



FEAC

ENGINEERING | REALIZE YOUR DIGITAL TWIN

Technology
Partner

Digital Industries
Software

SIEMENS

Solution
Partner

Digital Industries
Software

SIEMENS



COMPANY PROFILE



**ENGINEER
INNOVATION**



TABLE OF CONTENT

01 THINK BIG, GO BIG!	4
02 THE VALUE	5
03 EXPERTISE / TECHNOLOGIES	6
04 PRODUCTS	8
05 PITHIA	9
06 PROJECTS	10
07 AWARDS & ASSOCIATIONS	11
08 CONTACT	12

THINK BIG, GO BIG!

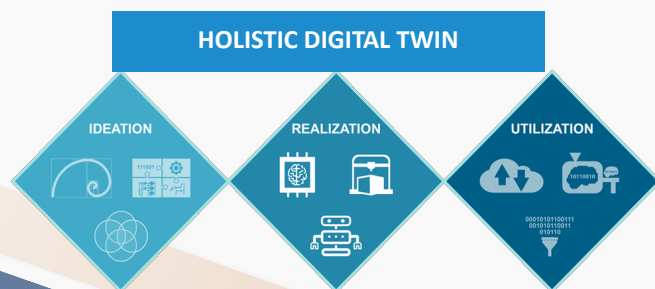
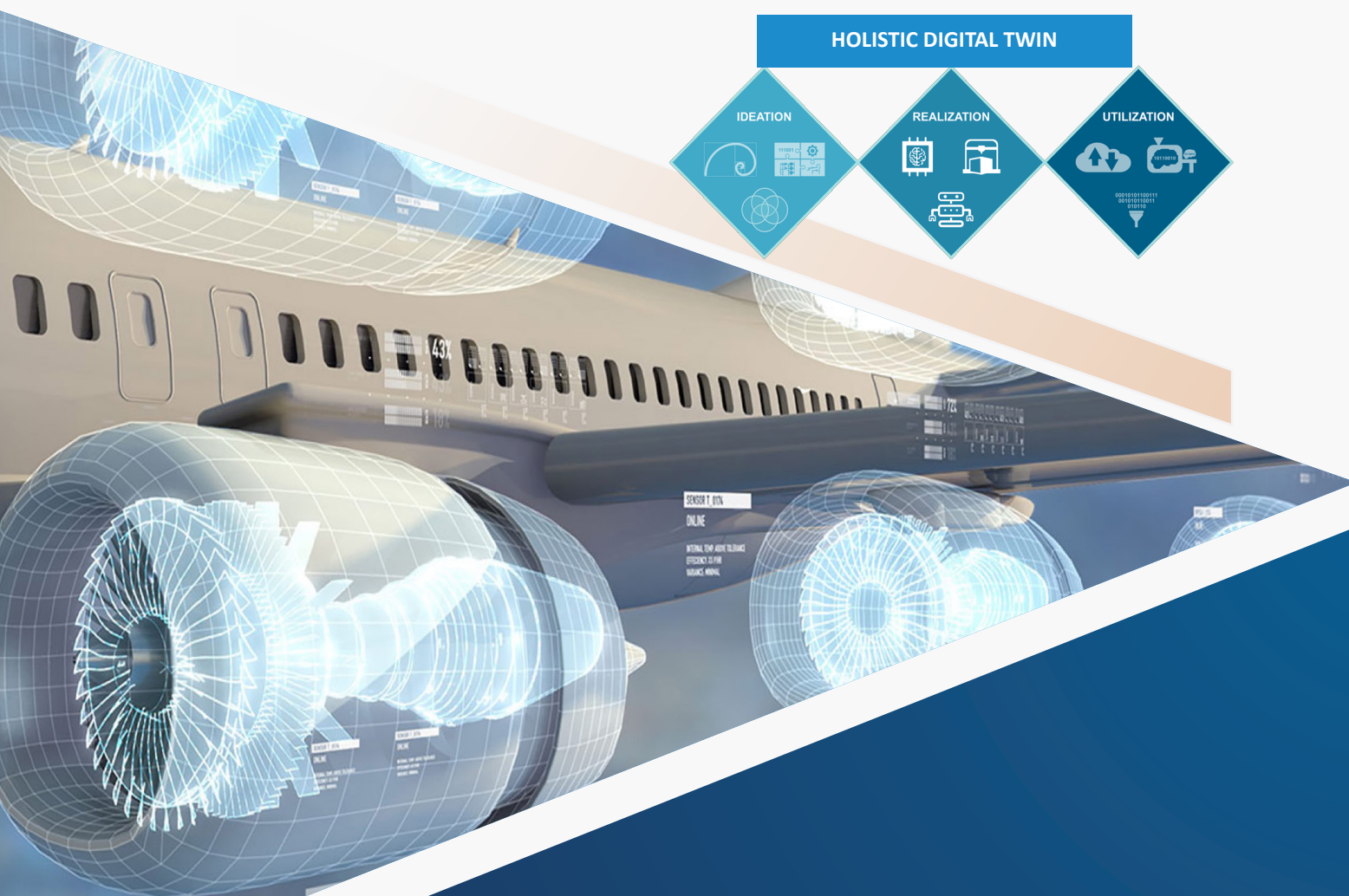
BECOME DIGITAL

