

PARAGON S.A.

SME RTD Partner Profile

ETNA2020 Transport Networking and Brokerage Event

7 October 2019 | Brussels, Belgium



Who We Are

- PARAGON S.A. (ISO 9001 certified) is a Research & Technology Development SME (micro-SME) active in R&D and Commercial services, established 1995 in Athens, Greece.
- RTD activities range from in-house development projects, to solutions and applications development provision, and participation to RTD consortia as an SME Research partner. PARAGON has participated (to date) to 30 research initiatives from EC FP4 through to H2020 in Aeronautics (including Clean Sky), Transport, ICT, Factories of the Future, Energy & Environment, and Security.
- Commercial activities comprise of a range of services, that include scientific and measurement applications and support (experimental, industrial, occupational safety & health), specialized applications development, and commercial representation of major manufacturers of industrial & scientific instrumentation from the EU and USA to markets in Greece and S.E. Europe.
- PARAGON is active in dissemination & events organization, and is sponsor to the biennial international conferences IC-SCCE (www.scce.gr) and IC-EpsMsO (www.epsmsso.gr).

Areas of Expertise & Applications development



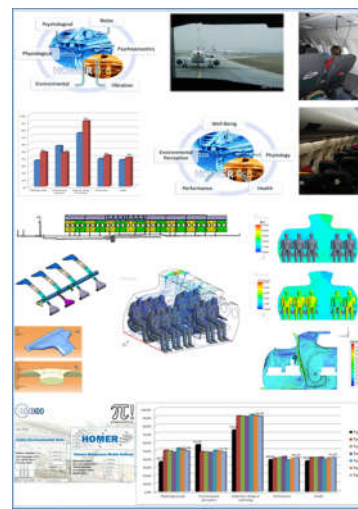
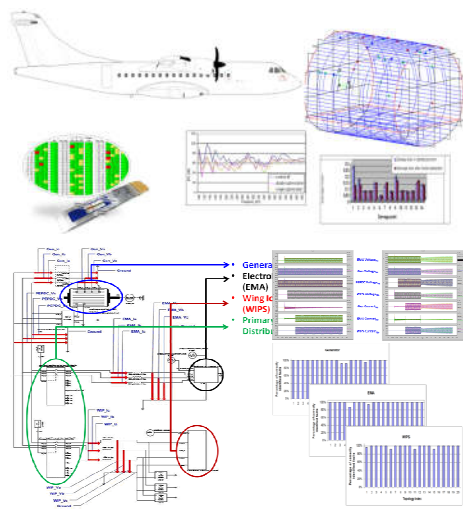
- Computational - Artificial Intelligence
- Evolutionary Algorithms – Multi-objective Optimization
- Acoustics (incl. beamforming) & Vibration -related applications (measurement - monitoring - analysis - condition - diagnostics - active control - optimization)
- A.I. -based Centralized / De-centralized on-line Condition Monitoring - Diagnostics – Etc. applications (acoustic/vibration, electrical, and electro-mechanical applications)
- Multi-parameter Human Fatigue & Well-being (subjective + objective) modeling - simulation - monitoring - control applications | Passengers / Crew
- 3D Sound Generation Systems | Simulators – Training
- Active Control Systems | Evolutionary Algorithms and/or A.I. (automated system building) –based:
 - Active Vibration Control (AVC)
 - Active Structural Acoustic Control (ASAC)
 - Active Noise Control (ANC)
 - Active Flow Control (AFC) | Active Aerodynamics
 - Structural Health Monitoring (SHM) | Active / Passive
 - Integrated -Simultaneously Optimized- Active Control/Monitoring networks | Combined SHM + AVC/ASAC
- Smart Surfaces - Structures - Systems applications

