

GREECE: SPACE CAPABILITIES



2014



The « Greece Space Capabilities » catalogue
is also available on the GSRT Website:
www.gsrt.gr
http://www.gsrt.gr/central.aspx?alias=38_ESA_gr
http://www.gsrt.gr/central.aspx?alias=39_ESA_en



Space is currently recognised as a sector of utmost importance at both the scientific and the economic level, contributing to the expansion of human knowledge, to development and job creation. The various

facets of space-related activities, from space science and exploration through development of space technologies to satellite-based services and applications, constitute an economic tool of high return-on-investment ratio, leading to increased competitiveness and growth, but they also offer essential elements for a variety of activities enhancing citizens' everyday life.

Greece has been active in the space sector for three decades and participates in International Organisations related to space as well as in the space programmes of the European Union. Greece began its cooperation with the European Space Agency, the European gate to space, in 1991, becoming a full member of the Organisation in 2005. During this period, Greek space stakeholders, consisting of the scientific community and industry, have participated in numerous programmes covering a wide spectrum of domains, ranging from space technologies to telecommunications and earth observation. Greece's participation in ESA is an important commitment at the political, scientific and economic level.

The General Secretariat for Research & Technology (GSRT) is the government agency responsible for strategy and policy making in the space sector, and for funding, coordinating and monitoring all activities related to Greece's

participation in ESA. One of GSRT's main roles is to encourage and support the participation of Greek companies and science/research institutions in space activities and, in this way, contribute to the country's economic recovery and the creation of a knowledge economy. Based on the accumulated experience and the lessons learnt, GSRT is currently preparing the National Strategy for Space, in order to steer and stimulate the participation of the stakeholders from the public and private sector.

An essential element towards achieving this goal is accurate and up-to-date knowledge of the existing national capabilities and skills in the space sector, which Greece should build upon and enhance, in order to achieve better integration of the Greek entities in the international space arena and, all in all, their successful involvement in the sector.

This catalogue presents an extensive overview of the current space community in Greece, concentrating on the existing entities and their competencies in space science, technology and applications, as well as on the opportunities for Greek involvement in the space sector. The catalogue constitutes a comprehensive guide for international stakeholders, enabling them to identify potential Greek partners in space activities, and an extrovert display of Greek capabilities and with a view towards increasing the country's participation in space activities.

Dr. Christos Vasilakos

Secretary General
for Research and Technology
Ministry of Education & Religious Affairs
General Secretariat for Research
and Technology



ACKNOWLEDGEMENTS

We wish to thank all the Greek companies, academia and research organisations that have accepted to be present in this catalogue, and helped us to carry out this extensive overview exercise. Your active participation is clear confirmation of the need for such a publication.

We do thank you also GSRT and ESA, who have provided us with invaluable support and technical assistance.

François Louisin & Paul Kamoun

Publication content design and information gathering process management

« GREECE: SPACE CAPABILITIES » CATALOGUE

03 FOREWORD

06 SUMMARY

08 PROFESSIONAL ASSOCIATIONS

- 10 Hellenic Association of Space Industries (H-ASI)
- 11 si-Cluster

12 COMPANIES

- 14 Adamant Composites
- 16 Advanced Microwave Systems (AMS)
- 18 Advent Technologies
- 20 AeroPhoto
- 22 Alma Technologies
- 24 Althom Engineering
- 26 Analogies
- 28 Aratos Technologies
- 30 Attisat
- 32 Creative Systems Engineering (CSE)
- 34 Datalabs

- 36 Dedalos
- 38 Draxis environmental
- 40 Ekby
- 42 Elfon
- 44 Emtech
- 46 Epsilon
- 48 Eulambia Advanced Technologies
- 50 European Sensor Systems (ESS)
- 52 Fasmetrics
- 54 Feac Engineering
- 56 Geapikonis
- 58 Geoset
- 60 Geosfaira
- 62 Geosystems hellas
- 64 Geotopos
- 66 Hellas Sat
- 68 Hellenic Aerospace Industry (HAI)
- 70 Hellenic Technology of Robotics (HTR)
- 72 Heron Engineering
- 74 iknowhow (IKH)
- 76 IMMG
- 78 Inaccess
- 80 Inasco
- 82 Infitheon technologies
- 84 Innora
- 86 Integrated Systems Development (ISD)
- 88 Interoperability Systems International (ISI)
- 90 Intracom Defense Electronics (IDE)

- 92 Irida Labs
- 94 Kinno Consultants
- 96 Logikon Labs
- 98 Miltech Hellas
- 100 Neuropublic
- 102 Noesis Technologies
- 104 Novocaptis
- 106 Optronics Technologies
- 108 Planetek Hellas
- 110 Prisma Electronics
- 112 Project 1221
- 114 Raymetrics
- 116 Sital Hellas
- 118 Softcom International
- 120 Space-Asics
- 122 Space Hellas
- 124 Teletel
- 126 Terra Spatium
- 128 Thales Hellas
- 130 VCI

132 ACADEMIA & RESEARCH INSTITUTES

- 134 Aerotron Research (ARES)
- 136 Applied Mechanics Laboratory (AML) / University of Patras
- 138 Applied Electronics Laboratory (APEL) / University of Patras
- 140 Dependability & Security Group spin-off / Aristotle University of Thessaloniki

- 142 Research Committee / Aristotle University of Thessaloniki
- 144 Democritus University of Thrace
- 146 DSCAL / National and Kapodistrian University of Athens
- 148 FORTH - Institute of Applied and Computational Mathematics (IACM) - EO Data
- 150 FORTH - Institute of Applied & Computational Math (IACM) Multiphysics
- 152 FORTH - Institute of Computer Science (ICS)
- 154 Department of Geography / Harokopio University of Athens
- 156 Institute of Accelerating Systems and Applications (IASA)
- 158 Microlab / National Technical University of Athens
- 160 MRCL / National Technical University of Athens
- 162 National Center for Scientific Research (NCSR) "Demokritos"
- 164 National Observatory of Athens (NOA) - IAASARS - BEYOND
- 166 R.C. « Athena » - Space Programmes Unit (SPU)
- 168 VLSI Laboratory / University of Patras

170 TABLES OF SPACE CAPABILITIES

- 170 Companies
- 174 Academia & Research Institutes

Hellenic Association of Space Industry p 10

si-Cluster p 11



BOARD OF H-ASI

Dr. Athanasios Potsis
Epicos, Senior Manager
H-ASI, President

H-ASI BoD Members

Dr. Christos Georgopoulos
Inaccess, CEO

Dr. Vangelis Kollias
Teletel, RTD Director

Dr. Emmanuel Zervakis
European Sensor Systems, General
Director

Dr. Vassilis Tsagaris
Irida Labs, CEO, Business
Development

Dr. Stelios Bollanos
Planetek Hellas, Director

Dr. Evangelos Veronikiatis
Terra Spatium, Air Force General
(RET), CEO & Chairman of the BoD

ADDRESS & WEB SITE

Stratigi 7,
15451 Neo Psychiko
www.hellenic-asi.org

CONTACTS

Dr. Athanasios Potsis
H-ASI, President

Sofia Kordikori
H-ASI Administration
Tel.: +30 210 677 1975
kordikori@epicos.com

INDUSTRIAL ASSOCIATION

The **Hellenic Association of Space Industry (H-ASI)** was founded on September 22nd 2008 following a joint endeavor on behalf of a significant part of the Hellenic Industry active in space technology and applications sector.

After a number of successive invitations to new members, the Association currently includes twenty five (25) active members while it is expected that before the end of 2014 the total number of the industrial and institutional members will be at least twenty eight (28). Currently all H-ASI members are Hellenic High Tech companies, employing over one thousand (1000) employees, of which the vast majority constitutes highly educated personnel in space technology and its applications. H-ASI members currently represent the biggest part of Greece's research and manufacturing person power in the space technology and applications sector.

Almost all H-ASI members have been participating successfully to ESA programs, either through the ESA-Greek Task Force Call for Ideas, or independently through ESA open ITT tenders and thus have been accumulating significant know-how and expertise with regards to developing and managing space-related programs, technologies and applications.

From 2003 up to date, H-ASI members have been successfully participated in over 40 space technology and applications programs, having a cumulative budget of over 20M€ and thus represent Greek Space Industry's spearhead. Additional experience and know how have been developed through the participation of the Greek Space Industry to different FP-7 space programs.

The Hellenic Association of Space Industry (H-ASI) Board

SPACE TECHNOLOGIES AND APPLICATIONS CLUSTER

Aiming to contribute towards the development of Greece as a leading region for space technologies and applications with a high international visibility, capable of developing and attracting high impact research, innovation and business activities, the **si-Cluster** brings together private and public actors in the field of space technologies and applications in Greece and provides an efficient framework around themes of common interest to reinforce the competitive advantage of its members.

The si-Cluster was established in 2008 and currently consists of 32 members, of which, 22 industrial members, 8 academic and research institutes, complemented with the industrial association H-ASI and the cluster facilitator Corallia. Corallia and H-ASI have been instrumental in the cluster initiation and development and are driving it towards achieving a World-Class Cluster status.

The si-Cluster is a bi-regional cluster with the majority of the si-Cluster members located in the Attica Region and the rest in Western Greece. The si-Cluster members are employing locally over 2000 professionals, of which 35% are holding a PhD or MSc degree.

The si-Cluster management office is located in the a2.innobox in Maroussi while a remote office is situated in the p1.innobox in Patras.

The si-Cluster is working towards the development of a research and innovation ecosystem in the local space industry to closely monitor related developments in technologies and applications in a global scale. We firmly believe that this dynamic ecosystem will pave the way for the development of advanced space-related products and services from the local industry.

The si-Cluster Steering Board The si-Cluster Manager



STEERING BOARD AND CLUSTER MANAGER

Jorge-A. Sanchez-P
Corallia, Chief Strategy
& Financial Officer

Dimitrios Soudris
NTUA, Ass. Professor

Sokratis Kostikoglou
Space Hellas, Director of IT,
Applications & R&D Division

Athanasios Potsis
H-ASI, Chairman of the Board

Vassilis Tsagaris
Irida Labs, CEO

Panagiotis Georgiadis,
Corallia, si-Cluster Manager

ADDRESS & WEB SITE

a2 innobox, Corallia,
Kifissias Ave. 44, 15125 Maroussi
www.si-cluster.gr

CONTACTS

Panagiotis Georgiadis
si-Cluster Manager

Panagiota Megagianni
si-Cluster Liaison
Tel.: +30 210 630 0770
Fax: +30 210 617 8682
info@si-cluster.gr

SPACE SEGMENT

Adamant Composites	14	Infitheon Technologies	82
Advanced Microwave Systems (AMS)	16	Innora	84
Advent Technologies	18	Integrated Systems Development (ISD)	86
Alma Technologies	22	Interoperability Systems International (ISI)	88
Althom Engineering	24	Intracom Defense Electronics (IDE)	90
Attisat	30	Irida Labs	92
Datalabs	34	Kinno Consultants	94
Dedalos	36	Logikon labs	96
Draxis Environmental	38	Miltech Hellas	98
ELFON	42	NeuroPublic	100
EMTech	44	Noesis Technologies	102
Eulambia Advanced Technologies	48	Novocaptis	104
European Sensor Systems (ESS)	50	Planetek Hellas	108
Fasmetrics	52	Prisma Electronics	110
FEAC Engineering	54	Project 1221	112
Hellas Sat	66	Sitael Hellas	116
Hellenic Aerospace Industry (HAI)	68	Softcom International	118
Hellenic Technology of Robotics (HTR)	70	Space-Asics	120
Heron Engineering	72	Teletel	124
iKnowHow (IKH)	74	Thales Hellas	128
IMMG	76	VCI	130
INASCO	80		

GROUND SEGMENT

Advanced Microwave Systems (AMS)	16
Analogies	26
Aratos Technologies	28
Attisat	30
Creative Systems Engineering (CSE)	32
Datalabs	34
EMTech	44
Eulambia Advanced Technologies	48
Fasmetrics	52
FEAC Engineering	54
Geosfaira	60
Hellas Sat	66
Hellenic Aerospace Industry (HAI)	68
Inaccess	78
Infitheon Technologies	82
Innora	84
Integrated Systems Development (ISD)	86
Interoperability Systems International (ISI)	88
Intracom Defense Electronics (IDE)	90
Kinno Consultants	94
NeuroPublic	100
Noesis Technologies	102
Planetek Hellas	108
Prisma Electronics	110
Raymetrics	114
Sitael Hellas	116
Softcom International	118
Space Hellas	122
Teletel	124
Terra Spatium	126
Thales Hellas	128
VCI	130

SPACE-BASED SERVICES

AeroPhoto	18
Draxis Environmental	38
EKBY	40
Epsilon	46
Geoapikonisis	56
Geoset	58
Geosfaira	60
Geosystems Hellas	62
Geotopos	64
Hellas Sat	66
Hellenic Aerospace Industry (HAI)	68
iKnowHow (IKH)	74
Inaccess	78
Infitheon Technologies	82
Innora	84
Interoperability Systems International (ISI)	88
Intracom Defense Electronics (IDE)	90
Irida Labs	92
Kinno Consultants	94
Optronics Technologies	106
Planetek Hellas	108
Prisma Electronics	110
Raymetrics	114
Space Hellas	122
Teletel	124
Terra Spatium	126



MANAGEMENT BOARD

Dr. Antonios Vavouliotis
Executive Managing Director

Dr. Dimitrios Vlachos
Non-Executive Director

Dr. Georgios Sotiriadis
Non-Executive Director

PERSONNEL

Total Personnel 2013: 6
Space personnel 2013: 3

ADDRESS & WEB SITE

Adamant Composites Ltd
Old National Road Patras-Athens 289
26504 Arachovitika-Patras
www.adamant-composites.gr

CONTACTS

Dr. Antonios Vavouliotis
Executive Managing Director
Tel: +30 261 093 1730
Fax: +30 261 093 1727
vavouliotis@adamant-composites.gr

Dr. Athanasios Baltopoulos
Space Business
Tel: +30 261 093 1730
Fax: +30 261 093 1727
baltopoulos@adamant-composites.gr

CORE BUSINESS

Adamant Composites Ltd has main competences in the following fields:

- Nano-enabled Composites
- Composite Materials and Processes
- Advanced Engineering Design and Analysis.

Our expertise:

- Structural design & verification methods & tools
- Structural damage tolerance & health monitoring
- Advanced structural concepts & materials
- Thermal analysis tools
- Novel materials
- Materials processes
- Technical support to R&D and/or product innovation
- Support to market research &/or technology watch
- Collaborative & concurrent engineering

3 complementary business domains:

- Development of **composite materials with tailored enhanced capabilities** through nanotechnology
- Processing and manufacturing of **composite parts** for prototypes or functional parts
- **Mechanical and thermal engineering design and analysis** services

PRODUCTS & SERVICES

- Nano-enabled Prepreg Technology
- Polymer Composite Materials Processing and Prototyping
- Advanced Engineering and Scientific Service (Mechanical, Thermal)

TECHNICAL MEANS

Cutting and Lamination tables, Curing ovens, Freeze storage for materials, Quality assurance (C-scan), Access to autoclave for curing, Tooling station, Fibre and Fabric Impregnation line, Workstations and software for design and analysis.

MAIN CUSTOMERS - SPACE

ESA - European Space Agency

MAJOR SPACE ACTIVITIES OR PROJECTS

Development of nano-enabled Fibre Reinforced Plastics

ESA/ESTEC (2013-2014)

The objective of this activity is to contribute in understanding the nanotechnology impact and expectations for use in FRP for structural applications. This study will define potential routes for the transfer of research results to neFRP products relevant to space application, and analyse and/or test new working approaches and methodologies.

Study on strategies towards the use of nano-enabled Fibre Reinforced Plastics in space

ESA/ESTEC (2013-2014)

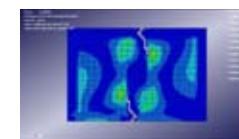
A technology gap has been identified between available nano-integration routes and already established FRP processing and manufacturing technologies to reach a seamless integration of nanotechnologies in production units. The focus is set on the technology gap in materials technologies for structural neFRP. The activity aims to bridge the aforementioned gap towards the manufacturing of advanced space hardware made of composite materials that utilize the advantages of nanotechnology to cover emerging performance needs.

Large stable deployable structures for future science missions

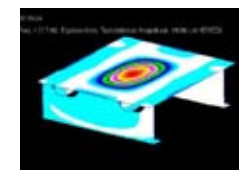
ESA/ESTEC (2014) The objective of this activity is to increase the TRL of a large stable deployable structure with a modular and scalable design solution as an enabling technology. Presently Phase 1 of the activity is running where the objectives is to Trade-off the possible technologies and design an ultra-stable deployable structure. This involves all engineering aspects (systems, mechanical, structures, thermal, mechanisms, MGSE etc) towards the delivery of a preliminary design (PDR).



2



3



4



1

1. Prepreg nano-enabling process
2. Manufacturing trials for novel materials and process optimization
3. Compression After Impact Analysis
4. Modal Analysis

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

AMS Advanced Microwave Systems

MANAGEMENT BOARD

Dr. Yorgos E. Stratakos

Managing Director

Anastasios Garetsos

Technical Director

Eleftherios Uzunoglu

VP Operations

PERSONNEL

Total Personnel 2013: 6

Space Personnel 2013: 3

ADDRESS & WEB SITE

Advanced Microwave Systems LTD
2, 25th Martiou Street
17778 Athens
www.ams-mw.com

CONTACT

Dr. Yorgos E. Stratakos

Managing Director

Tel.: + 30 210 483 8442

y.stratakos@ams-mw.com

CORE BUSINESS

Design and Development of **customised RF and Microwave assemblies for both military and commercial applications.**

PRODUCTS & SERVICES

- RF and Microwave Components and systems development up to 100 GHz
- Spread Spectrum Direct Sequence and Frequency Hopping patented telecommunication jammer systems
- Radar jammers S-band
- Airborne and Navy Active decoys
- Surveillance short range mmW radars
- Electronic Intelligence system (ELINT)
- Multi-static Radar Receivers
- Mixed Analog and Digital software radio warfare systems
- IFM real time frequency measurement systems
- DDS based ultra-high speed Frequency Hopping multi-channel receiver
- DDS based signal generators
- Spread spectrum high bit rate mobile satellite link
- Customized RF and Microwave low noise amplifiers
- Up-converters and Down-converters up to mmW frequencies
- Frequency hopping tracking filters with digital or analog control
- Broadband Detector Logarithmic Video Amplifiers for Radar receiver applications
- Phased Array Antenna Systems
- Military grade antenna development
- Military High Power RF Switch Matrix Systems
- GSM - GPS locator
- FMCW and CW Ground Penetrating Radar (GPR)
- Secure (Level 3) communications Voice Cryptographer for mobile systems
- Biomedical Systems (Hyperthermia, digital hypersonic tomography).

Certification & Accreditations

- ISO 9001-2008 certified



1

TECHNICAL MEANS

AMS has in house capabilities for testing up to 10 GHz and has developed close collaboration with the **National Technical University of Athens** for access to testing facilities to 100 GHz.

MAIN CUSTOMERS

- Greek Armed Forces
- INTRACOM TELECOM S.A
- European Community (participated in several research projects)
- ESA - European Space Agency (has participated in a ESA project in 2009)

MAJOR SPACE ACTIVITIES OR PROJECTS

No experience in components or systems for space applications.

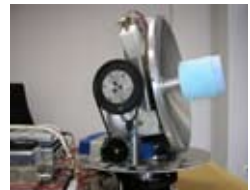
AMS has experience in **ground based systems applications.** Concerning space ground based systems the company would be interested in telecommunication and navigation transceivers, antennas, sub-components development such as filters, diplexers, PLLs, antennas, and other passive or active components.



2



3



4

1. 26 GHz Band Transmitter for EGSE (ESA study / RF front-end for data downlink systems - Earth observation satellites)

2. AEOLUS ELINT System TMW-18000 MW Receiver

3. DDS based signal generators

4. Spread spectrum high bit rate mobile satellite link



MANAGEMENT BOARD

Dr. Vasilis Gregoriou
Chairman

Mr. Michalis Dimitriadis
General Manager

PERSONNEL

Total Personnel 2013: 14

ADDRESS & WEB SITE

Advanced Energy Technologies SA
Kifisias av. 44
15125 Athens
www.advent-energy.com

CONTACT

Nora Gourdoupi
R&D Manager
Tel: +30 261 091 1583
ngourdoupi@advent-energy.com

CORE BUSINESS

Advent Technologies focuses on the research, development and commercialization of novel materials and systems for HT Polymer Electrolyte Membrane (PEM) fuel cells, PEM electrolyzers and hydrogen purification technologies, operating at temperatures between 150-220°C for HT PEM and 60-80°C for PEM electrolyzers.

Advent's expertise is on the design, synthesis and production of novel high temperature polymer electrolytes, high performance electrodes, and high performing and durable membrane electrode assemblies (MEAs). The innovation of Advent in the HT PEM area is the polymer electrolyte itself (Advent TPS®), which possesses certain technical advantages including high mechanical integrity, high oxidative stability as well as relatively low acid doping level.

- HT PEM air and liquid cooled stacks (50 W-5 KW) which can be integrated in final systems for off grid remote and back-up power applications as well as cost and energy efficient stationary residential applications.
- Low temperature PEM electrolyzers using low temperature MEAs based on commercially available low temperature polymer electrolytes.
- Core components of Regenerative PEM fuel cell systems build by combining PEM electrolyzers with HT PEM stacks.

PRODUCTS & SERVICES

Advent Technologies designs, produces and commercializes **materials for/and Membrane Electrode Assemblies (MEAs) for High Temperature PEM fuel cells**, based on its proprietary **Advent TPS® technology**.

The company is also involved in the development of **high temperature PEM APU and CHP prototype stacks** fed with natural gas, LPG, methanol, and bioethanol.

Advent has participated, as a consortium member or a project coordinator, in several research national and international projects. Currently, the company is participating in two FCH-JU projects, and in several other national and international projects related with High temperature PEM fuel cells, photovoltaic and battery fuel cell hybrid systems for automobile and other applications.

TECHNICAL MEANS

Development of proprietary technology, production of TPS HT PEM, MEA fabrication/lamination technique

- Glass reactors of 10L and 15L capacity, for pilot scale synthesis, connected with two Huber Heating/Cooling Unistat Systems - 815W, 315W (BUCHI)
- Vacuum ovens and furnaces used for drying of materials, membrane casting and doping (BINDER, DUROCELL, VACUCELL, HERAEUS).

- Instrumentation for the hot pressing/ MEA lamination process, consisting of a hydraulic press equipped with heated platens (CARVER)
- Coating semi-automated machine (COATEMA)

Equipment for monomer and polymer characterization

- Size exclusion chromatography - SEC (for Molecular weight measurements of polymers)
- Nuclear Magnetic Resonance - NMR (for structure determination)
- Dynamic Mechanical Analysis - DMA (for Glass Transition Temperature measurements)
- Thermogravimetric Analysis - TGA (for decomposition temperature determination)
- Mercury porosimeter (measure polymer membrane's porosity)

Specific characterization techniques

- Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy - ATR-FTIR
- Fourier Transform Raman spectroscopy - FT Raman
- X-ray Diffraction - XRD; X-ray Photoelectron Spectroscopy - XPS
- Scanning Electron Microscopy - SEM

Electrochemical characterization

- Potentiostat/Galvanostat equipment (AUTOLAB) for the ability to carry out a wide variety of electrochemical characterization methods such as: cyclic voltametry, stripping, AC impedance etc for MEA characterization
- Electronic loads in the range of 1kW for stack testing (ILPRA).
- Mass spectrometer for on line gas analysis (PFEIFFER)

MAIN CUSTOMERS - SPACE

ESA - European Space Agency

MAJOR SPACE ACTIVITIES OR PROJECTS

Regenerative PEM Fuel Cells / TRL3-4

ESA/ESTEC (Advent Technologies acting as sub-contractor)

Research and development of a regenerative PEM fuel cell (RPEMFC) system for space applications (large telecommunication platforms in GEO and planetary exploration missions).

Two stacks (an electrolyser one, and a fuel cell one) were manufactured by Advent using proprietary technology, and incorporated in a regenerative fuel cell test bench for testing. Testing was performed under a predefined load profile corresponding to the needs of a telecom platform in GEO orbit.

Development of a closed loop Regenerative HT-PEM fuel cell system / TRL5-6

ESA/ESTEC (Advent Technologies acting as prime contractor)

Continuation of the a.m. project to the next TRL 5-6. The initial concept proposed in the submitted proposal has been modified and, instead of a high temperature electrolyser, a low temperature PFSA based electrolyser will be developed and manufactured.



1



2



3

1. Advent TPS membrane
2. Advent MEAs
3. Advent TPS membrane from a Roll to Roll process

Certification & Accreditations

All Advent Technologies goods and services are designed and produced under a quality controlled system certified ISO 9001: 2008.

MANAGEMENT BOARD

Sofia Boutsouki
Managing Director

ADDRESS & WEB SITE

AeroPhoto Co Ltd
21 Antoni Tritsi Str.
57001 Thessaloniki
Tel: +30 231 080 4991-2-3
www.aerophoto.gr

CONTACT

Sofia Boutsouki
Managing Director
Tel: +30 231 080 4991-2-3
info@aerophoto.gr



CORE BUSINESS

An Aerial Survey Company

AeroPhoto Co Ltd created in 1992 and based in Thessaloniki, activates with success in the professional aerial survey domain with customers from Greece, the European Union and Middle East.

The company collaborates with the largest technical companies, and participates in large scale projects, where prerequisite is the use of aerial photography.

- AeroPhoto aims developing state-of-the-art technologies and undertakes aerial photography with digital receivers, special remote sensing and thermal camera, collaborating with universities and government researching institutions.
- The company strategic vision is to become soon one of the most modern specialized European companies for scientific flights purpose.
- For this purpose, AeroPhoto makes every effort to maintain very high standard levels in terms of professional reliability and provided service quality

PRODUCTS & SERVICES

High quality aerial surveys, covering the Greek Territory, the Balkans and the European Union area.

Airborne images captures dedicated to geological information collection (Waters, Soil, Cultivations-Destruction surveying, Subsoil Detection-Environmental Research, etc.), through spectral and hyperspectral cameras, unique in Greece.

Airborne images capture results, integrating scientific value-added treatment by a research group, before they are delivered:

- **Aerial films elaboration and aerial photography products.**
- **Photogrammetric mapping**
- **Digital orthophotomaps production**
- **Digital mapping**

Certification & Accreditations

AeroPhoto is a member of European Fleet for Airborne Research (www.eufar.net), in collaboration with the Laboratory of Air Pollution and Antipollution Technology of the Demokritos University of Thrace.

TECHNICAL MEANS

Missions operations

MAIN CUSTOMERS

- Greece National Cadastral Organisations and National Technological Universities
- ESA

MAJOR SPACE ACTIVITIES OR PROJECTS

AeroPhoto has participated with success in **large Europeans scientific projects**, which needed to integrate specialized aviation support:

- Aerial Survey flights for the Greek Cadastral organisations - 1992 to 2012
- SCOUT II: EC / Democritus University of Thrace - Scientific anti-pollution project - 2007
- SITHON: EC / Aristotle University Thessaloniki - Fire protection project - 2007-08
- IRIS: EC / National Technical University of Athens - Scientific thermal project - 2006-2008
- **THERMOPOLIS: ESA / Democritus University of Thrace project - 2009-2010**

For the ESA-THERMOPOLIS project, we have collaborated with the Democritus University of Thrace-Greece under the supervision of Prof. Dr. S. Rapsomanikis.

AeroPhoto is currently preparing to participate in a new EC scientific project: FAROS (Facility for Airborne Research, Observation and Sensing).



2



1. AeroPhoto Thermopolis Project

2. AeroPhoto Airplane

1



MANAGEMENT BOARD

Spyros Theoharis

Chairman of the Board
VP Products & Technology

Christos Androulidakis

Vice Chairman of the Board
VP & General Manager, Greece

Giorgos Anagnostopoulos

Managing Director of the Board
President

Vassilis Spiliotopoulos

Member of the Board
VP Brand & Customer Services

PERSONNEL

Total Personnel 2013: 6

ADDRESS & WEB SITE

Alma Technologies S.A.
Leoforos Marathonos 2
19009 Pikermi
www.alma-tech.com

CONTACTS

Giorgos Anagnostopoulos

President
Tel.: +30 210 603 9850 ext. 105
Fax: +30 210 603 6034
g.anagnostopoulos@alma-tech.com

Christos Androulidakis

VP & General Manager
Tel.: +30 210 603 9850 ext. 102
Fax: +30 210 603 6034
c.androulidakis@alma-tech.com

CORE BUSINESS

Alma Technologies is developing sophisticated, cutting-edge technology, Semiconductor IP cores for integration in ASIC or FPGA designs and licenses these products to customers lacking the necessary know-how and/or resources and/or time to develop them from scratch.

After 13 years of proven designs and over 150 satisfied licensees of our products, Alma Technologies is aiming to be recognized worldwide as a leading supplier for **image and video compression IP cores**. Our products address the needs of a broad range of applications, from consumer electronics to highly specialized fields, such as medical imaging, automotive imaging, industrial, military and space imaging applications.

PRODUCTS & SERVICES

Back in 2002, Alma Technologies was one of the first companies worldwide to introduce a JPEG 2000 image compression IP core.

Today, Alma Technologies offers **the only JPEG 2000 standalone hardware engine that supports the functionalities provisioned by the B1IF/NTSIF01.00 profile**.

Alma Technologies Baseline and Extended JPEG cores are probably the fastest and among the smallest available and they offer both 8-bit and 12-bit compression as well as our proprietary and unique, CBR accurate, video rate control option.

Alma Technologies is the only known IP provider for the Lossless JPEG and JPEG-LS compression. The most recent addition to our product line is our series of H.264 encoding IP cores, offered as standalone solutions and targeted for applications where video coding quality is a major concern.

Alma Technologies offers also **memory controllers and cryptographic functions**. We are constantly refining the available products and adding newer innovative solutions in our product portfolio.

We are currently developing UHD (4K and beyond) JPEG and H.264 encoding solutions for use in low-end and mid-range FPGAs and ASICs, as well as a CCSDS 122.0 encoder IP core for visible spectrum imaging space applications.

Certification & Accreditations

- ISO 9001:2008 certified on the scope of Production, Sales and Technical Support of Semiconductor Intellectual Property Cores
- ISO Certificate copy available on Alma Technologies web site

TECHNICAL MEANS

- Altera, Lattice, Microsemi and Xilinx FPGA design, synthesis, implementation and verification flows
- FPGA prototyping, verification and demonstration H/W
- RTL Front-End ASIC synthesis and verification flows

MAIN CUSTOMERS - SPACE

Customers and licensees of Alma Technologies IP products:

- Israel Aerospace Industries (IAI): www.iai.co.il
- NASA GPL: www.jpl.nasa.gov
- Malin Space Science Systems: www.msos.com
- CGS SPA: www.cgsspace.it
- Lockheed Martin Space Systems: www.lockheedmartin.com/us/ssc.html

MAJOR SPACE ACTIVITIES OR PROJECTS

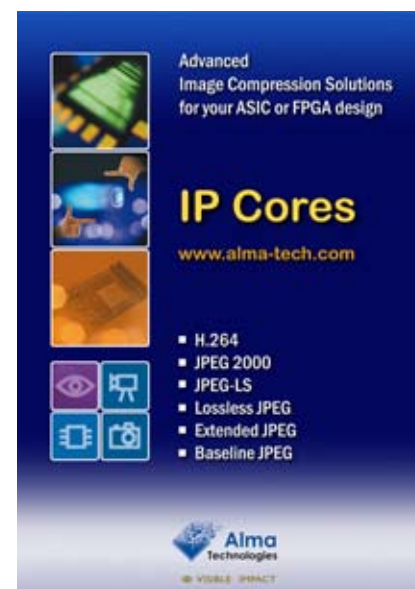
- Alma Technologies JPEG Encoder IP Core compresses images in Malin Space Science Systems camera system aboard NASA's Curiosity Mars rover. For more information: May 15, 2014 News section at www.alma-tech.com.
- Member of the Hellenic Space Technologies and Applications Cluster (si-Cluster): www.si-cluster.gr/en/
- JPEG 2000 encoder IP core licensed and used in the Ramon Chips JPIC ASIC: www.ramon-chips.com/ramon%20products.html



2



3



1

1. IP CORES
2. H.264 product line
3. JPEG product line



MANAGEMENT BOARD

Alkiviadis Thomas
C.E.O.

Stephan Lindner
Executive Director

Katerina Georgiadou
General Manager

PERSONNEL

Total Personnel 2013: 51

ADDRESS & WEB SITE

Althom Engineering EPE
Patras Science Park, Stadiou Street
26504 Rio Patras
www.althom.de

CONTACT

Katerina Georgiadou
General Manager
Tel: +30 261 091 1577
georgiadou@althom.eu

CORE BUSINESS

- **Engineering**
- **Technical Documentation**

When we talk about offshoring, we are talking about service and production to the highest level of engineering.

Many companies have recognised the shifting of corporate functions and processes to other countries as an opportunity to create additional competitive advantage. Such offshoring projects are however extremely complex and require a high level of management, quality assurance and quality control.

ALTHOM (Germany, Greece) provides professional and straightforward support throughout the entire offshoring process – from procurement to comprehensive production management.

PRODUCTS & SERVICES

- Offshoring Consulting
- Offshoring Production Management
- **Engineering Services** (Stress, CFD, Materials/Component testing)
 - Stress analysis/static calculation: Finite Element modelling and development of methods for composite or metallic structures, tailored exactly to client specific needs (linear static and non-linear static)
 - Computational Fluid Dynamics - CFD: Testing of products in the automotive, aviation and aerospace industries. Modern CFD programmes / aerodynamic behaviour testing of a wide range of components in terms of pressure and speed to the highest standards. Flow characteristics and processes and flow based design modification
 - Materials/Component testing: test series on metallic and composite structures under realistic conditions (destructive and non-destructive testing, ...)

Certification & Accreditations

- EN/AS ISO 9100 certified
- EN ISO 9001 certified

- **Technical Documentation** (Civil, Military, Development Projects)
 - Documentation in compliance with all applicable technical regulations and important international standards – according to high quality standards, plannable and structured
 - More than 20 years of experience in the production of Technical Documentation for the aviation industry
- Software Development
- Engineer Recruitment

TECHNICAL MEANS - PARTNESHIPS

- A special and exclusive partnership connects ALTHOM with the **Laboratory of Technology and Strength of Materials at the University of Patras** in Greece. There, we have made a large investment in creating a test environment to the very latest standards. A real win-win scenario, where excellent research meets pioneering practice, and the latest scientific findings are incorporated into marketable services. This allows us to offer excellence in the areas of stress analysis, testing and computational fluid dynamics (CFD).
- ALTHOM also work together with the **Hamburg School of Business Administration (HSBA)** on joint projects that afford students practical insights and allow us to sharpen our own expertise through their knowledge of today's economics.

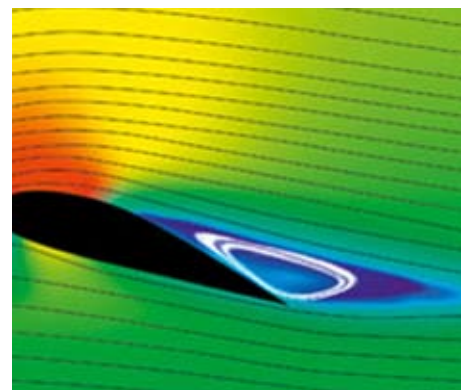
MAIN CUSTOMERS

- Airbus
- Rheinmetall
- Airbus/EFW
- R&D - EU

ALTHOM has its roots in the aviation industry but is not specialised in a single industry.



2



1

1. Computational Fluid Dynamics
2. Stress analysis

MANAGEMENT BOARD

Nikolaos Socrates Labroukos
President

Michael Birbas
VP & Board Member

Alexios Birbas
Board Member

PERSONNEL

Total Personnel 2013: 16
Space Personnel 2013: 9

ADDRESS & WEB SITE

Analogies S.A.
Patras Science Park, Stadiou St
26504 Platani, Rio, Patras
www.analogies.eu

CONTACT

Michael Birbas
R&D Manager
Tel: +30 261 091 0974
michael.birbas@analogies.eu



CORE BUSINESS

Analogies main activities (mission) is to deliver high-performance, multi gigabit, mixed signal/RF and digital silicon IPs to the semiconductor electronics and systems market.

PRODUCTS & SERVICES

Analogies develops products in the form of **Intellectual Property (IP)** for:

- **Highspeed PHYs** with emphasis in wireline & wireless communications (SerDes, VCOs, PLL, Equalizers, RF functions), high speed memory/bus PHY interfaces and connectivity cores
- **Advanced error correcting performance and high throughput ECC/FEC encoders and decoders** based on Turbo and LDPC coding schemes for various telecom standards and proprietary solutions
- **Advanced MIMO OFDM Baseband modem IP** cores based on sophisticated DSP algorithms (clients' performance and speed requirements)

Analogies' current product offerings include:

- DFI compliant (DDR2/3 PHY) physical memory interface cores,
- Multi GHz wired IP cores, like the Superspeed USB (aka USB3) PHY,
- Wireless IP cores like its 60GHz PLL, as well as

Certification & Accreditations

- ISO 9001 certified
- Numerous patented/patent pending applications in the area of mixed signal design - RF and Forward Error-Correction (FEC).
- Driver for DDR2/3 Memory Interfaces GRPTO
- Driver for DDR2/3 Memory Interfaces PCT
- Integrated Circuit Distributed Oscillator USPTO
- A/D Converters USPTO and India PTO
- Band gap Reference GRPTO
- DPC Encoding-and Decoding Techniques USPTO
- LTE Techniques for Rate Matching and De-rate Matching USPTO
- Time-varying low-density parity-check convolutional codes (submitted to USPTO)
- Construction of multirate low-density parity-check convolutional codes (submitted to USPTO)

- Advanced ECC/FEC cores, e.g. megabit to multi-gigabit rate capable Turbo and / or LDPC IP cores, including both proprietary high performance LDPC based FEC schemes for backhaul applications, and FEC cores supporting protocol standards like LDPC IPs for WiFi-Wimax support and LTE Turbo codecs
- Turbo-LDPC engines for multiprotocol support.

Analogies is currently implementing with success IP cores for a high speed (2Gbps) MIMO-OFDM baseband for an emerging wired telecom protocol on behalf of a European customer.

Furthermore Analogies has been implementing IP cores for a high speed (>1Gbps) MIMO-OFDM baseband for an emerging wired telecom protocol.

TECHNICAL MEANS

- A Rich Analog/Mixed-signal (AMS) Design Flow Environment based on suites available from CAD companies like Mentor, Cadence, etc. The suppliers for these flows, license the use of their toolsets via time based licenses.
- Mathworks Matlab and Ansoft Designer for algorithmic/system modelling.
- A full FPGA design tool flow – the (Xilinx) ISE Design Suite Logic Edition- along with a number of advanced FPGA evaluation and implementation platforms based on Virtex-6 and Virtex-7 devices for design testing/validating and prototyping

Strong IT Infrastructure, including:

- Strong IT Infrastructure including a CAE/Compute Server, a Workflow/Workgroup Server and 2 IBM System x3650, Dual Intel Quad Core E5420 2.5 GHz and E5140 2.33GHz

MAIN CUSTOMERS - SPACE

ESA - European Space Agency

MAJOR SPACE ACTIVITIES OR PROJECTS

Analogies has been working successfully in the area of emerging "Low-Density Parity-Check Convolutional Codes (LDPC-CC Codec).

