

Attachment to the news related to the DIANA accelerator in Finland

The importance of DIANA to Finland

Finland's DIANA accelerator and test centres will increase Finland's visibility and the business opportunities for Finnish companies among other NATO countries as a developer of dual-use technologies. Finland's strong position, especially in the development of new-generation communication technologies, is likely to attract operators and expertise to Finland. Finland's profile as a major power in dual-use communication technologies will also make it more attractive to international financiers and strengthen Finland's technological input as a member of NATO.

The benefits of DIANA

- a. Helping civilian companies to enter the defence market
- b. Strengthening the security of supply of national technological know-how
- c. Attracting international talent and funding to Finland
- d. Networking and partnerships between industry and research institutes
- e. Strengthening (defence) industry foundations
- f. Bringing together innovators developing disruptive technologies and trusted providers of funding
- g. Nationally adopting NATO's RDI philosophy
- h. Profiling Finland as a major power in dual-use communication technologies

What does DIANA do/What is DIANA aiming for?

- a. Brings together end-users and promising startups and small businesses through a network of accelerators and test centres
- b. Identifies potential new dual-use technology companies and brings them into NATO circles to develop common defence and security
- c. Helps companies to improve business opportunities and cooperation with the defence sector
- d. Proves the military potential of dual-use technological solutions
- e. Seeks to integrate technological solutions into the military capabilities of the member states
- f. Enables companies to get follow-up contracts and funding

Why was it decided that VTT would coordinate DIANA in Finland?

- a. It was essential (and also an essential criterion) to find an established RDI actor in Finland that is sustainably resourced and linked to the national innovation ecosystem in as diverse a way as possible. VTT is a traditional state-owned organisation with strong international networks and a proven track record in national research and development. VTT has the VTT LaunchPad function that commercialises research and technology, and the DIANA accelerator network is being built around this in collaboration with partners.

- b. In April 2023, Finland became a member of NATO and also a member of DIANA. DIANA was launched in June 2023, so the window of opportunity for Finland to propose national elements for the initiative's network was tight. VTT's activity and willingness to coordinate DIANA in Finland created an excellent basis for cooperation.
- c. From the perspective of the Ministry of Defence, it is important to support the implementation of DIANA by tying Finland more firmly into NATO cooperation structures and by strengthening the competence base of the Finnish defence industry. It is also important to strengthen Finland's technological profile in NATO, especially in terms of new-generation communication technologies and quantum knowledge.

What is the role of the Ministry of Defence in DIANA?

The Ministry of Defence acts as the national responsible authority for the proposal and approval of national DIANA elements (accelerators and test centres) and as the official liaison with the DIANA Secretariat. The Ministry of Defence represents Finland at DIANA Board meetings and contributes to defining the technological priorities of the initiative.

How can Finnish companies benefit from DIANA?

Finnish companies can participate in the DIANA challenge programmes, which will be used to select the companies invited to the programme. Companies selected through the challenge programmes will receive 100,000 euros in the first phase for product development and some of the selected companies will receive 300,000 euros in the second phase. In addition, companies will be able to test their technological solutions and prove their dual-use potential at DIANA test centres, as well as develop their business opportunities in DIANA accelerators. The DIANA network serves as a platform for companies to network and build new international partnerships. In the best case, companies will find an end-user for the technology they develop or a longer-term follow-on funder through DIANA.

Finland's contribution

DIANA is a programme outside NATO co-funding. The costs of DIANA's activities (staff costs and funding for businesses) are co-financed by the member states (GDP-based contribution). DIANA's total budget for 2024 is around 50 million euros.

What is a DIANA accelerator (Defence Innovation Accelerator for the North Atlantic)?

The DIANA accelerator programme is a special training programme to help companies develop deep technologies and innovations for commercial and defence purposes. The programme also develops other business skills that will help companies operating commercial and defence markets. It is specifically targeted at startups and SMEs with limited experience in the defence and security sector.

Training at a six-month hands-on 'boot camp' consists of ten modules in which early-stage startups develop their activities enabling them to grow into strong players in the business world. Through lectures, workshops and mentoring, participants learn how to develop to operate effectively in commercial and

defence markets. The programme uses experienced experts from the NATO network as mentors and applies a variety of methods to identify market and customer needs, develop technologies and engage investors. The programme also focuses on intellectual property rights, cyber security and risk management. Companies in the accelerator programme can develop their technological skills through DIANA test centres.

DIANA is a unique accelerator programme that supports the success of companies developing disruptive technologies in the defence and security markets of NATO countries. The transatlantic innovation ecosystem brings together the resources of academic research, industry, government and investors, and provides access to the national initiatives of its members.

How can businesses apply for the DIANA accelerator?

DIANA selects companies for accelerators through its own application process. This procedure is called the DIANA challenge programme. The first call for 2023 has already closed and 44 companies were selected for the first pilot accelerator programme. Companies will be able to apply for the accelerator to be set up in Finland in late 2024, according to a preliminary estimate.

What is a DIANA test centre (Defence Innovation Accelerator for the North Atlantic)?

DIANA test centres are places where companies can develop and evaluate their business concepts and technologies and receive support for their development.

Test centre services are open to all companies in NATO countries, regardless of whether they belong to a DIANA accelerator. The test centres provide expertise, services and infrastructure to companies for a fee.

DIANA test centres also support the development of startups participating in the accelerator programme in various ways. At test centres, companies can develop and evaluate their business concepts and technologies and receive support for their development.

DIANA test centres are specifically approved entities located in NATO member countries, such as universities, research centres and laboratories.

Who are the Finnish accelerator and test centres for?