THE PROBLEM

In today's business environment, consumers have become more demanding, product life cycles have become shorter and shorter, new product development competitors spring up seemingly overnight and the volatile economy creates new pressures to cut costs wherever possible. As a result, product designs have become much more complex – with added features, smaller sizing, novel materials, cost-saving production processes and other innovations.

OUR SOLUTION

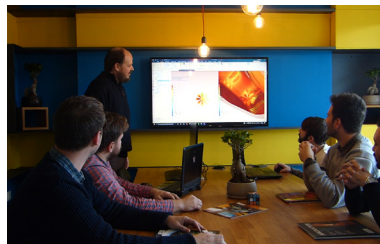
Because of its incredible power to replicate how products perform in the real world, engineering simulation has revolutionised the product development process. By minimising costly physical testing, accelerating time to market, and enabling game-changing design innovations in a low-risk virtual environment, simulation has helped businesses in every industry achieve significant competitive advantages. The various numerical techniques FEAC uses enable quick, efficient and cost-effective product development throughout the development process. It has become the ultimate tool for companies to fulfill customer promises, delivering optimized high-quality products that perform as expected in real-world applications.



THE VALUE

REALIZE YOUR DIGITAL TWIN

FEAC Engineering is a leading solutions provider in physics-based Simulation Driven Engineering. The company applies simulation & engineering expertise to solve challenging & complex problems and provides state of the art solutions throughout the product development cycle, from concept design & performance simulation to prototype testing.



ENGINEERING

FEAC commits to deliver multi-physics simulation services covering the entire product development process - from design concept to final-stage testing, validation and production.



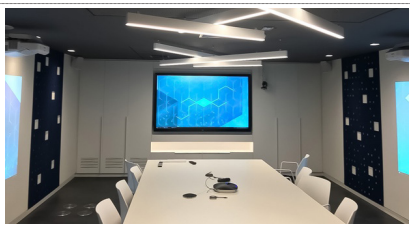
SOFTWARE DEVELOPMENT

FEAC develops PITHIA, a unique Boundary Element Method (BEM) based software integrated in SIEMENS Simcenter 3D.



SOFTWARE DISTRIBUTION

FEAC Engineering is official authorized distributor of Siemens DISW for the Computer Aided Engineering platform in Greece, Malta and Cyprus.



TRAINING CENTER

FEAC is certified SIEMENS training center providing technical training to students & engineers who want to enrich their knowledge toolbox and become decision-makers.