ESA Contract entitled "Low-Density Parity-Check Convolutional Codes (LDPC-CC Codec) for Satellite and Terrestrial Standards": a feasibility study, on the applicability of LDPC-CC schemes constructed by state-of-the-art techniques, has been successfully carried out, by evaluating their performance against existing FEC schemes employed in a number of important terrestrial and satellite standards (WiMax, DVB-RCS, DVB-SH, LTE and CCSDS), having in several cases exhibited better or equivalent performance.

Design, development and ASIC implementation of the **appropriate interface electronics of an "IMU"Unit (for space applications)**, as part of the Collaborative R&D project of Menelaos, in the si-Cluster 'Hellenic Space Technologies' framework funded by the Greek General Secretariat for Research & Technology.

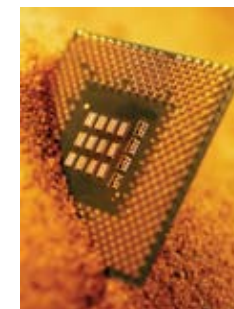
Analogies



1



2



3

1. Headquarters
2/3. Product details



MANAGEMENT BOARD

Dr. Nikos Bogonikolos

CEO, Managing Director

Dr. Ioannis Dontas

Director

Panagiotis Gatomatris

Member of Management Board

PERSONNEL

Total Personnel 2013: 25

Space personnel 2013: 10

ADDRESS & WEB SITE

Aratos Technologies S.A.
93, Riga Feraiou Street.
26221 Patras
www.aratos.gr

CONTACTS

Dr. Nikos Bogonikolos

CEO

Tel.: +30 695 194 3327,

Tel.: +30 261 022 3422

Fax: +30 261 022 4026

nbogonikolos@gmail.com,

info@aratos.gr

Dr. Ioannis Dontas

Director

Tel.: +30 210 942 4630

Fax: +30 210 942 4095

idontas@aratos.gr

CORE BUSINESS

Aratos Technologies S.A. is one of the first European companies to introduce value-added downstream services to citizens, by delivering products and services designed upon the users' needs and requirements. Since 2003, the company continuous to provide high quality and commitment at its services and user management, by maintaining a strong and active profile on regional and international RTD, adapting flexible market strategies and defining innovative means to optimize our deliverables.

Our research and development is being devoted to making **satellite-related technology available and approachable to end users**, and our main areas of expertise vary among:

- Space-borne data acquisition, management, storage and on-demand processing
- Design of environmental and other (e.g. security) models, appropriate for interpreting the EO indicators available
- Wireless telecommunications, with emphasis on SATCOM and Internet
- Navigation services

Additionally, our work is being expanded to complementary fields related to observation and ICT sciences, such as:

- GIS modeling
- UAVs (aerial) surveillance
- Intelligent Internet architectures (Future Internet, Internet of Things, Clouds)
- Mobile computing
- Machine-to-Machine communication

PRODUCTS & SERVICES

Our products and services are designed upon the above available tools and techniques and are namely focused on:

- Disaster Management
- Civil Protection
- Security and Surveillance
- Telecommunications
- Environmental monitoring and protection

Certification & Accreditations

- ISO 9001:2008 and ISO/IEC 27001:2005 certified
- Patents: ECM-PLUS is patent awarded (nr: 1006981) from Greek National Patent Office and the Greek National Industrial Property Organization. Several other patents are pending in US Patent Office (Aratos Advanced Data Fusion System, Aratos Integrated Pipeline Protection, Aratos - Net Security Gate, etc.)

In particular:

- ARATOS DISASTER CONTROL™
- EARTHQUAKE CRISIS MANAGEMENT SYSTEM™ (BASIC, PLUS)
- WORLD FIRE ALARM (BASIC-PLUS-PREMIUM) SYSTEM™
- GREEN SPACE SERVICES FOR LOCAL MONITORING(GREENSSLM™)
- LAND USE BASIC™
- VEGETATION MONITORING SYSTEM™
- FLOOD RISK MANAGEMENT SYSTEM™
- ARATOS GIS PLATFORM™
- ARATOS UAV MONITORING SOLUTIONS
- PIPELINE SURVEILLANCE SYSTEM™
- SHIP DETECTION AND MARITIME SURVEILLANCE SYSTEM™

Aratos Technologies S.A has also developed a variety of **mobile applications for iOS and Android platforms:**

- Sun UV Protector (english), Sun UV Protector (russian)
- Ozone Index Saves Earth
- World Fire Alarm
- Snow Ski Report
- Aratos Crisis Management, Aratos Company Presentation
- Space Saves Society

TECHNICAL MEANS

- Special equipment related to space down-stream services (Ground Station, mobile satellite terminal)
- Multiple fully equipped workstations, Dedicated web servers

MAIN CUSTOMERS - SPACE

- Greek Municipalities and prefectures
- Greek Civil Protection Departments
- Management Bodies of Environmental Protected Areas
- European Commission (FP7-Space-2010-1)

MAJOR SPACE ACTIVITIES OR PROJECTS

NEREIDS Project - European Commission, FP7-SPACE-2010-1, 263468

Coordinator: GMV (ES)

Full Title: New Service Capabilities for Integrated and Advanced Maritime Surveillance

Duration: 36 months

NEREIDS will enhance EO capabilities by combining different sensors with innovative data fusion techniques (toolbox approach enabling share data and capabilities and support a common maritime picture). NEREIDS will make an analysis of maritime surveillance in a cross-sector approach.

Aratos Technologies



1



2

1. Aratos Disaster Control
2. Aratos GSSLM - Green Space Services for Local Monitoring

**MANAGEMENT BOARD****Dr. Ioannis Polychronakis**

Managing Director

P. Theocharakis

Member

N. Theocharakis

Member

PERSONNEL

Total Personnel 2013: 6

Space personnel 2013: 3

ADDRESS & WEB SITE

ATTISAT S.A.
Thessalonikis 141
183 46 Athens
www.attisat.gr

CONTACTS**Ioannis Polychronakis**

Managing Director

Tel.: +30 210 993 9335

Fax: +30 210 993 9277

jpoly@attisat.gr

P. Sotiropoulos

R & D

Tel.: +30 210 993 9335

Fax: +30 210 993 9277

p.sotiropoulos@attisat.gr

CORE BUSINESS

ATTISAT SA designs, develops, manufactures and markets flat antennas for Direct-to-Home satellite TV reception.

Design and development of VSAT networks and Wireless Microwave systems are also included in its activities.

The company is also active in the Distribution of High Quality satellite equipment for the Greek market.

ATTISAT S.A provides also Research and Development activities in third parties, especially in the frame of Multimedia Terminals and equipment.

A team of highly qualified engineers and managers with experience in their fields of expertise are responsible for the company's activities from research and development up to production and marketing.

PRODUCTS & SERVICES**FL500 PLANNAR SATELLITE ANTENNA**

ATTISAT's personnel are experienced in the design and installation of VSAT point-to-multipoint networks. They have designed and set up the first Satellite Network for Seismic Data collection in Greece.

Working in close cooperation with its clients, ATTISAT provides Turn-Key Satellite Communication solutions for Data, Voice, Video distribution. Its activities include the design, procurement, installation and maintenance of Civil and Governmental satellite earth stations for DVB Audio/Video distribution and complete SCPC networks.

Being one of the partners of the HOST project the company has been involved in the early phase of the development of the HELLAS-SAT Net DVB-RCS network responsible for the Pilot Sites installation and maintenance in Greece, Albania, Serbia, Morocco and Tunis.

TECHNICAL MEANS

ATTISAT's laboratories are equipped with the most modern microwave instrumentation, including among others:

- HP 8510C Network Analyzer
- HP 83621B Sweep Generator (10-20 GHz)
- HP 8514B S-parameter test set (45 MHz-20 GHz)
- HP EPM-442A Power Meter (10 MHz-20 GHz)
- HP 83712 B Signal Generator (10 MHz-20 GHz)

Certification & Accreditations

ATTISAT S.A is ISO-9001:2008 certified from TUV-AUSTRIA

- FLANN-17240-20 Reference Horn Antennas (8-15 GHz)
- HP 9000 Class Series UNIX Workstation
- INTEL DUAL XEON Workstation
- Numerous high-end PCs
- CAD software for microwave and millimeter wave components design and simulation
- Proprietary software for antenna design and analysis

MAIN CUSTOMERS - SPACE

- Fa-Ten-Haaf (Germany)
- Greek MoD
- Greek Police

MAJOR SPACE ACTIVITIES OR PROJECTS

- Installation and maintenance of DVB-RCS terminals for ALUMIL company industrial plants in Athens, Kilkis, Serbia, Albania.
- Installation and maintenance of DVB-RCS terminals for EMPORIKI BANK offices in Albania, Bulgaria, Romania.
- Design, procurement, installation and maintenance of a DVB network for the Distribution of Video and Data in 10 remote sites around Greece, for NTFS «Demokritos». 2006
- Design, procurement, installation and maintenance of an SCPC network connecting 8 remote sites in the Balkan area with a Central site in Athens-Greece, for Greek MoD (2006)
- Design, procurement, installation and maintenance of Transportable Satellite Earth Station providing Data, Voice and Video communications, for Greek Police (2007).
- Maintenance, Repair and Upgrade of Vehicle mounted Satellite Terminals for Voice, Data, Video communications, for Greek MoD (2006-2013).



1. Attisat Antenna in Caravan
2. Attisat Antenna
3. Attisat Antenna FL500 with Cat

MANAGEMENT BOARD

Ioannis Vavourakis
Director

PERSONNEL

Total Personnel 2013: 5
Space personnel 2013: 2

ADDRESS & WEB SITE

Creative Systems Engineering (CSE)
45 Agiou Meletiou Str.
11257 Athens
www.creativese.eu

CONTACT

Ioannis Vavourakis
Director
Tel.: +30 210 883 6433 (Ext. 300)
Fax: +30 210 883 6431
j.vavourakis@creativese.eu

CORE BUSINESS

- **Electronics Engineering** (Design, Development, Test, Validation, Verification),
- **R&D activities** through EU and Government funded projects

PRODUCTS & SERVICES
Services

- Electronics Systems Engineering
- PCB design and development
- FPGA design and development
- Embedded sub-systems/Firmware (MCU/MPU) Design and Development

Products

- Application specific analogue/digital/mixed electronic subsystems/modules
- Application specific power supplies
- Application specific embedded sub-systems
- Automated Test Equipment for functional and production testing
- Internet of Things Architecture based M2M open gateway platforms
- Wired/wireless communication (voice/data)

TECHNICAL MEANS
CAD tools

- FPGA design: ISE Design Suite (Xilinx), Quartus II (Altera), Libero IDE (Actel-Microsemi)
- PCB design: PADS ES suite with integrated SPICE, Hyperlynx for SI and thermal analysis (Mentor), Eagle (Cadsoft)
- Embedded SW: System Studio for Linux (Intel), TI Code Composer Studio IDE, Atmel Studio, MPLAB IDE (Microchip)

CAE/CAD tools under evaluation

- Matlab/Simulink (Mathworks)
- Vivado SoC (Xilinx)
- Altium Designer PCB tool

Certification & Accreditations

- EN ISO 9001:2008 certified



1

Lab equipment

- Agilent DSOX3034A (Oscilloscope, 4-channel, 350MHz),
- DSOX3000-001 (WaveGen 20 MHz Function Generator),
- E3631A (DC power supply. Triple output, 80W)
- HP1663A (32-Channels, 500MHz, Logic Analyzer)

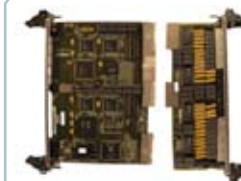
MAIN CUSTOMERS

- TELETET S.A.

MAJOR SPACE ACTIVITIES OR PROJECTS

- Experimental IP core for SpaceWire (receiver part) implemented in XILINX FPGA
- Analysis, design and partial development of the RMAP protocol

The engineering staff of C.S.E. (2 BsCs, 3 PhDs) has more than 15 year work experience on demanding projects in the Military sector and in Telecommunications: strict requirements; engineering disciplines and management per IEEE 1220-2005, MIL-STDs and MIL-HDBKs, NASA/SP-2007-6105 (SE HDBK).



2



3

1. Automation & control Products
2. Engineering Services
3. Power Products

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Nick Kalompatsos

CEO

Stavrouls Papakyriakou

President

Konstantina Aggelli

Vice President

PERSONNEL

Total Personnel 2013: 10

ADDRESS & WEB SITE

DataLabs S.A.
131 Griari Str.
17673 Athens
www.datalabs-sa.gr

CONTACTS

George Boulougouris

Technical Manager

Tel.: +30 210 957 6446

Fax: +30 210 957 6446

geboul@datalabs-sa.gr

Bill Kalompatsos

H/W Engineer

Tel.: +30 210 957 6446

Fax: +30 210 957 6446

b.kalompatsos@gmail.com

CORE BUSINESS

Datalabs was incorporated in 1996 and has been developing -ever since- **high technology electronic systems and devices**. The company is one of the few enterprises in Greece, able of fully designing, developing and producing **real time systems**. Our systems are sold as OEM via retailers or as parts of bigger systems.

We are specialized into the development of **intellectual property products** and processes over a broad range of applications in **Digital Signal Processing, Communications and Control**.

DataLabs has developed a widely based portfolio of Intellectual Property Rights (IPR) in the areas of core DSP and generic applications. Based on that we offer innovative Software and Hardware products based on our state-of-the-art technologies in DSP, FPGA implementations, Wireless Sensor Networks and Medical Systems. Working closely with our international clients, we are offering state-of-the-art technology and assisting them in every step of the development of innovative electronic solutions.

PRODUCTS & SERVICES

- Data acquisition systems
- Temperature controllers and cooling chamber pressure controllers
- Intelligent computer peripherals
- Electronic flow meters
- Fuel Pump control systems
- Motion control systems
- Naval fire alarm and monitor system
- Zig Bee. Communication Systems
- Energy management system
- Automated system for signature analysis

TECHNICAL MEANS

- FPGA Development Boards
- VHDL / VERILOG Tools
- Schematic capture, Simulation, Verification, Signal integrity & PCB design EDA tools
- IDE tools for embedded software development
- Logic Analysis Instruments
- Spectrum analyzers
- Signal Generators
- Digital Storage Oscilloscopes

MAIN CUSTOMERS

INTRACOM S.A.

Certification & Accreditations

- ISO 9001 certified

MANAGEMENT BOARD

Konstantinos Katsonis

Director

Chloe Berenguer

Project Manager

PERSONNEL

Total Personnel 2013: 3

Space personnel 2013: 3

ADDRESS & WEB SITE

Dedalos Ltd
Vass. Olgas 128
54645 Thessaloniki
www.dedalos.eu

CONTACTS

Konstantinos Katsonis

Director

Tel.: +30 694 745 3232

katsonis.dedalos@gmail.com

Chloe Berenguer

Project Manager

berenguer.dedalos@gmail.com

DEDALOS Ltd

CORE BUSINESS

- **Theoretical work in atomic and molecular data calculations and evaluations**, to be used in **plasma modeling and in studies of plasma diagnostics methods**. In so doing, we develop convenient codes for large data sets management, spectral line identification and various types of modeling, including Global Models (GM) and Collisional-Radiative (C-R) models.
- **Experimental plasma spectroscopy**, notably Optical Emission Spectroscopy allowing for various diagnostics cases, determining such important parameters as electronic temperature and density of plasmas.
- Conjunction of theoretical and experimental work allowing for **conception and optimization** of such industrial devices as **plasma thrusters, plasma reactors, fusion devices, lighting devices, lasers**, etc.
- **Consulting services** based in our research applications know-how, aiming to resolve a wide scope of research and industrial problematics.

PRODUCTS & SERVICES

Space related activities:

- Space propulsion (thrusters for electric propulsion of rockets and satellites)
- Air and other gases breathing thrusters for Earth satellites, space trips to Moon, planets and comets
- Study of erosion and lifetime of thrusters)
- Study of planetary atmosphere and reentry
- Collisional-Radiative and Global Models

Non-Space related activities:

- Plasma reactors for depollution, sterilization, and surface deposition.
- Atomic and Molecular Data evaluation.
- Modeling and diagnostics for Fusion devices studies.

Certification & Accreditations

- DEDALOS activities cover both experimental and theoretical domains, also including data analysis and scientific consulting, which allow to model, diagnose and optimize the functioning of various industrial devices.
- DEDALOS collaborates with laboratories, institutes and Agencies in Europe, USA and China.



TECHNICAL MEANS

Computing, Modeling and Databases. Plasma devices and Optical Diagnostics in collaboration with Institutional and Industrial partners.

MAIN CUSTOMERS - SPACE

- European Community 7th Framework Research Projects
- European Space Agency

MAJOR SPACE ACTIVITIES OR PROJECTS

- EU FP7 Project 'HPH.com', from 01/12/2008 to 30/05/2012.
- ESA AO7048 Project, 'Helicon Plasma Thruster for Space Missions', from 14/02/2013 up to now.

1. Space technology related publication:
«Global Modeling of N2O, air and N2 Discharges and Applications» - K. Katsonis and C. Berenguer - LAP LAMBERT Academic Publishing

2. Neon Fed Torch



MANAGEMENT BOARD

Evangelos Kosmidis

President & Managing Director

Panagiotis Symeonidis

Vice-President & Managing Director

Stavros Tekes

Member

PERSONNEL

Total Personnel 2013: 10

Space personnel 2013: 2

ADDRESS & WEB SITE

Draxis Environmental S.A.
63 Mitropoleos Street
54623 Thessaloniki
www.draxis.gr

CONTACT

Evangelos Kosmidis

Managing Director
Tel.: +30 231 027 4566
Fax: +30 231 025 3819
kosmidis@draxis.gr

CORE BUSINESS

DRAXIS was founded in 2000 in Thessaloniki, focusing on providing environmental consulting, solution development, implementation and management of Environmental Technologies. DRAXIS can support the whole life cycle of Environmental projects, from the requirements to the development and the implementation and finally, to management and maintenance.

DRAXIS can assist local, national and European authorities, as well as private organizations, in Environmental Management and its effective integration into the decision making process. Through the combined use of Environmental Databases and Software, along with Geographic Information System technologies, our clients can achieve substantial improvements in all the aspects of their work.

The strongest asset of the company is our people, who are highly motivated and trained to meet all challenges. They are all well-established scientists, experienced experts in their fields, coming from various backgrounds: Physicists, Engineers, Geologists, Agriculturist, Foresters and IT engineers.

Research and innovation play a key role in DRAXIS development. The continuous devotion to new technologies and innovative solutions, through our active involvement in National and European Research Projects, allows us to grow on high quality of services and technological standards.

PRODUCTS & SERVICES

In the last 5 years, as a result of its R&D activities and the involvement in many national and European projects, the company has acquired extensive knowledge in the following specific fields:

1. Software and GIS tools for Specific Scientific Areas:

- Precision Agriculture Technology (Meteorological Modelling and satellite data utilization)
- Solar Radiation (Evaluation, climatic prediction, Solar Panel efficiency)
- Climate change (Climatic, Environmental, Economical, Geographical Data)
- Development of spatial databases and web-gis applications with Satellite data analysis

2. Policy Making Tools:

- Decision Support Systems (Software Services and Earth Observation Data)
- Strategic Decision Tools (Water cost analysis, Environmental Permits)

- Dissemination Tools (Target Oriented Portals with scientific content) for European Directives and Legislatio
- Workflow management for environmental permitting and other procedures

3. Water Authorities Management (Products and Services)

- Network Management with "GIS-Water" product
- Resource Management and integration
- SCADA system with customized sensors
- Data, Model Assessment and Applications

Finally the company is greatly involved in **European Funding Programs** for Specific Scientific Areas undertaking all the phases in the life cycle of the programs such as

- Proposal and Consortium management and coordination
- Specific Task Development and Project Management
- Lobbying and Dissemination activities

MAIN CUSTOMERS - SPACE

- GSRT (providing services in research projects like GNORASI)
- EUROPEAN COMMISSION (Research projects or Tenders)

MAJOR SPACE ACTIVITIES OR PROJECTS

- GNORASI (<http://www.gnorasi.gr/>)
- EDHE (<http://www.helionet.gr/>)
- AEROVIS (<http://www.aerovis.gr/>)



1



1. Software developed for Water utilities



MANAGEMENT BOARD

Androniki Goulandri

President

Fali-Anna Vogiatzaki

Vice-President

Panayiotis Mpernitsas

General Secretary

PERSONNEL

Total Personnel 2013: 53

Space personnel 2013: 3

ADDRESS & WEB SITE

The Goulandris Natural History Museum / Greek Biotope Wetland Centre
14th klm Thessaloniki-Mihaniona
57001 Thermi
www.ekby.gr

CONTACTS

Eleni Fitoka

Head of Inventory of Natural Resources Section
Tel.: +30 231 047 3320
Fax: +30 231 047 1795
helenf@ekby.gr

Antonis Apostolakis

Head of GIS and Data Base Remote Sensing Department
Tel.: +30 231 047 3320
Fax: +30 231 047 1795
antonis@ekby.gr

CORE BUSINESS

EKBY The Goulandris Natural History Museum-Greek Biotope Wetland Centre generates knowledge, provides information, raises public awareness of the need for wise use of resources. It maintains updated archives of information on the natural environment and protected areas of Greece. It participates in European organisations and networks and in supranational initiatives for the conservation of nature. It supports policies, which are consistent with the principle of sustainability.

PRODUCTS & SERVICES

EKBY's products and services regard:

- Ecosystem and habitat inventory and monitoring including mapping with EO techniques and field working, land use land cover mapping, assessment of changes to ecosystems – including the alterations resulting from non-sustainable human activity, and global climate change – and documentation of policies and measures to advert degradation of ecosystems
- Halting the loss of biodiversity
- Restoration/rehabilitation of degraded ecosystems
- Monitoring of quantity and quality of fresh water for human use and ecosystems requirements
- Wide-ranging transfer of knowledge of functions and values of natural ecosystems, as well as the sustainable practices which must be introduced.

Certification & Accreditations

EKBY operates a Quality Management System (QMS) as per EN International Standard ISO 9001:2008, in accordance with TUV Austria HELLAS procedures.

The certification covers the following fields:

- Promoting the sustainable development of renewable natural resources: studies, integrated projects, advice and consultation, research, scientific information, geospatial information and remote sensing data workflow, awareness, educational activity, capacity building, interpretation, policies for sustainable development.
- Samplings in surface waters and measurements-analyses of physico-chemical, biological and hydromorphological parameters.
- The QMS aims to promote continual improvement of EKBY towards excellence and to ensure the satisfaction of society with its work.

TECHNICAL MEANS

- High speed, Computer network (wired and wireless) with 38 workstations and 5 servers
- GIS desktop and server software
- RS software
- Office applications software
- Laser and inkjet colour printers from A4 to A0 paper sizes
- Colour scanners from A4 to A0 paper sizes
- High speed internet access from two independent ISPs
- About 50 TB total network space for data, RS data and backup operations

MAIN CUSTOMERS - SPACE

- Greek government
- European Union
- Regional and local authorities
- Management Bodies of Protected Areas
- NGOs

MAJOR SPACE ACTIVITIES OR PROJECTS

- Wetland detection, identification, delimitation and inventory using RS data
- Wetland and Biotope monitoring using RS data
- Land Use land cover mapping
- Change detection using RS data

Examples of Earth Observation projects:

- SPIN (FP5, EVG1-CT-2000-00019, 1/3/2001 - 29/2/2004)
- MS.MONINA (FP7, 1/12/2010 - 30/11/2013)
- GlobWetland II (ESA User Element project, ongoing)
- Geoland2 (subcontractor to EARSEL for Scientific Review)
- GIO Water and Wetlands HRL (subcontractor to INDRA for product validation)



© EKBY/S. Miliotis



© EKBY/L. Logotheis



© EKBY/L. Logotheis



© EKBY/K. Zisis

1. EKBY's premises at Thessaloniki
2. Nestos Delta (Ramsar site), Eastern Macedonia
3. Great Heron
4. Papingo pools at Northern Pindos National Park

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Vasilis Papamichael

Production director

Aspasia Sitra

Quality assurance director

Nicholas Yannoulakis

Technical director

Paraskevi Koumandaki

Purchasing director

Michael Sosopoulos

Project director

PERSONNEL

Total Personnel 2013: 70

ADDRESS & WEB SITE

ELFON LTD
6, Kolomvou str.
Pallini, Attica
www.elfon.gr

CONTACTS

Nicholas Kemos

General Manager

Tel.: +30 210 603 7020

Fax: +30 210 964 9833

n.kemos@elfon.gr

Nicholas Yannoulakis

Technical Director

Tel.: +30 210 603 7020

Fax: +30 210 964 9833

n.yannoulakis@elfon.gr

CORE BUSINESS

Manufacturing of electromechanical components

ELFON LTD specializes in the manufacturing of Wiring Harnesses and Electromechanical Assemblies. The company performs subcontracting of OEM parts, and manufacturing of custom parts that require high precision and special processing. ELFON LTD also provides subcontract manufacturing for individual processes like, logistics support, kitting, and LASER marking of wire.

PRODUCTS & SERVICES

Wiring harnesses

The services provided by ELFON LTD are:

- Concurrent Engineering with the design authority for improved manufacturability
- Rapid production line deployment and configuration change
- Sub-tier Contractor Management and Equipment Integration.

Certification & Accreditations

- ISO 9001:2008 certified
- Defense Material Manufacturers Registry of the Hellenic MOD.
- Industrial Security Certificate: CLASSIFIED-NATO SECRET Level.
- Outstanding Supplier-Lockheed Martin.
- Strongest Companies in Greece.
- D&B D-U-N-S® Registered™ business.

TECHNICAL MEANS

- Wiring harness and electromechanical assembly technology
- Production:

2.000 square meters of environmentally controlled production space. The facilities include clean rooms and static protected work areas. There is also space available that can be configured to product requirements for performing special manufacturing and testing processes.

ELFON's production department utilizes cutting edge technology in management, and manufacturing technique. Self Assessment and Continuous Improvement programs are in place, while shop floor layout and production procedures have been designed according to the principles of Lean Manufacturing. CATIA design, LASER marking, automated cutting, pneumatic crimping and computer-based testing are some of ELFON's capabilities.

MAIN CUSTOMERS - AEROSPACE

The industries to which ELFON LTD caters are:

- Aerospace
- Land vehicle
- Marine - Submarine
- Defense
- Security
- Cots

Main customers in Aerospace:

Beechcraft, Northrop Grumman, RMS, Lockheed Martin



2



3



1. Elfon new building

2-3. Personnel



MANAGEMENT BOARD

Nikolaos-Antonios Livanos
Managing Director

PERSONNEL

Total Personnel 2013: 7
Space personnel 2013: 4

ADDRESS & WEB SITE

NIKOLAOS & MARINOS LIVANOS
O.E. - EMTECH
44 Kifisias Ave. (Building C)
15125 Athens
www.emtech.gr

CONTACTS

Nikolaos-Antonios Livanos
Managing Director
Tel.: +30 210 652 8527
Fax: +30 210 652 8717
nikolaos.livanos@emtech.gr

Georgios Stravopodis
Administration Manager
Tel.: +30 210 652 8527
Fax: +30 210 652 8717
georgios.stravopodis@emtech.gr

CORE BUSINESS

EMTech, established in 2008, is a startup company interested in research and development for high technology products and services related to embedded systems and software engineering, focused on the space sector. EMTech has been actively involved with spacecraft operational simulators and respective simulation infrastructure software, specially targeting performance optimization and parallelization. EMTech has extensive know-how in simulation adaptation technologies, co-simulation arrangements and respective synchronization and distributed simulation technologies.

PRODUCTS & SERVICES

Performance Optimization of Spacecraft Simulators (cPDES & PCOF)
Future, high complexity, spacecraft simulators will incorporate higher-fidelity models, several processor emulators and spacecraft clusters, all together running in the same co-simulation environment. Today, state-of-the-art multi-core processors provide high computational power with the core number anticipated to be significantly extended. Now, EMTech answers the question of how to take advantage of multi-core processors, by introducing parallelization and synchronization in models' execution. The Conservative-Parallel Discrete Event Simulation (C-PDES) scheduler has already been delivered to ESA/ESOC, supporting the SIMSAT simulator kernel, thus supporting future spacecraft operational simulator missions with multi-process and multi-threaded execution functionality. Additionally, EMTech is offering the Performance Control and Optimization Framework (PCOF), which provides a set of performance measurement and reporting tools, plus a well-defined methodology, including several specific tasks and activities targeting to the retrieval of parallelization possibilities, execution bottlenecks and poor code implementations. Together, PDES and PCOF, make a powerful combination of valuable tools to address performance optimization and parallelization of spacecraft simulators.

TECHNICAL MEANS

- Experience in Space Software Engineering: Ground Segment Data Infrastructure Systems, Object Oriented Analysis, Design Methodologies and Technologies, Programming, Artificial Intelligence; Design and development of spacecraft operational simulators based on Model Driven Architecture (MDA): SMP2, EGOS-MF, UMF, REFA; SIMULUS Infrastructure: SIMSAT, Ground Models, ERC32 emulator,

Certification & Accreditations

Since 2011 EMTech has been selected by ESA/ESOC to be a Qualified Partner (QPA) under the Competitive Frame Contracts for "Ground System Software Related Activities (2010 – 2014)" (the "GFC8 Frame Contracts").

Generic Models; Performance optimization of spacecraft operational simulators: Code analysis based on run-time tools, Code improvement, Parallelization, Parallel Discrete Event Simulator (PDES) scheduler; Programming Languages: C++, Java, Javascript, Python, UML, SysML, MagicDraw; Operating Systems: Linux SLES, Windows

- Experience in Space Software Engineering Standards: ECSS-Q-ST-80C – Space Product Assurance / Software Product Assurance; ECSS-E-ST-40C Space Engineering Software; BSSC 2005(1) SETG Tailoring of ECSS Software Engineering Standards for Ground Segments in ESA; ECSS-ETM-40-07 SMP2 Simulation Modelling Platform; BSSC2000(1) C and C++ Coding Standards; BSSC2005(2) Java Coding Standards; BSSC2004(3) Design & Style Guide for XML Data & Schema; ECSS-Q-ST-80C Space Product Assurance / Software Product Assurance

MAIN CUSTOMERS

- ESA/ESOC: Design and development of spacecraft operational simulators, Performance optimization and parallelization of spacecraft operational simulators, Ground segment software
- ESA/ESTEC: Magnetic dipole measurements, respective algorithms and software
- ADMIE S.A.: the Greek Independent Power Transmission Operator – part of the Greek Power Public Company has entrusted EMTech's iReact-Solution (HYPERLINK «<http://www.ireact.gr>» www.ireact.gr) since 2008 and there are currently over 100 installations all over the Greek region managing peak loads of 1,5GW.

MAJOR SPACE ACTIVITIES OR PROJECTS

- Multi Magnetometer Setups for Magnetic Dipole Modelling – MMSMDM (ESA/ESTEC TRP Study)

The MMSMDM project aims to perform an instant «snapshot» of the magnetic signature of an equipment under test (EUT) - as all spacecraft with units or instruments are susceptible to magnetic fields - and to result in a final proof-of-concept implementation of a multi-magnetometer setup.

- simBridge: adaptation technology for co-simulation arrangements using SMP2

The simBridge project involves the design and development

Emtech - Nikolaos & Marinos Livanos O.E.

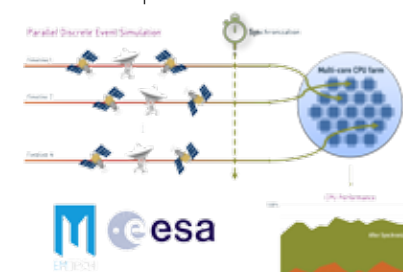
of a core adaptation technology, useful to efficiently interconnect different simulation environments with SIMSAT. Based on this core technology EMTech currently develops several plug-in adapters for interfacing SMP2 models executed by the SIMSAT simulator with external simulation tools and visualization solutions, such as simBridge:Matlab, simBridge:Octave, simBridge:Python, simBridge:web, simBridge:Celestia. Our strategy is to provide the key adaptation technology to build co-simulation environments using the SMP2 standard.

- Enhancement of Simsat Simulation Environment – ESSE (ESA/ESOC Project)

The ESSE project had three principal directions: design and development of a conservative Parallel Discrete Event Simulator (cPDES) engine, design and development of a Performance & Control Optimization Framework (PCOF), including the required tools and related methodologies, and experimentation on how the Dataflow concept could be applied in the SIMSAT environment; i.e. a Dataflow proof-of-concept in SIMSAT.

- Linux & Multi Core Processor Technology for Simulators – LMCPTS (ESA/ESOC TRP Study)

A theoretical study was conducted, focusing on state-of-the-art algorithms and techniques referred to in literature regarding the fields of Discrete Event Simulation (DES) and the prerequisites as well as augmentations required for introducing parallelism in such simulation environments. The study presented the Parallel DES and the related Conservative and Optimistic approaches, as well as information regarding algorithms and techniques able to support realization concepts.



Parallel Discrete Event Simulation



MANAGEMENT BOARD

Despina Kallidromitou

Managing Director

Marc Bonazountas

President, Shareholder, Founder

PERSONNEL

Total Personnel 2013: 50+

(all subsidiaries)

Space personnel 2013: 10+

ADDRESS & WEB SITE

EPSILON International SA

Monemvasias 27

15125 Marousi

www.epsilon.gr (main)

CONTACT

Marc Bonazountas

President & Founder

Tel.: +30 210 689 8615

Fax: +30 210 682 1220

bonazountas@epsilon.gr

CORE BUSINESS

EPSILON is a Technology Resources Engineering & Consulting Group with expertise in: Aerospace, GeoInformatics, Environment and Management. The company was established in 1985 in Boston, Massachusetts, USA. Today it operates world-wide as a Group of companies with Head Offices in Greece, Bulgaria, Cyprus, Germany, Italy, Malta, Russia and allied offices in most European countries

PRODUCTS & SERVICES

The Group has well-built links with foremost world technology organizations. EPSILON delivers engineering, consulting, outsourcing, R&D, training and state-of-technology products as geospatial database infrastructures and up-to-the-minute navigation and environmental technologies for Aviation, GeoInformatics, Environment and Management. Epsilon has recently expanded into the UAV technologies in association with UVision Aerosystems, Israel (manufacturing of a UAV tailored to the Forest Fire Management).

TECHNICAL MEANS

Use of satellite imagery

MAIN CUSTOMERS - SPACE

Private sector

European Commission (eg. management plans of Narura sites)

Governments

MAJOR SPACE ACTIVITIES OR PROJECTS

Only consulting and products from space imagery

Certification & Accreditations

We are working with the aviation industry (our company in Germany, www.aviontek.com) for certification of our products 3d-pilot.com



1



2



3



4



5

1. & 3. 3D-Pilot Navigation system (2013)

2. 3D-City/Island (iPad, 2014)

4. GeoInformatics: Galileo Marine Project

5. © UAV technologies in association with UVision Aerosystems, Israel

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Evangelos Grivas

CTO (electronics)

Alexandros Kapsalis

CTO (photonics)

John Syvridis

CEO

PERSONNEL

Total Personnel 2013: 4

ADDRESS & WEB SITE

Eulambia Advanced Technologies LTD
Em. Kampouri 34
18345 Moschato
www.eulambia.com

CONTACTS

Evangelos Grivas

CTO (electronics)

Tel.: +30 694 470 3852

Fax: +30 210 804 1187

evangelos.grivas@eulambia.com

Alexandros Kapsalis

CTO (photonics)

Tel.: +30 694 612 7738

alexandros.kapsalis@eulambia.com

CORE BUSINESS

Provision of dedicated solutions in the areas of photonics and electronics to industrial customers, covering a complete chain from specification extraction, design, development and prototyping.

PRODUCTS & SERVICES

- Photonic Design and System Implementation
- Electronics Design, Development and Prototyping

TECHNICAL MEANS

- Access to fully equipped optical and electronics lab.
- Ownership of a large software library (in-house and commercial) for the design of photonics and electronics components, subsystems and systems.

MAIN CUSTOMERS - SPACE

- GKN Aerospace
- Sensa

2014 SHOWCASE

01 PHOTONICS

Guiding new photonic technologies to successful market introduction. Our engineering professionals are dedicated to helping you develop and deliver your innovative photonic technology on budget and on schedule.

PHOTONIC DESIGN
EULAMBIA'S PHOTONICS TEAM

- Passive Components
- Active Components
- Periodic Integrated Circuits
- Optical Fiber Components

02 ELECTRONICS

Originally put together to provide support to the company's optical applications it rapidly gained experience in additional sectors. It is staffed by highly experienced researchers with comprehensive skills in both analogue and digital electronics.

ELECTRONIC SUBSYSTEMS DEVELOPMENT
EULAMBIA'S ELECTRONICS TEAM

- Digital Electronics
- Analogue Electronics
- ASIC

03 SYSTEMS & NETWORKS

Our experts have extensive know-how in Systems Development for various applications. Related fields include Sensor and Telecommunication Networks as well as other areas of interest.

COMPLETE CUSTOM SOLUTIONS
EULAMBIA'S SYSTEMS & NETWORKS TEAM

The Group works with you, understanding as a complete solution, rather than trying to push a design towards a particular product family.

EULAMBIA'S TEAM

WHO WE ARE

Eulambia Advanced Technologies Ltd. was founded in 2013 by a group of PhD researchers together with experienced engineers to provide the best solutions for a broad range of issues in the fields of photonics and electronics.

EULAMBIA'S MISSION

OUR PHILOSOPHY

The philosophy is to have innovation approaches with sound engineering principles, while understanding the financial and manufacturing constraints. We provide custom and cost effective solutions to a broad range of requests. Development or engineering problems in the areas of photonics and electronics while keeping good communication with our partners.

CONTACT US

EULAMBIA ADVANCED TECHNOLOGIES LTD.
104, KAMPOURI 34, MOSCHATO
CP 18345 - ATHENS, GREECE
PHONE: +30 694 470 3852
EMAIL: INFO@EULAMBIA.COM

WWW.EULAMBIA.COM



MANAGEMENT BOARD

Emmanuel Zervakis
General Director-BoD member

PERSONNEL

Total Personnel 2013: 15
Space personnel 2013: 8

ADDRESS & WEB SITE

European Sensor Systems S.A. (ESS)
48, Konstantinoupoleos St.
19400 Koropi, Attiki
www.esenssys.com

CONTACTS

Emmanuel Zervakis
General Director
Tel.: +30 216 200 0500
Fax: +30 216 200 0555
zervakis@esenssys.com

Maria Tsamkosoglou
Support Administrator
Tel.: +30 216 200 0500
Fax: +30 216 200 0555
info@esenssys.com

CORE BUSINESS

A privately owned company incorporated in 2010, European Sensor Systems (ESS) is a global developer and manufacturer of high quality sensors based on micro-electronics technologies.

- Design and Development of MEMS mass flow sensors
- Design and Development of MEMS pressure sensors
- Design and Development of MEMS acceleration sensors
- Design and Development of Signal Conditioning ASICs

Our MEMS based sensors and sensor systems measure fluid properties, pressure, acceleration and temperature.

ESS products are employed in sophisticated control and monitoring applications in the industrial, medical, aerospace and consumer good markets either as stand-alone components or being integrated within equipment.

Prior the incorporation of ESS, the core team was part of THEON Sensors S.A., an affiliated company of ESS.