- a. The DIANA accelerator and test centres to be set up in Finland will be aimed at startups that have been accepted into the DIANA challenge programme, with a special focus on next-generation communication technologies.
- b. Companies applying for the challenge programme can express a wish to be part of a specific accelerator at the application stage.
- c. A DIANA accelerator is not national in scope, i.e., all startups developing dual-use solutions in NATO countries can apply.

Which operators are involved in setting up accelerators and test centres?

- a. VTT is establishing an accelerator focusing on next-generation communication systems and quantum technologies in collaboration with Aalto University, the University of Helsinki and other accelerators.
- b. The University of Oulu is setting up a 6G test centre in collaboration with VTT. The test centre will be located in Oulu.
- c. VTT is setting up a test centre for secure connectivity, space and quantum technologies. This test centre will be located in Espoo.

Which technologies will Finland's accelerator focus on?

The accelerator will focus on next-generation communication systems and quantum technologies.

Which technologies will the Finnish test centres focus on and what will they do in practice?

- a. **The 6G Test Centre (6GTC)** will provide advanced wireless communications facilities, services and processes for research and testing by companies. The test centre will consist of two interconnected sites in Oulu: one on the main campus of the University of Oulu and the other on the nearby VTT premises. The test centres will work in close cooperation with another Finnish DIANA test centre, the Secure Connectivity, Space & Quantum Test Centre (SCSQ), coordinated by VTT. This cooperation will allow for a wide range of experiments. It will be possible to carry out testing in both sheltered, secure laboratory environments and challenging, outdoor Arctic conditions.

Once completed, 6GTC will serve as a global testing centre providing DIANA partners and the wider ecosystem with dual-use testing applications and services in response to the defence sector needs identified by NATO.

The test centre will enable the development, testing and customisation of future communication technologies for various critical application areas such as remote area communication, autonomous mobility and machine-to-machine communication. The 6G frequencies and radio technology using large antenna arrays in the global 6GTC will enable research aimed at combining telecommunications and observation. 6G networks aim to combine the features of a mobile network and radar by using radio equipment not only to transmit data, but also to detect objects in the environment and monitor changes.

The test centre will have access to world-class, rare radio frequency measurement equipment. It will be possible to carry out all measurements and testing related to the development of 6G technology in one place. The radio measurement equipment will include a large RF echo chamber and RFIC sensor stations, which are essential for successful radio testing. The test centre will have a highly capable test network with the latest commercial network technologies, software radio-based environments, simulation and emulation systems. The test centre will also provide a platform for distributed AI solutions, both for managing the 6G network and for controlling devices and implementing applications for users. Research into 6G antennae, radios and radio-frequency integrated circuits (RFICs) is currently successful up to 330 GHz.

The test centre's facilities will enable not only the development of future technologies, but also the testing and development of technologies for various applications and commercial operators. In this way, domestic defence industry and NATO's technological development can be accelerated.

- b. **The Test Centre for Cyber-secure Communication and Quantum and Space Technologies** will provide advanced facilities, services and processes for research and testing by companies, focusing on this theme. The centre will focus on the dual use of these technologies.

It will consist of several different research facilities located at VTT's premises at Otaniemi, Espoo. In addition to communication technologies, the facilities will include quantum computers, cybersecurity development environments, and laboratory and cleanroom facilities for space technology development and testing.

The centre will be able to implement and test space-based electronics, develop satellite sensors, antennae for space missions, ground station solutions and the integration of space-based connectivity.

The test centre will provide access to leading ecosystems in security and telecommunications, space and quantum technologies, as well as cutting-edge theoretical and applied research. It will support the development of dual-use technologies for defence, security and civilian use, and enable technology assessment and training in disruptive technologies, enhancing NATO's capabilities.

Who will make the decisions on the companies selected for the accelerator?

- c. DIANA will decide which companies are selected for the accelerator. Companies applying for the accelerator programme can express a wish to be part of a specific accelerator at the application stage.

When will the test centres and accelerator start operating?

In Finland, the DIANA network will be fully operational by the beginning of 2025 at the latest.

What is the difference between a DIANA accelerator and test centre compared to a NATO Centre of Excellence?

Centres of Excellence (CoEs) are international military organisations that train senior NATO personnel and experts. The Centres of Excellence support, among other things, the development of NATO doctrines, the strengthening of the interoperability of member states and the testing and validation of different concepts. The Centres of Excellence operate under the NATO Allied Command Transformation (ACT) but are not part of the NATO command structure.

How can I get involved in DIANA operations?

Defence-oriented companies can participate in the 2024 DIANA challenge programme to qualify for the free accelerator programme starting in 2025. Companies can directly contact test centres that charge a fee in order to test dual-use solutions.

You can also contribute to the organisation of DIANA activities by arranging facilities, training, mentoring, funding, etc. by contacting VTT. There is no separate funding for this activity.

Nato DIANA accelerator and test centres in Finland

The Ministry of Defense – the national authority responsible for the project

VTT – coordinator of the implementation

NATO's DIANA accelerator

Theme: Next-generation communication systems and quantum technologies

Location: Helsinki metropolitan area

Leader: VTT LaunchPad startup incubator

Partners: Aalto University, the University of Helsinki and other partners

NATO's DIANA test centre

Theme: 6G

Location: Oulu

Leaders: The University of Oulu and VTT

Research environments: 5G test networks (2025=> also 6G test networks), sensor network environments, simulation environments, edge computing environments, interference-free test facilities.

NATO's DIANA test centre

Theme: Secure Connectivity, Space and Quantum

Location: Espoo, Otaniemi

Leader: VTT

Research environments : test environments for communication technologies, quantum computers, cybersecurity development environments, and laboratory and cleanroom facilities for space technology development and testing.

Providers of funding and business partners

Photo: NATO's DIANA innovation accelerator and test centres in Finland