Areas of Expertise & Applications development



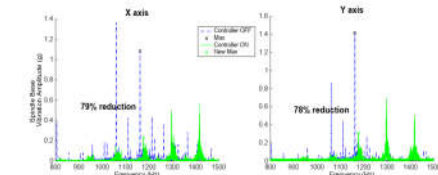
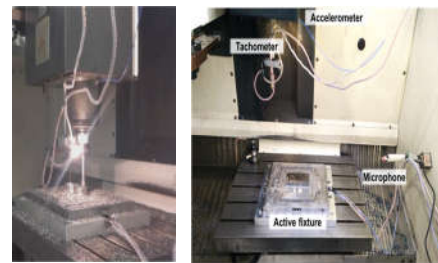
- Smart & Sustainable Manufacturing operations – Multi-objective Triple-Bottom-Line (Energy + Emissions + Social factors) Production Planning – Scheduling Optimization
- Product Development Process – Multi-objective Simulation Workflow Optimization (heterogeneous, distributed)
- Multi-objective Optimization for Smart & Rapid Process/Product development - configuration - optimization
- Sensor-Actuator networks - test-benches - testing technical know-how
- Multi-objective Optimization for Sensor - Actuator systems networks
- ICT for Radar - based applications - Harmonic and/or Conventional radar - (processing (raw sensor data) - monitoring - object detection - object tracking - object trajectory prediction).

Applications (EC Projects) - Examples

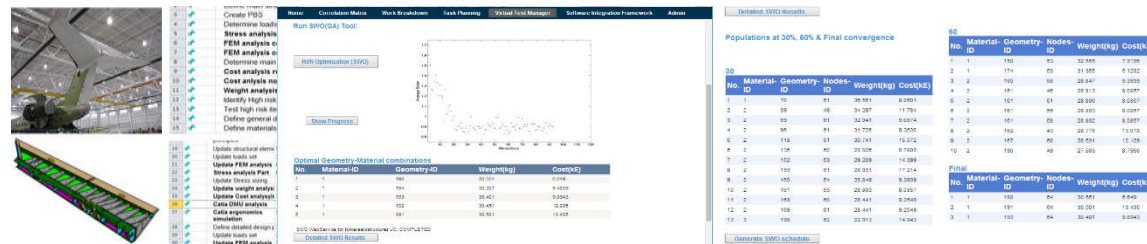


- 3D Sound Generation System - Simulators | ASCENT (H2020, Clean Sky 2).
- Multi-objective Aero-acoustic Arrays – Tests Configuration and Optimization | WENEMOR (FP7, Clean Sky 1).
- Active Control Systems - Active SHM, AVC, ASAC, Energy Harvesting, Combined SHM + AVC/ASAC, AFC | MESEMA (FP6), MOET (FP6), AVERT (FP6).
- Multi-parameter Passengers / Crew Fatigue & Well-being modeling - processing - simulation | CRESCENDO (FP7), HEACE (FP5).
- Centralized / De-centralized Fault detection - Diagnostics – Etc. (on-line/off-line, design phase) | ACTUATION 2015 (FP7), CRESCENDO (FP7), MOET (FP6), TATEM (FP6).

Applications (EC Projects) - Examples



- Multi-objective Triple-Bottom-Line Production Planning – Scheduling Optimization - Automotive engine component factory | FoFation (FP7, FoF).
- A.I. –enabled Active Vibration Control - Intelligent Active Fixture for chatter/vibration reduction in machining | INTEFIX (FP7, I4MS).
- Multi-objective Simulation Workflow Optimization - Aircraft structure Product Development Process | iProd (FP7, ICT).



Transport -2020 Topics of Interest for Participation



Global leadership and competitiveness

- MG-3-4-2020: Innovative electric network architectures and systems, optimising global energy, electrical power, data and communication for aviation.
- MG-3-5-2020: Next generation multifunctional and intelligent airframe and engine parts, with emphasis on manufacturing, maintenance and recycling.
- MG-3-6-2020: Towards sustainable urban air mobility.
- MG-3-7-2020: Improved Production and Maintenance Processes in Shipyards.

Low-carbon and sustainable transport

- LC-MG-1-13-2020: Decarbonising long distance shipping.
- LC-MG-1-14-2020: Understanding and mitigating the effects on public health of emerging non-regulated nanoparticle emissions issues and noise.
- LC-MG-1-15-2020: Towards global environmental regulation of supersonic aviation.

Blue Growth

- MG-BG-03-2020: Under water noise mitigation and environmental impact.

Transport -2020 Topics of Interest for Participation



Green Vehicles

- LC-GV-06-2020: Advanced light materials and their production processes for automotive applications.
- LC-GV-07-2020: Reducing the environmental impact of hybrid light duty vehicles.
- LC-GV-08-2020: Next generation electrified vehicles for urban and suburban use.