PRODUCTS & SERVICES

- **Mass air flow sensing systems:** Each sensing system integrates a silicon MEMS flow sensor along with its driving and read-out electronic circuitry. Current solutions include low to medium flow ranges (<0.2 Nm³/m) as well as very high flows (<3.5 Nm³/m).
- **Capacitive pressure sensors:** ESS has developed an innovative surface-bulk micromachining SOI process, which enables the fabrication of MEMS capacitive pressure sensors. These ones can be delivered either as single dies or in different type of packages targeting various applications. Each packaged pressure sensor integrates besides the MEMS pressure sensor die, a full custom mixed signal capacitive sensor signal conditioning IC of the ESS family of ASICs.
- **Acceleration sensors:** ESS accelerometers are a single axis capacitive MEMS transducers with a measurement range of $\pm 1g$, $\pm 10g$, $\pm 20g$. The device principle of operation is based on the displacement of a proof mass suspended by two silicon springs as a result of the induced acceleration. ESS accelerometers can either be delivered as single dies or co-packaged with ESS mixed signal readout electronics IC. The packaged component produces either analog or digital output while the operation is reconfigurable.

Certification & Accreditations

- Certification of the ESS Quality Management System in accordance with the standard ISO 9001:2008 - TÜV Hellas (TÜV NORD Group)

- **Full custom mixed-signal ASICs** for capacitive sensor signal conditioning: ESS capacitive signal conditioning ASICs are capable of interfacing all kinds of capacitive sensors, both of single and differential architecture and they are the ideal signal conditioners for the capacitive pressure sensors and accelerometers designed by ESS.

The core architecture of the ESS capacitive signal conditioning ASICs utilizes noise reduction techniques in order to improve SNR and to provide high resolution digital and analog outputs.

TECHNICAL MEANS

- Die Bonder (FINEPLACER® Pico MA) 5 μ m (0.2 mil) placement accuracy
- Packaging Capabilities: Eutectic Soldering, AuSn Soldering, Thermo Compression, Thermo-/ Ultrasonic Bonding, Adhesive Technologies, ACP (Anisotropic Conductive Paste), Chip On Glass (ACF)
- Wire Bonder (Kulicke & Soffa) 4522 Series Ball Bonder
- Customized Cascade Probe Station for special on-die/wafer sensor characterization tests
- Pressure Sensor Characterization and Calibration Setup (Temperature, Humidity Testing): LCR meter (4284A); Environmental Chamber (Votsch VC 7034)
- VMM (Video Measuring Machine): TESA - VISIO 300 DCC
- CMM (Coordinates Measuring Machine): DEA mistral 070705
- In-house Machine Shop: Accelerometer Isolation Table Thorlabs Isoplate PTT600600, Shaker TIRA TV 51110, Rotation Mount Thorlabs CR1/M, Pneumatic Pressure Controller/Calibrator (up to 172barg) for precision sensor calibration and characterization ...

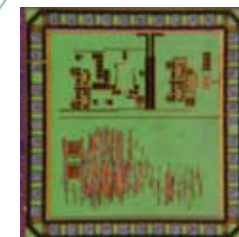
MAIN CUSTOMERS - SPACE

European Space Agency, Thales Alenia Space, Astrium, SEA, Lusospace

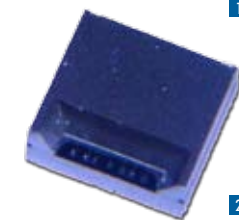
MAJOR SPACE ACTIVITIES OR PROJECTS

ESS/THEON have acquired unique experience the last few years, implementing different ESA activities and undertaking contracts with European Prime Contractors towards the development of Space Qualified Hardware in the area of MEMS sensors and CMOS signal conditioning electronics. Furthermore THEON participated in FP7 funded projects both in space and microelectronics area.

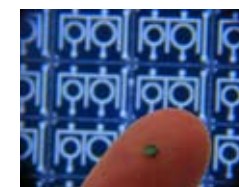
- Feasibility Study for MEMS-SOI Capacitive accelerometer (ESA Contract / Astrium ST)
- Flight Demonstrator for a MEMS accelerometer for Launchers (ESA Contract)
- Accelerometer Redirection Study (ESA Contract)
- Accelerometer Component to TRL5 (ESA Contract / Astrium ST)
- Performance Demonstration of THEON's existing MEMS Pressure Modules for Space applications (ESA Contract)
- Space Qualified Family of MEMS Pressure Modules for Satellite Applications (ESA Contract / TAS)
- Connectivity and Packaging of Systems-of-Microsystems (ESA Contract)
- CORONA - Customer-Oriented Product Engineering of Micro and Nano Devices (FP7 Collaborative project)
- SME-SAT / Small and Medium Enterprise Satellite (FP7 Collaborative project)



1



2



3



4

1. ESS CMOS ASIC Die
2. ESS MEMS Accelerometer Die
3. ESS MEMS Pressure Die
4. ESS Pressure Transducer for Space Application



MANAGEMENT BOARD

Dimitrios Kolokotronis
CEO

Ioannis Korinthios
R&D Director

Dimitris Kapellos
Product Development Director

PERSONNEL

Total Personnel 2013: 20
Space personnel 2013: 2

ADDRESS & WEB SITE

FASMETRICS S.A.
Perikleous 17 & Persefonis 1,
Gerakas - 15344 Athens
www.fasmetrics.com

CONTACTS

Ioannis Korinthios
R&D Director
Tel.: +30 1210 292 6935
Fax: +30 210 292 6978
jkor@fasmetrics.com

Aggeliki Andeopoulou
Administrative Director
Tel.: +30 210 292 6935
Fax: +30 210 292 6978
aggeliki.andeopoulou@fasmetrics.com

CORE BUSINESS

In FASMETRICS, we invent, create and produce radio technology products that provide added value to our customers. We are committed to innovation and fast forward-thinking. We provide outstanding services and highly specialized technology in order to achieve cost efficient operational excellence for our customers. Highly spirited and innovative-thinking, our team consists of professionals that are the top of their field, committed in offering solutions applied to all radio technologies.

PRODUCTS & SERVICES

- FASMETRICS is focused on development of specialised radio systems, devices and components. Intensive internal research has resulted in the development of:
 - unique hardware and software radio solutions
 - efficient antenna systems for a multiplicity of applications
 - specialized radio devices and components
- FASMETRICS is engaged in all types of radio technology projects from low to ultra-high frequencies. It also provides superior engineering services of increased flexibility in the following areas:
 - Radio Propagation Planning and Modelling
 - Radio Performance Management and Optimization
 - Spectrum Measurements and Post-Processing
- FASMETRICS specialized team is focused on supporting any interested party with various RF and microwave field measurements aiming to verifying received signal strengths of intended and unintended radio transmissions for any technology and frequency ranging. Spectrum measurements extend to various categories mainly aiming on electromagnetic safety (EMS), electromagnetic compatibility (EMC) and electromagnetic interference (EMI) cases.
- The company has so far focused on the telecommunication sector.
- The extensive experience of FASMETRICS in electromagnetic compatibility and electromagnetic interference tests has allowed the company to perform similar operations on Wireless Remotely Powered Sensors for Avionics and on SpaceWire Switch prototypes for spacecraft/satellite on-board data networks. Also the company has been involved in the design of the layout of the board and bracket of the SpaceWire Switch prototype for the isolation of EMC problems and absorption of emitted interference.

Certification & Accreditations

Fasmetrics is an accredited lab since 2007. It has an ISO 17025 Accreditation for EMS measurements. Fasmetrics also has ISO 9001:2008 qualification for products and services

TECHNICAL MEANS

Fasmetrics utilises CAD tools for electronic design (Altium) and 3D electromagnetic simulation (CST MWS and ADS).

Fasmetrics also has a fully equipped lab and access to anechoic chamber to perform a wide variety of lab measurements.

MAIN CUSTOMERS - SPACE

Fasmetrics has a number of international customers in the telecommunication sector, including Vodafone, NSN, Huawei Technologies, Cosmote Group, Siemens, Alcatel Lucent and ZTE Corporation. In the Space area the main customer and partner is Teletel S.A.

MAJOR SPACE ACTIVITIES OR PROJECTS

Fasmetrics has participated in a number of national funded R&D projects in the area of telecommunications.

Fasmetrics has participated in the development and testing of Wireless Remotely Powered Sensors for Avionics. This was within the framework of a national (GSRT) funded project with partners TELETEL & MILTECH.

Fasmetrics also participated in the design of the layout of the board and bracket of the SpaceWire Switch prototype for the isolation of EMC problems and absorption of emitted interference (Study project in cooperation with TELETEL).





MANAGEMENT BOARD

Charilaos Kokkinos

CTO - Mechanical Engineer
M. Sc./ FEA Analyst

Sotirios Kokkinos

Business Development
Electrical Engineer M.Sc.

ADDRESS & WEB SITE

FEAC Engineering
30, Michail Aggelou Str.
45333 Ioannina
www.feacomp.com

CONTACTS

Charilaos Kokkinos

CTO - Mechanical Engineer M.Sc./
FEA Analyst
Tel.: +30 694 712 0602
charilaos.kokkinos@feacomp.com

Sotirios Kokkinos

Business Development - Electrical
Engineer M.Sc.
Fax: +30 694 836 2576
sotiris.kokkinos@feacomp.com

CORE BUSINESS

FEAC Engineering P.C. is an engineering consulting company, highly specialized in Simulation Driven Product Development. The company applies simulation expertise and operational experience to solve challenging & complex problems. FEAC's top level and worldwide awarded services range from Computer Aided Design (CAD) drafting, advanced multi-physics Finite Element Analysis (FEA) and Computational Fluid Dynamics (CFD) to Structural Health Monitoring (SHM) and design optimization techniques.

Founded in 2014 and based in a strategic position between East and West, Greece, FEAC operates in the global market and collaborates and partners with engineering companies, product manufacturers, research centers and universities. FEAC Engineering P.C. provides state of the art solutions throughout the product development cycle, from concept design to prototype testing.

PRODUCTS & SERVICES

Our awarded services include:

- Computer Aided Design (CAD)
- Computational Fluid Dynamics (CFD)
- Advanced multi-physics Finite Element Analysis (FEA)
- Structural Health Monitoring (SHM)
- Optimization Techniques

Certification & Accreditations

- Winners of the prestigious 2014 ANSYS Hall of Fame Simulation Competition
- S/W & specific tools accreditations
- CATIA V5 Surface Design
- CATIA V5 Kinematics and DMU Fitting
- Smarteam CATIA data manager at CERN
- ANSYS Workbench / Workbench Advanced / Design Modeler / CFD Fluent & CFX
- Implicit & Explicit Finite Element Methods (FEM)(ANSYS Classic & Workbench, ANSOFT MAXWELL, CATIA FEM, MSCPatran/Nastran, ETA VPG, LS-DYNA, Is-prepost).
- Optimization methods using ANSYS DesignXplorer
- HBM's Data Acquisition software CATMAN
- DASSAULT's SMARTEAM PLM
- Beta CAE ANSA

FEAC Engineering

TECHNICAL MEANS

FEAC Engineering P.C. uses the best in class, state-of-the-art Computer Aided Engineering (CAE) tools combined with the great experience & deep knowledge of professional engineers.

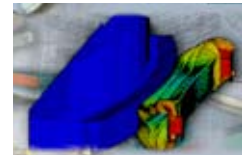
- CAD: Dassault Catia, Autodesk Suit, ANSYS DesignModeler
- CAD Plugin: Cadnexus
- CFD: ANSYS Fluent, OpenFoam
- FEA: ANSYS Classic, ANSYS Workbench, MSC Nastran/Patran, ETA VPG, LS-DYNA, ANSYS Maxwell, ANS/μETA
- SHM: Matlab
- Optimization: ANSYS DesignXplorer

MAIN CUSTOMERS - SPACE

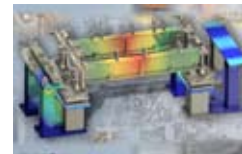
FEAC Engineering P.C. is a new member of LAMDA Team, an international group of Greek scientists/students, based in Silicon Valley (San Jose). More information by visiting the website: www.lambdasat.com

Collaborations & Partners:

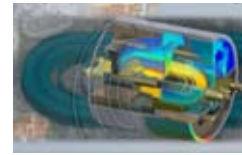
- | | | |
|-----------|-------------|-----------|
| 1. CERN | 3. Van Oord | 5. Arkhon |
| 2. C- JOB | 4. IMMG | 6. NAFEMS |



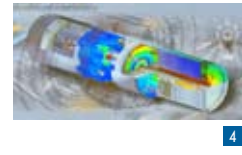
1



2



3



4

1. Automotive frontal bumper
2. High precision test bench
3. Short Model Coil
4. 11T Superconducting accelerator dipole magnet



MANAGEMENT BOARD**D. Aifantopoulou**

President

N. Zygras

Managing Director

Chr. Ntalas

Member

PERSONNEL

Total Personnel 2013: 13

Space personnel 2013: 3

ADDRESS & WEB SITE

Geoapikonisis S.A.P.-GE.

11, Maiandroupoleos str

115 24 Athens

www.geoapikonisis.gr

CONTACT**Dorothea Aifantopoulou**

Director of the Remote Sensing &

GIS Applications Unit

Tel.: +30 210 698 0158

Fax: +30 210 698 0686

da@geoapikonisis.gr

CORE BUSINESS

Remote Sensing, Digital Photogrammetry, Transports & Environment, Digital geo-spatial data & ITC systems & solutions, Cadastre and Surveying, Project Management

PRODUCTS & SERVICES

The entity provides services Public Bodies and Private Companies in Greece and other EU member states as well as to EU Institutions.

- **Basic services:** Topographic & Land use / Cover mapping, Creation of orthophoto base maps, Ground surveying, etc.
- **Thematic services:** Agriculture, Forestry, Environmental studies, Urban Environment, Risk Management, Cadaster, Maritime / Terrestrial Transports monitoring and safety
- **ICT solutions:** Design, Implementation, Support and Maintenance of integrated systems and specific applications
- **Other services & products:** Project Management, Digital geo-data
- **Technologies involved:** Informatics & Geo-informatics, Web, mobile, Multi-media, Remote Sensing, Aerial Photography acquisition, Photogrammetry, G.I.S, Mobile Mapping, Topographic surveys

TECHNICAL MEANS

The company is fully equipped with the latest versions of commercial SW covering the whole workflow for digital image (satellite, aerial, ground (videos), etc.) processing, data base management (ORACLE, SQL SERVER, etc.) and ICT solutions and systems set up. The HW equipment consists of data base servers, application servers, backup servers, etc., and several workstations all connected through Ethernet as well as scanning, printing, plotting, etc facilities

MAIN CUSTOMERS - SPACE

- ESA
- Hellenic Ministry of Rural Development & Foods (MRD&F)
- Hellenic Mapping and Cadaster Organism (HEMCO)
- EUROSTAT

MAJOR SPACE ACTIVITIES OR PROJECTS

- EO Information Services for EIB Projects, Annex H: Urban Development, ESA, 2013
- Towards an operational GMES land monitoring core service – Geoland2, FP7 project, 2008 - 2012
- Digitization of landscape characteristics for assessing the Good Agricultural and Environmental Conditions (G.A.E.C.), computer assisted photointerpretation on VHR satellite data, MRD & F, 2010
- Satellite images' pre-processing services, various private entities (GR), 2009
- GMES service element - MarCoast, ESA, 2007-2008
- Land & sea integrated monitoring for European Security (LIMES), FP6 project, 2006-2010
- Compilation of the Prespa lake area ecomap (1:20000), through processing of Very High Resolution satellite data, Society for the Protection of Prespa, 2009 GMES service element – Forest Monitoring (stages 1 & 2). Development and scaling up of consolidated services for forest areas monitoring, management and assessment (high-resolution satellite data), tree type composition and changes (ARD activities), ESA, 2003-2004 & 2005-2008
- Remote sensing controls of subsidized areas, CAPO – CY (2005)
- Corine land cover 2000 (landsat ETM) , HEMCO, 2004
- Land use mapping for the needs of the Hellenic Statistical Authority (ELSTAT), 1:100.000 scale (LANDSAT™), HEMCO, 2001
- Integration of atlas databases (eurolandscape). Multi-temporal urban atlas for the city of Athens (satellite data & aerial photography) needed for urban expansion models, JRC-SAI SSSA, 2000
- Land and water management in mediterranean islands using earth observation data (ISLA); development of a modular tool for the optimized water resources management in mediterranean islands through land use planning (multi temporal LANDSAT™, spot 4, ERS1 data / hydro-geological models), EC –DG XII, 1998 - 1999
- Land use mapping, 1:25,000 scale of the attica basin (very high-resolution satellite data, fusion, IRS LISIII, KVR and KFA3000 data), atlas - athens, JRC-SAI-SSSA, 1999
- Land use mapping, 1:25,000 scale (spot XS, spot P), for the environmental impact assessment of a new railway, Hellenic railway organization, 1998
- Calamities information system (CALIS); daily information for hazardous weather risk assessment through the agricultural period, impact assessment (area extent and severity), yield loss evaluation using satellite data (NOAA, spot, LANDSAT™), EC –DG XII, 1997 - 1999
- Remote sensing assisted controls of subsidized arable lands and forage areas in Greece, MRD & F, 1994, 1996 & 1999



1



2



3

1. Atlas – Athens - land use map

2. Forest monitoring using remote sensing techniques - ESA - GMES service element

3. Forest type (conf./ broadl.) coverage GEOLAND2

**MANAGEMENT BOARD****Michael Salahoris**

General Manager

Barka Kyriakoula

Legal Representative

PERSONNEL

Total Personnel 2013: 12

Space personnel 2013: 5

ADDRESS & WEB SITE

GeoSet Ltd
60 Cyprus str.
15669 Papagos-Holargos
www.geoset.eu

CONTACTS**Michael Salahoris**

General Manager

Tel.: +30 210 651 3225

Fax: +30 210 654 5280

geoset@otenet.gr

Barka Kyriakoula

Legal Representative

Tel.: +30 210 651 3225

Fax: +30 210 654 5280

brkkl@yahoo.gr

CORE BUSINESS

- Standardization and Quality Controls
- Inspire, data modelling and site implementation
- Design and development of GIS spatial data models.
- GIS management & web-based information technology
- Registries and Cadastre
- Image processing, interpretation and remote sensing applications. Controls with remote sensing
- Geomatics and GPS (orthophotos, large scale mapping, field surveys)
- Hydrological model (terrain physiographic analysis)
- Integrated System of Administration and Control (IACS)
- Map creation and Publication, based on satellite and / or field collected data
- Vehicle Tracking
- Utilities network modeling, analysis, field surveying and leak detection using GIS, satellite and water distribution models technology

PRODUCTS & SERVICES

- Satellite Image and Aerial Photo geometric and radiometric corrections and processing.
- Terrain morphometric analysis. DTM production.
- Orthophotomaps production and dissemination
- LIDAR data management, processing and analysis
- Inspire implementation: Design and implementation of data transformation dynamic and static procedures to INSPIRE data specifications. INSPIRE metadata creation. Creation of INSPIRE portals implementing the INSPIRE specifications
- Consulting on Integrated Administration and Control System applications: Land Parcel Identification System, Permanent Trees Registries, Control with Remote Sensing, On The Spot Checks
- Consulting on GIS Sites design and implementation
- GIS Software Application development (ESRI's ArcGIS, ArcEngine, MapObjects, ArcIMS and ArcGIS Server, AutoDesk's Map and MapGuide, Maptitude's Manifold and Open Source)
- Paper Map automation and GIS vector database creation
- Digital and Paper map Compilation and publication.

MAIN CUSTOMERS - SPACE

State and Local Administration Units and Agencies



MANAGEMENT BOARD

Vasilis Sapoulidis

General Director

Dimitris Katsaros

Quality Director

PERSONNEL

Total Personnel 2013: 7

Space personnel 2013: 5

ADDRESS & WEB SITE

Geosfaira L.P.
83 Vrilissou, 1st fl
11476 Athens

CONTACTS

Vasilios Sapoulidis

General Director

Tel.: +30 210 643 3889

Fax: +30 210 643 3574

geosfair@otenet.gr

Katsaros Dimitris

Quality Director

Tel.: +30 210 643 3889

Fax: +30 210 643 3574

geosfair@otenet.gr

CORE BUSINESS

Development studies for Infrastructures, Land uses and Urban Planning

PRODUCTS & SERVICES

- Production of maps using satellite images in: GIS projects, Infrastructures projects.
- Remote Sensing for recognition of Land uses in Urban Planning Projects.
- Use of satellite images for creating 3D digital terrain models in Hydrology and Hydraulic research and development.
- Use of infrared satellite images for recording the burnt forest areas and for precision agriculture.

TECHNICAL MEANS

- Image processing Software
- Spatial Analyst Software
- GIS Software
- Photogrammetric and Remote Sensing Software
- GPS Units
- Design Software
- Office Software
- Computers
- Large scale Plotters and Scanners
- Etc.

Certification & Accreditations

State degree for:

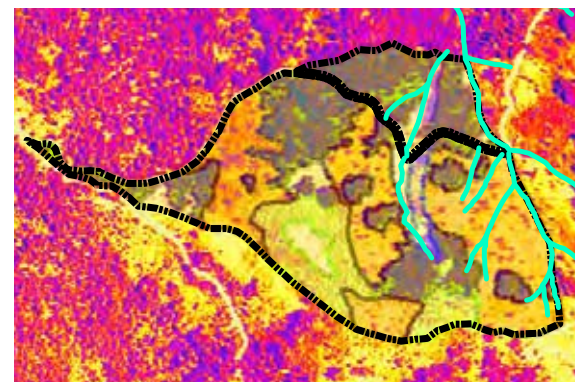
- Mapping
- Photogrammetry
- Remote Sensing
- Urban Planning
- Environmental studies

MAIN CUSTOMERS - SPACE

- DESFA S.A. (Hellenic Gas Transmission System Operator S.A.) Main Network
- DEPA S.A. (Hellenic Natural gas distributor company) Secondary Network
- EYDAP S.A. (Hellenic company for the management of drinking water and waste water)
- KTIMATOLOGIO S.A. - National Cadastre & Mapping Agency S.A.
- Ministry of Agriculture
- Ministry of Environment
- A lot of Municipalities
- Banks
- Private projects

MAJOR SPACE ACTIVITIES OR PROJECTS

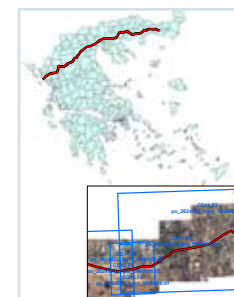
- Creation of digital ortho maps from satellite images of the main existing Natural gas, high pressure Pipe system (Length: 1000 km and width: 3 km) (customer DESFA)
- Creation of digital ortho maps from satellite images for DESFA's study of the main existing Natural Gas, High Pressure Pipe System (Hellenic-Italic pipe) (Length 600 km and width 3 km) (customer: DESFA)
- Creation of digital ortho maps from satellite images for the pipe system of drinking water and waste water over the capital of Greece (Athens) and 20 Greek islands (customer: EYDAP)
- Creation of digital ortho maps for the Cadastral of the Greek region Argolida (customer: KTIMATOLOGIO)
- Urban Planning using satellite images for the Greek region of Korinthos and Loutraki (customers: The local Municipalities)
- Recording of burnt areas from fire in the island of Rhodes (customer: MINISTRY OF AGRICULTURE).
- Etc.



1



2



3

1. Recognition of land & forest uses
2. Burnt areas after the fire in the Greek island
3. Digital maps Natural Gas pipe systems



MANAGEMENT BOARD

Vasiliki (Betty) Charalampopoulou
President & CEO- Geologist
Errikos-Ioannis Skassis
Member of the Board- Electric/
Mechanic Engineer
Hippocrates Pappas
Member of the Board- Mechanic
Engineer, Environmental Business
Unit Manager

PERSONNEL

Total Personnel 2013: 7
Space personnel 2013: 5

ADDRESS & WEB SITE

Geosystems Hellas S.A.
88A Ginosati Str.
14452 Athens
www.geosystems-hellas.gr

CONTACTS

Vasiliki (Betty) Charalampopoulou
President & CEO
Tel.: +30 210 284 6144
Fax: +30 210 281 5481
b.charalampopoulou@geosystems-hellas.gr
Charalampos (Charis) Manesis
Technical Sales Manager
Tel.: +30 210 284 6145
Fax: +30 210 281 5481
ch.manesis@geosystems-hellas.gr

CORE BUSINESS

Geosystems Hellas S.A. (GSH) was established in November 2009 as Geosystems EU Group Member (www.geosystems-group.eu) acting commercially as **HEXAGON GEOSPATIAL solutions authorized reseller**, and as consultant in Greece and Cyprus on subjects of **Geodetic and Environmental Monitoring** (as partner of Metrica SA, www.metrica.gr <http://www.metricanet.gr>), **Photogrammetrical and Remote Sensing projects** and **R&D projects for Land Management**. GSH is a legal e-GEOS representative authorized in Greece and Cyprus to handle all **e-GEOS satellite imagery products**.

The success of the company is based on its qualified staff with experience of at least 15 years working in the same market, and on the availability and use of good customer database of Greek and Cypriot Market.

GSH has developed a comprehensive range of services, implementation and support activities focused on solutions and software development for Earth Observation.

GSH is member of the Hellenic Association of Space Industry and of the si-Cluster participating in the Collaborative ACRITAS and NFOFRAS Projects.

PRODUCTS & SERVICES

Geosystems Hellas S.A. is a leading provider of geospatial solutions as well as technologies designed for geographical data capturing, processing, analysing and presenting.

The company puts its effort into promotion of innovative geospatial methods and technologies among users from different disciplines (project implementation, technical support, consultancy, workshops) in the field of remote sensing, photogrammetry and Geographical Information Systems, conducting research and development projects.

TECHNICAL MEANS

- 2 servers (HP Proliant) with Web-GIS, GIS, Photogrammetry and Remote Sensing s/w (ERDAS Apollo, Geomedia WebMap, Geomedia Smart Client, Geospatial Portal, ERDAS Imagine & Add-on modules, Geomedia Professional & Add-on modules)
- Several workstations with GIS, Photogrammetry and Remote Sensing s/w (ERDAS Imagine & Add-on modules, Geomedia Professional & Add-on modules), sereral GPS via METRICA S.A. warehouse and use of SmartNet GNSS Network

Certification & Accreditations

- From the Main Customers, to be asked if needed.

MAIN CUSTOMERS - SPACE

- Public sector: Greek, Cyprus Governments, Public Protection Offices, Defense
- Commercial Companies with interest in final products from Remote Sensing
- Research Institutes, General Secretariat for Research and Technology

MAJOR SPACE ACTIVITIES OR PROJECTS

Examples of recent activities 2013-2014 (Remote Sensing and Geo-Spatial Intelligence*):

• INDES - MUSA (Greece-China S&T cooperation call)

Objective: Establishment of integrated tools and models for large-scale multi-risk assessment in urbanized environments prone to ground subsidence and seismic motion by means of innovative, multi-sensor and cost effective monitoring solutions.

Context: Emerging need for corresponding urban-scale and highly-accurate monitoring schemes that can be used by end-users and decision-making authorities for risk management, disaster preparedness, environmental resource management and future urban planning. This concept becomes particularly valuable for complex urban landscapes (various types of residential structures, critical facilities, civil infrastructures).

Output: the INDES-MUSA project aims at providing readily available monitoring data in the form of spatial distribution models related to ground subsidence and seismic motion through a web GIS service applied in properly selected urban sites in Greece and China, meeting mutual scientific and practical needs of both countries for multi-risk mitigation strategies.

• Development of a unified system of geo-informational soil data and delimitation of rural areas of the country (Greek Payment and Control Agency for Guidance and Guarantee Community Aid).

Objective: Creation of a geo-informational data system for the management of a national plan for rural land, so as to ascertain and verify the suitability of agricultural areas for specific land uses, and the efficient orientation of agricultural crops, depending on the quality characteristics of soil and climatic conditions of each agricultural region with the ultimate objective of the Rural Domain multi-development within the principles of Sustainable Development.

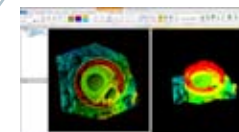
Output: Critical factors are the collection and proper utilization of existing soil data and the successful completion of individual mapping procedures. A web GIS platform is under construction that will provide all the raw and processed geospatial data that are collected from different time periods.

• Supply of equipment and software to create web content management system under the Action «Educational approach to natural disasters in the aspect of digital technologies» (Technological Educational Institute of Kavala).

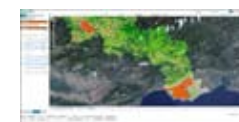
Objective: Development of methods relying on digital techniques and infrastructures, in order to support teaching processes and provide information and awareness across the thematic unity «natural disasters».

Output: An Atlas (Web GIS) of natural disaster was implemented in order to create an electronic temporal archive of different kinds of natural disasters.

* MoD projects are not included because of confidentiality.



1



2

1. Handling point clouds
2. AUTONEST - Automated Telemetric applications for operational monitoring in Nestos River Basin», Web Geo portal.

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

MANAGEMENT BOARD

Theofanis Katsanos
President and Managing Director

Liza Panagiotopoulou
Head of R&D

PERSONNEL

Total Personnel 2013: 32
Space personnel 2013: 4

ADDRESS & WEB SITE

Geotopos S.A.
427, Mesogion Avenue
15343 Athens
www.geotopos.gr

CONTACTS

Liza Panagiotopoulou
Head of R&D
Tel.: +30 210 698 0428
Fax: +30 210 698 0320
lizapan@geotopos.gr

Theofanis Katsanos
Managing Director
Tel.: +30 210 330 1021
Fax: +30 210 330 0884
fek@geotopos.gr

CORE BUSINESS

GEOTOPOS S.A. is an independent study company. The company is involved in Geographical and Land Information Systems applications, Digital Mapping and Photogrammetry, Earth Observation and Integrated GNSS applications, Cadastral, Topographical, Road Planning and Construction Studies. It has carried out studies and projects for the European Commission and the European Space Agency, Hellenic Central Authorities and Ministries, Local Authorities Organisations, Public and Private Companies.

PRODUCTS & SERVICES

According to company's orientation the products are either provided services or projects related to the broad area of geo-nformation.

TECHNICAL MEANS

The company owns an extended list of h/w and s/w.

MAIN CUSTOMERS - SPACE

The main customers are: European Commission, European Space Agency, General Secretariat of Research and Technology, Hellenic Ministries etc.

MAJOR SPACE ACTIVITIES OR PROJECTS

The major projects carried out by GEOTOPOS S.A. are:

- The project «EGNOS Performance In South Latitudes (EPISOL)» for analysing, testing and validating the EGNOS performance and limitations in the Aegean Sea/ Phase 1 and 2. (ESA)
- The project «Development of a) a Method for estimating road traffic conditions using Floating Car Data Technology and b) an algorithm for dynamic navigation of vehicles». (Hellenic General Secretariat for Research and Technology)
- The project «Advanced Earth Observation techniques for monitoring and protection of forest and other terrestrial ecosystems». (General Secretariat for Research and Technology)
- The project «Eye in the Sky» which aimed to develop a number of services based on the synergy of surveillance, communications and digital mapping technologies for addressing the organisation of large-scale events e.g. Olympic Games 2004. (European Commission)
- The project «Control of area-based arable and forage subsidies using Remote Sensing in the framework of the European Commission's MARS Project» (Hellenic Ministry of Agriculture)

For details please visit company's web site.

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

MANAGEMENT BOARD

Christodoulos Protopapas
CEO

Ilias Tsakalis
CFO

PERSONNEL

Total Personnel 2013: 60
Space personnel 2013: 60

ADDRESS & WEB SITE

Hellas Sat
48 Konstantinoupoleos Str.,
19400 Karelas Koropi
www.hellas-sat.net

CONTACT

Dr Christos Papachristos
Product and Marketing Manager
Tel.: +30 210 615 9728
c.papachristos@hellas-sat.net



CORE BUSINESS

HELLAS SAT is the owner of the Hellas-sat 2 satellite, the first Greek satellite, which was successfully launched and started operating in May 2003. Hellas Sat is the wholesaler and manager of the complete capacity and services of the satellite, offering contemporary, high quality services in Europe, Middle East and South Africa

PRODUCTS & SERVICES

- Satellite capacity leasing (Hellas-sat 2, and Hellas-sat 3 and 4 as forthcoming satellites in 2016 and 2017 respectively)
- Occasional use leasing
- Teleport Services
- Broadband Networks expertise though this product is just recently discontinued

MAJOR SPACE ACTIVITIES OR PROJECTS

Numerous projects funded by ESA and EU:

- H.O.S.T. (ARTES 3 - ESA)
- ESA ARTES 1 studies: two studies in Broadband and one in small GEO satellites
- EU FP6 and FP7 Projects - Rural Wings and BRESAT
- VITAL Project under Horizon 2020 (EU)

Hellas Sat



1. Hellas-sat 2 satellite

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Demetrios Papacostas

Chief Executive Officer

Athanasios Christogiannis

Chief Operating Officer

Dimitra Vroucha

Deputy of Operations Support
General Management

PERSONNEL

Total Personnel 2013: 1380

Space personnel 2013: 35

ADDRESS & WEB SITE

Hellenic Aerospace Industry S.A.
P.O. Box 23, Schimatari
320 09 Schimatari
www.haicorp.com/en/

CONTACTS

Aithon Narlis

Division Manager, Space
Applications
Tel.: +30 226 204 6599, 46512
Tel.: +30 697 755 0231 (cell)
Fax: +30 226 205 2910
narlis.Aithon@haicorp.com

Dimitrios Zagkos

Engineer, Space Applications
Tel.: +30 226 204 6594
Fax: +30 226 205 2910
zagkos.Dimitrios@haicorp.com

CORE BUSINESS

The Hellenic Aerospace Industry S.A. (HAI) is the leading aerospace and defense industry of Greece.

HAI's expertise is testified by its strong and reputable presence in the global marketplace both as a supplier to a long list of customers as well as a partner to synergies with some of the world's leading manufacturers in the Aerospace and Defence industry: Memorandums of co-operation with Lockheed Martin, Airbus Group, Dassault, Finmeccanica, Thales, Pratt & Whitney, Snecma, Boeing; Creation with Pratt & Whitney of a single source for aviation 's controls and accessories MMRO, «1Source Aero Services A.E.»; Collaboration with national/international Agencies such as the Hellenic Aerospace and Defence Companies Association, the European Organisation for Security, ASD, ESA, and EDA; Participation in EU Major Research Initiatives (CleanSky, ARTEMIS...).

PRODUCTS & SERVICES

- **Services:** Aircraft Maintenance, integrated services (MMRO) for combat aircraft and helicopters; Aviation Engines Depot Level MRO services (turbojet, turboshaft, turboprop, turbofan and reciprocating engines); Electronic maintenance (Aircraft Avionics and Instruments, Ground and Weapon System Radars, Telecommunication & Electronics ground based equipment, Air-to-Air Missiles); Research and Development; Training
- **Products - Manufacturing:** Electronic Products (in the area of Telecommunications, Command Control Systems, Electronic Warfare Systems, Optoelectronics, Secure Communications, Weapon Systems); Aerostructures (Sub-assemblies for large civil aircraft, for military and regional A/C; Non rotating sub-assemblies for military/civil engines; Kits for modification/upgrade of A/C and engines)
- **Space Services:** DVB RCS Broadband Communication Services.

Certification & Accreditations

- ISO 9001 / ISO 9001 and the TickIT Guide (Bureau Veritas – 1996 / 1999); ISO 17025 for the Calibration Laboratory (Hellenic Accreditation Council – 2001).
- EN/AS 9100 (Bureau Veritas – 2003); EASA Part-145 / EASA Part-147 / EASA Part-21G (Hellenic Civil Aviation Authority – 2004 / 2008 / 2010); NADCAP for NDI/FPI (PRI – 2008).
- Certifications as Authorized Maintenance Centres - AMC: Lockheed Martin (C-130/L100); Rolls-Royce (T56-501D); Snecma (M53-P2); Honeywell (T53); Embraer (ERJ-145)

TECHNICAL MEANS

- Open antenna test range; Anechoic Chamber for EMC; ... DVB RCS Ground Station Hub
- Clean room facilities for composite layup process; 2 autoclaves for curing composite parts; 3 laser projection stations for assisting flat pattern positioning / hand layup process
- CNC cutters (2 stations) for pre-preg flat pattern cutting; CNC gantry type milling machine for trimming / drilling of composite parts; C-scan Ultrasonic NDT equipment; A-scan portable equipment; Vacuum lines, portable vacuum pumps; RTM injection equipment; High speed shear mixer for mixing resins with particles ...

MAIN CUSTOMERS - SPACE

Ministry of National Defence (MoD), Hellenic Coast Guard, ESA and a large base of customers in the EMEA region.

MAJOR SPACE ACTIVITIES OR PROJECTS

- ASPIICS: Design of electronic systems for satellites.
- DiaSTEMA (Data-Intensive Space Applications on Emerging Massively Parallel Processor Architectures: Performance, Energy, and Dependability Opportunities): Project of the "Bilateral R&D Greece-China Cooperation 2012-2014" framework. Comprehensive study for the implementation of space processing applications on GPUs (3 algorithms for encryption/authentication, image compression and object recognition will be implemented in 3 different platforms / CPU , FPGA and GPU)
- DTNATOR Delay Tolerant Networking, ESA project: Implementation, verification of a high performance ground DTN router
- Participation in the Design & Development phase of CSO (HELIOSIII satellite)
- Satellite communication link for the Hellenic Air force
- Space Internet, DISCOS: Space communications with Delay Tolerant Networks
- SPACE - RTM ESA: Design and Manufacturing of Space Components by RTM method
- "Wide Area Fishery Network" (DEPEA) - Greek Ministry of Maritime Affairs, Islands and Fisheries (Coast Guard): secure expansion of the Corporate Data Network (CDN) of the Ministry to 96 remote Port Offices (nationwide), over Satellite Capacity from Satellite "Hellas Sat II", using HAI's Satellite Hub Station and sat. capacity from Hellas Sat



2



3



4

1. UCAV neuron
2. Manufacturing, assembly and testing of Electronic Products
3. Ground Station Antenna
4. Anechoic Chamber

HAI is interested in building LEO small Satellites ≤ 100 kgr for Relay, observation or security applications.

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Kyriakos Papantoniou

Chairman BOD

Panagiotis Kokkaliaris

Financial Director

PERSONNEL

Total Personnel 2013: 13

Space personnel 2013: 3

ADDRESS & WEB SITE

HTR

Kifissias ave 188, 14562 Kifissia

14562 Kifissia Attiki

www.htr.gr

CONTACT

Vassilios Papantoniou

R&D Dept. Director

Tel.: +30 210 801 0033

Fax: +30 210 801 0303

vpa@htr.gr

CORE BUSINESS

- Large scale S/W platforms
- Database S/W servers for Telematics / Security
- Field robotics
- Database S/W servers for industrial monitoring

PRODUCTS & SERVICES

- Real Time S/W platforms for robotics applications
- Electromechanical H/W for robotics applications
- Servo-Power control H/W for robotic applications
- Micro-processor H/W cards for robotics applications

TECHNICAL MEANS

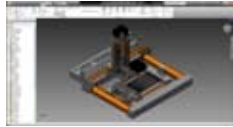
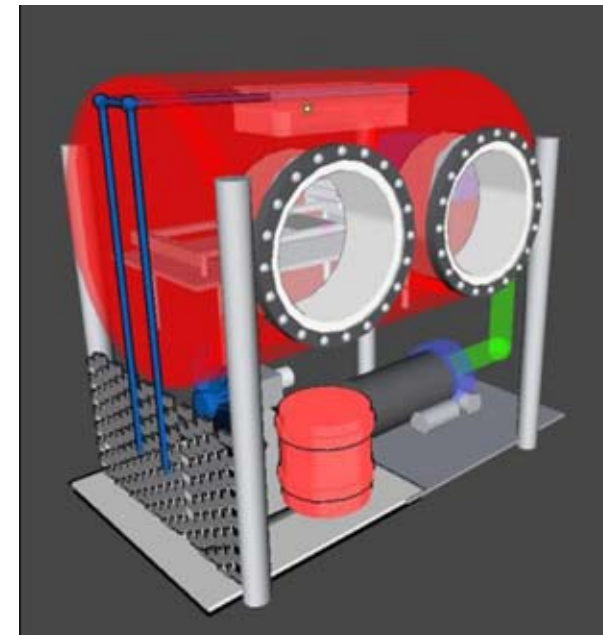
Lamia Laboratories, 1200m² of labs and workshops, 400m² of outdoor test area. Main facilities: Electronics assembly and test line, Mechanical engineering workshop, Mechanical assembly and testing facility, vacuum chambers for Martian environment simulation.

