



FEAC
ENGINEERING | REALIZE YOUR DIGITAL TWIN

Solution
Partner
Digital Industries
Software

SIEMENS

Technology
Partner
Digital Industries
Software

SIEMENS

PITHIA



Data from Digital twins & advanced simulations (corrosion, EM, acoustics, etc.)



Data from Sonars & Sensors



Integrating various data sources - Unified System



Real-time results based on simulations and data

Continuous monitoring & predictive maintenance



Operational Intelligence & operational readiness



Situational Awareness



Resilience of EU assets



EDA Innovation Prize 2024

- **FEAC is the proud winner in the category:**
"Innovative concepts, technologies, and solutions for critical maritime infrastructure protection."
- **FEAC's winning concept:**
"An advanced Digital Twin technology to enhance the protection of critical maritime infrastructure."

Introduction

The European Defence Agency organises the Defence Innovation Prize, which rewards companies and research entities that come up with technologies, products, processes or services applicable to the defence domain. The contest promotes defence innovation in Europe.

The EDA Defence Innovation Prize aims to stimulate defence technological innovation in Europe, so as to develop and produce Europe's future defence capabilities. It is organised under the umbrella of the Hub for EU Defence Innovation (HEDI), a platform for innovation lead by EDA and established by the EU's Strategic Compass for Defence and Security.

FEAC's winning concept

FEAC submitted to EDA a concept under Topic 1: *Innovative concepts, technologies, and solutions for critical maritime infrastructure protection, named "PITHIA".*

PITHIA centers on safeguarding critical maritime infrastructure by integrating simulation & sensor data and processing them in real-time to allow for continuous monitoring, predictive maintenance and operational intelligence.

The physics-based simulations, which are the backbone of *PITHIA*, rely mainly on FEAC's proprietary and awarded with the Seal of Excellence *PITHIA-CP* (for anti-corrosion studies), *PITHIA-EM* (for electromagnetic studies), *PITHIA-AC*

“**FEAC Engineering** is proud to be recognized as a winner of the prestigious EDA Innovation Prize 2024, for its groundbreaking proposal in critical maritime infrastructure protection. This accolade underscores FEAC's commitment to advancing Defence capabilities through simulation-driven innovation, AI and digital twin technologies.”

Sotiris Kokkinos, CEO, FEAC Engineering

(for acoustics studies) and/or any other simulation software available. The simulation results are constantly validated by sensor data (sonars/ microphones, fiber optics, radars, voltage taps, strain gauges, accelerometers, etc.).

Artificial Intelligence with Deep learning and Reduced Order Models, rely on the two data sources coming from simulation models and directly from sensors, enabling real-time simulation results and KPIs for operational intelligence.

All data and processes are integrated into a unified, scalable and modular system.

The goal is to enhance situational awareness, mitigate emerging threats and optimize operational

FEAC makes complexity possible through Digital Twins & Digitalization technologies. *We bridge the Digital with the Real world.*



resilience. Tailored for seamless integration into the EU's Defence framework, it embodies FEAC's mission to bridge the gap between the physical and digital worlds through cutting-edge technology.

“FEAC is already developing and testing parts of the proposed technology in EDF and Horizon Europe programs, but further work is needed, with the EDA Prize serving as a milestone to accelerate future developments.”

Charilaos Kokkinos, Technical Manager

A step forward in EU Defence

This recognition by EDA aligns with FEAC's mission to contribute to Europe's Defence technological and industrial base. The proposal's potential extends beyond immediate applications, paving the way for collaborative projects under the EDA's Hub for EU Defence Innovation (HEDI).

Commitment to Excellence

FEAC Engineering's participation in the EDA Defence Innovation Prize reinforces its role as a trusted partner in developing future Defence solutions. By focusing on innovation, collaboration and sustainability, FEAC remains dedicated to addressing the evolving challenges of critical infrastructure protection, ensuring robust and secure operations for Europe's Defence systems.

Next steps for “PITHIA”

The EDA Innovation Prize marks a significant milestone in PITHIA's business development journey. Future steps may include submitting an EDF 2025 SMERO proposal, pursuing an EDA CatB project, engaging in direct collaborations with national MODs, and forming partnerships to further develop and exploit the solution.

About FEAC

FEAC Engineering P.C. is an engineering & consulting company, highly specialized in Simulation Driven Product Development & physics-based Digital Twins. The company is based in Greece and operates in the global market by providing consulting services and developing specialized simulation software, to solve challenging & complex engineering problems. FEAC provides engineering solutions across diverse sectors, including Defence, Aerospace, Maritime and Renewable Energy. With a strong focus on innovation, FEAC partners with global leaders like Siemens DISW and European institutions to deliver transformative solutions tailored to future challenges.

