indra (Spain), Leonardo (Italy), Radmor (Poland), Rohde & Schwarz (Germany), and Thales (France). The work is split in relation to the shares of the member states, where Bittium's share is significantly lower than the directly calculated relative proportion would be.

The six nations involved and their respective industry leaders have then been working to add new features, such as electronic protection measures and support of modern cryptographic standards, leading to several successful interoperability demonstrations and qualification tests, and to the adoption of ESSOR High Data Rate Waveform as NATO STANAG 5651 in 2023.

Under the new contract, a4ESSOR will design a common mission framework aimed at a shared planning capability for the network parameters of the EHDRWF. Once implemented in the command-and-control system of each nation, the mission framework will ensure high interoperability at operational level, allowing quick and accurate deployment of multinational EHDRWF networks.

a4ESSOR will conduct field tests of the EHDRWF on the various radio systems to assess the maturity, performance, and reliability of the waveform in various scenarios, providing valuable feedback for future waveform enhancements. The field test will also include trials in different operational environments (urban, rural, and hilly terrains), line-of-sight/non-line-of-sight and mobility scenarios, as well as analysis of waveform performance under potential

interference conditions. Furthermore, the contract will define an ESSOR in-service support framework and will set up an ESSOR laboratory as the reference for interoperability validation.

*"Enabling seamless defense cooperation with solutions that are based on software-defined radio technology is at the core of our leading knowhow and expertise. We put a lot of emphasis on the a4ESSOR collaboration and the development of the ESSOR waveforms. The ESSOR High Data Rate Waveform has already been ported to the Bittium Tough SDR radio platforms, and with the new development phase beginning now, our customers will gain new operational capabilities to support with their objectives,"* said Tommi Kangas, Senior Vice President of Bittium's Defense & Security business segment.

Lino Laganà, President and General Manager of a4ESSOR, said *"a4ESSOR has been active for over 16 years playing a crucial role to develop and test ESSOR capabilities and technologies to address multinational defence requirements as a valuable solution in addition to the existing legacy waveforms. The ESSOR HDRWF standard is capable to facilitate seamless communications across diverse radio platforms and nations, affirming its potential to enhance collaborative defence operations across Europe and NATO countries. The mission framework will allow a quantum leap forward in terms of interoperability among armed forces from various countries, as it will define what's needed to achieve the interoperability in mission planning and management. We will work at defining the required solutions towards their integration onto command-and-control systems of the various countries. It's an evolution enabler, from technical to operational interoperability."*

Lino Laganà continued *"The project aligns with the European Union's strategic objectives of strengthening defence cooperation, enhancing autonomy, and improving the efficiency of combined military missions. By equipping EU member states with secure, interoperable, and scalable communication solutions, the initiative strengthens Europe's collective ability to respond to threats and ensures seamless coordination in operations."*

#### **Further information:**

Tommi Kangas  
Senior Vice President, Defense & Security  
Tel. +358 40 344 2789 (group communications)  
Email: defense(a)bittium.com

#### **Distribution:**

Main media

#### **Bittium - Defense & Security**

As a trusted supplier in the Defense & Security market with 40 years of experience in advanced radio communication technologies, we provide next-generation resilient and mobile communications systems for defense forces and secure communication solutions for governments and authorities. Our solutions bring broadband data and voice seamlessly across multi-domain operations. The offering is completed by mobile devices and cyber security solutions certified up to CONFIDENTIAL and NATO Restricted levels.

In addition to the products and systems supplied to the Defense & Security market, Bittium offers solutions focused on measuring and processing of biosignals as well as R&D services and wireless embedded solutions. Bittium's net sales in 2024 were EUR 85.2 million and operating profit EUR 8.6 million. Bittium is listed on Nasdaq Helsinki. [www.bittium.com](http://www.bittium.com)

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