MAIN CUSTOMERS • SPACE

ESA

MAJOR SPACE ACTIVITIES OR PROJECTS

Robotic system study for Martian dust removal from solar panels, using compressed Martian atmosphere. We have designed and built a Martian atmosphere simulation facility and robotic systems to conduct tests inside the facility. We have successfully characterised the jet specifications required for cleaning solar panels using compressed atmospheric gas of Mars. We have designed and implemented pumps that can achieve the compression required.



2



3



4

1. ESA DUSTER- Vacuum Chamber Design
2. Design for X-Y table for cleaning tests + 2 DOF nozzle
3. HTR Robotic Test facility Integration
4. HTR Robotic Test facility Control Station

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



Heron Engineering

MANAGEMENT BOARD

Georgia Psoni

CEO / CMO

Dimitrios Rellakis

CMO

Christos Vrettos

CTO

PERSONNEL

Total Personnel 2013: 3

ADDRESS & WEB SITE

Heron Engineering
44, Kifissias Ave. 15125 Marousi
www.heron-engineering.gr

CONTACTS

Georgia Psoni

CEO / CMO

Tel.: +30 213 043 1621

georgia.psoni@heron-engineering.gr

Dimitrios Rellakis

CMO

Tel.: +30 213 043 1621

dimitrios.rellakis@heron-engineering.gr

CORE BUSINESS

Heron Engineering is a SME based in Athens, which provides **engineering services in the Aerospace domain – from on-going development projects to R&D projects.** The main activity of the company is the provision of consultancy services in the areas of **stress analysis and finite elements**, and the **development of computational software and tools for the aerospace industry.**

The core staff of HERON consists of three engineers with industrial and academic experience in the areas of Computational Structural Mechanics (CSM).

PRODUCTS & SERVICES

Heron is geared to participants in aerospace development.

- We engage in a variety of activities dealing with structural analysis.
- We provide assistance during any stage of a project.
- We also develop specific tools to assist us in our work.

TECHNICAL MEANS

Our team has a very good knowledge of the most commonly used CAE softwares, which are applied in aerospace and elsewhere. We have solid experience in and command of the majority of available commercial / or freeware software packages. We will put all our efforts to access the most appropriate tool necessary for each project.

MAIN CUSTOMERS - SPACE

As a young company, Heron Engineering cannot «show» customers this moment.

On the other hand all three members of our company have experience in the space sector.

Mrs Georgia Psoni has a M.Sc. in Civil Engineering. She has significant experience in **finite elements and stress analysis**. She has also worked on product development, on the interface between design office and manufacturing, and on project management.

She has been employed for many years as a stress engineer in the aerospace sector, in Toulouse, on projects for:

- Airbus: Structural Analysis for Nose Fuselage in A340, A350, A400M.
- Astrium for components & systems (communication satellites): modal and dynamic frequency response, thermal, thermo-elastics and hydro-elastics analysis, coupled dynamic analysis (satellite/launcher).

Her interaction with ESA goes back to 2009, where she submitted a proposal on behalf of the Hellenic Aerospace Industry, in the domain of CFRP panels (granted and successfully finished).

Dr. Christos Vrettos is a **mechanical engineer**, specialized in **computational mechanics**. He has

more than 10 years of experience in applied engineering and research projects in:

- Aeronautics: in Greece (National Technical University of Athens) and lately in the United Kingdom (Assystem UK, GKN Aerospace) where he worked as a stress engineer for airframe structures and also for turbine engines.
- Space: on behalf of the Hellenic Aerospace Industry he worked on the ESA project SPACERTM, where he carried out the associated studies for the development of an electronic box, RTM made (carbon/epoxy).

He also has extensive experience in programming and in the development of computational codes.

Mr. Dimitrios Rellakis is a mechanical engineer with a M.Sc. in Computational Mechanics from the National Technical University of Athens, Greece, with several years of experience in European Research Projects.

He is competent on **finite element modeling and stress analysis of composite and metallic aeronautical structures**, as well as in 3D CAD design of components and mould tools. He also has experience in optimization methods.

MAJOR SPACE ACTIVITIES OR PROJECTS

See above

Certification & Accreditations

- As we are a relatively young company (founded in May 2013), for the time being our activities are focused on proposals writing, making contacts and synergies for future projects in the space sector.
- We are also referenced in major aeronautical subcontractors in Toulouse (France)
- In May 2014, we became member of the si-Cluster.



MANAGEMENT BOARD

Aikaterini Fotopoulou

President of the Board and Managing Director

Polyxeni Bania

Vice President

Members of the Board

Gregory Kotsikaris

Panos Chatzakos

Anastasia Drosopoulou

PERSONNEL

Total Personnel 2013: 30

ADDRESS & WEB SITE

iKnowHow S.A.
116 Kifissias Avenue & 1 Davaki str.
11526 Athens
www.iknowhow.com

CONTACTS

Aikaterini Fotopoulou

President of the Board and Managing Director
Tel.: +30 210 6041425 (301)
Fax: +30 210 6041675

Nikos Makris

R&D Projects Coordinator
Tel.: +30 210 6041425
Fax: +30 210 6041675
nmakris@iknowhow.com

CORE BUSINESS

iKnowHow offers a full spectrum of fully integrated Research and Development (R&D) services. Our capabilities include, but are not limited to: Image Processing, Quality Monitoring, Process Engineering, Mechanical Engineering & Design, Finite Element Analysis, Computational Fluid Dynamics, Radio Frequency Technologies, Acoustics & Vibration, Embedded Control Systems, Wireless Control Systems, Sensor /Sensor Networks Technology, Medical Diagnostics, Environmental Science, Building Management Systems and Defense Technology

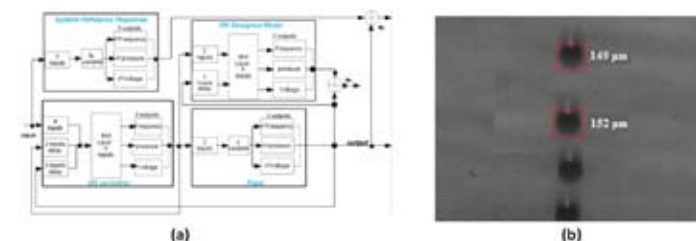


Human Machine Interface (HMI) developed for Non Destructive Evaluation applications. The presented HMI allows the automated defect detection, through Artificial Neural Networks, and hosts a defect recognition database which is automatically populated with inspection data.

TECHNICAL MEANS

The laboratory is fully equipped with a large number of software tools to support research and development work:

- Measuring equipment (oscillators, signal generators, power supplies)
- Arbitrary Waveform Generator
- PCB Design Software Package (Eagle)
- Software development platforms (Visual Studio 2010, MatLab r2012a, etc)
- IT infrastructure for application development and hosting



(a) Analytical Neural Adaptive Control Architecture for eliminating sphere-size variations and (b) Real-time image capture and size control of the spheres produced during operation of a Ball Grid Array (BGA) production system.

Certification & Accreditations

ISO certified (on progress)

- 9001 (Quality assurance)
- 27001 (Information security)

MANAGEMENT BOARD

Dr. Paul Michelis

President

Members

Prof. Panos Ligomenidis

Prof. A. Naoumidis

PERSONNEL

Total Personnel 2013: 6 employees, 16 specialized part timers

ADDRESS & WEB SITE

IMMG S.A.
22, Askiton str.
15236 Penteli
www.immg.gr

CONTACT

Dr. Paul Michelis

Managing Director
Tel.: +30 210 804 6477
Fax: +30 210 803 2709
immg@otenet.gr



CORE BUSINESS

- Production of nano-reinforced PEK or PEEK sheets. - Tailor made reinforced thermoplastics.
- Improvement of the production line for PEEK/CNT or PEK/CNT cores, panels and support structures, characterized by outstanding specific strength, stiffness to weight ratio and energy absorption.

PRODUCTS & SERVICES

- PEEK/CNT sheets with outstanding strength, fatigue life, temperature operating range, dimensional stability and damping capacity.
- Honeycomb cores, panels and support structures, implementing the (patented) DIRIS architecture.

TECHNICAL MEANS

- High scientific potential. Cooperation with NTUA of Athens - Testing Laboratory with new concept (patented) testing machines (including forced and free vibration in shear), validated in more than 30 european projects.
- Polymer processing machines including machines developed recently during polymer CNT reinforcement.
- Workshop with CNC cutting and measuring machines

Certification & Accreditations

Operation of a Quality Management System compliant with the requirements of ISO 9001:2008 for the following scope of activities :

- Design and production of reinforced polymer components
- Design and construction of mechanical parts and testing machines
- Laboratory testing of reinforced polymers

MAIN CUSTOMERS - SPACE

The CNT reinforced materials were produced and validated recently. Samples were sent to several transport vehicle manufacturers.

MAJOR SPACE ACTIVITIES OR PROJECTS

Design, manufacturing and testing of the support structure for a space antenna, EC project, NMP3-LA-2010-246067, 7th Framework Programme.



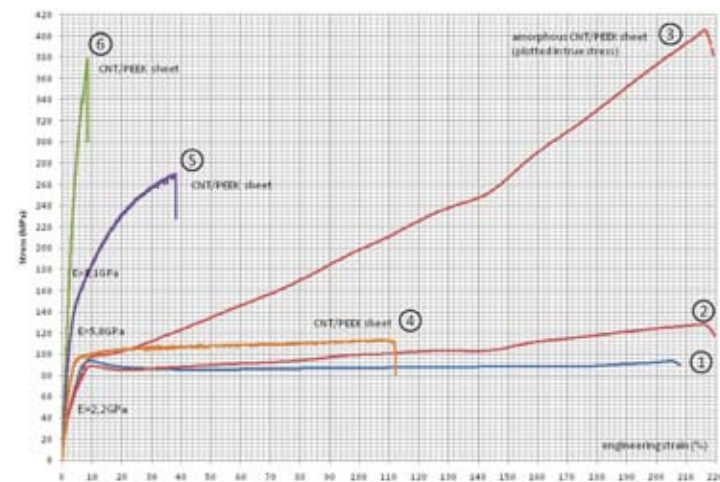
1



2



3



4

1. PEEK/CNT powder preparation
2. Amorphous sheet production
3. Stretched and straightened sheet production
4. Performance simulations



MANAGEMENT BOARD

Christos Georgopoulos
CEO

George Konstantoulakis
CTO

Vassilis Nellas
Product Management Director

PERSONNEL

Total Personnel 2013: 75
Space personnel 2013: 3

ADDRESS & WEB SITE

Inaccess
Sorou 12
15125 Maroussi
www.inaccess.com

CONTACTS

Christos Georgopoulos
CEO

Tel.: +30 210 680 2300
Fax: +30 210 619 9258

Yiannis Karras

R&D Manager
Tel.: +30 210 680 2300
Fax: +30 210 619 9258
jkarras@inaccess.com

CORE BUSINESS

Founded in 2000, Inaccess focuses on renewable energy and telecom infrastructure management. Our company designs and develops state-of-the-art products and solutions which give our partners invaluable access to information, enabling them maximize viability and effectiveness of their investments through performance optimization and OPEX reduction. Headquartered in London, UK, and with presence in Europe, North America and Asia, the company is well established through long term cooperation with major energy producers, large constructors and telecom operators.

The company's main activities are the design, development and implementation of **remote monitoring and control solutions**

- for **renewable energy**, through our vendor independent system insolar and
- for **electromechanical equipment of telecom operators**, through our centralized and integrated system insite. In addition we offer customized solutions for more complex and demanding applications. Our main clients are from the renewable energy sector including developers, infrastructure investors and constructors, as well as from telecommunications and broadcasting.

PRODUCTS & SERVICES

Insolar is an integrated, vendor independent solution for the centralized management of geographically distributed solar plants. It offers accurate fault recognition and real time performance monitoring according to IEC 61724 standard. The system guarantees smooth plant operation and maximizes yields. Insolar continuously monitors the plant's equipment to detect operation failures or under-performance spots. It provides real-time secure collection and recordings of statistical data as well as reporting according to operators' needs directly to their desktops through web browsers and emails or to their mobile devices through SMS and the insolar mobile app. Insolar adopts an open and expandable architecture consisting of: 1) Solar Plant Subsystem, including all devices in field (controllers, sensors, etc.) installed at the solar plant 2) Control Center, the central operator platform.

Certification & Accreditations

- ISO 9001 for systems development, active participation in CENELEC standardisation bodies. Products certified with CE, FCC.

Insite is an integrated, vendor-independent solution for the centralized management, monitoring and control of geographically distributed sites. The solution is ideal for deployment at telecom operators' networks (fixed and wireless alike), broadcasters' infrastructures, as well as many types of ground stations. Its open architecture enables the management of legacy and modern E/M systems and sensors through a common platform. With its advanced features and applications – customizable upon demand – Inaccess helps operators reduce OPEX and increase network availability and reliability. Our solution continuously monitors the equipment of the respective site detecting operation failures or under-performance. It also provides real-time secure collection and recording of statistical data as well as reporting according to operators' needs directly to their desktops through web browsers and emails or to their mobile devices through SMS notifications.

TECHNICAL MEANS

- Distributed data centres in Milan, Greece, and cloud-based: currently handling several Tbytes of monitored data from thousands of distributed sites.
- Hardware design lab: the company carries out product design and development internally, while manufacturing of the designed systems is outsourced.
- Automation lab: integration and testing of control networks and equipment.
- Assembly building: where planning, design, assembly and shipping of systems at the installation destinations occur.
- Software development teams: experienced teams for embedded or general purpose software, front end systems and user interfaces, databases and customised proprietary tools and systems.

MAIN CUSTOMERS • SPACE

Silver Ridge Power (US) (solar plants monitoring systems), Civil Aviation Authority (Greece, SATWAYS project).

MAJOR SPACE ACTIVITIES OR PROJECTS

GSRT/SI-CLUSTER/ACRITAS: Inaccess enhances its solar plants monitoring platform, with adaptive data quality algorithms, accurate modelling and production forecasting enabled through intelligent space and ground data fusion. The solution integrates effective use of satellite communications through private networks of solar plants of broadband connectivity.

SATWAYS/ESA: Inaccess has developed a state-of-the-art solution for the centralized, integrated and effective management and maintenance of geographically distributed facilities. The system is ideal for deployment in heliport and small airport management infrastructure, providing reliable voice services between the heliports and the headquarters, monitoring and control of installed equipment, early alerting in case of failures, preventive maintenance and video surveillance. The solution integrates all services over a common satellite or landline network with complementary operation to increase reliability. SATWAYS has been deployed in Greece under agreement with the Hellenic Aviation Authority.



1



2



3

1. Installations worldwide.
1.5 GW monitored, more than 1200 installations worldwide
2. Vendor independent solar plant monitoring system
3. Centralized site management



MANAGEMENT BOARD

Dr. Dimitri Bofilios

Managing Director

Dr. Christos KyriazoglouBusiness Development and
Marketing Director**Dr. Christos Koimtzoglou**

Assistant Managing Director

PERSONNEL

Total Personnel 2013: 15

Space personnel 2013: 6

ADDRESS & WEB SITE

INASCO
18 Napoleodou Zerva Street
16675 Glyfada, Athens
www.inasco.com

CONTACTS

Dr. Dimitri Bofilios

Managing Director
Tel.: +30 210 994 3427
Fax: +30 210 996 1019
d.bofilios@inasco.com

Dr. Christos Kyriazoglou

Business Development and
Marketing Director
Tel.: +30 210 994 3427
Fax: +30 210 996 1019
c.kiriaz@inasco.com

CORE BUSINESS

Established in 1989, INASCO is a high-tech industrial SME active in the international markets of Aerospace & Composites.

Member of the Hellenic Space Technologies and Applications Cluster (si-Cluster) and of the Hellenic Association of Space Industry (H-ASI), INASCO has received a number of international awards for its in-house developed technological solutions and products.

- **Composites Processing:** Novel Technologies (sensors and hardware, intelligent software and algorithms, dedicated electronics, complete systems) for Composites Parts Manufacturing for Autoclave and Out-of-the-Autoclave processes (DiAMon Plus™, DiAMon Flow™, DiAMon Cloud™)
- **Aerostructures Prototyping:** Design & Advanced Manufacturing of next generation composite and high-precision metallic prototype aero structures
- **Space Technologies**

PRODUCTS & SERVICES

- **Technological Products:** Composite Processing Technologies: «DiAMon family of systems: DiAMon Plus™, DiAMon Flow™, DiAMon Lite™, DiAMon Cloud™». Complete suite of unique in-house developed technologies (industrial equipment and systems, sensors, software and dedicated electronics) for composites manufacturing; Industrial applications: Autoclave, Oven, LCM, Pultrusion production. “Turn-key” solutions for composite manufacturing including inception-design-manufacturing of “smart” molds and process control electronics, material characterization and process design, final verification & testing. In-house fully developed RTM/LCM process know-how. Structural Health Monitoring: Sensor Networks, Embedded FBG Networks
- **Industrial Services:** Aerostructure prototyping: design & manufacturing of advanced composite and high-precision metallic prototype structures for aircraft and jet-engine applications, new generation composite aerostructures with integrated active elements, aircraft engine components, inception-design-manufacturing of “smart” tools. Analytical Numerical Modeling (FEA, Thermal Analysis). Aircraft Noise reduction (SegHit™ liner)
- **Space technologies:** Design and Manufacturing of Space Structures, Large Deployable Structures, Metrology and Mechanisms,

Certification & Accreditations

- ISO 9001, CE certification for products

Thermal Management Systems for re-entry vehicles, Nano-composite components with enhanced sensing/actuating capabilities (stimuli-responsive), Power Electronics, FPGAs, Re-configurable Hardware, Micro-Electronics

TECHNICAL MEANS

Technical resources available (indicative):

- **Electronics facilities** for component testing/product qualification: Multi-channel 2.5GHz Digital Phosphor oscilloscope (Tektronix), multi-channel digital oscilloscopes, impedance gain/phase analyzer (Solartron), spectrum /network analyzers, RLC meters, signal generator & power meters. Cadence EDA SW tools for analog and digital design, for PCB design (Cadence Allegro). Use of ATMEL-AVR and MATLAB/Simulink SW platforms. Facilities for electronics assembly/testing of special tools, gauges and measuring devices
- **Mechanical testing facilities** (static, dynamic, acoustic) for experimental validation of components including special fixtures for complex testing. Electro-dynamic shakers and specialized testing fixtures and assemblies
- **Computer Aided Engineering** (CAE) & Expert SW tools: ProEngineer, STEP, CGM, or DXF for technical/CAD drawings; PATRAN, NASTRAN, for mechanical and thermal mathematical modeling; Expert SW packages such as Mathworks Matlab®, NI LabVIEW®, XML for delivering content of specific databases
- **High precision facilities to support its prototyping activities for metallic and composite parts.** Composite manufacturing using Liquid Composite Molding (LCM) techniques such as RTM and VARI

MAIN CUSTOMERS

Airbus Group, SAFRAN Group (Snecma, Aircelle), ESA, RUAG SPACE, DLR, Invent, RAFAEL, IAI, NLR, European Commission

MAJOR SPACE ACTIVITIES OR PROJECTS

- **NANO2 / ESA-ESTEC:** Design, Development, Manufacturing and Process Monitoring for structures of nano-modified multifunctional pre-preg materials targeting near term space applications
- **LAGARD-Large Stable Deployable Structures** for Future Science Missions
- **SARISTU / FP7:** Integration of Structural Health Monitoring data with aircraft avionics AFDX data Bus for inspection decision support, incl. signal processing and coding, data fusion and management of optical (fiber optics) and electrical signals
- **ELECTRICAL / FP7:** Novel Aeronautical Multifunctional Composite Structures with Bulk Electrical Conductivity and Self-sensing Capabilities



1



2



3

1. Composites Processing Technologies DiAMon Flow™
2. Prototype Aerostructures
3. New Generation of Composite Aerostructures



MANAGEMENT BOARD

Dr. Nikolaos Tsampieris

General Manager

Dr. Serafeim Tsavdaras

Deputy General Manager

Dr. Simon Jones

Chief Technology Advisor

PERSONNEL

Total Personnel 2013: < 10

Space personnel 2013: <10

ADDRESS & WEB SITE

Infitheon Technologies
Patriarchou Grigoriou
& Neapoleos 27
15310 Ag. Paraskevi
www.infitheon.com

CONTACTS

Dr. Nikolaos Tsampieris

General Manager

Tel.: +30 211 850 0821

Fax: +30 211 850 0214

tsampieris@infitheon.com

Dr. Serafeim Tsavdaras

Dep. General Manager

Tel.: +30 211 850 0821

Fax: +30 211 850 0214

tsavdaras@infitheon.com

CORE BUSINESS

INFITHEON main focus is on **Wireless Sensor Networks Development** with special emphasis on ultra low power and energy scavenging/harvesting mechanisms.

PRODUCTS & SERVICES

INFITHEON innovative communication concepts include:

- Wireless Sensor Networks @2.4 GHz, 868 MHz, 433 MHz
- Long Range self organized Wireless Sensor Networks
- Self powered & Remote powered Wireless Sensor Networks
- RFID technology/ Proximity sensors
- Ultra Low power design
- Passive Remote Powered Telemetry applications
- Radio Modems
- 3D Geo visualization GPS/GPRS Tracking systems
- Infrasonic sensor systems
- Telemedicine & e-health systems
- Ultra low Power Heterogeneous Reconfigurable Wireless Sensor Networks for Battery Powered, Powered and Remote Powered Telemetry for Space-Craft Applications
- Digital & Innovative Technologies for Security & Efficiency of First responder operations
- Remote RF powering and Passive Telemetry link for a Wireless Strain Sensor System

TECHNICAL MEANS

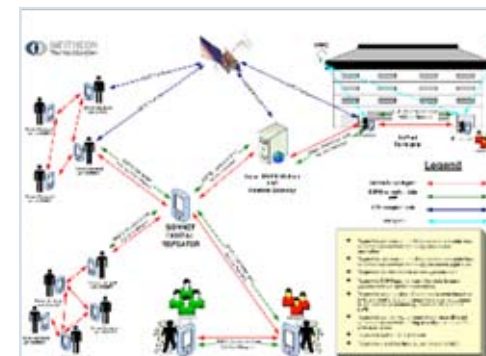
Laboratory facilities within the National Centre of Science and Research 'NCSR Demokritos'

MAIN CUSTOMERS - SPACE

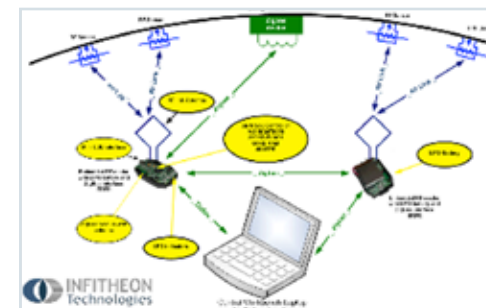
ESA - European Space Agency

MAJOR SPACE ACTIVITIES OR PROJECTS

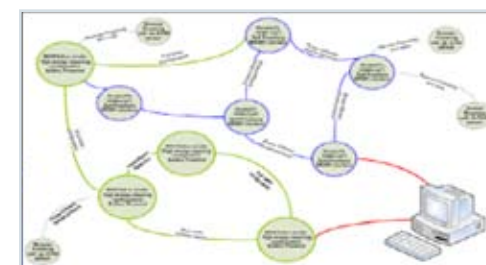
- Ultra Low Power Heterogeneous Reconfigurable Wireless Sensor Network for battery powered, self powered and remote powered telemetry for S/C applications Reference N°: ITT AO 1-6037/09/F/VS- LET SME Announcement of opportunities 2009.
- Remote RF powering and Passive Telemetry link for a WirelessStrain Sensor System (ESA) RFQ - Reference N°: RFQ No. 3-12170/07/NL/GLC.



1



2



3

1. Personal Self Organized Network Node and Tracker
2. Remote RF powering and Passive Telemetry link for a Wireless Strain Sensor System
3. Ultra low Power Heterogeneous Reconfigurable Wireless Sensor Networks for Battery Powered, Self Powered and Remote Powered Telemetry for Space-Craft Applications

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



Innora

MANAGEMENT BOARD**Gregory Kotsikaris**

President of BoD

Panos Chatzakos

Vice President & Managing Director

Katerina Fotopoulou

Member of BoD

PERSONNEL

Total Personnel 2013: 12

ADDRESS & WEB SITE

Innora SA
Ioannou Metaxa 59
19 400 Koropi, Athens
www.innora.gr

CONTACT**Panos Chatzakos**

Vice President & Managing Director

Tel.: +30 210 652 6411

Fax: +30 210 652 6419

chatzakos@innora.gr**CORE BUSINESS**

Innora helps companies to create sustainable value and profitable growth via innovation and technology. We provide technology engineering, management consulting, and business coaching that are fully integrated and complement these with general administrating and project management services to deliver:

- Complete technology-enabled product development to product providers, usually small- and medium-sized companies.
- Integrated technological and automation solutions to production facilities, usually owned and operated by larger companies.
- Technology due diligence to contribute to informed decision making by individuals, e.g., investors, and organizations.

PRODUCTS & SERVICES**Platform products**

In addition to our core services, Innora can also help companies that seek growth by acquiring technology-enabled products. We have internally developed and offer technology platforms that can get new products to market faster, with reduced technological and financial risk for service-supported licensing, sale, or joint ventures:

- UbiTM platform: Micro-controller based data acquisition platform for measurement, communication and control.
- μ Track TM platform: Miniature, low-power tracking platform for real-time location, activity tracking and context sensing.
- DigiT TM platform: Pulse-receiver-digitizer platform for implementing inspection techniques for non-destructive evaluation.

Certification & Accreditations**ISO certified**

- 9001 (Quality assurance)
- 27001 (Information security)

Distinctions & Awards

- Made in the UK Awards - Advanced Manufacturing & Technology (2014)
- British Institute of Non-Destructive Testing Prize (2012)
- Thomaidion Prize for Paper Publication (2008, 2007)
- Emerald Literati Network Award for Excellence (2007)
- Industrial Robot Highly Commended Award (2005)

Memberships

- euRobotics AISBL (Member 177), www.eu-robotics.net

- Wireless sensor network platforms for spatially distributed sensing and networking.
- Hardware based control platforms for demanding, high-performing robotic applications.

TECHNICAL MEANS

Fully instrumented laboratory, equipped with a large number of traditional and state-of-the-art machines to support research and development work:

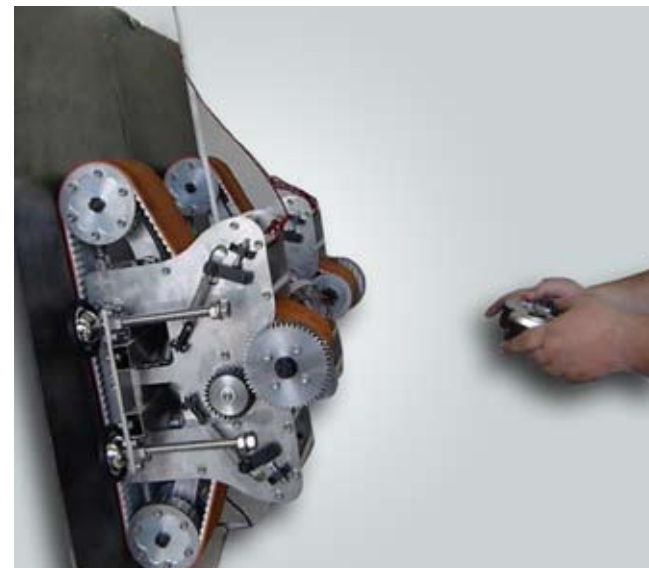
- IT infrastructure
- Capability of programming microcontrollers and FPGAs (ARM Cortex M & A series, Spartan 6)
- A number of power supplies, oscilloscopes, wave generators, etc.
- Complete set for the development of PCBs (from design to production ready prototypes)
- Prototyping equipment (3D printer, etc.)
- Machining facility (milling machine, 4-axis lathe, machine drills, etc.)
- Fully equipped workshop



2



3



1. Autonomous and remote robots design
2. Advanced, motion and force, real-time control
3. Image and video processing for analysis and control

1

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

**MANAGEMENT BOARD**

Theofanis Tsiligiannis
President

Constantin Papadas
Managing Director

PERSONNEL

Total Personnel 2013: 22
Space personnel 2013: 8

ADDRESS & WEB SITE

Integrated Systems Development SA
32 Kifissias Avenue, Atrina Centre
Building B
15125 Maroussi
<http://www.isd.gr>

CONTACT

Constantin Papadas
Managing Director
Tel.: +30 210 689 5115
Fax: +30 210 689 5412
papadas@isd.gr

CORE BUSINESS

Independent organization established in Greece in 1998, Integrated Systems Development S.A. (ISD) is active in the domain of Integrated Systems of guaranteed quality and performance. ISD is an R&D organization working with system houses, software houses and integrated circuit manufacturers. Actually ISD acts as an original electronic equipment developer and integrator, providing services ranging from software development for embedded and general purpose platforms, to digital and analog/RF integrated circuit design, memory design, to digital signal processing for embedded/stand-alone applications and PCB design.

Moreover ISD is a turn-key solution provider handling all aspects of product definition, design, development, documentation, production and support:

- Integrated Circuit Design: Numerous Integrated Circuits ranging from display driver ICs for ST Microelectronics used in consumer devices to Digital-to-Analog and Analog-to-Digital Converters for ESA intended to be used in space missions such as LISA Pathfinder.
- Design, development, validation and verification of Intellectual Property blocks: graphics coprocessors for ST Microelectronics TV Systems on Chip and mobile phone video compressors for ST-Ericsson ...
- Specialized software development including operating system kernels, device drivers, DSP software and application software: Device drivers for ST Microelectronics and ViT (one of the major automated optical inspection players worldwide) ...
- Design and development of products involving PCBs, FPGA and/or microprocessor firmware and system software targeting niche markets. Our clients include Hewlett Packard Labs, Alenia Aeronautica, Dassault Aviation, Eurocopter, Cassidian, EADS Innovation Works ...
- High end PCB design and population: Evaluation platform for the ST Microelectronics radiation hardened SerDes in the context of the KipSat project funded by ESA ...

Certification & Accreditations

- ISO 9001:2008 (certified by TUV Austria Hellas)
- Alpha user of the 65nm hardened CMOS platform of ST Microelectronics
- Qualified design house of the 150nm and 90nm mixed-signal CMOS platforms of Atmel SA; Altera design partner

PRODUCTS & SERVICES

ISD has a wide range of product portfolio. These products are either in the form of components embedded in partners' products or in the form of finished goods. The components that have been so far commercialized include:

- Audio algorithms for high end digital TV sets
- Hardware for video acquisition, processing, compression, transmission and display
- Firmware and low level system software for general purpose and embedded operating systems and platforms
- Display drivers
- Components for real time, safety critical integrated systems
- Components for UWB, 802.11n, Wimax and relevant platforms
- System C kernels and Network on Chip Components
- Components for printed electronics

The complete products that have been so far commercialized include:

- Herodion video, a multi camera, real time pixel synchronized video acquisition systems suitable for face recognition, high security surveillance, high resolution 3D map reconstruction, etc.
- Structural health monitoring for aircraft gathering, storing, processing sensor data and transmitting them to a host. These data are used in order to schedule maintenance activities. Clients include Alenia Aeronautica, Eurocopter and Dassault Aviation.

TECHNICAL MEANS

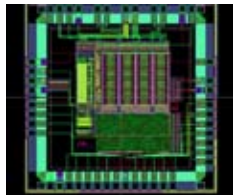
- CAD design flows and design kits for the design, simulation and physical implementation of analog, mixed-signal and digital space integrated circuits
 - FPGA flows for the fast prototyping of space-related functions in HW
 - CAD design flows and tools for the design simulation and physical implementation of PCBs to be used for space applications.
 - A fully equipped lab for electrical AC, DC and small signal analysis; a small production, fine-line-BGA assembly line for PCBs
- Open source SW tool chains for the development of Space SW.

MAIN CUSTOMERS - SPACE

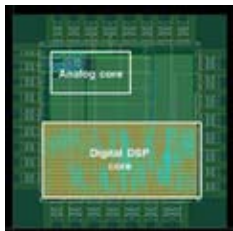
Astrium F, Astrium D, Atmel F, ST Microelectronics F, ESA

MAJOR SPACE ACTIVITIES OR PROJECTS

- Functional and performance validation of the ADV80S32 Microcontroller (ESA)
- Design of a very high resolution (24bit) DAC at 1KHz for space applications (ESA)
- 24bit Digital to Analog Converter: prototyping, characterisation and preliminary evaluation for use in space (ESA)
- High Performance Data Processor: Prototyping and Performance Assessment (ESA), CCN related contract with Astrium D is under finalization.



1



2

1. 24bit DAC for space applications
2. 24bit ADC for Space applications

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

**MANAGEMENT BOARD**

Dimitris Karantzavelos
President & Managing Director

Nikolaos Papatsas
Director

Antonios Anastasiou
Director Program Management

Yannis Bakogiannis
Director Finance

PERSONNEL

Total Personnel 2013: 30
Space personnel 2013: 3

ADDRESS & WEB SITE

Interoperability Systems International
S.A. (ISI)
Kritis & 12, Gravias str.
16451 Argypoli
www.isihellas.com

CONTACTS

Tony Anastasiou
Program Management Director
Tel: +30 210 964 7756 (ext. 3201)
Fax: +30 210 963 4892
tony.anastasiou@isihellas.com

Dimitris Karantzavelos
General Manager
Tel: + 30 210 964 7756 (ext. 3101)
Fax: + 30 210 963 4892
dimitris.karantzavelos@isihellas.com

CORE BUSINESS

Interoperability Systems International S.A. (ISI), is a European software development company registered and incorporated in Greece since 1992. The company specializes in the specification, design, development, integration, installation, testing and follow-on support for:

- Tactical Data Links (NATO, National and customized solutions)
- Tactical Data Link Planning & Networking Tools
- Real-time Tactical C2/C3 Systems
- Combat Management Systems
- Simulation, Training & Testing Systems
- Surveillance & Reconnaissance
- Management Information Systems

ISI since its founding has been engaged in the defence, security and more recently in the space sectors and has delivered turn-key high quality operational, simulation and training systems to the domestic and international markets.

PRODUCTS & SERVICES**Data Links & Interoperability Solutions**

- Universal Link System – ULS
- Multi Tactical Data link Planning & Design tools – MTPS & NDT

Mission & Tactical C2/C3 Systems

- Mission Integration & Management System – MIMS
- Air Defence Command & Control System (ADCCS)

Simulation, Training and Testing Systems

- Data Link simulators
- Radar Video Simulator
- Universal Test & Training System – UTTS
- Mission trainer for Marine Patrol Aircraft and Airborne Early Warning
- Embedded Naval trainer
- Software Support Centre

Certification & Accreditations

- DOD MILSTD498 & IEEE12207 Guides the Software Development Process
- ISO 9001: 2008 Certified
- Certified for handling Hellenic, NATO and EU SECRET classified materials
- Registered in the Hellenic's Ministry of National Defence (HMoND) Registry of Defence Material Manufacturers

Interoperability Systems International (ISI)

Reconnaissance & Surveillance

- Portable Reconnaissance Image Screening System – PRISS
- Maritime Surveillance System
- Systems are based on Commercial-Off-The-Shelf (COTS) components that comply with the demanding military, industrial and environmental standards

TECHNICAL MEANS

ISI's competitive edge lies in its highly specialized s/w development teams, which are led by experienced and professional Systems, Software, Hardware and Test Engineers who have acquired extensive knowledge and expertise in the Technical and Operational requirements of complex and advanced software applications, intended for the defence, security and space sectors. Of the Engineering Staff, more than 50% have completed post-graduate studies at the Masters and Doctoral level.

MAIN CUSTOMERS - SPACE

ESA - European Space Agency

MAJOR SPACE ACTIVITIES OR PROJECTS**Maritime Surveillance System (MSS)**

ESA awarded a contract to ISI for the development of a Maritime Surveillance System (MSS). The activities of the MSS were coordinated with the organisations performing the ESRIN Contract 'Maritime Security Information Services' (MARISS). MSS was developed and completed in 2011.

IMU navigation sensor data fusion module

ISI, as a member of the Hellenic Space Cluster participates in the Inertial Measuring Unit (IMU) including Vision based Navigation System program (funded by the ERDF and the Hellenic General Secretariat for R&D). Under this project, started in November 2013, it is developing the navigation sensor data fusion module for the IMU, comprised of two sensors, the Accelerometer and the Gyro. In order for the subsystems to communicate they employ the SpaceWire protocol.

Anomaly Detection for a Coastal Surveillance system

ISI, as a member of the Hellenic Space Cluster participates in the Coastal Surveillance program (funded by the ERDF and the Hellenic General Secretariat for R&D). Under this project, started in November 2013, ISI is developing the Anomaly Detection software module, which monitors the movement of vessels through the fusion of various types of sensors data (AIS, Radar, SAR satellite images), in order to determine unjustified and suspicious vessel movement. Deviation from such canonical behaviours are then reported to the operators of a control center in the form of alerts. Future potential customers having declared a need for such system include the Coast Guard and the Navy.



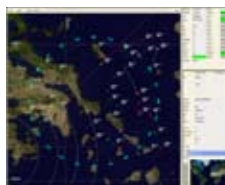
1



2



3



4

1. Radar Video Simulator
2. Universal Link System
3. Portable Reconnaissance
4. ULS Command and Control MMI

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

MANAGEMENT BOARD

Dimitrios X. Klonis

Chairman

Konstantinos S. Kokkalis

Vice President

PERSONNEL

Total Personnel 2013: 430

ADDRESS & WEB SITE

Intracom S.A. Defense Electronic Systems
21 km Markopoulou Ave.
Koropi Athens 19400
www.intracomdefense.com

CONTACTS

Mr. Konstantinos Mellos

Research & Technology Programs

Head

Tel.: +30 210 667 8699

Fax: +30 210 667 8020

kmel@intracomdefense.com

Mr. Nickolas Bossinas

Research & Technology Programs

Manager

Tel.: +30 210 667 8833

Fax: +30 210 667 8020

nbos@intracomdefense.com



CORE BUSINESS

- Leading Hellenic Communications and Electronics Systems Industry.
- Active in the areas of Tactical Communications Systems, Wideband Radios, Data Links and Telemetries, Encryption Devices, Command and Control Systems and Test Equipment.

