Mission-critical cybersecurity for defence

CYBERNETICA

Cybernetica

Cybernetica is an R&D extensive, mission-critical system development company with over 25 years of expertise.
Our technologies are deployed in more than 40 countries worldwide.

Our expertise in the military domain builds on our capabilities to develop resilient information systems and our expertise in advanced cryptography.
Projects in collaboration with global industry leaders encompass cybersecurity, maritime situational awareness and border surveillance solutions for military units and equipment in their ever-changing dynamic environments.

"We are extremely proud of our decades-long journey. We are certain that with our values, our people, and our capabilities, we will continue to be the driving force in emerging technologies."

– Oliver Väärtnõu, CEO

Essential facts

Established
in 1997

Roots in academia
since 1960

11% of employees
have a PhD

Architects of e-Estonia, incl.
i-voting
X-Road
SplitKey

Technologies exported to 30+ countries, incl.
USA
Japan
UAE
Ukraine

Global partners
NATO
European Commission
DARPA
EDF
USAFRL
ESA

Interoperability is key

The key to sucess does not consist just of advanced platforms and equipment, but also of the ability to connect, shar and act as one unified force across ships, drones, command centres and allied nations. **This is where interoperability becomes the foundation of operational dominance.**

Cybernetica's mission-critical cybersecurity solutions are built on a deep understanding that real situational awareness cannot exist without seamless information exchange across systems, domains and borders. Our technologies enable secure, trusted and real-time interoperability across dynamic environments, ensuring that every node in the network can see, understand and respond to threats in unison.

With decades-long experience in the defence domain, Cybernetica's cybersecurity offering includes the following:

+ Cyber situational awareness
+ Entity behaviour analysis
+ Applied R&D

Cybersecurity for a connected battlespace

You know which armor is best for your military equipment on the physical battlefield, but can you be equally sure that it's sufficiently protected in the cyberspace?

Cyber situational awareness

A large part of ensuring cyber situational awareness comes from understanding the system, the information it consumes and how the chosen information protecting measure`s function.

We help to systematically identify and assess the elements such as:

+ system mission and processes,
+ assets,
+ threats,
+ vulnerabilities and risks.

Entity behaviour analytics

We train, test and assess the experts, implemented systems and protective measures to create the ability to predict or anticipate the future states or events of the situation.

Cybernetica's entity behaviour analysis is an AI-powered intelligence layer that continuously evaluates the trustworthiness of every user, device, and connection in real time.
In addition to detecting anomalies, it explains why a device or user is risky, based on behavior, context, and operational feedback.

