



BALTIC INSTITUTE OF
ADVANCED TECHNOLOGY

We create value
by providing

**R&D SERVICES
FOR GLOBAL
SECURITY**



The Baltic Institute of Advanced Technology (BPTI) is a private, high tech-oriented research institute. We are driven by our mission to create value by providing R&D services for global security. Our core competencies in research and innovation lie in artificial intelligence/machine learning method development and applications, cybersecurity solutions, and IC component design for radar and communication systems.

Core focus on:

- Defence & security-related R&D

Areas of expertise:

- High-speed electronics
- Computer vision
- Signal processing
- Cybersecurity

SIGNAL PROCESSING & APPLIED MATHEMATICS



Development of mathematical methods for extracting information from signals and data

- UAV classification using μ -Doppler features in radar data
- Theory and numerical methods for phase retrieval
- Custom-made methods for statistical, inference, machine learning, and mathematical optimization problems
- Simulation of radar response based on objects physical properties
- Spectral analysis, signal decomposition, and compressed sensing

HIGH-SPEED ELECTRONICS



RF and mm-Wave TX / RX components supply and RF design services

- Supply of all-European RF components:
 - HPAs, LNAs, filters, SP2T / SP3T switches, power limiters, frequency mixers, etc.
 - With typical freq. coverage: 2-6 GHz, 6-18 GHz and 18-40 GHz
 - Power levels up to 46 dBm
 - Designed closely following EW, Radar and Comms application requirements
 - Without end-user restrictions
- RF design services incl. passive / active component design with state-of-the-art European III-V, SiGe, and CMOS technologies and package modelling
- RF measurement / verification services

COMPUTER VISION



Applied machine learning R&D for defence and security with a focus on computer vision

- Object detection, localization and tracking in electrooptic data (e.g., UAVs, Vessels, etc.)
- Visual situational awareness
- Mobile and stationary applications
- Real-time automated monitoring
- Integration into existing C2 systems
- Map generation from UAV flight video, with threats localisation

CYBERSECURITY



Advanced cybersecurity solutions for operational technology (OT) and industrial control systems (ICS)

- End-to-end cyber project management services, from strategic planning to risk assessment
- Drone pentesting AI co-pilot

- OT Sensor for continuous ICS/OT network security monitoring
- Machine learning-driven network threat detection
- Tailored cybersecurity tool development to address unique challenges and requirements
- Open-source cybersecurity tool modification and adoption for specific business needs
- Automation of cybersecurity infrastructure deployment

MODELLING AND SIMULATION



Modelling and simulation of OT sensors for defence, including drone and anti-tank protection, with 3D Lithuanian terrain integration for training

- OT sensors
- Protection against drones
- Protection against anti-tank mines
- Applying Lithuanian terrain into 3D format in M&S for training

PROJECTS

BPTI actively participates in European defence and security-related projects and initiatives.

EDF	EDIDP	HORIZON	PADR
25 projects	4 projects	8 projects	3 projects

Some of our projects:



European Multifunction System Concept applied to Communications, Electronic Warfare and Radar (SCEPTER)

www.scepter-edf.eu



Future European Self Protection System for Fixed Wing and Rotary Wing airborne platforms (CARMENTA PF)

www.carmenta-edidp.eu



Advanced European RF Components for Wideband Array-Type Radar, Electronic Warfare and Communication Systems (ARRAYS)

www.arrays-edf.eu



Responsive Electronic Attack for Cooperation Tasks II (REACT II)



European framework and proofs-of-concept for the intelliGent aUtomAtion of cyber Defence Incident mAnagement (EU-GUARDIAN)

www.eu-guardian.eu



Secure Digital Military Mobility System (SDMMS)



Main ARMoured Tank of Europe (MARTE)



European Extended Mine Countermeasures (E=MCM)



Funded by
the European Union

Contact Us



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INVENTIVE

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