PRODUCTS & SERVICES

Products:

- SECLINE Encryption Device Family, Digital Intercommunication Systems WiSPR - TACTiCON - NAUTiCON
- Wireless Broadband Communication Networks Se@NNet - WiWAN - Spart@n
- Hybrid Electric Power Systems HEPS
- Tactical VSAT Systems CRONOS
- Wireless Integrated Tactical C3 Systems for Land and Sea

Services:

- Automated CCA assembly, functional testing, end item integration and testing, wiring and cabling and environmental screening
- Industrial Participation Programs
- Multinational Programs

Certification & Accreditations

- ISO 9001:2008, Quality Management
- ISO 14001:2004, Environmental Mgmt
- BS-OHSAS 18001:2007, Occupational H & S
- SA 8000:2008, Social Accountability
- ISO 17025: Accreditation of Calibration Laboratory
- ISO 27001: 2005, Information Security Management
- Systems-Requirements
- Boeing Quality Management System Requirements for Suppliers (D6-82479, Appendix A) (EN 9100)

TECHNICAL MEANS

- Automated CCA assembly, functional testing, end item integration and testing, wiring and cabling and environmental screening
- Laboratories: Crypto, TEMPEST, Digital & VLSI, Analog Electronics and Electro-acoustics, Power Supplies, RF and Wireless Systems, Mechanical Engineering Integration, Test Systems Engineering

MAIN CUSTOMERS - SPACE

Hellenic Armed Forces

MAJOR SPACE ACTIVITIES OR PROJECTS

VSAT CRONOS secure satellite communication system

Intracom Defense Electronics (IDE)



1



1. INTRACOM DEFENCE
IDE-Headquarters



MANAGEMENT BOARD

Vassilis Tsagaris
CEO

Christos Theoharatos
President

Nikos Fragoulis
CTO

PERSONNEL

Total Personnel 2013: 12
Space personnel 2013: 3

ADDRESS & WEB SITE

IRIDA Labs
Patras Science Park, Stadiou str.,
Suite B3
26504 Rio
www.iridalabs.com

CONTACTS

Vassilis Tsagaris
CEO
Tel.: +30 261 091 1568
Fax: +30 261 091 1569
tsagaris@iridalabs.gr

Christos Theoharatos
President
Tel.: +30 261 091 1568
Fax: +30 261 091 1569
htheohar@iridalabs.gr

CORE BUSINESS

IRIDA Labs is a platform-independent leading technology provider of software and silicon IPs for Embedded Computer Vision.

The company possesses significant knowledge in analysis, modeling, design and development of high-fidelity reference components and systems in Video Processing and Computer Vision, using state of the art FPGA and DSP technologies.

IRIDA Labs is operating in two business units that comprise the fields of Computer Vision Systems and Security. IRIDA Labs develops software components that can be used in vision based navigation, and services such as multiple data fusion and multi/hyperspectral data processing, for surveillance and monitoring Earth Observation applications.

PRODUCTS & SERVICES

Non-space related activities:

- Video stabilization software module (IRIS-VISTA) bringing advanced imaging capabilities to embedded systems like next generation smart-phones and mobile devices
- Face detection system (iFaDe), optimized for the challenging computational environment of embedded devices and that can process Full HD video sequences in real-time
- Low light image enhancement software module (EnLight)
- Image Signal Processing pipeline (IRIS-ISP) that provides image enhancement modules such as gamma correction, histogram equalization and automatic white/color balance
- Car plate detection and recognition system IP core (IRIS-CPD, IRIS-ANPR) for various embedded platforms

Space related activities:

IRIDA Labs is a member of HAS-I (Hellenic Aerospace Industry) and also a member of si-Cluster (the first Greek "space technologies and applications" cluster). The company is developing technology related to space services and applications: Ship Detection, Synergistic border surveillance based on EO data, Data Fusion of Earth Observation Data, Vision based Navigation Systems».

Certification & Accreditations

ISO 9001:2008 certified company for «Design and Development of Hardware and Software Components and Subsystems for Computer Vision and Video Analytics Applications»

TECHNICAL MEANS

- TMR Xilinx Tool (floating license under si-Cluster)
- Extensive software suite , extensive simulation capabilities

MAIN CUSTOMERS - SPACE

- ESA, European Commission, European Defence Agency
- Cadence / Tensilica

MAJOR SPACE ACTIVITIES OR PROJECTS

- MENELAOS - Micro Sensor Technologies for Navigation Space Applications (GSRT, si-Cluster Collaborative Project)

IRIDA Labs participation in the System Definition and the extraction of the components requirements, especially concerning the computer vision algorithms. Leading role in developing the computer vision algorithms for the development of a Vision Navigation sub-System (VNS) that will enable the calculation of the position through a sequence of emerging images.

Objectives: To design / fabricate innovative smart inertial sensors, such as accelerometers, using MEMS technology, to design / fabricate state of the art radiation hardened integrated electronics for the signal conditioning of the inertial sensors using modern deep sub-micron CMOS technology, to develop computer vision algorithms to obtain navigation data by processing images from on-board optical sensors, to develop fusion algorithms to process data produced by different types of sensors, to develop a radiation hardened FPGA to implement all different kinds of algorithms, to design / fabricate a system package and board in order to integrate all different components.

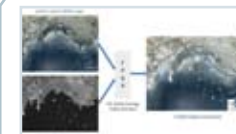
- ESA - DFUN: Data Fusion of Earth Observation Data for the United Nations (ESA project). Objective: to exploit and improve current advanced EO techniques involving the more recent EO data (both radar and optical) to derive information products/services, which can give a relevant contribution to the enhancement of the existing UN DFS capabilities

- ShipDetect - Development of small ship detectors based on polarimetric SAR data. Project objectives: To create a reference set of satellite SAR (from different sensors) data for the Greek seas, to create a reference set consisting of the polarimetric signatures of ships that are of particular interest in the Greek seas. To develop ship detectors (CFAR and other), to develop a data fusion algorithm focusing on strategic surveillance areas and ship detection.

- JASON - Joint synergistic and integrated use of eArth obServation, navigatiOn and commuNication technologies for enhanced border security (GSRT)

- ACRITAS - Space Technologies for Surveillance and Monitoring Integrated Applications (GSRT). Project objectives: Research, design, development and validation of space-based integrated applications for surveillance and monitoring through advanced multi-sensor data fusion technologies.

- BalkanGEO Net - Towards Inclusion of Balkan Countries into Global Earth Observation Initiatives. FP7 project dealing with Earth Observation and capacity building in the Balkans. IRIDA Labs participate as WP leader.



1



2

1. Real time fusion of SAR and optical data implemented as FPGA IP core

2. Synergistic use of AIS and SAR data for ship detection and recognition



KiNNO

MANAGEMENT BOARD

Yiannis Geragotellis

Managing Partner

PERSONNEL

Total Personnel 2013: 11

Space personnel 2013: 2

ADDRESS & WEB SITE

Kinno Consultants Ltd
104, Pentelis Ave.
15234 Athens
www.kinno.eu

CONTACTS

Yiannis Geragotellis

Managing Partner
Tel.: +30 210 683 8950
Fax: +30 210 683 8952
geragotellis@kinno.eu

Paris Rallis

Business Designer
Tel.: +30 210 683 8950
Fax: +30 210 683 8952
rallis@kinno.eu

CORE BUSINESS

KiNNO Consultants Ltd. focuses on Technology, Innovation and Entrepreneurship and acts as an **intermediary between researchers, engineers, businesses and investors** to accelerate the deployment of innovations to the market. KiNNO has established strategic partnerships at European and International levels with Research & Technology Organisations (RTOs), entrepreneurs and SMEs as well as public sector in the 3-Helix model.

The company aims at constantly and significantly enhancing technology integration and innovation capacity, technology transfer and market uptake of research results in sectors such as agro-food, energy, environment, transportation, maritime and ICT. KiNNO provides a portfolio of support services such as knowledge acquisition: technology scouting and licensing-in; knowledge commercialization: marketing R&D, licensing out, spinning-out new ventures; open innovation schemes and cross-cutting services: strategic analysis, technical and commercial evaluation of knowledge and technologies, project management, and capacity building.

KiNNO offers its services via many channels such as projects, platforms and methodologies and acts as broker for international clients including the European Space Agency (ESA).

PRODUCTS & SERVICES

KiNNO provides unique methodologies to significantly enhance the innovation potential of new technologies and systems. KiNNO offers knowledge and innovation support services aiming into strengthening the innovation capacity of SME's, private firms and Research & Technology Organisations (RTOs) and also supports industry players, investors, business actors and public bodies seeking to exploit new technologies, systems and ideas, bridging the gap between research and innovation.

KiNNO supports ideas through every stage of development. Researchers, engineers, entrepreneurs or developing startups can benefit from the KiNNO (Transforming Ideas to Business) methodology.

Researchers & Research Technology Organisations (RTOs)

- Intellectual Property (IP) support: Protection of IP, Valuation of IP, Partnership agreements (foreground - background knowledge)
- Exploitation Strategies
- Marketing R&D and Technologies,
- Brokerage Services
- Project Design & Management

Entrepreneurs & Start-ups

- Idea Generation

- Knowledge Commercialization
- Innovation Management
- Innovation Financing

Private Companies

- Innovation Management
- Technology Transfer Services
- Open Innovation Schemes
- Corporate Venturing

Business Support Organisations:

- Strategic Analysis
- Clusters & Networks
- Capacity Building
- Project Design & Management

Investors:

- Appraisal of Projects
- Valuation of IP

Our company is the first Greek organization that has become a member of the international network of brokers of the ESA's (European Space Agency) Technology Transfer Programme.

KiNNO as member of the network focuses its efforts both in national and international context in order to seek and promote suitable technologies, expertise and systems from ESA and other European space programmes to non-space sectors such as agriculture, transport, defense, maritime and tourism. KiNNO also acts as a commercial broker for ESA's IP aiming to exploit the full potential of top-notch space technologies down to earth.

More specifically, KiNNO offers the following services:

- Technology Transfer: Technology transfer from Space technology applications to non-space industries
- Spin-in and Spin-out: Transfer of technology and applications from various industries to space programs
- Funding schemes: Usage of specialized funding tools to promote R&D in SMEs and larger enterprises
- Valuation of IP: Appraisal of IP through the globe & opportunities for investments / collaboration
- Support actions: Organization of events and programmes (demonstrators) that promote technology transfer from space down to earth

MAIN CUSTOMERS - SPACE

European Space Agency (ESA)

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Michael Misirlis

Managing Director

Dimitris Lampridis

Technical Director

PERSONNEL

Total Personnel 2013: 2

Space personnel 2013: 2

ADDRESS & WEB SITE

Logikon Labs
69 Arapaki Str.
17676 Kallithea
www.logikonlabs.com

CONTACTS

Michael Misirlis

Managing Director

Tel: +30 215 530 9262

Fax: +30 215 530 9262

mmisirlis@logikonlabs.com

Dimitris Lampridis

Technical Director

Tel: +30 215 530 9262

Fax: +30 215 530 9262

dlampridis@logikonlabs.com

CORE BUSINESS

Logikon Labs is a high-tech micro entity based in Athens, Greece, offering **innovative design and consulting services** in the field of **electronics and software for scientific and aerospace applications**.

The company focuses on developing embedded processing platforms, with particular emphasis in digital acquisition and real-time data processing, as well as dynamically reconfigurable and adaptive systems.

Typical applications include:

- High-speed real-time data acquisition and processing
- Complex sensor readout techniques
- Precision automated control feedback loops
- High-speed communication links
- Digital signal processing
- Image processing
- Pattern recognition and computer vision

PRODUCTS & SERVICES

- Embedded System Design
- R&D Support
- Feasibility Studies
- Open Innovation Studies

TECHNICAL MEANS

- 32 channel, 200 MHz logic analyzer compatible with TTL and CMOS digital signals
- Dual channel 1 Gsa/s digital oscilloscope
- Dual channel 25 MHz arbitrary function generator
- Triple channel, 30 VDC / 5 A laboratory power supply
- USB, I2C, SPI and UART protocol analyzers
- JTAG, I2C, SPI, and UART device programmers

MAIN CUSTOMERS - SPACE

Confidential. A list can be provided upon request.

MAJOR SPACE ACTIVITIES OR PROJECTS

- PCB, FPGA and embedded software design at TRL4 for a quad channel digital acquisition and real-time processing system for radiation monitoring and high energy particle identification
- PCB, FPGA and embedded software design at TRL4 for a novel miniaturized singlephoton counting laser altimeter aiming at spacecraft landing/docking applications, supporting 27 ps time-of-flight resolution



2



3



1. MPS-DAQ: a low-power, 12-bit, 100 M samples/s, quad-channel simultaneous digital acquisition system
2. LAT-SINPLEX: an embedded multi-channel time digitizer with sub-nanosecond time resolution
3. Electronics lab., «test and measurement» section.

1

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Constantine Koutsos

Managing Director

John Spanoudakis

General Manager/Development Manager

Yiannis Klitorakis

Financial Manager

PERSONNEL

Total Personnel 2013: 60

Space personnel 2013: 3

ADDRESS & WEB SITE

MILTECH HELLAS S.A.
90, Metaxas Str
19004 Koropi Industrial Area
www.miltech.gr

CONTACTS

John Spanoudakis

Development Manager
Tel.: +30 210 664 7320
Fax: +30 210 664 7322
jspa@miltech.gr

Dimitris Charalampakis

Contracts Responsible
Tel.: +30 210 664 7320
Fax: +30 210 664 7322
dcharal@miltech.gr

CORE BUSINESS

- Aerospace Harnesses Design & Production
- Avionics Design & Production
- Aircraft functional & non-functional assemblies

PRODUCTS & SERVICES

Aircraft Electrical boxes, Head Down Displays, Thermal Imaging Cameras, Power Converters, PCBs-SMD Manufacturing, Harnesses Production & testing, Machining full 5-axis turning & milling, Riveting of aircraft assemblies, Clean room facilities for assembly of Thermal Imaging technology products

TECHNICAL MEANS

See attached Equipments List

- Conventional PCB Assembly Line
- QUALITY & Measurement Equipment
- SMD Automatic Assembly Line

Humidity & Temperature controlled with ESD protected manual production room (300 m²)

- Aircraft & Military Electrical Harnesses & Cables (New 700 m² facility)
- Thermal Imaging Cameras Clean Room facility (100.000 p) (100 m²)
- High Precision Mechanical shop (1000 m²)

Certification & Accreditations

- ISO9001:2008
- ISO9100:2004

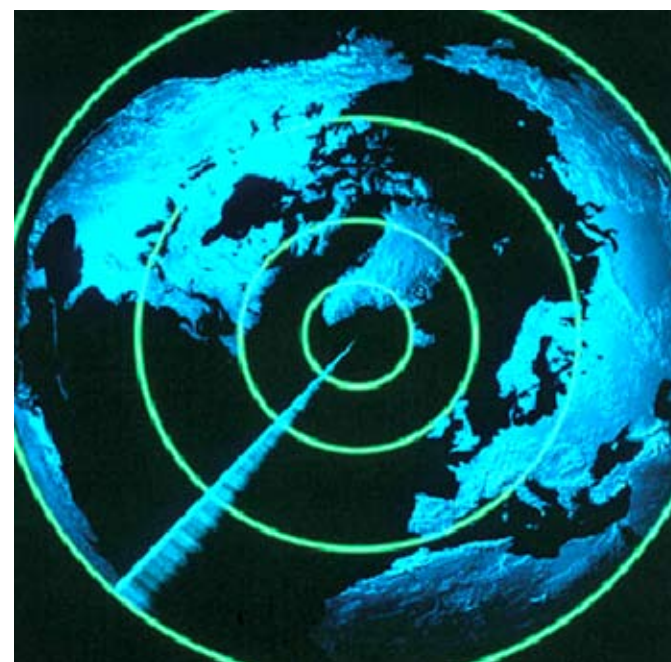
MAIN CUSTOMERS - SPACE

MUSIS Studies for the pre-liminary phase
Teletel S.A. Manufacturing of Space Wire Harnesses

MAJOR SPACE ACTIVITIES OR PROJECTS

Currently we have no specific space activities. Our customers are: Dassault Aviation, Airbus Helicopters, THALES, MBDA France.

Miltech Hellas





MANAGEMENT BOARD

Ioannis Mavroudis

CEO

Ioannis Koufoudakis

Deputy CEO

Stamataki Klairi

General Manager

PERSONNEL

Total Personnel 2013: 85

Space personnel 2013: 5

ADDRESS & WEB SITE

Neuropublic S.A.
11 Sfaktirias Street
18545 Piraeus
www.neuropublic.gr,
www.c-gaia.gr
www.semantix.gr

CONTACTS

Ioannis Mavroudis

CEO

Tel.: +30 210 410 1010 Ext 4135

Fax: +30 210 410 1013

i_mavroudis@neuropublic.gr

Ioannis Koufoudakis

Deputy CEO

Tel.: +30 210 410 1010

Fax: +30 210 410 1013

i_koufoudakis@neuropublic.gr

CORE BUSINESS

Neuropublic SA has established a strong presence and gained considerable experience in the **public administration systems modernization sector**, both through the implementation of major complex projects and the marketing of a broad range of specialized value added services. The company's new technology know-how enable the design of reliable systems that fully meet, based on technical and financial criteria, the requirements of any modern organization or business and ensure the long-term performance of investments in an environment marked by constant change.

Our core market is agriculture with specialization in the field of paying agencies.

Our company managed to develop since 2006 the main system for the Greek Agricultural Payment Agency and for the Greek ministry of Rural Development: a big project with more than 2000 registered users all over the Greek sector, which is web-based and combines alphanumeric and geospatial information. This project is thought to be one of the most complete projects in European region and is used as a model from the other countries agencies. Furthermore, we have developed systems for the public sector (municipalities, psychiatric hospitals and other public organizations).

Finally, after our **merger in 2012 with Semantix Information Technologies**, we have significant insight into automatic code generation and code modelling, as applied to a number of projects with ESA-ESTEC.

PRODUCTS & SERVICES

Information technology services for the government sector

- Systems Integration, Software Development, Business Process Reengineering, Information Systems Planning, Systems and Applications Architecture Design, Custom Applications Development
- ERP Systems Implementation, Systems and Applications Deployment and Rollout, Training and Technology Transfer
- IT Security Planning and Implementation, Systems and Applications Support and Maintenance, Business Operations Support, Business Process/Technology/Applications Outsourcing, and Data Centre Organisation/Operation and Support (DRS), CLOUD services
- Customized Applications: Integrated Information Systems for the Management of the Farmers Single Support and Rights (O.P.E.K.E.P.E.),

for the Management of the Farmers Registry and the Farms (Ministry of Rural Development and Food)

Wide spectrum of Advanced and Integrated IT Solutions in the following areas:

- Enterprise Resource Planning (ERP) Systems; Administrative-Financial Information System, Public Planning and Operational Management System
- Business Intelligence Systems (BI), Geographic Information Systems (GIS)
- Contact Centre Solutions (CRM), Voice Portal Solutions (Voice Processing, Speech Recognition, Text-to-Speech)
- Workflow & Business Process Management, Knowledge Management & Document Management, Enterprise Information Portals, CLOUD Services, Information Security Services & Systems

Vendor activities

- World class GSM roaming management solutions "Roaming Studio" and "Roaming Components" (www.tapeditor.com)
- Taxinomia Archive and Taxinomia Culture (management systems for archives and cultural collections based on Taxinomia platform)

Our **automatic code generation team** (a part of our R&D department) has applied its ASN.1 and code generation know-how to a number of projects for ESA-ESTEC, and is a large part behind the TASTE series of projects (<http://taste.tuxfamily.org/>).

MAJOR SPACE ACTIVITIES OR PROJECTS

- ASSERT - Automated proof based System and Software Engineering for Real-Time (EC FP6 IP project (led by ESA)). Objective: to improve the system-and-software development process for critical embedded real-time systems, in the Aerospace and Transportation domains. Implementation of the model-driven code generation mechanism that allows independent software building blocks to plug onto the common infrastructure of the system (the ASSERT VM).
- ASSERT tool-chain

- System Software Co-Engineering: Data Modelling Technologies (ESA/ESTEC, Astrium (prime)): Development of a complete methodology with supporting tools that allow model and code level integration of various modelling notations (SDL, SCADE Lustre, Matlab/Simulink) and tools with ASN.1
- Adaptive programming and certified code generator for space applications using ASN.1 (ESA/ESTEC): Implementation of the 1st phase of the ASN1SSC (funded under the Greek Incentive Scheme 1st Call to the Greek Industry)
- EGOS Coding Convention and Quality Model (ESA/ESOC): Review of existing ESOC coding rules and SW quality models. Implementation of a rich graphical front-end "Visualization Tool" that acts as a front-end to existing code checking tools and provides important additional functionalities
- Lab Activities - Data Model Tuning (ESA/ESTEC): Improvement and horizontally enhancement of the Data Modelling Technologies developed in the scope of the ASSERT project
- Adaptation of a Software System Test Bed to Integrate Data Modelling Technologies (ESA/ESTEC, SpaceBel (prime)): Assessment of a potential adaptation of the ASSERT project results and ASN1 data modelling activities to the PROBA On Board SW development environment and process
- Development of data formatting applications for EST Tools to support the ATV missions (ESA, Semantix (prime), Astrium GmbH)
- ASN.1 Space-Certifiable Compiler (ASN1SCC): Implementation of the 2nd phase of the ASN1SSC. Extension of the prototype implementation of phase 1 with support additional encodings (XER, BER, ACN) and programming languages (Ada, C++)
- Final assessment of the TASTE toolset and delivery of a full demonstrator (ESA/ESTEC, M3 (prime))
- Maintenance, operations and evolution of the EURO-VO (Virtual Observatory) registry of resources (ESA)

Certification & Accreditations

- ISO 9001, ISO 27001

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



Noesis Technologies

MANAGEMENT BOARD

George Krikis
Managing Director

PERSONNEL

Total Personnel 2013: 5

ADDRESS & WEB SITE

Noesis Technologies
Suite B5 Patras Science Park,
Stadiou 1, Platani, Rio
26504 Patras
www.noesis-tech.com

CONTACT

George Krikis
Managing Director
Tel.: +30 261 091 1531
Fax: +30 261 091 1586
gkrikis@noesis-tech.com

CORE BUSINESS

Noesis Technologies is a **world-wide leading provider of production proven, process independent and parameterizable telecom IP cores, designed from the ground-up; our IP cores** present an industry-leading combination of high performance, low power and low die-area, as well as easy customization for adaptability to a wide range of applications in the System On a Chip (SoC) era. Our IP cores have been successfully integrated in a wide spectrum of projects ranging from telecom, industrial control and automotive applications to defense and aerospace systems.

Noesis Technologies is specialized in hardware implementation of **high computational complexity telecom algorithms**. Our hardware accelerator IP solutions allow telecom system developers to significantly off load demanding tasks from the CPU and to drastically decrease execution time thus boosting the overall system performance.

Noesis is among world-leaders in **Forward Error Correction technology** having developed a rich portfolio of FEC IP cores that includes Reed Solomon Codecs, Viterbi Decoders, Turbo Product Codecs, Turbo Convolutional Codecs, BCH codecs, LDPC Codecs, Interleavers, AWGN Channel Emulators. The offered IP solutions are fully configurable and can be used in any telecom technology that requires FEC. The company offers a broad range of architectures optimized for speed, area and power dissipation as well as customized versions tailored to specific customer needs. In addition to the complete suite of FEC IP cores, the company offers a range of silicon proven cores in the areas of encryption (AES, RC4), networking (E1/E2/E3, T1/T2/T3, HDLC), audio/voice compression (G729, G726, G711, CVSD), telecom DSP as well as turn-key solutions such as baseband PHYs (WiMAX, LTE) and low-power processors for WSN applications.

Certification & Accreditations

- Official member of the Xilinx Alliance Program
- Official IP Core Designer for Turbo Coding Technology.
- Full member of the Hellenic Semiconductor Industry Association. HSIA is a proud member of the European Semiconductor Industry Association (ESIA) and the Global Semiconductor Alliance (GSA).
- Full member of Corallia (Hellenic Technology Clusters Initiative)

PRODUCTS & SERVICES

- Our IP cores are silicon proven and technology independent for easy and risk-free porting to any target silicon process. We work closely with our customers and our IP design engineers provide an outstanding level of technical support during the SoC integration phase. Noesis impressive portfolio of IP Cores includes our high performance fully parameterizable Reed Solomon and BCH codecs, Viterbi decoders, LDPC codecs, Turbo Product Codecs; AES and RC4 encryption engines for security applications; E1/T1-E2/T2-E3/T3 framers/deframers, WiMAX PHYs, I2C, HDLC controllers for your networking needs; G.729A, G.726, G.711 and CVSD voice codecs for VoIP and multi-channel conference systems; FFT/IFFT processors, Demodulators, Channel Equalizers, Channel Estimators, Synchronizers, Soft output demappers and AWGN channel emulators. Our IP Cores can be purchased under flexible licensing royalty-free schemes, in RTL source code or FPGA netlist formats.
- One of Noesis Technologies latest products is **ComLab™**. ComLab is a cost efficient highly integrated development environment (IDE) that enables a system designer to rapidly build, configure and evaluate in real-time the performance of complex telecommunication systems. It is comprised of a Xilinx FPGA based board for the real-time HW emulation, a sophisticated application SW with interactive GUI capabilities for configuration, control and monitoring purposes as well as a rich portfolio of highly optimized telecom subsystem silicon IPs. ComLab™ platform is ideal for proof-of-concept rapid prototyping as well as an intuitive educational tool for engineers.
- In addition, Noesis offers **expert ASIC/FPGA and DSP development resources** that enable our customers to launch their products in the market on time and with the highest quality assured. Our highly skilled engineering team has professional expertise in software modeling, hardware design and implementation of complete systems mainly focused on data networking, audio, video, consumer, embedded processors and military market segments.
- Noesis Technologies is an export-oriented company. Its customer list includes **U.S.A, Europe, Canada, Taiwan and India** based companies active in **telecom, defense and aerospace sectors**.

TECHNICAL MEANS

Our company possesses complete infrastructure for the design and development of complex silicon IP Cores (Matlab, Simulink, Labview for system modelling, Modelsim for RTL level simulation, Xilinx ISE, Quartus for FPGA implementation, Xilinx/Altera development boards, Spectrum Analyzers and Logic Analyzers for real-time system prototyping, etc.).

MAIN CUSTOMERS - SPACE

Intel, Ericsson, NextWave Wireless, EdgeWater Computer Systems, NASA, Ultra Electronics, PMC-Sierra, MBDA Missile Systems, Zyxel, Annue Systems, CEM Solutions.



1

1. ComLab system

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

MANAGEMENT BOARD

Dr. Stathis Kasderidis

Managing Partner / Lead Scientist

PERSONNEL

Total Personnel 2013: 9

ADDRESS & WEB SITE

NOVOCAPTIS Cognitive Systems
& Robotics
Antoni Tritsi 21
57001 Thessaloniki
www.novocaptis.com

CONTACTS

Dr. Stathis Kasderidis

Managing Partner / Lead Scientist
Tel.: +30 231 080 4967
Fax: +30 231 080 4810
kasderidis@novocaptis.com

Charalambos Theodosiadis

Head of Systems Applications Unit
Tel.: +30 231 080 4972
Fax: +30 231 080 4810
theodosiadis@novocaptis.com



CORE BUSINESS

Novocaptis, a start-up established in 2010, is a high technology company with strong links to the business, the academic and the research community providing it access to the latest technological developments in the markets it operates. Its vision is to provide cutting-edge products and services in the areas of service and consumer robotics, ambient intelligence, ambient assisted living, environmental applications, education and entertainment markets.

PRODUCTS & SERVICES

Main activities include:**1. Technical consulting services**

The company provides technical consulting services in its areas of its expertise so as to assist private and public organisations to define, specify, implement, test and deploy selected technological solutions. These services include, but are not limited to, financial and technical development and evaluation of business plans and development of technical roadmap strategies.

2. Customised R&D

The company undertakes the research and development of customized products and services for businesses and organizations worldwide. Customised R&D clients include CERN - The European Organization for Nuclear Research. Novocaptis has developed a personal safety system allowing supervision and monitoring of personnel intervening in a particular difficult radioactive environment.

3. Safety systems for extreme environments

This platform enables the planning, monitoring and operations for a maintenance crew, working in an extreme / unsafe environment. The platform consists of wearable components worn/used with the personal protective equipment of the maintenance crew and server-side and control room-side software, which allows the efficient communication and real-time streaming of video, audio, bio-signal and ambient data to the mission supervisor. The particular modular solution was developed for CERN. The personal safety system has potential applications in other environments

Certification & Accreditations

- The company is in the process of acquiring ISO 9001 certification for quality management.

Novocaptis

Cognitive Systems & Robotics

(toxic, radioactive, mining, construction, etc), where personnel safety alongside real time monitoring and controlling is of paramount importance. Novocaptis is currently concentrating on adding Augmented Reality capabilities, through optical see-through head mounted displays (OST-HMD).

4. Environmental monitoring platform

This platform creates technology, which aims to support a number of environmental oriented applications. This includes pollution monitoring, water management, applications of sensor networks to agriculture, civil protection and others. The platform has the capacity to combine elements from ground sensor networks, mobile robots, various databases and other sources. Novocaptis is developing further capabilities for aerial robotics.

5. Education / entertainment market platforms

The educational platform is aimed at kindergarten and primary school students. The platform integrates learning by adopting information and communication technology as an instructional and exploratory tool that motivates children to investigate problems, concepts and ideas. The multimedia and sensor experience is to be further complemented by another educational project that aims in developing micro-robots for in-classroom training for primary and secondary school students. A variant of the micro-robot will also be developed for the entertainment market. A second application of the platform is a training simulation environment for the maritime industry.

TECHNICAL MEANS

1. A well equipped prototyping laboratory for electronics, embedded systems and HW development including tools, parts and software assets for circuit design, HW debugging and development, HW emulators, etc.
2. A flexible and scalable IT infrastructure based on a private cloud including servers, shared network storage systems and a number of development and supporting stations.
3. A flexible SW development and quality assurance pipeline for supporting multiple research and product development projects. Aspects include version control, automatic build-deployment-testing, SW simulators of various types, and centralised issues management.

MAIN CUSTOMERS

CERN

MAJOR ACTIVITIES OR PROJECTS

Relevant projects to space include the CERN-ATLAS WPSS (2011-2013) and EDUSAFE (<http://edusafe.web.cern.ch/edusafe>) (2012-2016) projects. The former developed a safety monitoring system for radioactive environments including a wearable HW system, wearable- , server- and client- side SW components for real time mission control and response. The latter is an EU-funded project which aims to include Augmented Reality (AR) capabilities to WPSS. In both projects the company is the overall system designer.





MANAGEMENT BOARD

Georgios Papastergiou

President and CEO

Ilias Koukouvinos

VP and MD , CTO

Christoforos Papastergiou

VP & MD, CCO

PERSONNEL

Total Personnel 2013: 20

ADDRESS & WEB SITE

Optronics Technologies SA
Thessalonikis 79-81
183 46 Moschato , Attiki
www.optronics.gr

CONTACTS

Georgios Papastergiou

CEO

Tel.: +30 210 983 7121

Fax: +30 210 983 4814

Ilias Koukouvinos

VP , CTO

Tel.: +30 210 983 7121

Fax: +30 210 983 4814

ikoukouvinos@optronics.gr

CORE BUSINESS

- Turn Key Networking Projects
- Fibre Optic Networks Deployment (Management, Design, Installation, Commissioning and Maintenance)

Optronics Technologies SA was established in 1990 as a privately held, high tech company offering services in **optoelectronics, lasers** and **fiber optics market**. Our vision is to be the most technologically advanced company in Greece concerning fiber optics and optoelectronics. As such we aim to play a major role in the development of optoelectronics and fiber optic communications in Greece, Cyprus and European countries by distributing a complete range of relevant products. The principle of our operation is to provide our customers with properly certified solutions for their particular application. Doing so, we offer consultancy services and supply quality equipment to telecommunication and fiber optic cable manufacturers, PTTs, alternative carriers, Universities, Institutes, OEM Manufacturers, Contractors, Private Companies and other optoelectronics users.

The market sectors we cover through our dealers network are oriented to **Fiber Optic Systems for communications and local networks** and **Laser Technology for research, scientific applications**.

We are running as well training courses concerning optoelectronics and fiber optic technology through the educational department. Running cooperations with companies and distributors worldwide we advise and supply our customers on the above sectors with the best valued equipment for their needs.

PRODUCTS & SERVICES

- Fiber Optic Networks
- Optoelectronic devices
- Network Design & Studies

Optronics Technologies SA has long experience in the design and execution of Technical and Financial Studies for Telecom Networks.

Our Expertise spans from IT networks (LAN/MAN/WAN) to full scale Telecom Trunk and Access Networks.

Contemporary Technology aspects are included in our technical portfolio to meet diverse communication needs (Fibre Optics, Copper, Wireless, CWDM, DWDM, 10G, etc.) in cost efficient ways.

Customers ranging from Telecom Operators to Public Utilities, Institutes, Industry and SMEs in Greece and abroad have trusted us for the design and construction of their networks including development of operational procedures to maintain good performance and seamless operation.

TECHNICAL MEANS

Following the development of our operation for the second decade we are now able to run joint ventures with companies for production of customised products designed by our engineers in **Optronics Lab**. This resulted to the production of fiber optic modules for video and data transmission applications, fiber optic fault locator system, optical delay line module, WDM based fiber optic cable monitoring systems, ATM traffic monitoring system, fiber optic interferometer, etc.

Production department is established and equipped with all necessary machinery for production of fiber optic based accessories and components as patch cords, patch panels, fault locators, voice and video transmission systems. Since production is based on Just-in-Time flexible schedules customized products and special assemblies are available within a few days from order. All kinds of fiber optic connectors are handled successfully by our production engineers. Assemblies along with patch panels and cables create the Fiber-Net Series brand name including products specially designed for fiber optic networking LAN applications.

Installation department is undertaking hundreds of fiber optic based network installations in Greece both for LANs and WANs as well as telecom applications for public and privately owned networks.

PROJECTS

Our extended cooperation with manufacturers and Institutes allows us to follow the European market developments through participation in Community Projects as specialised contractors for programs like FUSE concerning the development of a microelectronic ASIC based device for 2Mb/s fiber optic links.

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



Planetek Hellas

MANAGEMENT BOARD

Giovanni Sylos Labini
CEO

Stelios Bollanos
Director

PERSONNEL

Total Personnel 2013: 8
Space personnel 2013: 8

ADDRESS & WEB SITE

Planetek Hellas
Mesogeion 2-4,
11527 Athens
www.planetek.gr

CONTACT

Stelios Bollanos
Director
Tel.: +30 210 745 4306
Fax: +30 210 745 4300
bollanos@planetek.gr

CORE BUSINESS

Planetek Hellas (PH) is a Greek company, member of the Planetek Group that since 1994, operates in the field of **Satellite Remote Sensing, Spatial Data Infrastructure and Software development** for the “on board” and “ground” segment space applications.

The Company was founded in 2006, is based in Athens-Greece, and aims to replicate the successful approach to the market of the Group leader Planetek Italia s.r.l., whose applications and solutions are developed within the most important European programs in the field of space research and integrated systems for the management, analysis and sharing of land-related information.

Planetek Hellas' experience conjugates mastering of advanced remote sensing processing, with GIS Commercial Off-The-Shelf (COTS) competence and real world application delivery. These applications are usually addressed to public administrations like Central and Local governments, Environmental Agencies, NGO's, etc.

Planetek Group participates also to the definition and implementation of software for space systems for Earth Observation missions, such as ERS, Envisat and COSMO SkyMED. The experience in providing Geoinformation solutions (Earth Observation & Spatial Data Infrastructure) and the collaboration with ESA and EC, makes the company a provider of specific technologies needed to receive and process the satellite data acquired by the spacecrafts instruments, solutions and systems to archive, disseminate, publish and share the generated products as well as engineering consulting services for new missions definition, feasibility studies, ground control system architecture definition, requirements specification and design.

The previous activities are included into the «Ground Segment» systems, set up on Earth to manage and control the space missions and to receive and process the data produced by the spacecraft's instruments. The specific know-how and expertise is a common property of Planetek Group, as a consequence of a continuous knowledge transfer policy. Planetek Hellas is the reference company for the Greek market as a provider of «Ground Segment» services and systems.

PRODUCTS & SERVICES

- Satellite based Near Real Time Sea Water Quality Monitoring
 - (Chlorophyll-a concentration, Sea Surface Temperature, Water Transparency)
 - Water Turbidity at high resolution
- Satellite Seabed and Sea Grass Mapping
 - (Posidonia Oceanica)
 - Shallow Waters bathymetry

- Satellite Coastline Monitoring
 - Coastal erosion and Restoration
 - Coastal Land Use (Mangrove mapping)
 - Census and classification of Coastal Work
- Oil and Gas Implantation monitoring
 - Near-shore dredging / excavation works
 - Pipeline movement detection
- INSPIRE compliant Spatial Data Infrastructure Platform

TECHNICAL MEANS

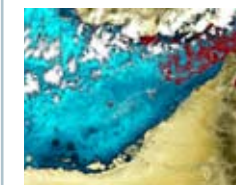
Planetek Hellas has the capacity, the personnel and the know how to handle complex software design and development projects as well as EO application oriented projects.

MAIN CUSTOMERS - SPACE

ESA, European Commission (through FP7), European Environmental Agency, Hellenic General Secretariat for Research and Technology.

MAJOR SPACE ACTIVITIES OR PROJECTS

- Planetek Hellas has developed strong capacity through its participation in **nine (9) different ESA funded projects**. Some of these projects are PARC-Archipelago (Posidonia-oceanica Advanced Remote Cognition), SIMS (Seagrass Integrated Monitoring System), Marcoast2 (Marine & Coastal Environmental Information Services), Coastal Outfall, EOforUN and WEOS).
- The company has related activities in **EC-FP7 funded projects** such as ITACA (Innovation Technologies and Applications for Coastal Archaeological sites), SAFER (Space Applications For Emergency Response), BIO_SOS (Biodiversity Multisource Monitoring System – From Space to Species), GNEXT (GMES pre-operational security services for supporting external actions), and eENVplus (eEnvironmental services for advanced application within INSPIRE).
- Planetek Hellas has also developed for **ESA several systems integrated into ESA-SSE (service support environment) service architecture**, under the projects NTSS (Naval Traffic Statistics for Security) and Ozone 3D. Planetek Hellas is also the first Greek company to have ever signed a contract with the European Space Astronomy Centre (March 2013) for which its implementing an SDI system.



1. Totem PKH 2013
2. Satellite image of an algal bloom (and software scanning for the “red tide” algae’s chlorophyll, represented by the intensity of redness)

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

George Giordamlis
President of Board of Directors
Christos Giordamlis
Managing Director
Elias Giordamlis
Vice President of BoD
Serafeim Katsikas
Member
Amanda Soukoulia
Member

SCIENTIFIC/ADVISORY BOARD

Petros Soukoulis
Head

PERSONNEL

Total Personnel 2013: 56
Space personnel 2013: 5 people
dedicated to Defense & Space
apps, 4 people involved part time
in Defense & Space apps

ADDRESS & WEB SITE

Prisma Electronics SA
87, Demokratias Ave.
681 00 Alexandroupolis
www.prisma.gr

CONTACT

Amanda Soukoulia
Marketing
Tel.: +30 255 103 5013
Fax: +30 255 103 4916
amada.soukoulia@prisma.gr

CORE BUSINESS

Prisma Electronics SA is a hi-tech Company established in 1991 in Alexandroupolis, NEastern Greece. Through a consistent effort, the Company has evolved into a specialized Company in the field of ICT, while the design and production of complex manufacturing of electronics parts and integrated electronic systems in commercial, research, space and defense applications, established the Company in Greece and abroad.

Aiming at innovation and thereby increasing competitiveness in Greece and abroad, strategic priority is always the development of Corporate Products and Services of high technology in the field of Electronics and ICT, while engaging in important R&D activities. Export-oriented activities to new markets are also considered a dynamic priority to the promotion of Company products.