Model the complexity



Explore the possibilities



Go faster



Optimize

EXPERTISE

SIMULATION DRIVEN PRODUCT DEVELOPMENT

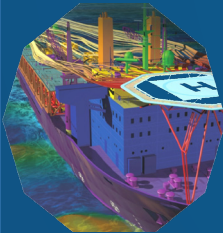
FEAC's Expertise	Engineering Performance			
	Structural Performance: Structural, Buckling, Vibrations, Fatigue	✓	✓	✓
	Computational Fluid Dynamics Performance: Fluid dynamics analysis	✓		
	Acoustic Performance: Underwater Noise Propagation	✓		
	Thermal Management: Thermal Analysis	✓		
	Electromagnetic Performance: Electromagnetic Analysis	✓	Multiphysics Analysis	Artificial Intelligence
	System Performance system: System architecture & Controls (PLCs) Definition	✓		
	Cathodic Protection: Anti-corrosion design of structures	✓		
	AI-assisted Real-time Digital Twins: Real-time Digital Twins by using AI-assisted Reduced Order Models	✓		

TECHNOLOGIES



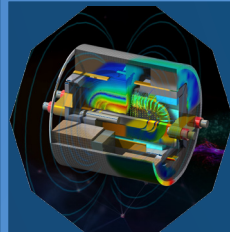
COMPUTER AIDED DESIGN (CAD)

- Parametric 2D/3D part
- Surface - Assembly Design
- Kinematic Analysis
- Manufacturing drawings
- Rendering



COMPUTATIONAL FLUID DYNAMICS (CFD)

- Heat transfer
- Turbulent/Laminar flows
- Fluid Structure Interaction (FSI)
- Multiphase flows



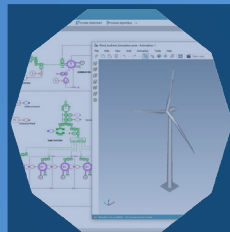
FINITE ELEMENT ANALYSIS (FEM)

- Structural, Buckling
- Modal & Vibrations
- Thermal
- Electromagnetic
- Explicit (Impact / Crash)



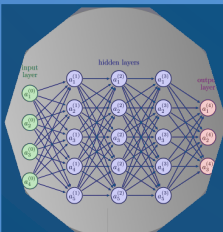
BOUNDARY ELEMENT METHOD (BEM)

- Sacrificial & Impressed CP
- Underwater acoustics
- Ground Vibrations
- Soil-Structure Interaction



SYSTEM SIMULATION (1D)

- Mechatronic systems
- System verification
- Pre-design
- Systems sizing and integration
- Performance balancing



AI-assisted DIGITAL TWINS

- Reduced Order Models
- Artificial Intelligence (AI)
- Neural Networks
- Real-time applications
- Health Monitoring

FEAC

INNOVATION

FEAC is at the forefront of technological innovations, conducting R&D and transforming research to impactful services and products

AWARDS

- ANSYS 2014 Hall of Fame (1st global award)
- 2 National awards regarding Innovation

Clients & Partners

Satisfied Clients & Partners from all around the world. Indicative examples: SIEMENS, CERN, ABS, NAVAL GROUP, FINCANTIERI, NAVIRIS, NAVANTIA, ENERGIAN OIL, VARTA, OHB, FULGOR, EUNICE, BIC, INTRACOM

PROJECTS

More than 150 projects delivered to our clients & partners

FEAC's Team

Ph.D. & M.Sc. Engineers & Physicists with experience, numerous publications and participations in top-notch

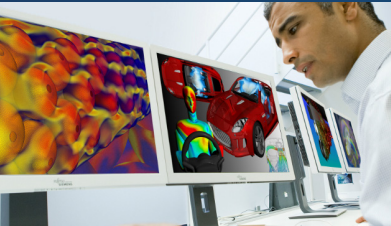
MILESTONES

Expert & Technology Partner of SIEMENS DISW
1st prize in ANSYS Hall of Fame Global competition
Participation in European Aerospace Mission
Participation in the design of CERNs FCC accelerator
Participation in Horizon & European Defense Projects
Global collaborations & trusted Partner