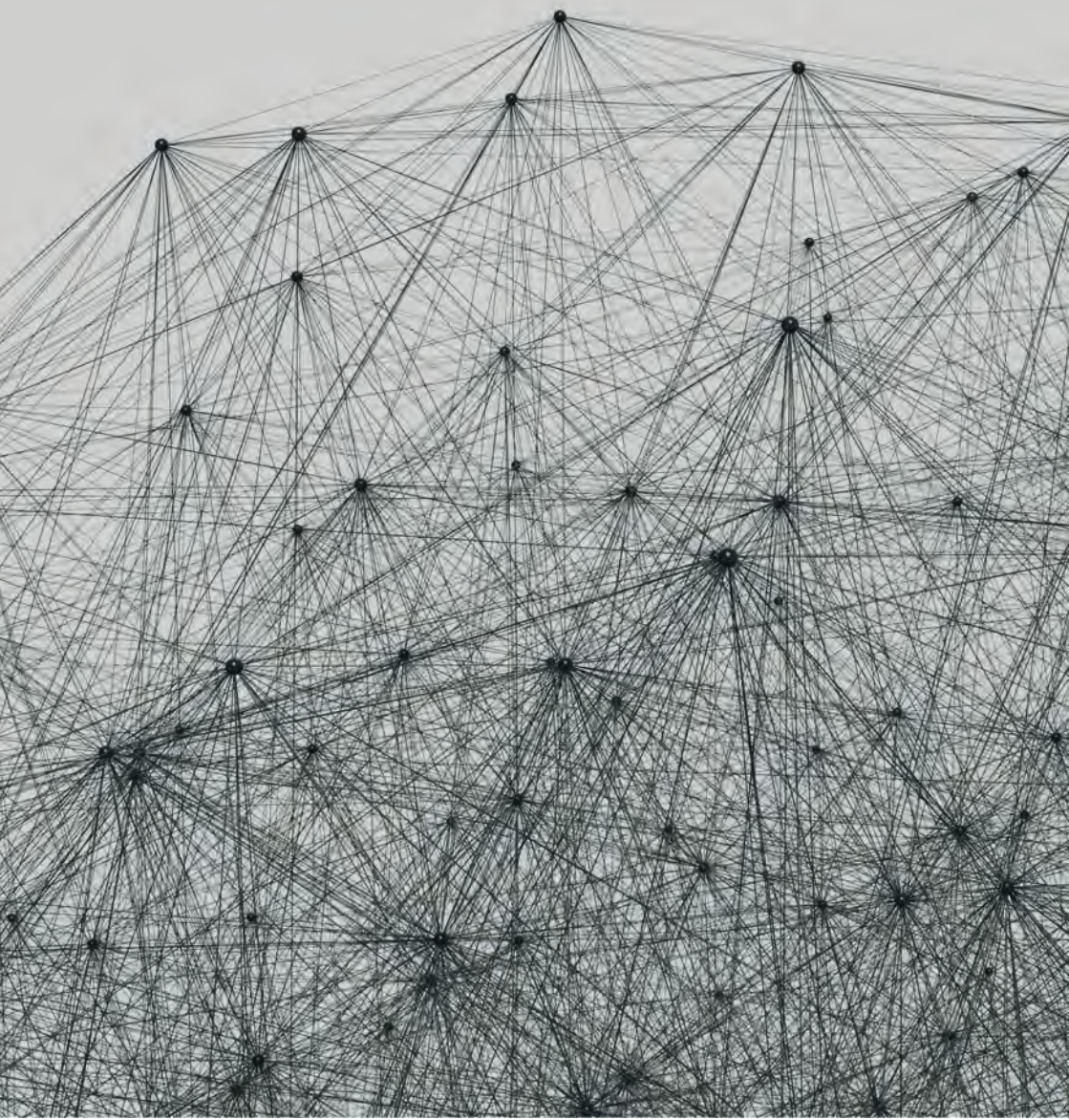
Research-driven cybersecurity services

We have developed a full suite of services to address cybersecurity 360°. Our team of seasoned experts advise and consult, as well as conduct sophisticated technical tests and analyses of your systems.

Security testing services
+ Penetration testing (Pentesting) & redteaming: Our expert red teams conduct thorough, manual assessments from an attacker's perspective, targeting critical systems, applications, and networks. We deliver prioritised, actionable remediation plans to close high-risk gaps.
+ Source code and architecture review: We analyse code for hidden flaws, logic errors, and insecure design patterns, ensuring security is built in from day one. We assess your system architecture against real-world threats, aligning it with international and local standards.

Assessment services
+ Asset discovery & risk profiling: Map all digital assets (systems, devices, processes) and assess their criticality and exposure.
+ Cyber situational awareness (CSA) Readiness Assessment: Evaluate your current ability to detect, correlate, and respond to cyber events in alignment with mission objectives.
+ CSOC maturity assessment: Review your Cyber Security Operations Center's structure, processes, tools, and response capabilities, identifying gaps and recommending improvements.

Advisory
+ CISO support & security architecture design: Guidance on secure-by-design principles, access control, authentication, and trusted system integration.
+ Compliance & standards advisory: Expertise in ISO 27001, NIST, IEC 62443, and defense-specific frameworks, ensuring alignment with various requirements.
+ Training & capacity building: Equip your teams with the skills to manage cyber risks, conduct incident response, and maintain operational security.



Our experience

Cyber situational awareness
Minerva / European Space Agency

In an era where cyber warfare threatens mission-critical operations, Minerva delivers autonomous network defence capabilities that adapt to evolving threats in real-time. This system employs unsupervised machine learning to provide instant situational awareness across complex military networks, detecting adversarial activities that traditional security tools miss.