PRODUCTS & SERVICES

Electronics (Services)

The Electronics Sector operates in a modern industrial plant, equipped with contemporary systems and tools. Main Services provided are focused on the assembly (SMT & THT) of printed circuit boards, cables and electronic devices integration. Specialized services are also provided. After-Sales Services include repair/rework of assembled printed circuit boards and/or devices. The Company has the ability, equipment and procedures to perform a number of quality controls at every stage of production and complete checks on the integrated products.

Prisma Electronics is the only Greek company that has been honored by CERN with the Gold Award for Industry for manufacturing 5.500 pcbs for the CMS preshower with an outstanding defect rate of 0.02%.

ICT (Services)

Along with its dynamic network of partners, Prisma Electronics provides highly advanced integrated IT systems and customized solutions followed

Certification & Accreditations

- Quality Management System: ISO EN 9001:2008
- IT service management: ISO 20000
- Information Security Management Standard: ISO 270001
- Industrial Safety: certified by the authorized branch (GDAA) of Hellenic Ministry of Defense (MoD).
- Official Defense Material Manufacturer: Registry of the MoD under S/N 0010; NCAGE Code with S/N G1077.
- Production personnel certified by: IPC-STD-001 & IPC-WHMA-620A.

by advanced support services regardless the size of the organization by delivering value-added services that exceed customer expectations.

ICT major activities among others, include: Integrated solutions for public organizations and private companies, SW development, Fiber Optics Network, Access Networks and Data Centers, Buildings Networks, WLAN Broadband Networks, Testing and Proofing.

R&D (Services)

Since its inception Prisma Electronics spends over 20% of its revenue in R&D activities. Such commitment has enabled the company to consistently remain at the forefront of technology. The Company has ongoing cooperation and R&D relationships with over 100 researchers in different Universities and Research Institutes across Europe. Over the last 12 years, the company has been involved in 21 research programs. Today, the R&D section manages 7 national and European research projects, 2 of which are in collaboration with CERN and 5 European universities, in the frontier of research subjects.

Corporate products

LAROS: An innovative patented platform that enables remote monitoring and analysis of vessels operational parameters. It is a powerful tool that collects, processes and transmits real-time data from any type of vessel imminently to the administration HQ's through a smart-sensors' wireless network, providing complete diagnosis, prognosis and early warnings. LAROS solution assists maritime companies to achieve higher efficiency in operation, better environmental protection and compliance, dynamic predictive maintenance and effective coordination between crew and administration.

TECHNICAL MEANS

- Surface Mount Technology (SMT) electronics assembly production line.
- Through Hole Technology (THT) electronics assembly production line. Cables assembly line
- Special Services Equipment; Test Systems Equipment

MAIN CUSTOMERS - SPACE

CERN, ESA

MAJOR SPACE ACTIVITIES OR PROJECTS

- Enhancement of Crete's potential for a dedicated calibration facility for satellite radar altimeters and for tectonic deformation monitoring (SOFIA). Ref N. 229885, Sub-Contractor to TUC.
- ESA/ESTEC, Essential Telemetry ASIC. Contract N. 20198, Sub-Contractor to DUTH.
- Si-Cluster, Project MENELAOS: "Miniaturizing electronics in space applications".
- ESA/ESTEC, Design, development, manufacture and qualification of the Power Processing Unit (PPU) for the Hall Effect Thruster (HET) Electric Propulsion (EP) Subsystem for Small Satellites. Ref. N. ITT-7835, Prime Sub-Contractor to ALTA.



SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

MANAGEMENT BOARD

Andreas Andrianos

Development Engineer & Chief Executive

WEB SITE

www.project1221.com

CONTACT

Andreas Andrianos

CEO

Tel: +30 697 239 5143

ceo@project1221.com

Project 1221

CORE BUSINESS

- Research and Development
- Propulsion, Energy, Environment, Vehicles, Craft, Aircraft, Space, Hydrogen, Synthetic Fuels

Project 1221 has been operating sub rosa since 2001 and was first incorporated in London, U.K. in 2004, dedicated to creating and marketing exceptional gas-turbine powered vehicles, craft and aircraft under a single banner. Overall, a great amount of independently financed work has been carried out, concerning the development of several design and engineering concepts for the introduction in due time of a complete range of road and off-road vehicles, craft and aircraft and notably concerning the development of proprietary gas turbine technology. The Space Sector is considered by Project 1221 as a potential outlet for the proprietary solar thermal power generation technology and solar array for spacecraft and/or satellite applications (as opposed to the currently used photovoltaics). Among other advantages, this solar thermal technology would also allow to generate gaseous hydrogen onboard from conventional jet fuel and is indeed applicable to terrestrial power generation.

PRODUCTS & SERVICES

R&D

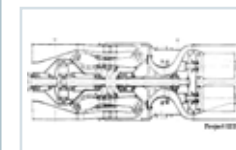
TECHNICAL MEANS

Outsourcing, as applicable

Project 1221



1



2

1. High-speed gas turbine vehicle detail

2. Patented variable cycle counter-rotating gas turbine

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

MANAGEMENT BOARD

Dr George Georgoussis

CEO and lidar expert

Nikos Kontos

Chairman

Dr Matt Woollard

Director of Client Relations

PERSONNEL

Total Personnel 2013: 10

ADDRESS & WEB SITE

Raymetrics S.A.
Spartis 32 & Fil. Eterias
14452 Metamorfosis Athens
www.raymetrics.gr

CONTACTS

Dr Matt Woollard

Director of Client Relations

Tel.: +30 210 663 9039

Fax: +30 210 282 7217

mwoollard@raymetrics.gr

Dr George Georgoussis

CEO

Tel.: +30 210 665 5860

Fax: +30 210 663 9031

georgoussis@raymetrics.gr



CORE BUSINESS

Design, construction, delivery and maintenance of lidars for atmospheric analysis.

PRODUCTS & SERVICES

Primarily aerosol lidars - Raman lidars, backscatter lidars, 3D scanning lidars, for research, meteorological and aviation applications

Also Differential Absorption Lidars (DIAL) for detecting different gas types (primarily ozone)

Key knowledge of telescope and optical design (emission and receiver) plus laser design

MAIN CUSTOMERS - SPACE

European Space Agency

Raymetrics



1. 3D Scanning Backscatter LIDAR System
2. Vertical pointing Raman LIDAR System
3. Custom Telescope

MANAGEMENT BOARD

Nikolaos Bazakas
General Manager

PERSONNEL
Newly Founded

ADDRESS & WEB SITE

SITAE L Hellas S.Ltd.
Dionysiou Solomou 4
59100 Veroia Imathia
www.sitael-hellas.com

CONTACTS

Nikolaos Bazakas
General Manager
Tel.: +30 233 107 6265
nikolaos.bazakas@sitael-hellas.com

Ioannis Katsavounidis
CTO
Tel.: +30 233 107 6265
ioannis.katsavounidis@sitael-hellas.com

CORE BUSINESS

SITAE L HELLAS is a Greek private Company, able to cover all the processes needed for the Design and Test of Electronic Equipment and sub-systems compliant with high reliability standards. The company belongs to the Angelo Investments holding, a worldwide leading Group with more than 1000 highly skilled employees, composed by successful high-tech companies strongly involved in Transportation and Aerospace markets.

SITAE L HELLAS has been founded in 2013, carrying out activities especially in the **development of electronic sub-systems for space propulsion**, and can count on the background experience of the mother company SITAE L, and of the other Angelo Investments subsidiaries, in covering all the processes needed for the Design, Development, Production and Qualification of **Microsatellites, Electric Propulsion sub-systems, Instruments, and Spacecraft Avionics** at component, board and unit level. SITAE L Hellas is an established Greek player, being the focal point of all Greek customers and users of SITAE L technology and promoting the solutions and systems of SITAE L in the Space and Industrial markets.

PRODUCTS & SERVICES

- Microsatellites
- Space Propulsion
- Instruments and Sensors
- Power and Processing Units for electric propulsion
- Power Supplies
- Data Handling/Processing Units
- Drive & Control
- Equipment Electrical Ground Support Equipment
- Microelectronics

TECHNICAL MEANS

Design and Analysis Tools

- System Design (THOR, ALMASim, MATLAB/Simulink); Mixed-signal Electronics Design Tools (Cadence/Mentor Environment, NI Labview); Microelectronics Design Tools (Cadence Environment, Altium Environment, FPGA SW ...)

Certification & Accreditations

- Quality assurance certifications EN 9100, ISO 9001:2008, ISO 14001:2004, SA8000
- Official ESA/NASA standard certifications (to guarantee highly qualified processes, increasing the quality of offered products and solutions)

- Mechanical Design SW (2D – 3D); V&V and RAMS Analysis Tools

Production Facilities

- Clean Rooms (Class ISO5, ISO7 and ISO8); Electronics Assembly (Space Qualified Manual Assembly Line, Automatic Assembly Lines)
- Mechanical Fabrication (CNC machine); Warehouses for High-Rel products; Inspections Facilities

Test facilities

- Environmental Test Chambers; Vacuum and Thermal-Vacuum Test Facilities
- Micropropulsion Lab; Aerothermodynamics Lab; Cavitating Test Facility; Green Propellant Rocket Test Facility
- Electronics/Microelectronics Test Areas
- Mechanical Test Facilities (Shaker for system and subsystem vibration test, Separation Test Facilities)

MAIN CUSTOMERS - SPACE

SITAE L has successfully taken part in many International Projects and is currently involved in International Programmes (ESA, NASA, ASI, Thales Alenia Space, Airbus DS, OHB, Selex ES, COMDEV, RSC Energia).

MAJOR SPACE ACTIVITIES OR PROJECTS

SITAE L On-going programs:

- MUSIS CSO (Air Liquide, CNES): Control, Drive and Power Unit for CryoCoolers
- COSMO SkyMed 2nd Generation (SELEX ES, TAS): Control Momentum Gyro Assembly Control Unit (CMGA CU)
- EarthCARE (Syderal, EADS Astrium, ESA): Mass Memory and Formatting Unit Power Supply Boards
- ICESat-2 (NASA-GSFC): HV Power supply system for the Advanced Topographic Laser Altimeter System (ATLAS) instrument
- SHIRA Satellite at High Resolution TIR: Phase A/B1 study for Earth Observation Hyperspectral Optical Instruments
- ASTRO-H (JAXA, ESA): HV Power Supply systems for APD, CdTe and PM sensors
- Orion MPCV (Selex ES, Astrium DE, NASA): 120V/28V DC/DC Converter of the Service Module PCDU of NASA Multi-Purpose Crew Vehicle
- SOLAR ORBITER (OHB, ESA, ASI): METIS PPU, STIX HVPS, SWA DPU
- ASIM (ESA): HV Power supply for ASIM experiment on ISS

SITAE L Completed programs:

Sentinel 1 and 3 (ESA, Thales Alenia Space, Astrium), Swarm (ESA, Comdev), Exomars (ESA, TAS), Calet (JAXA, NASA, ESA), Integral (ESA, IAS), MSL/Curiosity (NASA, ESA, Astrium), Pamela (ASI, INFN, CNR), AMS-01/AMS-02 (NASA, ASI, MIT, INFN), Gaia (ESA, Syderal), ATV (RSC-Energia)



1



2



3



4

1. Instruments and
Sensors

2. Microsatellites

3. Platform and Payload
Avionics

4. Space Propulsion

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

MANAGEMENT BOARD

Dr. Zoi Ekaterinidi
CEO

PERSONNEL

Total Personnel 2013: 17

ADDRESS & WEB SITE

Software Competitiveness
International
Main Branch Office: 40, Agiou
Konstantinou str.
15124 Athens
www.softcom-int.com

CONTACTS

Dr. Zoi Ekaterinidi
CEO

Tel.: +30 210 617 9485

Fax: +30 210 618 0451

zoi.ekaterinidi@softcom-int.com

Dr. Stefanos Melissopoulos

Business Development

Tel.: +30 210 617 9342

Fax: +30 210 618 0451

stefanos.melissopoulos@softcom-int.com



CORE BUSINESS

Software Competitiveness International ("SOFTCOM INTERNATIONAL") is a small-medium sized dynamic company, which harmonically combines the professional diligence, the operational excellence and the processes maturity of multinational market leaders and the personal commitment, the flexibility and costs' attractiveness of SMEs. This is an innovative combination, which generates a trusted partner for demanding customers, markets and projects! This is the reason, that international companies trusted the newly established SOFTCOM INTERNATIONAL for their innovative and assuming product development.

The main asset of SOFTCOM INTERNATIONAL is its personnel. The company is founded in April 2010 by highly experienced and qualified executives in the international market of Information and Communications Technology, Software Research & Development and IT services. Following worldstandards of quality and processes, Software Competitiveness International operates in both international and domestic markets.

The Company focuses mainly on Software Research and Development (R&D), innovative ICT Solutions & Services, Consulting and Professional Trainings. SOFTCOM INTERNATIONAL brings a rich background and client experience, among others, with web applications, either on

Certification & Accreditations

- ISO9001:2008 certified (by TUV AUSTRIA HELLAS)
- Member of «Deutsch-Griechische Industrie- und Handelskammer»

Personnel Qualifications:

The majority of Softcom-Int employees (up to 82%) have bachelor degrees in computer science, electrical engineering or physics, while up to 86% of them holds an MSc in engineering or / and a PhD

Personnel Professional Certifications:

- Certified Scrum Master (CSM)
- Certified Scrum Product Owner (CSPO) by Scrum Alliance
- IT/IL v3 Foundation (EXIN)
- ISO/IEC 27001:2005 Lead Auditor/Auditor (IRCA)
- ISO 9001:2008 Lead-External Auditor (TUEV Austria Academy)
- ISTQB Foundation (EXIN)
- Certified Ethical Hacker (ec-council)
- CISM certification (ISACA)
- CISA certification (ISACA)

Softcom International

client – server or on distributed and horizontal scaling architectures including mobile applications and telematics. Both open source technologies and Microsoft based technologies are part of its technologies' portfolio. Furthermore, company has references on iOS and embedded systems development.

SOFTCOM INTERNATIONAL is characterized for personnel excellence. The Company's personnel covers a wide range of activities, from project management, business analysis, system architecture, system analysis, design and coding, quality control, and delivery of end-customer training, always following the working methodology of international companies (due to SOFTCOM INTERNATIONAL's strategy and their previous working experience). Management and team offer to the company's customers their broad experience in software development, in quality processes and international standards, but mainly their personal commitment for the projects' success.

PRODUCTS & SERVICES

Our experienced engineers and consultants use globally accepted methodologies to deliver business and technology related solutions.

- **Software Research & Development Services**
- **Customized Software Products and Solutions**
- **ICT Solutions & Services (ICT Networks and IT Security)**
- **Consulting & Training**

TECHNICAL MEANS

The company uses a variety of technologies, frameworks, databases and tools: C#, .NET, Objective C, Embedded C, C++, Java SE, Scala, Spring, Hibernate, GUIs, Swing, JPA, JUnit frameworks, Web services, Java Design Patterns, IntelliJ, Maven, Tomcat, MySQL, PostgreSQL, MongoDB, a.o.

- Partner dedicated teams, equipped with Dell (i5 and i7) laptops
- Network infrastructure and Telephony System based on Cisco equipment
- Site-to-Site VPN based on Cisco Appliance
- Conference Station (by Polycom)
- SDSL Leased Line available
- UPS support (by APC)
- Source Control System (Subversion)
- Offices and meeting rooms of up to 500m² (in total), that are already fully equipped with furniture, network/power cabling and lights

MAJOR SPACE ACTIVITIES OR PROJECTS

In contact with ESA ESTEC and with major ESA Contractors (ATOS France, THALES ALENIA SPAZIO, AIRBUS DEFENCE & SPACE) so as to join them as a s/w implementation sub-contractor



SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



Space-Asics

MANAGEMENT BOARD

Vassilis Papageorgiou
CEO

Stratis Solomos
President

PERSONNEL

Total Personnel 2013: 11
Space personnel 2013: 7

ADDRESS & WEB SITE

SPACE-ASICS S.A.
Apollonos 16
10557 Athens
www.space-asics.gr

CONTACTS

Stratis Solomos

President
Tel: +30 210 3256991
Fax: +30 210 3256995
info@space-asics.gr

George Kottaras

Chief Engineer
Tel.: +30 210 325 6996
Fax: +30 210 325 6995
gkottaras@space-asics.gr

CORE BUSINESS

The SPACE-ASICS expertise encompasses the Design, Verification, Testing, Characterization and Evaluation of custom, low-power, mixed signal, Rad-Hard ASICs, which are used for the end-to-end development of bigger spacecraft subsystems and instruments.

PRODUCTS & SERVICES

- Sensor Interface ASIC
- Essential Telemetry (ETM) ASIC
- Technology Independent Bandgap Voltage Reference
- Programmable Gain Instrumentation Amplifier
- Rad-hard on chip linear regulators
- Low-Power Rad-hard SpaceWire Interface
- Bank of Rad-Hard ADCs

TECHNICAL MEANS

- Microelectronics Lab
- Thermal Chamber

MAIN CUSTOMERS - SPACE

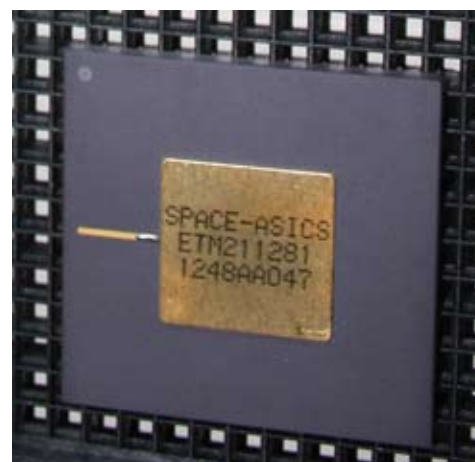
- ESA
- Bradford Engineering BV
- Kayser-Threde GmbH

MAJOR SPACE ACTIVITIES OR PROJECTS

- Development and Qualification of a 14-bit ADC ASIC for Pressure Sensors, ESA Project
- Development and Qualification of an Essential Telemetry (ETM) ASIC, ESA Project
- Bank of Rad-Hard ADCs, ESA Project
- Development of a 16-bit ADC, ESA Project



2



1

1/2. Mixed Signal, Low-Power, Rad-Hard ASICs developed by SPACE-ASICS S.A.

**MANAGEMENT BOARD****Spyridon Manolopoulos**

Chairman, Executive Member of the Board

Pari Drossinos

CEO, Executive Member of the Board

Ioannis Mertzanis

A' Vice-President, Executive MoB

Christos Bellos

B' Vice-President, Non-Executive MoB

Executive MoB

George Lagogiannis**Ioannis Doulaveris****Panagiotis Bellos**

Independent Non-executive MoB

Dimitrios Houhoulis**Lyssandros Kapopoulos****PERSONNEL**

Total Personnel 2013: 213

Space personnel 2013: 15

ADDRESS & WEB SITE

Space Hellas S.A.
312 Messogion Ave.
153 41 Athens
www.space.gr

CONTACTS**Ioannis Mertzanis**

Executive Vice President & COO
Tel.: +30 210 650 4292
Fax: +30 210 650 4397
imer@space.gr

Socrates Costicoglou

Director of IT, Applications and R&D Division
Tel.: +30 210 650 4275
Fax: +30 210 654 1539
scostic@space.gr

CORE BUSINESS

Founded in 1985, Space Hellas is a leading system integrator that offers a comprehensive range of integrated ICT and security solutions and services complemented by award-winning after-sales support. Headquartered in Athens, Space Hellas has offices in the major Greek cities, subsidiaries in five countries and activities extending across Europe to the Middle East. The company is listed on the Athens Stock Exchange since 2000.

Space Hellas provides value-added solutions to high-profile customers in the enterprise, government and defense sectors. Its impressive range of solutions and services covers every aspect of ICT and security, as well as services like managed services, nationwide technical support, consulting, training, and project management.

PRODUCTS & SERVICES

- **Communications & Networks:** Communication and Data Networks (wired, wireless, satellite), Network Management
- **Telecom Services:** IP - MPLS - VPN (domestic and global connectivity), Fixed & Mobile Telephony - SpacePhone National Retail Shop Network, Satellite Communications, Node Housing
- **Information Technology & Security:** Virtualization Platforms, Cloud Computing, Application Delivery, Storage Consolidation & Unification, Data Management, Backup, High Availability and Disaster Recovery/BCP, Network Security, Information Security and Compliance, IT Security, CCTV/IP HD Surveillance, Video Analytics, Number Plate Recognition, Biometrics, Perimeter Protection, Access Control, Intrusion Detection, Homeland Security, Integrated Security Systems
- **Infrastructure:** Data Centre Infrastructure, Structured Cabling, Electrical and Mechanical Installations, Meteorological Radar Network Infrastructure
- **Applications:** Unified Communications - IP Telephony and Video Conferencing, Fleet/Asset Tracking & Management, Telemetry, Security Platforms, Training Simulators, Audio Visual Applications and Systems, Space-based EO Service Platform for Maritime Security and Sea Border Control, SatCom-based Fire Detection and Alerting System, GNSS-based Fleet Tracking and Management

MAIN CUSTOMERS - SPACE

- Telecom operators and service providers

Certification & Accreditations

- ISO9001:2008 and ISO/IEC27001:2005 certifications
- Space Hellas engineers: more than 300 leading international vendor certifications and accreditations.

- Banks and financial institution, Hospital, Industrial enterprises, SMEs
- Government and Public sector organisations, Defence, ESA

MAJOR SPACE ACTIVITIES OR PROJECTS**Integrated Satcom, Navigation and EO related R&D programmes**

- Joint synergistic and integrated use of earth observation, navigation and communication technologies for enhanced border security (JASON)
- PHAROS: Project on a Multi-Hazard Open Platform for Satellite-based Downstream Services (FP7 Space)

Satellite Communications related R&D programmes

- ISAES: Interoperable E-Systems for Africa Enhanced by Sat (ESA IAP)
- BRESAT: Broadband in EU Regions via Satellite (FP7 CIP/PSP)
- SFEDONA: Satcom-based Fire Detection Automated system (ESA ARTES 34; Space Hellas: Prime Contractor)
- FISI: Future Integral Satcom Initiative (EC FP7 ICT)
- WISDOM: Wideband satellite demonstration of multimedia (EC ACTS)

Earth Observation related R&D programmes

- MARISS Scaling-Up (ESA GSE), MARISS Extension Phase (ESA IAP), MARISS: Maritime Security Services (ESA GMES)
- DOLPHIN: Development of Pre-operational Services for Highly Innovative Maritime Surveillance Capabilities (EC FP7 SPACE)
- STINGRAY: Satellite-Aided Integrated Sea Border Security (ESA Greece Industry Incentive Scheme; Space Hellas: Prime Contractor)
- MUSIS: Multinational Space-based Imaging System – System Architecture and User Ground Segment Study (European Multinational Military R&D Programme)

Satellite Navigation related R&D programmes

- GRABEL: GNSS Reconfigurable Antenna Based Enhanced Localization (FP7 SME)
- BUS-KI-ERXETAI: Advanced system for dynamic information and guidance services to public transport passengers (GSRT, National Range Action "SME Support")
- eCall: Development of Pilot Emergency Call System for Vehicles (GSRT - NSRF 2007-2013, National Range Action "Cooperation")

Space Hellas has developed the following Satellite related Products: Space-based EO Service Platform for Maritime Security and Sea Border Control; SatCom-based Fire Detection and Alerting System; GNSS-based Fleet Tracking and Management; Meteorological Radar Network Infrastructure...

Space related Commercial System Integration Projects (for Greek public organisations) - Excerpts

- Satellite Network for Interconnection of Public Sector Organisations located at Remote & Rural Areas", Integrated IT and SatCom System, Remote Access and Fleet Management System, Pre-Hospital Emergency Care Telemedicine System, Health Information Network for Military Hospitals



1



2

1. System integration
2. Disaster facilities

teletel

Teletel - Telecommunications
and Information Technology

MANAGEMENT BOARD

Vassilios Velentzas

Managing Director and Chairman
of the Board of Directors

Members of the Board of Directors

Christos Choumbavlis

Vangelis Kollias

Loukas Romanos

Stavros Katsikis

PERSONNEL

Total Personnel 2013: 30

Space personnel 2013: 10

ADDRESS & WEB SITE

Teletel SA
124 Kifissias Avenue
11526 Athens
www.teletel.eu

CONTACT

Vassilis Velentzas

Managing Director
Tel.: +30 210 698 3393
Fax: +30 210 698 3391
v.velentzas@teletel.eu

CORE BUSINESS

Established in 1995, TELETTEL is a **software and microelectronics development company**, committed to offering innovative solutions, setting industry standards and delivering cost-effective products.

- **SPACE:** Hardware & software solutions for satellite/spacecraft avionics and ground equipment, with special focus on testing & monitoring tools (EGSE, SCOE) for on-board subsystems, QoS monitoring tools for ground communications, on-board electronics & software, GALILEO signals interferences & management, etc.
- **DEFENCE:** Leading edge technology electronic systems and high reliability software for the needs of the International & Hellenic Defence Industries.
- **AERONAUTICS:** HW & SW solutions for aircraft avionics and ground equipment, with special focus on testing & monitoring tools for on-board data communications, on-board electronics & SW, etc.

Excellent know-how and exceptional experience in space, defence and aeronautics technologies with SW & HW solutions provided to DASSAULT, SAGEM, THALES, MBDA, EADS, AIRBUS, ALCATEL-LUCENT, MOTOROLA, ESA and many other customers.

PRODUCTS & SERVICES

- **iSAFT product series:** Integrated powerful HW/SW environment for the simulation, validation & monitoring of aerospace on-board data networks supporting simultaneously a wide range of protocols (RMAP, PTP, CCSDS Space Packet, TM/TC, CANopen, AFDX, etc.) and network interfaces (SpaceWire, ECSS MIL-STD-1553, ECSS CAN). Product line, fully re-engineered in cooperation with ESA & aerospace leaders, to comply to aerospace on-board industrial validation requirements: iSAFT Protocol Validation Platform; iSAFT SpW / MIL-STD-1553/CAN Recorder; iSAFT SpW Simulation Interface; iSAFT ARINC 664 Test Tool.
- **EGSE/SCOE design & development services:** Specialised Electrical Ground Support Equipment, such as CDMU SCOE, PLM SCOE, Instrument Interface simulators, specialized data recorders, simulation Data Front End interfaces, automated avionics test benches, etc.

Certification & Accreditations

- ISO 9001:2008
- Certified and authorised to handle graded material / NATO C-M (55) 15 FINAL Security System; Registered (Certificate No: 0051) in the Registry of Defence Material Manufacturers of the Hellenic Ministry of Defence for the activities of "Software Development for Defence systems"

- **Engineering services for the development of software & microelectronics** (both space and non-space)
- **Engineering Support Services** (in the areas of integration and testing services, Verification & Validation, Operations Engineering, etc.)

TECHNICAL MEANS

- Extensive set of technologies and associated tools for SW Engineering: LABVIEW, NI TestStand, ATEasy, LABWINDOWS; MATLAB Simulink, Mathcad; XML, SOAP, W3C Web Services, etc.
- EDA tools for the design and implementation of electronic products: PCB Design Entry & Layout; Programmable logic design and implementation (Xilinx ISE, ...); Xilinx and ACTEL evaluation/development boards
- Extensive Test & Measurement capabilities / development/debugging processes

MAIN CUSTOMERS - SPACE

- Customers: ESTEC, ESOC, ASTRIUM SAS Satellites, Delta Technologies, EC, ITTI
- Subcontractors: ASTRIUM UK, TAS-F, INRIA, SCISYS, 4Links

MAJOR SPACE ACTIVITIES OR PROJECTS

- SpaceWire-T/SpaceWire-D validation (ESA/ESTEC): Design and development of a proof-of-concept prototype for the functional and performance validation of SpW-T & SpW-D protocols.
- SpaceWire Evolutions prototyping/validation (ESA/ESTEC): Prime Contractor. Cooperation with ASTRIUM Satellites, 4Links and SCISYS
- FDIR / N-MaSS Instrument Simulator/Analyser (ESA/ESTEC): Implementation of N-MaSS end-point protocols and simulation SW of instrument and telemetry/telecommand of data sources
- Applicability of ARINC-664 (AFDX) in space O/B data networks (EC FP7-SPACE): Representative ground demonstrator of a S/C on-board architecture to assess the suitability of AFDX technology elements over the SpaceWire physical interface
- Starkit/SCOC3 Drivers & System Validation (ESA/ESTEC): Validation of the Basic Support SW for ASTRIUM's SCOC3 Starter Kit board (I/O drivers, associated Board Support Package ...)
- Protocol Validation System (PVS) for on-board communications (ESA/ESTEC): Open, generic & fully integrated tool for validation/conformance testing, protocol monitoring & analysis, traffic generation & fault injection, and interfaces simulation
- GALILEO interference signals: Design and development of a fully parameterised interference signals generator for GALILEO bands E1-E5 (THALES COMMUNICATIONS, SPACE ENGINEERING).
- EGNOS algorithms: Development of a simulation tool allowing the validation/fine-tuning of EGNOS correction & integrity algorithms for positioning applications from different application areas
- Development Services for satellite/spacecraft on-board SW: 2 year cooperation with ASTRIUM Satellites, Toulouse (on-board SW components for the CSO satellites)



1



2



3

1. Automated Testbench
2. iSAFT SpaceWire/MIL-STD-1553/CAN Recorder
3. SpaceWire interface board



MANAGEMENT BOARD

Evangelos Veronikiatis

Chairman and CEO

Vasilios Gaitanidis

Vice President

Ioannis Chaidemenakis

Member of the BoD

PERSONNEL

Total Personnel 2013: 5

Space personnel 2013: 4

ADDRESS & WEB SITE

TERRA SPATIUM SA

Ardittou 32

11636 Athens

www.terraspatium.gr

CONTACTS

Dionysia Petala

Business Development & Sales

Senior Manager

Tel.: +30 210 674 8540

Fax: +30 210 674 8547

d.petala@terraspatium.gr

Ioannis Chaidemenakis

Helios Hellenic Industrial

Team Leader

Tel.: +30 226 204 5390

Fax: +30 226 205 7924

i.chaidem@atase.gr

CORE BUSINESS

TERRA SPATIUM SA (TS) is the former **Spot Infoterra Hellas SA (SIH 2010-2012) and Geomet Ltd (1989-2010)**. TS is a long-standing partner of Spot image and Infoterra in Greece with more than **20 year experience in the field of satellite imagery and EO data applications** and distributes the **full range of Airbus Defense and Security (former Astrium GEO-Information Services) products and services**, including data provided by the SPOT Constellation, TerraSar-X, Formosat, etc. It is also an **official distributor of e-Geos**.

Taking advantage of the resources, skills and experience built since 1989 that the company was established, TS offers advanced solutions that expand in the whole range of geoinformation, serving various sectors such as environmental and physical surface management, telecommunication, monitoring and management of utility networks, border control, national and regional planning, maritime monitoring, agriculture, defence and even management of natural resources exploitation (oil, natural gas), etc.

During its years of operation, TS has successfully participated in numerous Greek and international projects (ESA, EDA).

TS employees are highly skilled and experienced in the following fields of activities: Remote Sensing, End users requirement collection, Production and processing of geographical data, Digital Image Processing, GIS applications, Mapping, Cadastre, Applied Geodesy – GPS.

PRODUCTS & SERVICES

Regarding space related activities, TS is the sole distributor of **Airbus Defense and Security** full range of products and services (e.g. data acquired by Pleiades, TerraSAR-X, SPOT 1-5, SPOT 6-7, etc.). We are also official distributors of **eGeos** products and services (eg data acquired by Geoeye, WorldView, Quickbird, Ikonos, CosmoSkyMed, etc).

We are distributors of the photogrammetric sw platform INPHO (Trimble) and provide relevant technical support. Moreover, we can provide solutions for airborne laser scanning by Riegl and UAV by Sciebel. Finally we have recently started a cooperation with MAWIS for enhancing our LBS solutions.

TS as an ATESE company **can also provide satellite ground station services**. ATESE has been supporting the operations and maintaining the Hellenic Satellite Ground Station in the aspect of the Hellenic participation in the military satellite program «Helios» since 2009.

Certification & Accreditations

ISO 9001:2008 certified.

MAIN CUSTOMERS - SPACE

Short and indicative list: EC, ESA, EDA, Cyprian Agricultural Payment Organization, Klimatologia SA & HEMCO - now merged into the Mapping And Cadastre Authority, Frontex, Geomatics SA, Geoanalysis SA, SONAK SA, Fotopo SA, ILF GmbH, HellasSAT SA, National Technical University of Athens, Aristotelion University of Thessaloniki, University of Aegean, University of Patras, University of Ioannina, FAO of the United Nations, Ministry of Culture, Ministry of Defense, Ministry of Agriculture.

MAJOR SPACE ACTIVITIES OR PROJECTS

- Coverage of Cyprus, in zones (2009-2013) - LPIS
- Tropoforest (2011-2013) – ESA
- Orthoimages for surveys for pipeline (2008-2011) - ILF
- Agricultural payment controls using Remote Sensing (2004, 2010)
- DEM in LOT2 and 4 (2010) - Frontex
- LBCSS (2011) - ESA: land border surveillance, with the Hellenic Police as target user, and the participation of FRONTEX representatives in the proof of concept pilot demonstration
- NEOS Feasibility study on Earth observation Ground Segment System of Systems for Security and Defence (2011-212) - EDA
- Feasibility study on Earth observation Ground Segment System of Systems for civil security (2013) - ESA
- Satellite data for background mapping over various Greek municipalities for urban mapping, to contractors of the municipalities or their development companies (2005-2012)
- Satellite data for background mapping over various Greek prefectures for forest fire protection, to contractors of the prefectures (2010-2012)
- Satellite based geographical data over Romania for telecom radio planning (2005) - Cosmote
- Orthoimages for forestry (2005) - Xylotechnologia
- Orthoimages (2008-2009) – Greek for Ministry of Development
- Maintenance and operational support of the Hellenic Satellite Ground Station in the framework of the Hellenic participation in the military satellite program «Helios» (2009-present)
- Co-operative project Acritas / si-Cluster
- Co-funding project BeachTour examining beach erosions under the supervision of GSRT FP7 projects that are currently active:
 - LOBOS (LOW time critical BOrder Surveillance)
 - SAGRES (Support to Pre-Operational Validation of the High-Time Critical Components of CONOPS)
 - D-BOX (Demining tool-BOX for humanitarian clearing of large scale area from antipersonnel landmines and cluster munitions)
 - CHARMe (Characterization of metadata to allow high-quality climate applications and services)



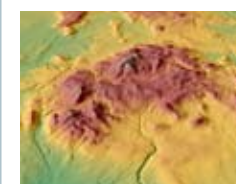
1



2



3



4

1. Pleiades sochi Russia
2. Pleiades Venise Italy
3. Spot6 Madrid Spain
4. WorldDEM south province Iceland

MANAGEMENT BOARD**Cyrille Dupont**

Chairman of the Board of Directors (BoD) and Managing Director

Laurent Guyot

Deputy Chairman of BoD

Members of BoD

Patrice Gilardoni**Antonis Dimitropoulos****PERSONNEL**

Total Personnel 2013: 38

ADDRESS & WEB SITE

THALES HELLAS S.A.
48 Konstantinoupoleos Street
194 400 Karellas Koropi
www.thalesgroup.com

CONTACTS**Panos Kappos**

Account Manager
Tel.: +30 210 668 4280
Fax: +30 210 668 4325
panos.kappos@thalesgroup.com

Dimitra Zavali

Project/BID Manager
Tel.: +30 210 668 4414
Fax: +30 210 668 4300
dimitra.zavali@thalesgroup.com

CORE BUSINESS

Thales Hellas S.A. is a subsidiary of the Thales Group and represents Thales in Greece and Cyprus. As the Group's regional centre of excellence, Thales Hellas promotes the optimum solutions and systems in the military and civilian regional markets.

Thales Hellas has the means and competences to execute programmes locally while benefiting from the extensive resources of the Thales Group and to provide state-of-the-art solutions.

Thales Hellas has made significant contributions, either as prime contractor or as a first-tier subcontractor on major Thales programmes in Greece and Cyprus. Through long-term co-operations and partnerships with local suppliers and partners is able to provide products, systems and services that meet customer needs and expectations.

Thus, we offer our customers with a full range of services: deployment of complex systems, program management, system engineering, supply chain management, installation, technical assistance & logistic support, training and warranty service.

Thales Hellas has the ability in the aerospace domain, to produce high-tech electronic equipment and sub-systems, test benches, to provide technical support and qualification of local supply chains as well as their management.

The company is equipped with some of the most advanced systems for testing of electronic equipment, from test benches for analogue and digital PC boards, power supplies, benches for test in-situ of PC boards with the possibility of developing particular fixtures, to vibration testers and advanced climatic and anechoic chambers.

Our highly skilled engineers are capable of addressing different types of technology performing engineering, system integration, project

management and management of complete supply chains due to our capability to qualify subcontractors to work locally in the aerospace domain as presented below. The advanced test benches and the accumulated expertise in fixtures development have established THALES Hellas as a major partner of the Greek industry and the Thales Group Units for testing of sophisticated printed-circuit boards harness manufacturing including management of the complete supply chain. Greek fighters and military ships are today operating systems, which have been partially "made in Greece".

PRODUCTS & SERVICES**Defence Area**

- Airborne & Naval Subsystems , Electronic Warfare Subsystems
- Test Benches: DV Benches (Prod & Funct), Insitu & JTAG Development
- Avionics Subsystems
- C2-C4SI SYSTEMS
- Services & Customer Support on product and systems

Civil Domain

- Air Traffic Management, Train Transportation , Security

TECHNICAL MEANS

The company is equipped with some of the most advanced systems for testing of electronic equipment, from test benches for analogue and digital PC boards, benches for test in-situ of PC boards with the possibility of developing particular fixtures, to vibration testers and advanced climatic and anechoic chambers.

MAIN CUSTOMERS - SPACE

- THALES ALENIA SPACE
- EC (European FP7 programmes)

MAJOR SPACE ACTIVITIES OR PROJECTS

MUSIS Program (2010), Customer: THALES ALENIA SPACE, Location: TAS HQ Cannes (FR), Duration: 1 Man Year per WP

Participated in the MUSIS (Multinational Space-based Imaging System) for the CSO (Composant Spatial Optic) part : Optical Instrument Payload as a subcontractor to Thales Alenia Space for the phase B - Engineering Phase for the following workpackages :

WP 1: Electrical Architecture Support and Database Content Manager

WP 2: Electrical Ground Support Equipments (EGSE)

Certification & Accreditations

- ISO 9001:2008 certification
- NATO security clearance
- Registration in the Hellenic MoD Defence Manufacturers Registry
- J-STD-001 trainings (CIT & CIS)
- IPC-A-600 trainings (CIT & CIS)
- IPC-A-610 trainings (CIT & CIS)
- IPC-A-620 trainings (CIT & CIS)



MANAGEMENT BOARD

George Karantonis
CEO

Nikolaos Karapanagou
Executive Chairman

Marios Papadopoulos
Member

PERSONNEL

Total Personnel 2013: 67

ADDRESS & WEB SITE

VCI SA
Cheimaras 5
15125 Marousi
www.vci.gr

CONTACTS

George Karantonis
CEO

Tel.: +30 213 018 6801
Fax: +30 213 018 6888
gkarantonis@vci.gr

Nikolaos Karapanagou
Executive Chairman - CTO
Tel.: +30 213 018 6802
Fax: +30 213 018 6888
nkarapanagou@vci.gr

CORE BUSINESS

VCI is a leading **systems integrator offering state of the art solutions in the ICT sector**. It was founded in 2005, targeting to develop new technologies and integrated IT and communications solutions for Financial Institutions, Telecom Operators, Central and Regional Public Administration Services

VCI has commercial business providing Innovative Technologies and Integrated Software Solutions in Greece, Italy, Bulgaria and Cyprus and expands its presence with local offices all over Europe. Along with commercial business, it has as Innovation Incubator supporting new business ventures marketing their new products to its enterprise customers. Finally, it also participates in European Research.