PRODUCTS

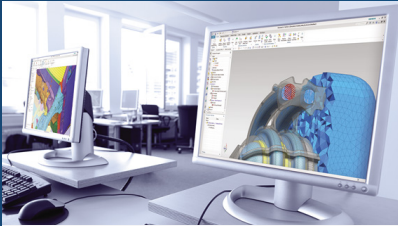
BEST-IN-CLASS COMMERCIAL SIMULATION TOOLS

SIEMENS DISW



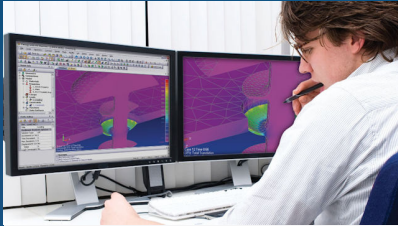
STAR-CCM+

Delivers accurate and efficient multi-disciplinary technologies in a single integrated user interface in the field of Computational Fluid Dynamics.



SIMCENTER 3D / FEMAP

Multi-discipline simulation platform including structural, acoustics, flow, thermal, motion, and composites analyses, as well as optimization and multiphysics simulation.



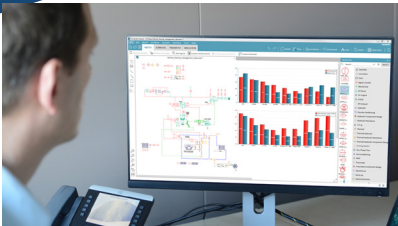
NX CAD

NX software provides a flexible, powerful and integrated solution to deliver better products faster and more efficiently. NX delivers the next generation of design, simulation and manufacturing solutions.



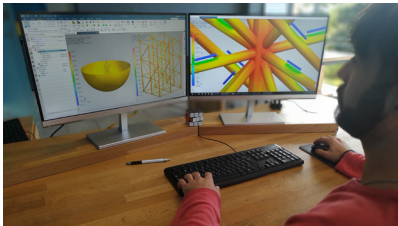
HEEDS

Modelling and simulation of various operating conditions. Design space exploration and determination of the most appropriate values to discover better designs.



AMESIM

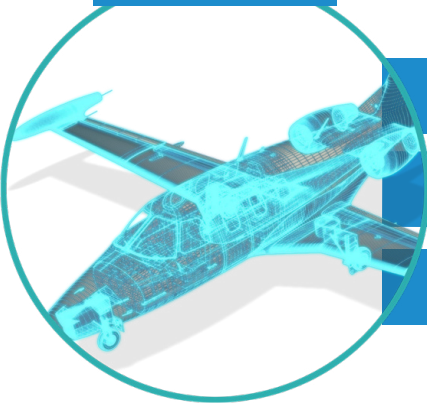
Amesim is the leading integrated scalable system simulation platform, allowing virtually assess and optimizing the performance of mechanotronic systems.



PITHIA-CP

PITHIA-CP is FEAC's powerful and unique solution for Cathodic Protection Computer Aided Engineering, integrated and available as an add-on module to the Siemens Simcenter 3D software.

DIGITAL PRODUCT



Realistic models
Predicting real-world product performance

Design exploration
Driving product innovation

Simulation and data management
Enabling collaboration and long-term knowledge

PITHIA

BEM SIMULATION SOFTWARE

“

FEAC's PITHIA-CP is a world leading Boundary Element solution for cathodic protection.

