CONNEXUS | 2026
black sea tech forum

Shaping the Future of Maritime Technologies through Innovative Education

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ICT CLUSTER VARNA

BSMEPA
BULGARIAN SMALL AND MEDIUM ENTERPRISES PROMOTION AGENCY

ВАРНА

BRAIN++
AI FACTORY

ARC FUND

Autonomy, AI and space-based sensing are reshaping shipping, port operations and maritime security.

The Black Sea is a strategic and contested environment that needs persistent awareness.

The gap is not the technology but the people who can operate, integrate and create it.

The Challenge: Maritime Is Becoming a Data-and-Autonomy Domain

CONNEXUS

One Ecosystem, Four Pillars

01

Education

BSc AI & Smart Technologies
MSc Artificial Intelligence
MSc Space Engineering & Technology

→

02

Faculty Capability

AI-enabled teaching methods
Learning by understanding and doing
Know-how scaled to all programmes

→

03

Research Infrastructure

Maritime monitoring systems
New research vessel
Own USV & UAV prototypes

→

04

Industry Partnership

Startups
Space & unmanned systems leaders
Joint projects and internships

SHARED CORE

Maritime Technology Research & Simulation Analysis Centre

Simulation · Testing · Data

The synergy between the pillars is the innovation.

New Programmes for New Technologies

BSc AI & Smart Technologies	MSc Artificial Intelligence	MSc Space Engineering & Technology
ML, computer vision, NLP, smart devices, software engineering	1 year, part-time; deep learning, LLMs, XAI, AI ethics & regulation	1 year, full-time, 75 ECTS; spacecraft, orbital mechanics, satcom, sensor payloads

Sea – Air – Space – AI: one pipeline

Practice-based learning scales across the academy

LEARNING ENGINE

1. **Projects on real maritime data**
   Cases turn theory into operational judgement
2. **AI as a learning tool**
   Tutoring, coding, analysis and scenarios
3. **AI literacy and explainable AI**
   Confident, responsible use across disciplines
4. **Simulators bridge to operations**
   Safe practice before real-world deployment

ENABLES

SCALE PATHWAY

01 Faculty first
Build confidence and reusable teaching practice

02 Across specialties
Transfer to navigation, engineering and every programme

03 Institutional practice
Shared tools and the distance-learning platform

UNDERSTAND → PRACTISE → TRANSFER → STANDARDISE

Result: a repeatable academy-wide model that connects teaching, simulation and maritime operations.

The Centre validates technologies before operational deployment

MISSION **Test, simulate and validate before deployment**

- **D** — **Digital twins**
  Model vessels, sensors and operating environments
- **D** — **Data fusion**
  Combine monitoring, vessel and mission data
- **U** — **Unmanned systems testing**
  Assess upgraded and in-house platforms
- **S** — **Sea–air–space integration**
  Validate cross-domain coordination

MARITIME TECHNOLOGY RESEARCH & SIMULATION ANALYSIS CENTRE

1. MODEL
2. SIMULATE
3. VALIDATE

VALIDATED OUT

- **M** — **Monitoring systems**
- **R** — **Research vessel**
- **D** — **Data pipeline**
- **U** — **Unmanned systems**

NEXT → RESEARCH-DRIVEN INNOVATION

The validated outputs become the connected operational capabilities shown next.

Research-Driven Innovation

M **Maritime monitoring systems**

Integrated coastal and offshore observation

R **New research vessel**

Mobile platform for multidisciplinary missions

CONNECTED SYSTEMS HUB

D **Data acquisition, transmission & processing**

Upgraded end-to-end data pipeline

U **NVNA unmanned surface & aerial systems**

Upgraded platforms + in-house designs for autonomous missions

OBSERVE → COLLECT → TRANSMIT → PROCESS → ACT

Shared infrastructure connects field assets, vessel operations, data systems and autonomous platforms.

From Partnership to Pipeline

Startups: joint prototypes, testing on NVNA platforms, internships.

Industry leaders in space and unmanned systems: EnduroSat.

Formats: co-supervised theses, industry lecturers, test-and-evaluation services, joint EU/NATO proposals.

„Never be afraid to ask questions, because if you never ask, the answer is always no.“

Sheena Yap Chan