Indicative participations in European Funded Projects

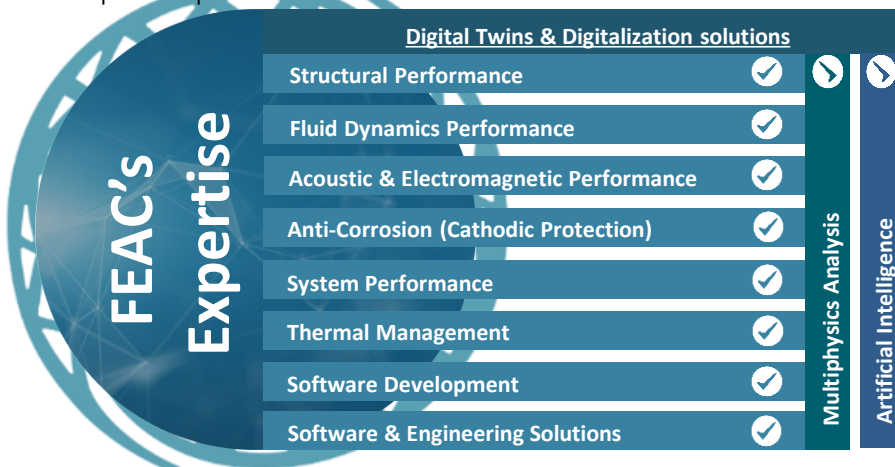
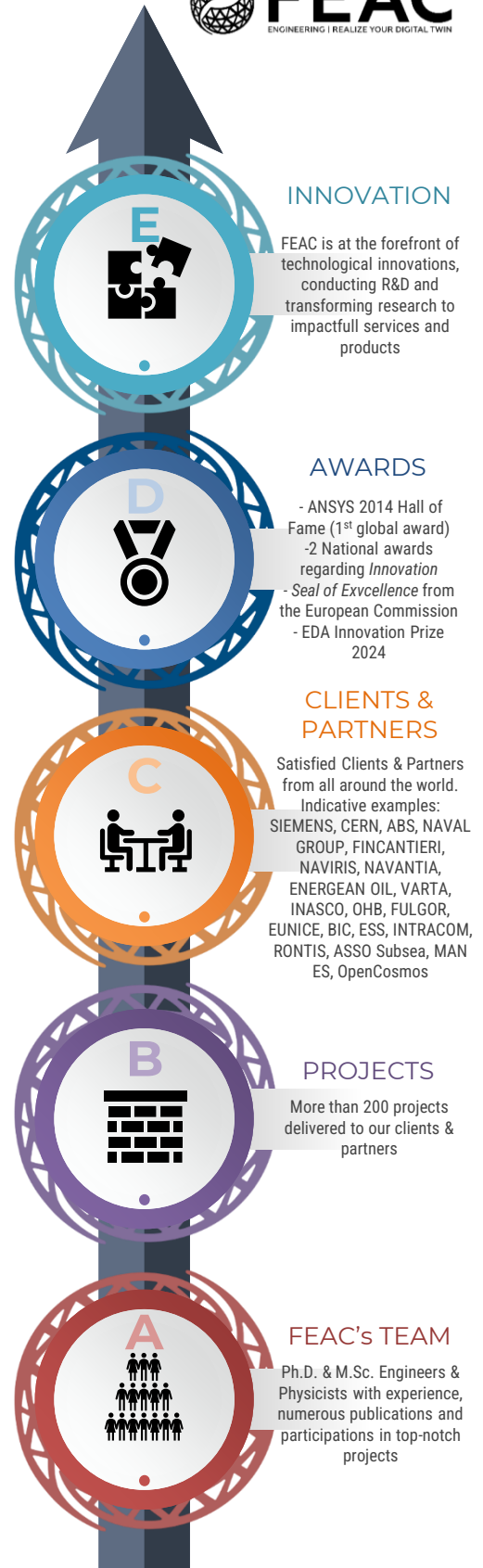
- “EDF” → Project: [EPC, SEACURE](#)
- “EDA” → Project: [IntelliSea](#)
- “Horizon Europe” → Project: [Thor](#)
- “Neptune” → Project: [PyVIV](#)
- “FF4EuroHPC” → Project: [Gemini](#)
- “AMable” → Project: [RAMFASAT](#)

Indicative participations in other European Projects

- “ESA” → Project: [JUICE](#)
- “ESA” → Project: [TRUTHS](#)
- “CERN” → Project: [SIGRUM](#)
- “CERN” → Project: [FCC](#)
- “EDK” → Project: [BioCoStent](#)
- “RIS3” → Project: [PITHIA-CP](#)

“We look forward to collaborating with EDA and other strategic partners on projects to advance PITHIA's capabilities and enhance EU safety.”

Konstantinos Lafkas, Business Development



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