VCI develops its own products as well as it acts as integrator either utilizing Open Source software or Commercial software from major vendors including IBM, Oracle, Microsoft etc.

Its product line contains seven products as mentioned below :

- **Process** (Process automation within an organization, Procurement processes)
- **Sensor Management** (Energy management, OnBoard Diagnostics, Monitoring and Efficiency, Domain rules, Photovoltaic)
- **Online** (Self-service, Bills presentment, Bills payment, e-TopUp, Online wizards, Sales assistants)
- **Content** (Intranet and Public Web / Mobile Portals, Mobile web / Mobile Apps)
- **Document** (Documents generation, distribution and archiving, Application / Contract Management, Content generation and approval)
- **Campaign** (On-Pack / SMS Promotions, Sponsored Alerts SMS, mCouponing, Mobile Parking / Ticketing, Emergencies notification (generic or location based))
- **Credit** (Loan and credit card approval processes, Web / Mobile banking, payments and brokerage, Automated Payment Machines (APM), Expansion of payment channels)

VCI holds extensive experience and strong competence in mobile applications offering strong development team and state of the art

solutions in private and public organizations. It also provides advisory services as well as technical and operational support. Committed to quality, VCI is certified against ISO 9001:2008 under certification scope: "Management, Design, Development, Installation and Support of Software Products, SaaS and IT Projects"

VCI's mission, vision, goals and business concept is at high level grade served by passionate people and managed by field proven managers & personnel.

PRODUCTS & SERVICES

VCI provides integrated software solutions for value-added services and e-business solutions. Furthermore, it is also one of the leading companies in the design and development of applications distinguished for its highly innovative design concepts.

The most important products offered by VCI are the following:

1. Business Process Management
2. Sensor Management
3. Enterprise Portals
4. Content Management Systems
5. Identity Management
6. Business Intelligence
7. Electronic Bill Presentment And Payment
8. eCRM Solutions
9. Mobile Business Solutions

VCI holds extensive experience in mobile utilizing its innovative mobile platform that enables enterprise class customers (brand names), advertising agencies, content companies, media and telecom providers to benefit in the best possible way from the mobile channel. VCI mobile platform includes the widest range of activities in mobile marketing and advertising, including promotion and advertising via SMS, MMS and mobile internet, on pack promotions, mobile coupons, QR codes and 2D Bar

Codes, loyalty solutions, voting and polling campaigns etc.

Professional Services

As part of the computer consulting services, which are a key element of any comprehensive solution, VCI provides its customers with the following services:

1. Quality assurance services for software applications
2. Support and maintenance services
3. Training services
4. Provision of SaaS services
5. SLA services
6. Service for monitoring production systems and services (Service Monitoring)

TECHNICAL MEANS

- Strong development team in modern technologies (J2EE Enterprise, Microsoft .NET, Oracle Identity Management)
- Dedicated quality assurance team, isolated from the production department, to ensure high quality standards according to ISO certifications
- Strong consulting background in telecommunications and networking sector
- Utilization of modern agile development methodologies and utilization of build and deployment tools
- Data center grade infrastructure (both in premises and outsourced to cloud providers) to support 24x7 high availability systems for operators and financial services institutions
- Operational support excellence utilizing tools (JIRA, Confluence, Knowledge base)

MAIN CUSTOMERS - SPACE

Banks, Mobile Operators, Fixed Operators, Public Sector

Certification & Accreditations

VCI's Quality Management System is certified against ISO 9001:2008 QMS standard since 2012.

VCI's Information Security Management System is soon to be certified against ISO27001 standard.

SPACE SEGMENT

AEROTRON Research (ARES)	134
Applied Mechanics Laboratory (AML) / University of Patras	136
Applied Electronics Laboratory (AEL) / University of Patras	138
Dependability & Security Group spin-off / Aristotle University of Thessaloniki	140
Democritus University of Thrace	144
DSCAL / National and Kapodistrian University of Athens	146
FORTH - Institute of Applied & Computational Math (IACM) Multiphysics	150
FORTH - Institute of Computer Science (ICS)	152
Institute of Accelerating Systems and Applications (IASA)	156
Microlab / National Technical University of Athens	158
MRCL / National Technical University of Athens	160
National Center for Scientific Research (NCSR) "Demokritos"	162
R.C. « Athena » - Space Programmes Unit (SPU)	166
VLSI Laboratory / University of Patras	168

GROUND SEGMENT

Democritus University of Thrace	144
FORTH - Institute of Applied & Computational Math (IACM) Multiphysics	150
FORTH - Institute of Computer Science (ICS)	152
Institute of Accelerating Systems and Applications (IASA)	156
Microlab / National Technical University of Athens	158
National Observatory of Athens (NOA) - IAASARS - BEYOND	164
VLSI Laboratory / University of Patras	168

SPACE-BASED SERVICES

Research Committee / Aristotle University of Thessaloniki	142
FORTH - Institute of Applied and Computational Mathematics (IACM) - EO Data	148
FORTH - Institute of Computer Science (ICS)	152
Department of Geography / Harokopio University of Athens	154
Institute of Accelerating Systems and Applications (IASA)	156
National Observatory of Athens (NOA) - IAASARS - BEYOND	164
R.C. « Athena » Space Programmes Unit (SPU)	166

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Theodoros Spathopoulos

Chairman

Xenophon Gryllakis

Member of the Board

SHAREHOLDERS / OWNERSHIP

Non-profit organisation

PERSONNEL

Total Personnel 2013: 10

Space personnel 2013: 10

ADDRESS & WEB SITE

Aerotron Research
Lykourgou 5-7
17563 Paleo Faliro
www.aerotron-res.com
(temp. in reconstruction)

CONTACT

Theodoros Spathopoulos

Chairman

Tel: +30 694 585 0046

spaths@hol.gr

CORE BUSINESS

AEROTRON Research (ARES) is a private non-profit research organization created in the last decade by a team of engineers, scientists and researchers who in the past have been active in **aerospace research**, basically under TEI (Technical Education Institute, TEI-PIR) of Piraeus. TEI-PIR ranks on the top of the twelve independent, self-governed Technical Educational Institutes which constitute the Greek national system of higher technological education.

ARES was established with the aim to provide - with its own resources - engineering services and research capabilities to national and international aerospace stakeholders.

PRODUCTS & SERVICES

Legacies that the RTD team has developed in the past years on industrial technology applications include among others:

- Expertise in applications of control and estimation theory, image and video analysis and coding, stereoscopic imaging systems, hyperspectral and multispectral imaging,
- Expertise in applications for embedded systems, artificial intelligence, reconfigurable systems, systems on chip, neural networks and fuzzy logic techniques, and their applications on sensor networks allowing the sophisticated implementation of sensing systems with intelligent data handling based on already established network protocols (e.g. CAN bus, Flex Ray etc.), simulation of manufacturing processes

A vast research experience exists in the **wider area of conventional and non-conventional manufacturing processes of materials, science and technology, welding technologies and characterization of welded and treated materials**, through the close links to national and European Research Organizations and Industries, on the basis of contracts and collaboration within funded research projects.

Furthermore experience exists in the fields of **physical-thermal-mechanical modelling of advanced manufacturing technologies and advanced surface treatment processes for aeronautic applications** using numerical methods. More specifically, ARES engineers are experts in process simulation of the following manufacturing - welding - treatment processes:

- Laser beam forming and laser beam welding of metallic materials and components
- Deep drawing and Stretch forming of metallic blanks
- Friction Stir Welding and Friction Stir Processing of metallic, hybrid and metal matrix composite structures
- Shot peening and laser shock peening of metallic materials.
- Deep rolling and low plasticity burnishing.

Aerotron Research (ARES)

Based on the above experiences, many other similar manufacturing - welding - processing methods of advanced materials can be successfully simulated.

ARES has expertise in efficient **design optimization and finite element calculations on structures as well as in CFD**, in the fields of aerospace engineering. Particularly, ARES has excellent skills to perform numerical analysis of complex and innovative aerospace structures considering material and geometrical non-linearities by using commercial and in-house developed FE software. Moreover, experience exists in performing numerical thermo-mechanical analysis of smart materials (Shape Memory Alloys) in the frames of obtaining morphing structures, such as Trailing Edge and Leading Edge devices. Engineers working for ARES have capabilities for designing structural aircraft components and producing CAD drawings for manufacturing purposes. In addition, they are familiar with optimization software based on the Evolutionary Algorithms for shape determination and the survivor of the fittest theory.

TECHNICAL MEANS

Ownership of CfD, FEA (ANSYS, NASTRAN, Fluent) and other in-house developed computational software tools for modelling and simulation. Availability of computer facilities. Access to electronic and structures test labs. Prototype manufacturing capabilities.

MAIN CUSTOMERS

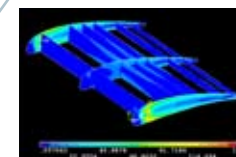
European Commission, FraunhoferGes., Greek governmental bodies

MAJOR SPACE ACTIVITIES OR PROJECTS

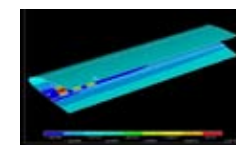
The company has a long track record of participating in **EC funded research projects, mainly in Aeronautics**.

ARES experts teams have been involved or are working in a significant number EC funded projects, covering a wide spectrum of aerospace technologies, such as mobile ad hoc networks (ATENAA), digital image processing (Archimedes II), aircraft separation algorithms (ASSTAR), electric network modelling and simulation (MOET), innovative electric motors design (CREAM, EMAS, HPEM), RF and optical communications (MINERVAA), application of Smart Material Alloys to wing morphing (SMyle, SMyle, STRENGTH), design of advanced cockpit touch screen displays (ODICIS), and sensor placing & design of health monitoring systems (OPTIMAL, TRACE-IT).

ARES aims to transfer the company's expertise accumulated in aeronautic R&D activities to the space sector and thus expanding its market field.



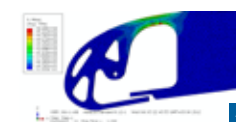
1



2



3



4

1. Von Mises stress of a morphing scaled flap under aerodynamic loading

2. Vertical displacement of Droop Nose actuated with the aid of three SMA patches

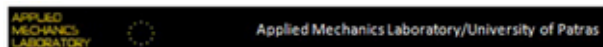
3. 3D design of a morphing scaled flap

4. Von Mises stresses of a rib's Leading edge due to SMA loadin

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Prof. Venetsana Kyriazopoulou
Rector

Prof. Vassilis Kostopoulos
Laboratory Director

SHAREHOLDERS / OWNERSHIP

Public body

PERSONNEL

Total Personnel 2013: 35
Space personnel 2013: 7

ADDRESS & WEB SITE

Applied Mechanics Laboratory
University of Patras
University Campus, Mechanical
Engineering and Aeronautics
Department
26504 Rio-Patras
www.aml.mech.upatras.gr

CONTACTS

Prof. Vassilis Kostopoulos
Laboratory Director
Tel.: +30 261 096 9441
Fax: +30 261 096 9417
kostopoulos@mech.upatras.gr

Dr. Theodoros Loutas
Lecturer
Tel.: +30 261 096 9477
Fax: +30 261 096 9417
loutas@mech.upatras.gr

CORE BUSINESS

AML/UoP is active in the general field of **materials & structures, working in the science, technology and applications of composite materials**. Our highly trained and internationally experienced team of engineers, led by the professors and PhD holders of the laboratory offers a wide range of services on composites. Our 30 years long experience focuses in:

- Material development and characterization
- Composite processing & manufacturing
- Non-destructive inspections and SHM
- Design, analysis and optimization of composite structures

These form the pylons for application in aeronautics, space, automotive and wind industry. AML/UoP is an internationally recognized R & D partner having participated in several key projects under the granting framework of EU & ESA. On top of R&D, we offer mechanical testing services accredited under EN17025 and work in developing and prototyping innovative ideas and technologies, enhancing their readiness level to deliver novel solutions and tools to the global market.

PRODUCTS & SERVICES

- Material development and characterization
- Composite processing & manufacturing
- Non-destructive inspections and SHM
- Design, analysis & optimization of composite structures

TECHNICAL MEANS

Mechanical and NDI Testing

- Hydraulic Universal Testing Machines
- Ultrasonic Systems, A, C and D-Scan (Bath Size 1200x1000 mm)
- Thermo-camera system by Nikon...

Vibration and modal Analysis

- Dynamic Mechanical Analysis System by Bruel & Kjaer for resonance and forced vibrations.
- Complete set of 1-D, 2-D and 3-D accelerometers and the necessary amplifiers.
- 2 base excitation shakers, excitation hammers, data logger and data acquisition systems.
- Sensory voltage, dynamic acceleration, force, strain and temperature measurement
- Various 8-and 4-channel high-speed dynamic data acquisition & spectral analyzer systems
- Experimental Modal Analysis: Modal frequency, Modal damping, Mode shapes

Nano-composites fabrication

- Dissolver, Torus Mill, Calender devices for shear mixing
- Ultrasonic Tip/Bath, Magnetic Hot Plate Stirrers
- Glove Box and Fume Hood for safe material handling

Composites Production: Autoclave, RTM, SQ-RTM and Infusion

- Autoclave & Vacuum Bugging, 3 x conventional curing Ovens and 1x microwave Oven, Various polishing and cutting devices (LaboPol-1, Minitom...)

Environmental & Conditioning

- Outgassing: Low Vacuum Chamber for preliminary tests
- Conditioning chamber for humidity and temperature control and UV radiation.

Physical Characterization

- Full thermo-mechanical characterization: DSC, DMA, TMA, TGA and thermal conductivity
- Full CAD Design software
- Access to Dielectric Spectroscopy Alpha-N Frequency Response Analyzer by Novocontrol
- Full access to a number of SEM, Atomic Force Microscope, Microprob, XPS and optical microscopes for material and fractographic analysis

MAIN CUSTOMERS - SPACE

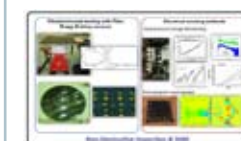
ESA - European Space Agency

MAJOR SPACE ACTIVITIES OR PROJECTS

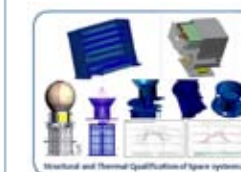
- ESA-NANO1: Nano-modified fiber reinforced polymers in terms of mechanical, electrical and thermal properties towards the development of new materials for space applications
Customer: ESA/ESTEC, Dates: 2007-2010
- ESA-NANO2: Design, Development, Manufacturing and Process Monitoring for structures of nano-modified multifunctional pre-preg materials targeting near term space applications
Customer: ESA/ESTEC, Prime: INASCO Hellas, Dates: 2011-2015
- ESA-NACO1 & NACO2: Non Conventional Matrix/Carbon Nanotube Reinforced Composites for Applications in Space
Customer: ESA/ESTEC, Prime: HPS GmbH, Dates: 2006-2013
- ESA-NAREMA: Nanotube Reinforced Structural Materials for Spacecraft Applications
Customer: ESA/ESTEC, Prime: HPS GmbH, Dates: 2009-2011
- ESA-NAFO: Use of Nanocomposite Reinforced Foams for Manufacture of Superlightweight Stiff Sandwich Panels
Customer: ESA/ESTEC, Prime: HPS GmbH, Dates: 2013-2014
- DEVELOPMENT OF NANO-ENABLED FIBRE REINFORCED PLASTICS
Customer: ESA/ESTEC, Prime: Adamant Composites Ltd., Dates: 2013-2014



1



2



3

1. Nano-modified composites
2. Non-Destructive Inspection & SHM
3. Qualification

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

MANAGEMENT BOARD

Prof. Georgios Panagiotakis
Rector

Prof. Stavros Koubias
Former rector, APEL Director
Division of Electronics & Computers

SHAREHOLDERS / OWNERSHIP

Public body

ADDRESS & WEB SITE

Applied Electronics Laboratory
Department of Electrical & Computer Engineering
University of Patras
Campus of Rion, Patras 26500,
www.apel.ee.upatras.gr

CONTACTS

Prof. Stavros Koubias
APEL Director
Division of Electronics & Computers
Tel.: +30 261 099 6427
Fax: +30 261 099 6818
koubias@ece.upatras.gr

Prof. Alexis Birbas
Division of Electronics & Computers
Tel.: +30 261 099 6426
Fax: +30 261 099 6818
birbas@ece.upatras.gr



CORE BUSINESS

The Applied Electronics Laboratory (APEL) is a major, institute-like, laboratory in the Department of Electrical and Computer Engineering in the University of Patras. It was founded in 1975 (by Prof. George D. Papadopoulos) and it is responsible for courses and research in the area of :

- Electronics, Microelectronics, RF Electronics
- Advanced Wireless (Sensor/Actor) Networks
- Microprocessors, Embedded Systems
- Real-Time Networked Embedded Systems,
- Industrial Communications, Enterprise Systems
- Advanced Communication Systems

Over 200 Masters and over 40 Ph.D. theses have been completed in the past twenty years. Many more are, currently, in the stage of execution or completion.

PRODUCTS & SERVICES

1. APEL Electronics Group main R&D areas and activities include **Electronics, Microelectronics** and **RF Electronics**.

Electronics

- Noise in deep submicron devices
 - Thermal noise modeling in the sub 20 nm era for CMOS structures
 - Flicker noise modeling for nano-scale CMOS
 - Phase noise modeling of ultra high speed CMOS oscillators
- Ultra High Speed Design
 - Design of high-speed PHY components for wire-line/wireless applications. Design of an 60 GHz PLL for telecoms, and of a 5 GHz PLL for ultra-high speed serial interface applications
 - Implementation (up to 40 GHz) of distributed circuits (VCOs, amplifiers)
 - Design of the electronic part of Optical communication systems

Microelectronics

- Baseband systems implementation: APEL Microelectronics Group has been involved in the design of analog VLSI Implementation of iterative probabilistic decoding algorithms
- System on a chip design: experience in designing readout mixed mode circuits for various sensor applications (circuits for optical and x-ray sensors). APEL Microelectronics Group is currently involved in the design of read out (capacitive) circuits for medical applications.

RF Electronics

- Advanced RF/ Microwave circuits for Ultra-wideband (UWB) and Point-to-point Millimeter -wave next -generation radio:

- Ultra- wideband (3-10 GHz) low -noise amplifiers; 60 GHz down-converters
- Ultra-wideband, low -power consumption, voltage controlled oscillators; Injection locking low phase-noise oscillators
- Advanced RF subsystems for Multi-standard and Ultra-wideband radios: APEL RF Electronics Group has extended expertise through research programs and PhD work in the design and implementation of:
 - Injection locking Phase -locked loops (PLLs); RF down-converters with AGC
 - Integer -N double- loop synthesizers for multi-standard receivers
 - UWB FM transmitters and receivers

Most of the above circuits/subsystems have been designed for fabrication in recent submicron CMOS integration technologies. Some have been already fabricated.

- Baseband transceiver/ modem implementation: The RF Electronics Group has been involved (through mostly national R&D projects) in the design and implementation of parts in baseband transmitter / receiver system of:
 - Ultra-wideband (UWB) receivers including RAKE receivers for multipath effect elimination in broadband reception, channel estimator and equalizers
 - OFDM receiver design and implementation such as the demodulator, the carrier and timing recovery subsystems.
 - Point-to-point digital Microwave radio transceivers
- Radio System design in adverse propagation conditions: The RF Electronics Group has been involved (through European and national funded R&D projects) in:
 - Designing and implementing channel estimators for harsh channel conditions in OFDM transmission systems.
 - Designing and development of hybrid radio networks for wireless video transmission in tunnel environments for public transport applications.

2. APEL Networking and Embedded Systems Group Main R&D areas and activities include Wireless Networks, Networked Embedded Systems, Intelligence in Embedded Systems, Real-Time Distributed Systems, Enterprise Systems.

- Advanced Wireless Systems (sensor and actor networks) and their interworking in fixed and broadcasting networks, including broadband wireless access and distribution

systems, radio LANs and point-to-point systems supporting interactive real-time and bandwidth-on-demand services.

- Real-time distributed systems for industrial and home networking structures
- Network management, configuration software and protocol stack software for industrial networks and home networks.
- Protocol software for interworking, integration, interoperability and QoS considerations, concerning a wide range of physical channels (wired, wireless)
- Advanced enterprise systems and industrial communications structures (design and development) for C2V, B2B applications, Vertical/Horizontal Integration, Ontologies, Web-services, Industrial GRIDs, etc.

Embedded systems for communications based on advanced microprocessor and DSP cores, FPGAs and embedded modules using HW/SW co-design techniques, reusable functional blocks and advanced tools.

- Machine vision systems for industrial inspection incorporating advanced signal processing techniques and advanced cameras and interfaces.
- Hardware/software solutions for several types of advanced networking structures such as software radio, xDSL units, RF modems, set-top-boxes, special ATM adaptors, etc.

Real-Time Distributed / Embedded Systems

- Wireless Sensor and Actor Networks – Ad hoc networking
- Real-Time Networked Embedded Systems (industrial environment)
- Modelling of networked real time control systems as hybrid systems incorporating continuous and discrete dynamics
- Classification engineering (distributed data mining, semantically enrichment of sensor data)
- Integration and internetworking of industrial networks and the Intranet/Internet
- Security, Safety and Dependability; Surveillance systems

SPACE ACTIVITIES

R&D projects / Greek si-Cluster.

Applying the previously referred R&D activities in space applications. For example extend the capabilities of VLSI circuits design into a radiation hard environment. Or apply baseband and RF technology in transponder communications.

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



ARISTOTLE UNIVERSITY OF THESSALONIKI

MANAGEMENT BOARD

Prof. Panagiotis Katsaros

Researcher, Tech. Manager

SHAREHOLDERS / OWNERSHIP

Public body

PERSONNEL

Total Personnel 2013:

3 software engineers, 1 secretary

ADDRESS & WEB SITE

Dependability & Security Group (DSG)

Dept. of Informatics, Aristotle Un. of Thessaloniki

54124 Thessaloniki

<http://depend.csd.auth.gr/>

CONTACT

Prof. Panagiotis Katsaros

Researcher, Tech. Manager

Tel.: +30 694 447 1448

Fax: +30 231 099 1911

katsaros@csd.auth.gr

CORE BUSINESS

Safety and security-critical software:

- Design & development
- Verification & validation

Research and tool design on:

- Requirements specification, traceability management and formalization
- Automated formal verification by model checking, static program analysis, correctness-by-construction techniques

PRODUCTS & SERVICES

Services:

- Design and development of critical software
- Verification & validation of critical software
- Research and development for the software process and tools
- Evaluation and studies on/with automated formal verification techniques for systems and software

Space related activities:

- Spacecraft Engineering Services: Software development, Independent verification and validation
- Space System Software: Advanced Software technologies
- Quality, Dependability and Safety: Software quality

Dependability & Security Group spin-off / Aristotle University of Thessaloniki

TECHNICAL MEANS

Specialized software tools implementing algorithmic and model-based analyses for systems and software safety.

MAJOR SPACE ACTIVITIES OR PROJECTS

- ESA Study on «A Semantic Web Architecture for Model Based Safety Engineering» in collaboration with Gnomon Informatics S.A. (GR) and Ellidiss Software (FR), 2009
- Participation in the ESA trainee program with work on Spacecraft Early Design Validation using Formal Methods (COMPASS toolset), 2012
- ESA Study on «Schedulability Analysis Techniques and Tools for Cached and Multicore processors» in collaboration with the Centre of Research & Technology - Hellas, September 2014
- ESA Study on «Catalogue of System and Software Properties» in collaboration with Thales Alenia Space France, November 2014

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

ARISTOTLE UNIVERSITY OF THESSALONIKI
RESEARCH COMMITTEE

MANAGEMENT BOARD

Prof. Pericles Mitkas

Rector, Chair Research Committee

SHAREHOLDERS /
OWNERSHIP

Public body

PERSONNEL

Total Personnel 2013: 2500

Space personnel 2013:

35 (estimated)

ADDRESS & WEB SITE

Aristotle University of Thessaloniki -
Special Account for Research Funds
Aristotle University Campus, KEDEA
Building, Tritis Septemvriou
54636 Thessaloniki
www.auth.gr
www.rc.auth.gr

CONTACTS

Konstantinos
Papapanagiotou

Marketing, Planning and
Development Dept.
Tel.: +30 231 099 1355
Fax: +30 231 085 3283
marketing@rc.auth.gr

Georgia Petridou

Research Committee Secreteriat,
Head
Tel.: +30 231 099 5140
Fax: +30 231 085 3283
research@rc.auth.gr

CORE BUSINESS

The Aristotle University of Thessaloniki is the largest university in Greece. The main campus is located in the centre of the city of Thessaloniki, and covers an area of about 33.4 hectares. It comprises 7 faculties which consist of 33 schools, 5 faculties which consist of one school each, as well as 4 independent schools. About 81,500 students study at the Aristotle University (72,140 in undergraduate programmes and 8,360 in postgraduate programmes). There are 2,150 faculty members: 739 professors, 435 associate professors, 634 assistant professors, and 342 lecturers. The university's main activities include undertaking research policy initiatives as: Thematic networks, Certified laboratories, centres of excellence and quality, excellence for new researchers, Lifelong training for researchers, Development of innovative actions, Development of a quality-management policy for the operation of the Special Account for Research Funds, Development of technology transfer mechanisms, Technological change prediction mechanisms, Research result evaluation mechanisms. Also, the focus is mainly in creating new, specialised, high-technology infrastructures for the organisation and expansion of research activities, the transfer of technology and the utilisation of new facilities at the Farm, Technology Park and Centre for the Dissemination of Research Results (Research Committee Building).

PRODUCTS & SERVICES

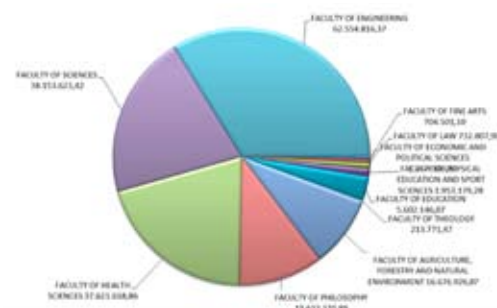
Research is developed in all fields of theoretical and applied science by all the schools and laboratories of AUTH. All the research is supported by private, public and European institutions with funding. It's worth mentioning that **AUTH, in the last three-year-period, has collaborated with 1.700 partners** (Universities, Research Centers and Companies) for the implementation of **3.500 Research and Technological Development RTD Projects**. 1.340 members of the teaching and research staff, 12.000 external co-operators as well as a large number of postgraduate students have participated in these projects. The overall budget of these projects has risen up to 150 million euros. The Research Committee supports and carries out projects across all scientific/research areas.

MAJOR SPACE ACTIVITIES OR PROJECTS

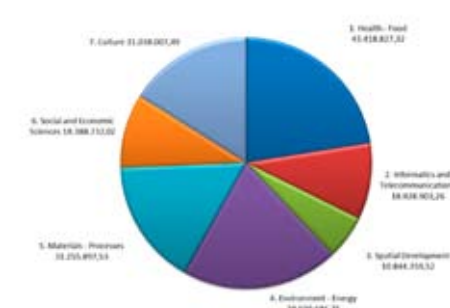
- Fundamental and applied studies of emulsion stability, 01/01/2007 to 31/12/2008
- Reinforcement of Engineering Polymers for Aerospace Applications: Development of high performance polymer nanocomposites using as filler novel 2- and 3- dimensional silicate porous matrices, layered silicates or hybrid silicate-carbon nanotubes additives, 15/11/2007 to 04/07/2010
- Innovative Architectures for reducing the number of Controls of Multiple Beam Telecommunications Antennas, 01/09/2008 to 31/03/2010

Research Committee /
Aristotle University of Thessaloniki

- Spectral analysis and interpretation of current satellite-only Earth gravity models by incorporating global terrain and crystal data, 09/04/2009 to 30/06/2011
- Building Infrastructure for the validation of satellite derived atmospheric parameters, 01/06/2009 to 31/05/2011
- In-Vivo embolic detector phase IIIa, 06/03/2009 to 31/01/2010
- Influence of gravity on mass and heat transfer in porous media, 01/10/2009 to 01/10/2011
- ESA Climate change initiative, 01/09/2010 to 31/12/2013
- External calibration/validation of ESAs GOCE mission and contribution to dynamic ocean topography and sea level change determination through stochastic combination with heterogeneous data - GOCE-Sea Comb, 01/07/2012 to 30/06/2014
- Towards a better understanding of the Earth's interior and geophysical exploration research, 03/10/2011 to 02/10/2013
- GDP5.1 - Upgrade of the GOME Data Processor for improved total ozone columns, 01/12/2011 to 30/04/2012
- Study on an end-to-end system for volcanic ash plume monitoring and prediction, 20/12/2012 to 31/03/2014
- Electromagnetic Software for the Design of Advanced Multibeam Array Antennas, 01/11/2012 to 31/01/2014
- Biocide management for long term water storage, 15/01/2014 to 14/07/2015
- In - Vivo Embolic Detector Phase IVa, 15/04/2013 to 15/10/2013
- Bubble dynamics during degassing of liquids, 01/10/2013 to 30/09/2016



Faculties Funding



Funds per Research Area

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Prof. Konstantinos Remelis
Rector

Prof. George Kosta
Vice Rector

Prof. Pantelis Mpotsaris
Vice Rector, Chairman of the
Research Committee

SHAREHOLDERS / OWNERSHIP

Public body

PERSONNEL

Total Personnel 2013: 772
Space personnel 2013: 46

ADDRESS & WEB SITE

Democritus University of Thrace
University Campus
69100 Komotini
<http://duth.gr>

CONTACTS

Theodore Sarris

Asst. Prof.
Tel.: +30 254 107 9531
Fax: +30 254 107 9590
tsarris@ee.duth.gr

Ioannis Dafnis

DUTH Research Committee,
Head of IT
Tel.: +30 254 107 9413
Fax: +30 254 107 9454
joda@rescom.duth.gr

CORE BUSINESS

University research on:

- **Satellite and space communications** (network protocol design, interoperability testing, etc.)
- **The Space Environment and Space Weather**
- **Mixed signal radiation hardened ASICs**
- **Space Instruments and Data Processing Units**

PRODUCTS & SERVICES

- Design and development of Space communications protocols and mechanisms
- Evaluation of existing/future communication platforms
- Development of Mixed Signal Rad-Hard ASICs
- Energetic Particle Detectors
- Data Processing Units
- Space Weather
- Mission Concepts Design
- Remote Sensing
- Li-ion cells for space

TECHNICAL MEANS

State of the art DTN testbed, including:

- Multiple DTN nodes
- Portable Satellite Simulator
- Cortex
- Satellite Tool Kit
- Accurate Circuit Simulation SW Tools
- Microelectronics Lab
- Vacuum Chamber

MAIN CUSTOMERS • SPACE

- European Space Agency
- European Commission

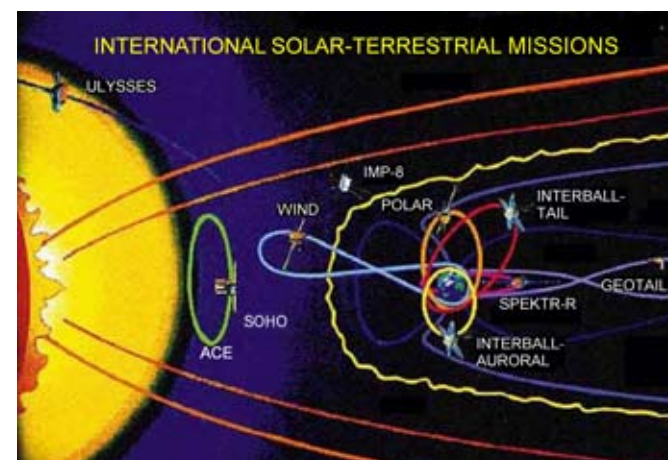
Certification & Accreditations

- SPICE leader, Prof. Vassilis Tsaoussidis is representing ESA in CCSDS meetings

Democritus University of Thrace

MAJOR SPACE ACTIVITIES OR PROJECTS

- Extending Internet into Space, phases I-II-III (ESA)
 - Evaluation of Internet protocols for use in Space
 - Design and development of DTN mechanisms
 - Evaluation of CFDP
- Space Internetworking Center (European Commission - FP7)
 - Build the first European Space Internetworking Center in Greece
- Space-Data Routers (European Commission - FP7)
 - Deploy a Space-Data overlay to support the dissemination of space data to interested organisations
- Application of a BitTorrent-like Data Distribution Model to Missions Operations (ESA)
 - Propose applicable models
 - Evaluate them against other approaches
- Development and Qualification of a 14-bit ADC ASIC for Pressure Sensors (ESA)
- Development and Qualification of an Essential Telemetry (ETM) ASIC (ESA)
- Bank of Rad-Hard ADCs (ESA)
- Electrodynamics Study of Upper Atmosphere in Support to Future MLTI Missions (ESA)
- Development of a 16-bit ADC (ESA)



1. DUTH 14 experiments onboard International Solar-Terrestrial exploration missions

2. Mixed Signal Rad-Hard ASICs / Radiation Testing for SEE Effects

3. DUTH Space Internetworking Center specialized in the design of space protocols that dynamically adapt to topology changes and communications anomalies

4. DUTH participation in the CubeSat QB50 project

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Prof. Theodosios Pelegrinis
University Rector

Prof. Antonios Paschalis
DSCAL

SHAREHOLDERS / OWNERSHIP

Public body

ADDRESS & WEB SITE

National and Kapodistrian University of Athens, Department of Informatics and Telecommunications, Digital Systems and Computer Architecture Laboratory
Panepistimiopolis, Ilissia
15784 Athens
<http://dscal.di.uoa.gr/>

CONTACTS

Antonios Paschalis
Professor
Tel.: +30 210 727 5231
Fax: +30 210 727 5214
paschalis@di.uoa.gr

Nektarios Kranitis
Senior researcher
Tel.: +30 210 727 5222
Fax: +30 210 727 5214
nkran@di.uoa.gr

CORE BUSINESS

The **Digital Systems and Computer Architecture Laboratory (DSCAL)** of the Department of Informatics and Telecommunications of the National and Kapodistrian University of Athens (UoA) is specialized in fault tolerant computing, dependable architectures, reconfigurable FPGA based System-on-Chip design, onboard data handling and payload data processing systems, and VLSI and processor testing.

DSCAL has more than 25 years expertise in fault and radiation tolerant methodologies, more than 10 years expertise in embedded processor-based self-test of Systems-on-Chip, and more than 5 years expertise in hardware implementation of on-board payload data processing algorithms.

DSCAL is involved in educational activities, as well. The courses supported by the group include Logic Design, Computer Organization and Architecture and Design of Digital Systems at undergraduate and graduate level.

PRODUCTS & SERVICES

The **Digital Systems and Computer Architecture Laboratory (DSCAL)** and the Section of Astronomy & Astrophysics (SAA) of the Department of Physics of UoA (Prof. K. Tsinganos) have established since 2009 an **ad-hoc joint space technology and science team** to participate in space technology and science activities, respectively, of the **ESA PROBA-3 Coronagraph System**.

DSCAL is currently working on the development of a reconfigurable Image Data Compression IP core, according to recommended standard CCSDS 122.0-B-1, for the Coronagraph System of the ESA PROBA-3 space mission. DSCAL has successfully completed Phase B and participates in Phases C/D/E1 of the Reconfigurable FPGA Image Data Compression IP Core.

DSCAL, under funding for research excellence (Excellence-II/5149-SCORPIUS) and other projects funded by the National Strategic Reference Framework (NSRF) 2007-2013, aims to:

- Advance over the state-of-the-art of Payload Data Processing Units (PDPUs) by developing the breadboard model (system-on-chip FPGA design) of a novel Single-Chip Radiation Tolerant Dynamically Reconfigurable PDPU for space applications, which is based on the space grade reconfigurable Xilinx Virtex-5QV rad-hard FPGA; and
- Create an IP core portfolio of state-of-the-art on-board data processing algorithms implemented in reconfigurable space-grade FPGAs in accordance to recommended Consultative Committee for Space

DSCAL / National and Kapodistrian University of Athens

Data Systems (CCSDS) standards for space applications including: CCSDS 121.0-B-2 "Lossless Data Compression", CCSDS 122.0-B-1 "Image Data Compression", CCSDS 123.0-B-1 "Lossless Multispectral & Hyperspectral Image Compression" and CCSDS 352.0-B-1 "Cryptographic Algorithms".

DSCAL is able to provide the European space supply chain with products and services as **center of excellence in space data systems design**, and especially in Payload Data Processing Units design and hardware implementation of on-board payload data processing algorithms.

TECHNICAL MEANS

DSCAL is equipped with several FPGA development boards and more than 20 dedicated high performance workstations for design, verification and testing of digital systems. In terms of software tools, the laboratory is equipped with the state-of-the-art EDA CAD tools including like Xilinx Vivado and ISE Design Suites: System Edition, Xilinx Partial Reconfiguration licenses, Synopsys Front End and Verification Suite (FEV), Synopsys FPGA suite, Mentor Graphics Full Suite (including FPGA & Board Design), MATLAB/Simulink + Toolboxes.

MAIN CUSTOMERS - SPACE

ESA, Centre Spatial de Liège (CSL), Laboratoire d'Astrophysique de Marseille (LAM), General Secretariat for Research and Technology (GSRT)/ Ministry of Education, Greece.

MAJOR SPACE ACTIVITIES OR PROJECTS

- Proba 3 Coronagraph System Payload Phase B. Preliminary design of a reconfigurable Image Data Compression IP core, according to recommended standard CCSDS 122.0-B-1. Subcontract to Laboratoire d'Astrophysique de Marseille (LAM) for ESA, 2012-2013.
- Proba 3 Coronagraph System Phases C/D/E1. Image Data Compression IP core NRE, EM and FM production, validation, test and post-delivery support during in-orbit commissioning and calibration phases. Subcontract to Centre Spatial de Liège (CSL) for ESA, 2014-2017.
- 12CHN358 DIATESTMA, Data-Intensive Space Applications on Emerging Massively Parallel Processor Architectures: Performance, Energy, and Dependability Opportunities, "Greek-China Research Collaboration 2012-2015", for General Secretariat for Research and Technology (GSRT) / Ministry of Education, Greece, 2013-2015.
- Excellence-II, SCORPIUS-5149, Single-Chip Radiation Tolerant Dynamically Reconfigurable Payload Data Processing Units for Future Space Applications, for General Secretariat for Research and Technology (GSRT) / Ministry of Education, Greece, 2014-2015.



SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Prof. Costas Fotakis

President of FORTH

Prof. Vassilios A. Dougalis

Director IACM

SHAREHOLDERS / OWNERSHIP

FORTH reports to the General Secretariat for Research and Technology (GSRT) of the Hellenic Ministry of Education and Religious Affairs

PERSONNEL

IACM Personnel 2013 : 80

ADDRESS & WEB SITE

Institute of Applied and Computational Mathematics (IACM)
Foundation for Research and Technology-Hellas (FORTH)
Nikolaou Plastira 100, Vassilika Vouton,
70013 Heraklion, Crete
www.iacm.forth.gr

CONTACTS

Dr. Poulicos Prastacos

Research Director, Head of Regional Analysis Division

Tel.: +30 281 039 1767

Fax: +30 281 039 1761

poulicos@iacm.forth.gr

Dr. Nektarios Chrysoulakis

Research Director

Tel.: +30 281 039 1762

Fax: +30 281 039 1761

zedd2@iacm.forth.gr

CORE BUSINESS

The Foundation for Research and Technology-Hellas (FORTH), established in 1983, is one of the largest research centers in Greece with well-organized facilities, highly qualified personnel and a reputation as a top-level research foundation worldwide. The Foundation, with headquarters in Heraklion, includes six Research Institutes in different parts of the country.