Next Generation Batteries

- LC-BAT-8-2020: Next-generation batteries for stationary energy storage.
- LC-BAT-9-2020: Hybridisation of battery systems for stationary energy storage.
- LC-BAT-10-2020: Next generation and realisation of battery packs for BEV and PHEV.
- LC-BAT-11-2020: Reducing the cost of large batteries for waterborne transport.

Automated Road Transport

- DT-ART-05-2020: Efficient and safe connected and automated heavy-duty vehicles in real logistics operations.
- DT-ART-06-2020: Large-scale, cross-border demonstration of connected and highly automated driving functions for passenger cars.

Transport -2020 Topics of Interest for Participation



Safe, integrated and resilient transport systems

- MG-2-10-2020: Enhancing coordination between Member States' actions in the area of infrastructure research with a particular focus on biodiversity and ameliorating environmental impacts and full automated infrastructure upgrade and maintenance.
- MG-2-11-2020: Network and traffic management for future mobility.
- MG-2-12-2020: Improving road safety by effectively monitoring working patterns and overall fitness of drivers.
- MG-2-13-2020: Coordination and support for an integrated freight transport and logistics system.

EC Research participations

| AERONAUTICS |

- ASCENT: Active Simulator Cockpit Enhancement (Clean Sky 2, Large Passenger Aircraft, Topic Manager - Airbus Defence & Space, ES).
- WENEMOR: Wind Tunnel Tests for the Evaluation of the Installation Effects of Noise Emissions of an Open Rotor Advanced Regional Aircraft (Clean Sky 1, Green Regional Aircraft, Topic Manager - Leonardo Aircraft).
- ACTUATION 2015: Modular Electro Mechanical Actuators for ACARE 2020 Aircraft and Helicopters (FP7, Goodrich Actuation Systems).
- CRESCENDO: Collaborative and Robust Engineering using Simulation Capability Enabling Next Design Optimisation (FP7, Airbus).
- MOET: More Open Electrical Technologies (FP6, Airbus).
- TATEM: Technologies and Techniques for New Maintenance Concepts (FP6, GE Aviation Systems).
- AVERT: Aerodynamic Validation of Emission Reducing Technologies | Active Flow Control technologies (FP6, Airbus).
- MESEMA: Magneto-Elastic Energy Systems for Even More Electric Aircraft | Active Vibration Control | Active Structural Acoustic Control | Structural Health Monitoring | Energy Harvesting (FP6).
- HEACE: Health Effects in Aircraft Cabin Environment | Multi-parameter Passengers / Crew Fatigue – Performance – Well-Being modeling - processing - simulation (FP5).
- CASH: Collaborative Working within the Aeronautical Supply Chain (FP5).

EC Research participations

| FACTORIES OF THE FUTURE |

- PRECOM: Predictive Cognitive Maintenance Decision Support System (H2020).
- FOFDATION: The Foundation for the Smart Factory of the Future (FP7, Airbus).
- INTEFIX: Intelligent Fixtures for the Manufacturing of Low Rigidity Components (FP7, I4MS).

| ICT / IST-NMP |

- IPROD: Integrated Management of Product Heterogeneous Data (FP7, ICT).
- SWOP: Semantic Web-based Open Engineering Platform (FP6, IST-NMP).

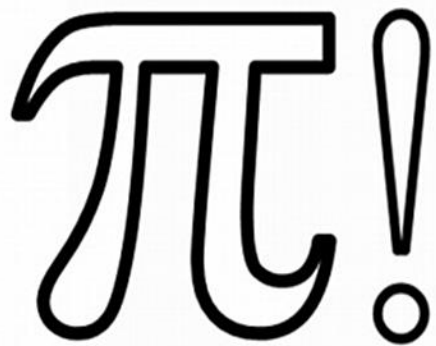
| SECURITY |

(Airports - Critical Infrastructure Protection, Civil Security Monitoring)

- MIPMaDe: Modelling of Infrastructure Protection - From Materials to Devices (DG Home, Isdefe).
- SENSE: Smart Embedded Network of Sensing Entities (FP6, IST).

| ICT for Intelligent Vehicles & Mobility Services |

- ADOSE: Reliable Application Specific Detection of Road Users with Vehicle On-board Sensors (FP7, ICT, Fiat-CRF).



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