Tactical advantages:

+ Autonomous identification of advanced persistent threats and insider attacks without human intervention
+ Real-time mapping of network vulnerabilities and attack vectors across operational environments
+ Optimised for forward operating bases and expeditionary networks with limited IT personnel
+ Seamless monitoring across classified, unclassified, and IoT device networks in mixed operational environments

Interoperable solutions across the full spectrum of armoured platforms
FAMOUS / European Defence Fund

Project FAMOUS redefines armoured warfare through mobility, lethality, and survivability enhancements. This comprehensive modernisation programme delivers interoperable solutions across the full spectrum of armoured platforms, ensuring European forces maintain battlefield supremacy against near-peer adversaries.

Combat multipliers:

+ Advanced ATV platforms for reconnaissance and rapid deployment operations
+ LAV systems optimised for urban warfare and expeditionary missions
+ Cutting-edge upgrades extending main battle tank operational relevance through 2050
+ Standardised systems enabling seamless multinational operations

Cybersecurity for hypersonic weapon interceptor technology
HYDIS / European Defence Fund

As adversaries deploy hypersonic weapons that can strike anywhere within minutes, HYDIS develops the interceptor technologies essential for homeland and theater defence. This initiative creates an integrated defence network capable of defeating the most advanced hypersonic threats.

Strategic defence capabilities:

+ Advanced interceptor concepts designed to defeat Mach 5+ weapons systems
+ Integration with TWISTER early warning systems for global threat detection
+ Coordinated development across France, Germany, Italy, and the Netherlands
+ Building European capacity for next-generation missile defense systems

Cybernetica's mission: Securing the digital backbone of hypersonic defense through advanced cybersecurity architecture and validation protocols, ensuring system integrity against sophisticated cyber attacks.

Cyber situational awareness for enhanced decision-making
ECYSAP EYE / European Defence Fund

Modern warfare extends across all domains, with cyberspace operations determining mission success or failure. ECYSAP EYE provides military commanders with unprecedented visibility into cyber threats and opportunities, enabling proactive cyber operations that support kinetic missions.

Operational capabilities:

+ Comprehensive understanding of cyber impacts on land, sea, air, and space operations
+ Real-time correlation between cyber events and operational objectives
+ AI-powered analysis enabling rapid commander decision-making under fire
+ Understanding and countering adversary information warfare campaigns

ECYSAP EYE transforms cyber domain awareness from tactical support to strategic weapon system, providing the intelligence edge required for victory in multi-domain operations.

Collaborative threat-sharing system
VORMSI / United States Air Force Research Laboratory

This project aimed to develop a bilateral threat-sharing system between Estonia and the United States to enable real-time cybersecurity information exchange between national defense agencies. It addressed key barriers to international cyber defense cooperation: lack of standardised processes, complex security requirements and varying trust levels between nations.
We researched standards, processes, methods and rules for the exchange and processing of cybersecurity information between nations. Enabling information exchange and processing on various levels (from threats to ongoing attacks) between multiple nations with different relationships of trust and enabling different rules of information exchange dependent on the current cyber situation.

Confidential and sensitive data sharing
PROVENANCE / DARPA

Cybernetica was granted funding by DARPA (Defense Advanced Research Projects Agency, United States of America) under PROVENANCE project to bring value to communication between the public and private sector by creating techniques for constructing meaningful zero-knowledge proofs.

The goal was to improve government interactions with citizens, companies, and other governments by enabling them to confidentially handle sensitive data. The first key objective of PROVENANCE was to build proof structures that capture real-world settings, without unreasonable simplifications. This meaned developing new data encoding techniques and proof structures that make the verification of proof meaningful in the real world. A further goal was to select a proof system where the deployment fits the number of stakeholders and their trust. Once the proof structure and system are known, a tool was needed to translate the statement into the underlying cryptographic constructions.

From this project, our zero-knowledge proof technology was born.

Contact us for more information:

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