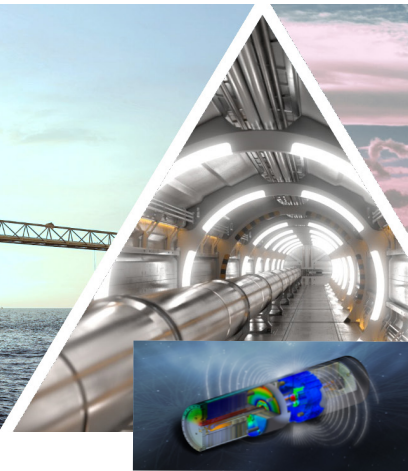
KOEN DE LANGHE
Director Product Management

PITHIA-CP



- Add-on module to SIEMENS SIMCENTER 3D
- Sacrificial & Impressed Anode CP
- Extensive Material Library
- Sacrificial anodes consumption
- Coatings deterioration over time
- Optimal anode location

PITHIA-EM



- Low -frequency EM
- FEM/BEM linear & non-linear
- Meshless Fragile Points Method
- Field Harmonics
- Lorentz Forces
- Vector & Scalar Potential

PITHIA-FSI

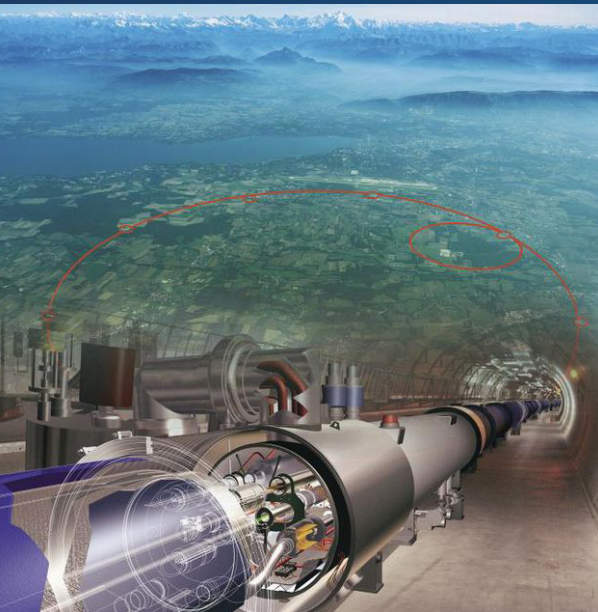


- Soil structure interaction analysis
- Ground vibrations & vibration isolation
- Elastic wave propagation
- Acoustic radiation & scattering solutions
- Underwater acoustic analysis
- Vibroacoustics predictions

PROJECTS

(INDICATIVE)

FEAC Engineering provides bespoke consulting services to several industries such as Aerospace, Marine, Oil & Gas, Bioengineering, Construction, Renewables, Accelerator Magnets and Defense.

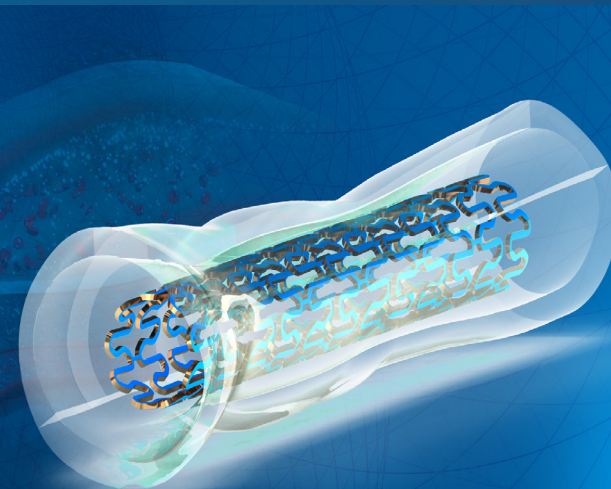


01. CERN / LHC

HIGH ENERGY PHYSICS

LHC is the most powerful particle accelerator in the world, aiming to allow physicist testing the predictions of different theories of particle physics.

FEAC was assigned with the objective to test the structural integrity of superconducting magnets, by taking into account structural, thermal & electro-magnetic phenomena. The multi-physics analysis confirmed the structural integrity of the magnets, reaching 98.5% accuracy compared to the physical test data.



03. CORONARY STENT

FEAC computed the developed stress fields during deployment and performed fatigue analysis to verify its behavior under cyclic loading.



04. EUROPEAN PATROL CORVETTE (EPC)

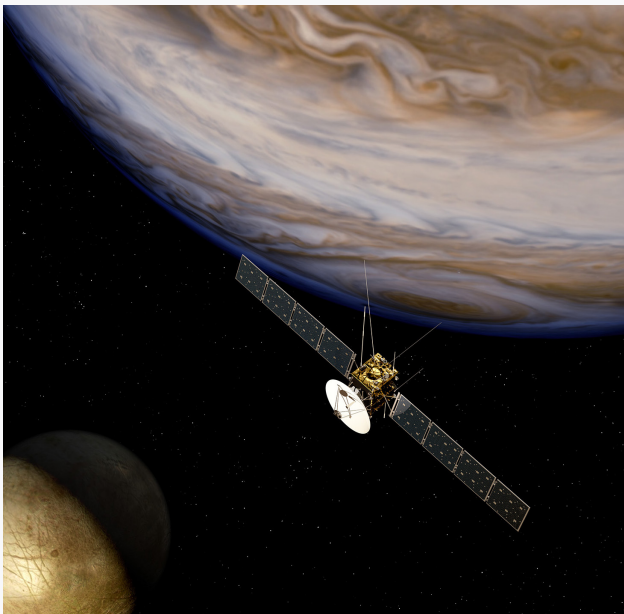
FEAC Engineering simulated the structural integrity and endurance of the subsea trencher. The Digital Twin resulted in an optimum design results and increased performance.

02. JUICE MISSION (ESA)

SPACE

The Jupiter Icy Moons Explorer (JUICE) is an interplanetary spacecraft in development by the European Space Agency (ESA) with Airbus Defence and Space as the main contractor.

FEAC contributed as Sub-contractor of INASCO Hellas, on the structural analysis of SEMS. The Spacecraft EM Structure (SEMS) acts as a 3D-representative structure, reproducing the geometry of the structure of the Proto-Flight Model (PFM) of the Spacecraft.



Aerospace



Marine



Oil & Gas



Bioengineering



Construction



Renewables



Accelerator Magnets



Defense



FEAC has been awarded with the 1st price in the prestigious 2014 ANSYS Hall of Fame Worldwide Simulation Competition for our expertise in multi-physics finite element analysis and especially in designing superconducting accelerator magnets. This award proves FEAC's high quality services and our top level of expertise ans serves as a guarantee for the accuracy of our simulation results.

FEAC is a proud & active member in the following clusters and associations:





FEAC

ENGINEERING | REALIZE YOUR DIGITAL TWIN

CONTACT

General Enquiries:
info@feacomp.com

Technical Support:
support@feacomp.com

Phone Representative:
+30 2613019794
+30 6947120602

ATHENS

BUSINESS
DEVELOPMENT &
MARKETING
Working hours :
9AM– 6PM
Monday to Friday

44, Kifissias Av.,
Monumental Plaza

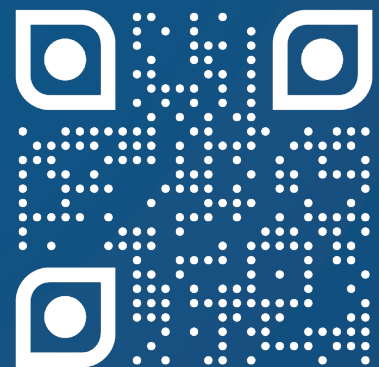
Building C, 15125
Maroussi

PATRAS

TECHNOLOGY &
ENGINEERING

Working hours :
9AM – 6PM
Monday to Friday

Afstralias 61,
26442 Patra GR



www.feacomp.com