The Institute of Applied & Computational Mathematics (IACM), located in Heraklion, was founded in 1985. Initially, it was part of the Research Center of Crete; in 1987 it became one of the founding institutes of FORTH. The objectives of IACM research personnel are:

- To conduct research of high quality in selected areas of Applied and Computational Mathematics.
- To participate in interdisciplinary research projects, mainly by developing and applying mathematical methods and tools for modelling and solving complex problems in the sciences and technology.
- To develop tools and methodologies based on applied mathematics that can be used in the public and private sectors.
- To provide training for graduate students and postdoctoral researchers in Applied and Computational Mathematics and related areas.

PRODUCTS & SERVICES

IACM – “Regional Analysis” Division R & D Activities

The Regional Analysis Division is the largest of the IACM five divisions. The emphasis of the work carried out is on the development of tools and methods aimed to assist regional, urban and environmental planning. Specifically the researchers of the division are involved in:

- Applications of Geographical Information Systems
- Spatial Decision Support Systems
- Remote Sensing Applications
- Spatial Statistical Modeling
- Sustainable Development Assessment Tools

Remote Sensing Applications

Satellite remote sensing methods and techniques are used for data capture and the study of many environmental problems and phenomena. Earth Observation data from new satellite sensors providing images of Very High Spatial Resolution are used for urban applications. On the other hand, ASTER, Landsat, SPOT, IRS, MODIS and AVHRR data is routinely used in supporting a broad range of environmental applications. More specifically, the division is involved in the following application fields:

- Thematic mapping and land cover - land use studies,
- DEM development and 3D Visualizations,
- Environmental monitoring and change detection,

FORTH - Institute of Applied and Computational Mathematics (IACM) - EO data

- Feature extraction and urban application,
- Natural and man-made disasters analysis,
- Surface radiation balance and microclimatic applications,
- Environmental and atmospheric physics

TECHNICAL MEANS

- Hardware: 5 Workstations, a Cluster and access to the computational facilities and Servers of the Institute of Applied and Computational Mathematics of FORTH.
- EO and GIS dedicated software: ERDAS Imagine, ENVI, SILC, ArcGIS, ATCOR, in-house developed Matlab, IDL and Python codes.
- HRPT/CHRP satellite ground receiving station. Image data from several satellites are transmitted providing a spatial resolution of 1.1 km in up to ten spectral bands.
- Data: Databases with very high spatial resolution EO data, as well as GIS data related to Heraklion urban morphology and surface cover are available.
- New Equipment: in the framework of URBANFLUXES project, FORTH will purchase and install a tower carrying Eddy Covariance instrumentation for turbulent fluxes measurements and a wireless meteorological stations network in the urban area of Heraklion.

MAIN CUSTOMERS - SPACE

- European Commission, ESA
- Various Greek public and private organizations, universities and research centers in Europe

MAJOR SPACE ACTIVITIES OR PROJECTS

- BRIDGE (EC FP7): Sustainable urban planning decision support accounting for urban metabolism (2008 - 2011). <http://www.bridge-fp7.eu/>
- GEOURBAN (EC FP7 - ERANetRUS): Earth Observation in sUustainable uRBan plAnning & maNagement (2012 - 2013). <http://geourban-fp7-eranet.com/>
- EO4SEB (Bilateral Greece-France: GRST-Centre d'Etudes Spatiales de la BIOSphère (CESBIO)): Review of existing EO systems and state-of-the-art methods to identify their capabilities and limitations in supporting Surface Energy Balance (SEB) modelling. <http://www.eo4seb.gr>
- MONITOR (ESA/10510): Project aiming at the definition and application of indicators at the urban scale as supported by EO data. <https://dragon3.esa.int/web/dragon-3/-/10510-monitor>
- FLIRE (EC DG ENV LIFE+ (Environmental Policy & Governance): Floods and Fire Risk assessment and management (2012 - 2015). <http://www.flire.eu/en/>
- URBANFLUXES (EC H2020 - Leadership in enabling and industrial technologies - Space): URBANAnthropogenic heat FLUX from Earth observation Satellites (2015 - 2017)

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

MANAGEMENT BOARD

Prof. Costas Fotakis

President of FORTH

Prof. Vassilios A. Dougalis

Director IACM

SHAREHOLDERS / OWNERSHIP

FORTH reports to the General Secretariat for Research and Technology (GSRT) of the Hellenic Ministry of Education and Religious Affairs

PERSONNEL

IACM Personnel 2013: 80

ADDRESS & WEB SITE

Institute of Applied and Computational Mathematics (IACM)
Foundation for Research and Technology-Hellas (FORTH)
Nikolaou Plastira 100, Vassilika Vouton,
70013 Heraklion, Crete
www.iacm.forth.gr

CONTACTS

Prof. John Ekaterinaris

Collaborating Researcher

Tel: +30 281 039 1773

Fax: +30 281 039 1761

ekaterin@iacm.forth.gr

Dr. Yannis Papaharilaou

Principal Researcher

Tel.: +30 281 039 1783

Fax: +30 281 039 1761

yannisp@iacm.forth.gr



CORE BUSINESS

The Foundation for Research and Technology-Hellas (FORTH), established in 1983, is one of the largest research centers in Greece with well-organized facilities, highly qualified personnel and a reputation as a top-level research foundation worldwide. The Foundation, with headquarters in Heraklion, includes six Research Institutes in different parts of the country.

The Institute of Applied & Computational Mathematics (IACM), located in Heraklion, was founded in 1985. Initially, it was part of the Research Center of Crete; in 1987 it became one of the founding institutes of FORTH. The objectives of IACM research personnel are:

- To conduct research of high quality in selected areas of Applied and Computational Mathematics.
- To participate in interdisciplinary research projects, mainly by developing and applying mathematical methods and tools for modelling and solving complex problems in the sciences and technology.
- To develop tools and methodologies based on applied mathematics that can be used in the public and private sectors.
- To provide training for graduate students and postdoctoral researchers in Applied and Computational Mathematics and related areas.

PRODUCTS & SERVICES

IACM – “Numerical Analysis, Computational Fluid Dynamics and Scientific Computing” Group

The main objective of the Numerical Analysis, Computational Fluid Dynamics and Scientific Computing group of IACM is the development of novel, efficient and accurate numerical techniques for solving complex problems of fluid dynamics.

- Development and application of high-order accurate methods for computations of compressible and incompressible flows
- Computation of flows including strong discontinuities, LES of compressible turbulence.
- Direct computation of noise generated by high-speed flows.
- Computation of compressible flow with strong magnetic effects used for flow control.
- LES of incompressible flows using high order, energy preserving numerical schemes.

FORTH - Institute of Applied & Computational Math (IACM) - Multiphysics

- Development of Biomedical computation approaches using specific patient data obtained from medical imaging and geometry reconstruction techniques
- Development and application of fast and accurate methods for acoustic wave propagation
- Coastal hydrodynamics
- Numerical modelling in hydrology
- Nonlinear Dispersive Waves

TECHNICAL MEANS

- Hardware: 5 Workstations, a Linux Cluster with 120 cores and access to the computational facilities and Servers of the Institute of Applied and Computational Mathematics of FORTH.
- Software: In house developed discontinuous galerkin finite element based numerical solvers for the coupled solution of compressible and incompressible Navier Stokes and Maxwell equations.

MAIN CUSTOMERS - SPACE

ESA - ESTEC

MAJOR SPACE ACTIVITIES OR PROJECTS

- Plasma flows (ESA-ESTEC): High-Order Numerical Method for plasma flows in complex domains. (2011-2013). J. Ekaterinaris.
- Chemically reacting flows (ESA-ESTEC): Simulation of Chemically reacting high speed flows using high order accurate Discontinuous Galerkin discretizations (2012-2014). J. Ekaterinaris.
- A study of polarizable and magnetisable fluids (ESA-ESTEC) (2012-2014). Y. Papaharilaou.
- Computation of High Speed Jet Noise (ESA-ESTEC): Development and validation of a high order accurate method suitable of simultaneously capturing discontinuities and small amplitude acoustic disturbances (2005-2007). J. Ekaterinaris.

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Prof. Costas Fotakis

President of FORTH

Prof. Constantine Stephanidis

Director ICS

SHAREHOLDERS / OWNERSHIP

FORTH reports to the General Secretariat for Research and Technology (GSRT) of the Hellenic Ministry of Education and Religious Affairs

PERSONNEL

ICS Personnel 2013:
38 Researchers

ADDRESS & WEB SITE

Institute of Computer Science (ICS)
Foundation for Research and
Technology-Hellas (FORTH)
Nikolaou Plastira 100, Vassilika
Vouton,
70013 Heraklion, Crete
www.ics.forth.gr

CONTACT

Prof. Constantine Stephanidis

Director ICS

Tel.: +30 281 039 1741

Fax: +30 281 039 1799

cs@ics.forth.gr

CORE BUSINESS

The Foundation for Research and Technology-Hellas (FORTH), established in 1983, is one of the largest research centers in Greece with well-organized facilities, highly qualified personnel, and a worldwide reputation as a top-level research organisation.

The Institute of Computer Science (ICS) is one of the six institutes of FORTH. Since its foundation in 1983, FORTH-ICS has been highly competitive at an international level. It has excelled in all previous evaluations of Greek Research Institutes conducted by the GSRT, as it has always been ranked first in the Computer Science domain.

FORTH-ICS comprises eight laboratories conducting **basic and applied research** in specific thematic areas in the field of **Information and Communication Technologies**, developing prototype systems, and providing **services**.

The research fields addressed by FORTH-ICS include: Computational medicine, eHealth, bioinformatics, computational vision and robotics, computer architecture and VLSI systems, signal processing, distributed computing systems, telecommunications and networks, network and information security, information systems and cultural informatics, human-computer interaction, universal access and assistive technologies, ambient intelligence and smart environments.

Since 1992, FORTH-ICS has represented Greece in the European Research Consortium for Informatics and Mathematics (ERCIM), which comprises leading research institutions from 20 European countries, committed to the advancement of information technology and applied mathematics. It also hosts the World Wide Web Consortium (W3C) Office in Greece.

FORTH-ICS has adopted an evolving strategy towards promoting the commercial exploitation of R&D results by providing services, licensing specific products to industrial partners, and contracting with industrial partners to jointly develop new products. FORTH-ICS encourages the establishment of spin-off companies with the goal to exploit its research results. FORTHnet, one of the largest Greek companies in the internet and telecommunications sector, is such a successful example.

Certification & Accreditations

- ISO 9001:2008 certified

PRODUCTS & SERVICES

A. Space-related activities and S&T directions of potential interest to ESA

- Cloud storage management for Earth Observation (EO) datasets.
- Cloud-based computations.
- Service-based cloud infrastructures: Data-as-a-service infrastructures for searching, extracting, and downloading data from large datasets, and for offering intelligent computations as a service to users.
- Linked Geodata: provide metadata descriptions according to semantic models so that ESA data can be integrated into the semantic web. Publishing of ESA's data as Linked Data allowing the interconnection with measurements from satellite imagery and ground sensors. Work under this category can be linked with European initiatives such as GEOSS and INSPIRE.
- Novel methodologies for Big Data management.

B. Other related activities

- Information Systems: Knowledge representation and reasoning; web data and knowledge extraction, integration, and adaptation; service-oriented computing.
- Computational Vision and Robotics: Visual perception; augmented reality; bio-inspired robotic locomotion, manipulation, and control.
- Telecommunications and Signal Processing: SAR imaging; hyperspectral imaging systems; internet of things and smart cities; 5G communications; software defined networks and cognitive radios; modeling and analysis of wireless access markets; geo-database recommendation systems for wireless markets based on Quality of Experience.

TECHNICAL MEANS

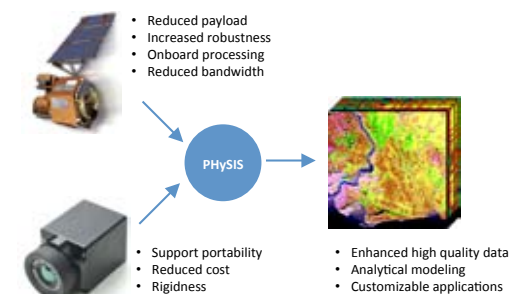
- Data management technologies; exploitation of cloud infrastructures; data-as-a-service; large-scale analytics.
- State of the art computing and communications equipment, grid facilities, cameras, robotic platforms.
- RF spectrum sensing equipment (spectrum analyzers, antennae), software defined radio platforms, wireless sensor networks.

MAIN CUSTOMERS - SPACE

- European Commission, ESA

MAJOR SPACE ACTIVITIES OR PROJECTS

- "PHYSIS: Sparse signal processing technologies for hyperspectral imaging systems," an EC H2020 project funded under call "COMPET: Bottom-up space technologies at low TRL." FORTH-ICS is the coordinator in a consortium that includes CEA, FR; NOA, GR; IMEC, BE, and PLANETEK, IT. (HYPERLINK «<http://www.physis-project.eu>» www.physis-project.eu) 2015-17.
- "CS-ORION: Compressed sensing for remote imaging in aerial and terrestrial surveillance," an EC FP7 a Marie Curie industry-academia partnerships and pathways project. FORTH-ICS was the coordinator in a consortium that included CEA, FR; SAGEM, FR; VTrip, GR. (www.cs-orion.eu) 2010-14. FORTH-ICS designed and evaluated compressive sensing architectures for enhancing the high-quality video and range data acquisition and delivery capabilities of remote sensing devices enabling them to provide efficient remote imaging in aerial, space and terrestrial surveillance.
- "SEXTANT: Development of efficient computer vision algorithms for the navigation and localisation of Martian autonomous rovers," an ESA project. FORTH-ICS acted as a sub-contractor of GMV SA.
- "Multiresolution algorithms for spaceborne synthetic aperture radar (SAR) systems," a GSRT & British Council project. 2005-07.



SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



HAROKOPIO
UNIVERSITY

Dep. of Geography

MANAGEMENT BOARD

Prof. Dimosthenis Anagnostopoulos
Rector

Prof. Christos Chalkias
Associate Professor
Head of the Department of
Geography Staff Council

Prof. Efthimios Karimbalis
Associate Professor
Vice-Head

SHAREHOLDERS / OWNERSHIP

Public body

PERSONNEL

Total Personnel 2013: 28

ADDRESS & WEB SITE

HAROKOPIO UNIVERSITY
OF ATHENS
El. Venizelou 70, Kallithea
17672 Athens
www.hua.gr

CONTACT

Issaak Parcharidis
Assoc. Prof.
Tel.: +30 210 954 9345
Fax: +30 210 951 4759
parchar@hua.gr

CORE BUSINESS

Research and education activities concerning earth Observation applications.

Harokopio University (HUA), founded in 1990, is one of the youngest state Universities in Greece. Its relatively small size makes it a flexible, highly specialized and dynamic academic institution. It is active in academic research and teaching in the wider fields of:

- "Geography",
- "Home Economics and Ecology",
- "Nutritional Sciences and Dietetics"
- "Informatics and Telematics".

Its ratio of journal publications per academic member of staff ranks it 4th among the 21 Greek Universities.

During the last 10 years over 300 national, European and company funded research programs were implemented by HUA, giving it again one of the highest ratios of projects per academic member of staff among Greek Universities. Through these programs, as well as its extensive ERASMUS educational exchange program, the University has built an extensive network of high quality co-operation with other academic and research institutes and the private sector in Greece, Europe and worldwide.

The **Department of Geography** was established in 1999. The scientific subject matter of Geography in the new department is made up of knowledge about the subjects like **human and physical geography** and **geoinformatics**. These three scientific fields represent the respective directions of the post-graduate course. Within the Geography department, the last 10 years a **remote sensing group** was founded as well as a **group working on geo-archaeology**. These two teams are composed by geologists, geographers and engineers.

PRODUCTS & SERVICES

Two courses in undergraduate level and two courses at post-graduate concerning:

- Introduction to Remote Sensing,
- Remote sensing applications,
- Advanced issues of Remote Sensing
- Remote Sensing and GIS in risks assessment

are carried out.

Main objective of research interest constitutes the use of Space Earth Observation Systems. Specifically: **Synthetic aperture radar (SAR) interferometry**.

And **Very high spatial resolution remotely sensing data** for natural hazard and risks monitoring, assessment, mitigation and reconstruction.

TECHNICAL MEANS

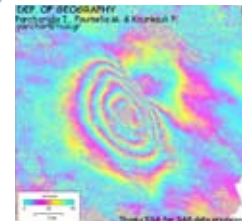
The laboratory of geoinformatics is equipped by the following hardware and s/w: Multiple high performance work stations (PCs) for extensive processing requirements GAMMA s/w including IPTA (multiple indoor installations), NEST, ENVI, ERDAS Imagine, ESRI ArcGIS.

MAIN CUSTOMERS - SPACE

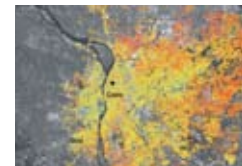
- GSRT - General Secretariat of Research and Technology of Greece
- ESA - European Space Agency
- Civil protection Organizations

MAJOR SPACE ACTIVITIES OR PROJECTS

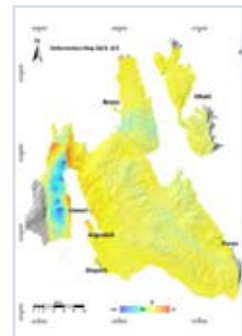
- Novel methodologies for the assessment of risk of ground displacement (GSRT Bilateral Greece-China, 2013-2015, id: 12CHN245)
- SAR Interferometry over Santorini island during unrest phase (ESA's GMES Terrafirma-X, extension, 2010-2011)
- High resolution SAR Interferometry for monitoring the Rio-Antirio Bridge (Western Greece) : a case study in the frame of Terrafirma-X project. (German Aerospace Center (DLR), project GEO0904, 2010-2011).
- Earth surface displacement and related risks based on space SAR interferometry (ESA's 2nd call for ideas for Greek institutions, integrated in TERRAFIRMA_X GMES project,, 2009-2011).
- Ground Deformation Studies in the Central Ionian Islands (Greece) using Time Series Interferometry. European Space Agency (ESA), CAT-1 6831, 2010-2012.
- Ground deformation monitoring in (i) Suez canal area (ii) Alexandria city and related risks by using space techniques, optical data and SAR interferometry. (Alexandrina Biblioteca Foundation, 2009-2011)
- Ground Deformation Monitoring in the Greater Cairo Metropolitan Region (Egypt) by SAR interferometry (NATO Collaborative Linkage Grant, 2009-2010,)
- Ground deformation mapping in Ilia Prefecture using Persistent Scatterers Interferometry technique from space radar data. (Latsis I. Public Foundation, 2008-9).
- Continuous risk assessment of structures and plants in areas of ground deformation susceptibility by space-based SAR/ASAR Interferometry. (ESA 's 1st call for ideas for Greek institutions, integrated in TERRAFIRMA GMES project, 2007-2009).



1



2



3

1. Deformation measurement – L'Aquila and Fossa cities
2. Linear component of ground deformation - Cairo area
3. Deformation measurement - Chephalonia island

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Paraskevas Sphicas

Director, Professor at Dept. of Physics

Evangelos Gazis

Deputy Director, Professor at Dept. of Physics

SHAREHOLDERS / OWNERSHIP

National and Kapodistrian University of Athens (NKUA): 50 %
National Technical University of Athens (NTUA): 50 %

PERSONNEL

Total Personnel 2013: 15

ADDRESS & WEB SITE

Institute of Accelerating Systems and Applications
Panepistimioupoli Zografou,
Dept of Physics
15784 Athens
www.iasa.gr

CONTACTS

Sotiris Sotiropoulos

R&D Engineering Manager-
Electronics Lab
Tel.: +30 210 725 7533 (int. 127)
Fax: +30 210 727 6747
s.sotiropoulos@iasa.gr

Ioannis Dages

Research Associate-Wireless
Systems Group
Tel.: +30 210 727 6873
Fax: +30 210 727 6747
jdages@phys.uoa.gr

CORE BUSINESS

IASA is a research institute based in Athens and affiliated with six university departments (Medicine, Physics, Electrical and Computer Engineering, Computer Science and Communications, Chemical Engineering, Applied Mathematics and Physical Sciences). IASA has also a number of research laboratories, ranging from electronics and communications to computing, which support and enhance the capabilities of each research area.

Its main research activities are: Accelerator Science - Engineering and Applications; Computing Clusters and Grid Computing; Electronics - Controls and Data Acquisition; Environmental Physics; Medical Physics; Wireless Communications.

The institute has gained important experience by participating and managing complex international research projects, including European Commission projects. Moreover, IASA is collaborating on several projects with: universities and institutes in Greece and abroad, in CERN, ESA, entities from the private (new product development) and public sectors.

PRODUCTS & SERVICES

IASA was established to carry out R&D in the area of accelerators and all technologies that are needed to design, build, operate, control and monitor an accelerator complex. Because of its multi-faceted charge, IASA has expanded its activities to large multidisciplinary research projects.

- **IT Lab:** Participation in Grid computing. Partner member of the Greek National Academic and Research Network ("GR-NET"; Greek Research and Technology Network) in numerous EU Grid projects.
- **Wireless Systems Group (WSG):** Work mainly focused on Mobile and Wireless communication systems, and more specifically, on: Physical Layer & Baseband Techniques, Modulation/Waveform Design, Receiver Architectures, Coding/Decoding, Channel Parameter Estimation, Flexible, Adaptive Reconfigurable Design, Satcom systems...
- **Electronics Lab:** Significant design, construction and deployment experience in the field of high-speed electronics, especially in the fields of data-acquisition systems, trigger, control, monitoring and embedded systems. Products developed for the public sector and for the telecommunication and consumer electronics industry. Participation in the study of key prototype space devices for the ESA Proba-3 satellite mission.
- **Medical Physics:** A radiation protection office was originally established to facilitate radiation protection demands in the early days of installation of the accelerator elements. It has since evolved to a

Certification & Accreditations

Design of electronic equipment conforming to CE certification directives. Monitoring CE certification for new products.

Institute of Accelerating Systems and Applications (IASA)

medical physics laboratory, which comprises the nuclear imaging and the dosimetry sections and capitalizes on the expertise and infrastructure of the computing and electronics divisions of IASA.

- **Environmental Physics:** IASA scientists run a fully equipped laboratory on environmental materials that has developed materials contributing to heat is-land mitigation strategies like cool coatings, thermochromic coatings for the outdoor environment, nano-materials including PCM, etc.

The Atmospheric Modeling and Weather Forecasting Group (AM&WFG) has developed a series of modeling tools for studying atmospheric composition change – radiation – cloud interaction.

TECHNICAL MEANS

- Programming Languages; Technologies: Multi-Tier Architecture, Client-Server Architecture; Databases: MySQL, PostgreSQL, Oracle, MS SQL Server, Tandem-NonStop HP DB; IT infrastructure - Clustering & Grid Computing, Networked file systems, Virtualization; Monitoring; Identity management; Repositories (source code & binary), Networking: Cisco & Extreme, VLANs, ACLs, routing/forwarding/NAT, firewalling, etc.
- Electronics Lab & Software tools for hardware design.
- Wireless System Group: open-air interface, open-source HW/SW development platform that targets demonstrating innovation in: Real-time Radio Signal Processing, All-IP Wireless Networking, Agile RF System Design, etc.
- The Medical Physics Laboratory consists in, and supports, two major initiatives:
 - The Single Photon Emission Computer Tomography (SPECT) Laboratory, involved in Nuclear Imaging research.
 - The Dosimetry Laboratory: supports the radiation safety & dose-monitoring IASA program, is actively engaged in research using experimental and computational dosimetry techniques.

MAIN CUSTOMERS - SPACE

European Commission through its research programs, ESA

MAJOR SPACE ACTIVITIES OR PROJECTS

- SATellite UMTS Ip Network: Study of the particular implications of the IP-based packet mode on the S-UMTS design. IASA worked on the development of S-UMTS access network for broadcast and multicast service delivery.
- Sat4G Study of Satellite Role in 4G Mobile Networks – ESA: study of the viability and the role of satellites in 4G. IASA worked on flexible transceiver designs, with the ability to communicate with many standards/modes and addresses the task of processing waveforms corresponding to very different modulation schemes.
- Study and development of prototype space devices and subsystems for the ESA Proba-3 satellite mission ("STARTIGER" program) – ESA. Collaboration with the Laboratoire d'Astrophysique de Marseille: Study and experimentation of subsystems of the Formation Flying demonstrator (2 spacecraft; primary mission: solar coronagraphy).



1



2

1. IASA SPECT Laboratory
4. GRID Computing Center at IASA

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

MANAGEMENT BOARD

Dr. Dimitrios Soudris
Professor at ECE/NTUA

SHAREHOLDERS / OWNERSHIP

Public body

PERSONNEL

Total Personnel 2013: 16
Space personnel 2013: 5

ADDRESS & WEB SITE

Microlab - ICCS/NTUA
9 Heroon Polytechniou, Zographou
Campus
15780 Athens
www.microlab.ntua.gr

CONTACT

Dimitrios Soudris

Professor
Tel.: +30 210 772 4270
Fax: +30 210 772 4305
dsoudris@microlab.ntua.gr



CORE BUSINESS

Microprocessors and Digital Systems Laboratory (Microlab)
Application Domains:

- Embedded Systems Design
- Microelectronics - Reliability
- Trusted computing - Secure computing
- Space
- Multimedia
- Biomedical

PRODUCTS & SERVICES

Reconfigurable Architectures, HW/SW co-Design, Dynamic Data Management, Run-time Mapping, Run-time Resource Allocation, Dynamic Data Type Refinement, Adaptive Resource and Dynamic Data Management, Design Space Exploration, System Level Modeling

MAIN CUSTOMERS - SPACE

European Space Agency (ESA)

MAJOR SPACE ACTIVITIES OR PROJECTS

SPARTAN (Sparing Robotics Technologies for Autonomous Navigation)

ESA, March 2011 - July 2013

Main goal of the SPARTAN activity was to reduce as much as possible the overall budgets required by the rover navigation function while improving on its performances (i.e. accuracy of terrain reconstruction, probability to find paths) so to make the system compatible with the requirements of a long traverse range capability device. In order to reduce as much as possible the overall budgets required by the rover navigation function while improving on its global performances the following functions were optimized:

- Imaging, implementing suitable local image processing that can serve Image products,
- Visual Odometry which provides an estimation of the Displacement of the rover,

Certification & Accreditations

Completed two ESA-funded projects of technology readiness level (TRL) 3.

Approved from ESA, two demos of corresponding projects, using indoor and outdoor rover exhibition.

Microlab / National Technical University of Athens

- Visual SLAM which determines the current Location of the rover,
- 3D Map reconstruction, which reconstructs the 3Dimensional shape of the terrain being imaged in front of the rover.
- Localisation.

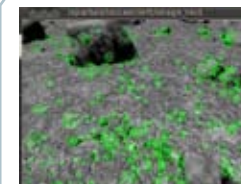
The SPARTAN project focused in the tight and optimal implementation of the computer vision algorithms for rover navigation using custom-designed vectorial processing (by means of FPGAs).

SEXTANT

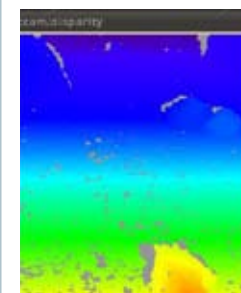
ESA, May 2012 - Present

The SEXTANT activity builds upon the system developed within the SPARTAN (Sparing Robotics Technologies for Autonomous Navigation) project. The SEXTANT objectives are intended to extend the breadth of the SPARTAN system to include:

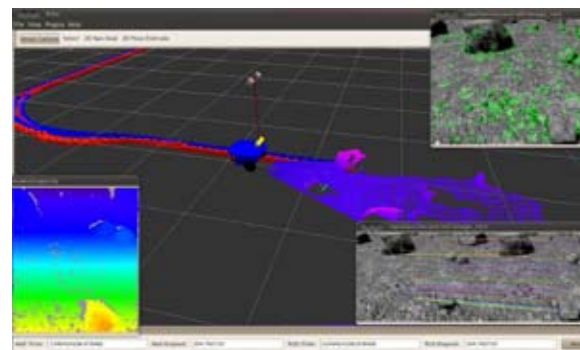
- Implementation of two different set of computer vision algorithms used by Martian rovers in visual navigation and localisation. In order to fulfill this objective the Consortium is already revisiting the list of candidates proposed in SPARTAN as the trade-off for some criteria was based on estimates (the factual data can only be derived from the implementation) and it exists the possibility of having these runner-up algorithms having a performance similar or better than the initial selection made in SPARTAN and addressing the implementation of two different set of algorithms. It is also intended to perform a cross comparison in terms of performance with respect to different terrain typologies (sandy vs. rocky).
- Assessment of feasibility and prototyping of integrating orbital imagery to the Simultaneous Localisation and Mapping (SLAM) component of the system. In SPARTAN the SLAM module solely relies on the visual features seen through the rover cameras. However, SLAM algorithms can work on maps where other unique features (e.g. boulders scattered on a plain) are evident. Therefore, the usage of prior topological information (such as high-resolution orbital maps of the Martian surface) to improve the absolute localisation accuracy of the rover will be addressed within the context of the SEXTANT activity.



2



3



1

1. Microlab analysis results

2/3. Details

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Athanasios D. Panagopoulos

Assistant Professor

Philip Constantinou

Emeritus

SHAREHOLDERS / OWNERSHIP

Public body

PERSONNEL

Total Personnel 2013: 16

Space personnel 2013: 5

ADDRESS & WEB SITE

Mobile Radiocommunications Laboratory
9 Heroon Polytechniou, Zographou Campus
15780 Athens
<http://mobile.ntua.gr>

CONTACTS

Athanasios D. Panagopoulos

Professor

Tel.: +30 210 772 3842

Fax: +30 210 772 3843

thpanag@ece.ntua.gr**Charilaos I. Kourogiorgas**

Researcher

Tel.: +30 210 772 3518

harkour@mail.ntua.gr

CORE BUSINESS

The **Mobile Radio Communications Laboratory (MRCL)** is a laboratory of National Technical University of Athens (NTUA) and a partner of the Institute of Communications and Computer Systems (ICCS). Moreover, MRCL is a member of the space cluster of Greece.

The MRCL has been involved in many research projects including **ESA projects, FP5, FP6, FP7 projects and national research projects**. Its personnel has an expertise on **channel modelling, channel measurements, radiocommunications system design, antennas design and software development for mobile applications**.

PRODUCTS & SERVICES

Activities

- Terrestrial Mobile Communication Systems (TETRA, GSM, UMTS, HSPA, WLAN, WIMAX, LTE, LTE-Advanced)
- Mobile Terrestrial and Satellite Communication Technologies: Radio Channel Measurements and Characterization, Quality Measurements, Simulation Studies
- Design and Evaluation of Advanced Radio Transceivers
- Wireless Broadband Infrastructures and Communication Networks
- Design and Development of Microwave Antennas and Arrays
- High Altitude Platform Systems (HAPs), Fixed Satellite, VSAT Systems
- Interference and Coexistence of Terrestrial/Satellite Systems
- Radio-Coverage and Deployment of Cellular Systems (DECT/GSM/DCS/UMTS)
- Non-Ionizing Electromagnetic Radiation Effects from Telecommunication Emissions: Design of Measurement Setups, Techniques and Software Applications
- Spectrum Management Systems
- Electromagnetic Interference, Compatibility and Noise Issues for Communication Systems
- Wireless Sensors & Applications to Bio-Signal Processing

TECHNICAL MEANS

MRCL is actively involved in various research- and industry-oriented projects exploiting its extended hardware and software infrastructure, comprising:

- a Vector Signal Analyzer (Agilent E4445A – PSA/89600, 3 Hz – 13.5 GHz)
- a Vector Network Analyzer (Agilent PNA – L/N5230A, 100 kHz – 13.8 GHz)
- a GTEM Cell (Schaffner, TESEQ 750, 0 Hz – 20 GHz)
- a Quality Measurement Platform for GSM, UMTS and HSPA Systems (SwissQual Diversity & Media Server)
- a Software-Defined-Radio Development Kit (Sundance, STM-8036)
- a DSP Starters Developer Kit (Texas Instruments, C6000/TMS3206701)
- a Channel Sounder at 1.89 GHz (Berkeley Varitronics Systems, Duet 2.5)
- 5 Spectrum Analyzers
- a Digital Oscilloscope (Tektronix, TDS 784D, 1 GHz/4 Gsps); 2 Digital Signal Generators (HP-83640B/10 MHz – 40 GHz, HP-E4433B/250 kHz-4 GHz)
- a rich set of narrow- and wide-band antennas, 2 RF receivers (ICOM, R&S)
- 2 high accuracy rubidium clocks (10 MHz)
- 4 microwave amplifiers with high linear response (500 MHz – 4.5 GHz), 4 low noise amplifiers (500 MHz – 4 GHz)
- 3 Selective Radiation Meters allowing for Spectrum Analysis and Non-ionizing EMR Safety Evaluation
- a DVB-T Measurement System
- Agilent Advanced Design System (ADS) Professional

Version (Microwave and Telecommunication systems simulation platform)

- CST Microwave Studio 2010 (Suite of full-wave electromagnetic simulators)
- OPNET Modeler and modules (Network Simulation)
- MATLAB (Mathematical Programming Suite)
- ATDI ICS Telecom, EDX, Cellular Expert (Radio-Coverage, Dimensioning and Planning tools)

MAIN CUSTOMERS – SPACE

- ESA
- European Commission

MAJOR SPACE ACTIVITIES OR PROJECTS

- Participation in si-Cluster Greece and the Collaborative Project Acritas.
- Participation in ESA funded SatNEx III Project (European Satellite Communications Network of Excellence)
- COST Actions:
 - 227: Integrated Space / Terrestrial Mobile Networks
 - 228: Simulation for Satellite / Terrestrial Networks
 - 255: Radiowave Propagation Modelling for new SATCOM Services at Ku-Band and above
- IST/EU Projects:
 - STINGRAY: Space Time codING for Reconfigurable wireless Access sYstems
 - SATIN: Satellite-UMTS IP-based Network
 - MAESTRO: Mobile Applications & sErVICES based on Satellite & Terrestrial interworking

Certification & Accreditations

- ISO 17025 certified

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Dr. N Kanellopoulos
President of the BoD

SHAREHOLDERS / OWNERSHIP

Public body

PERSONNEL

Total Personnel 2013: 836
Space personnel 2013: 5-10

ADDRESS & WEB SITE

NCSR "Demokritos"
Patriarchoy Grigoriou & Neapoleos -
PO BOX 60037
15310 Agia Paraskevi, Attiki
www.demokritos.gr

CONTACTS

Philippos Beveratos
Business Development Officer
Tel.: +30 650 3078
beveratos@central.demokritos.gr

Sophia Magia
Executive Assistant - President Office
Tel.: +30 650 3022
smagki@central.demokritos.gr

CORE BUSINESS

The National Center for Scientific Research "Demokritos" (NCSR "Demokritos") is the largest multidisciplinary research center in Greece, with critical mass in expertise and infrastructure in the fields of **Nanotechnology, Energy & Environment, Biosciences, Particle and Nuclear Science, Informatics and Telecommunications.**

NCSR "Demokritos" conducts world-class basic and applied research, to advance the scientific knowledge and promote technological development in selected areas of national economic and societal interest. The Centre also plays a pivotal role in graduate education and professional training and its unique infrastructure is employed for high-technology services to the industry and the society.

PRODUCTS & SERVICES

NCSR "Demokritos" has large scale research infrastructures as well as unique facilities and laboratories of national importance such as:

Non Space activities

- 5 MW nuclear research reactor, 5 MV Tandem accelerator
- Nanomaterials and Nanotechnology fabrication and characterization
- Mass Spectrometry and Dioxin Analysis Laboratory
- Helium Liquefaction Facility (32 lt per hour).
- Radiopharmaceuticals Laboratory
- Center for Radioisotope Transport & Distribution
- Laboratory of Radio and Immunodiagnostic Products Laboratory
- Immunoassays and Immunosensors Laboratory
- Molecular Diagnostics & Cytogenetics Laboratory
- Solar and other Energy Systems Laboratory
- Environmental Research Laboratory
- Health Physics & Environmental Health Laboratory
- Environmental Radioactivity Laboratory
- Thermal Hydraulics & Multiphase Flow Laboratory
- System Reliability & Industrial Safety Laboratory
- Silicon Detectors Instrumentation Laboratory
- Micromegas Gas Detector Development and Data Acquisition Laboratory
- Deep Sea Research Facility in Pylos
- X-ray Fluorescence Laboratory

Certification & Accreditations

The Laboratory of Nanotechnology and Microsystems is ISO 9001:2008 and 17025 certified in the fields of Si processing, I-V and C-V electrical characterization of MIS devices, measurements of RF S parameters and breakdown voltage of dielectrics.

National Center for Scientific Research (NCSR) "Demokritos"

- Archaeometry Laboratory
- Human Tissue Laboratory
- Animal Colony Facility
- Laboratory for Structural Analysis of Molecules & Biomolecules (NMR, X-ray diffractometer, CD)
- Laboratory for Advanced Imaging (Epifluorescent, Inverted, and Confocal microscopes)

Space Related activities

- Radioisotopes
- A very large range of technical services in support of industry and other research groups (e.g. mechanical properties, electron microscopy, physico-chemical characterization, prototype manufacturing ...)
- Nanoelectronics, Photonics and Microsystems:
 - Electrical characterization of integrated circuits (ICs) from 10K up to 420K, evaluation, reliability specification tests, radiation hardness experiments for ICs and PC boards.
 - Fabrication and characterization of Rad-hard Si devices and components, failure analysis.
 - Fabrication and characterization of radiation detectors
 - Fabrication and characterization of pressure sensors, chemical sensors for VOC, bio-sensors
- Optical and electrical characterization of materials after radiation exposure experiments and materials reliability by SEM, EDX, impedance spectroscopy

TECHNICAL MEANS

- Full complement of R&D facilities in Materials Science, Nanotechnology, Microelectronics, Physico-chemistry, high energy beam (e.g. for testing materials for space radiation protection)

MAIN CUSTOMERS - SPACE

- R&D collaborations: ASTRIUM, ESA, Thales Alenia Space, ALTA Space (Italy), Institute of Aviation (Poland)

MAJOR SPACE ACTIVITIES OR PROJECTS

- RastasSpear (FP7/Space): Development of demonstrator full scale (1m diameter) shield for re-entry capsule
- Pulcher (FP7/Space): Development of new material for combustion chamber for small thruster and demonstrator
- HYDRA (FP7/Space): Thermal protection materials
- SMARTEES (FP7/Space):
- Hybrid TPS (ESA-ESTEC ITI): Thermal protection materials
- Investigations of the use of III-Nitride quantum dot-resonant tunneling diodes structures as tuneable wavelength UV-Visible detectors (ESA-ESTEC Ideas)



1



2

1. Helicopter picture of NCSR Demokritos
2. Nuclear Research Reactor

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



BEYOND

MANAGEMENT BOARD OF BEYOND

Dr. Charalampos Kontoes

Coordinator of the BEYOND Center of Excellence

Dr. Iphigenia Keramitsoglou

Dr. Vassilis Amiridis

Dr. Georgios Balasis

Associate Researchers
IAASARS/NOA

Dr. Ioannis Papoutsis

Ms Alexia Tsouni

Research Associates IAASARS/NOA

Ms Eleni Christia

Greek GEO officer

SHAREHOLDERS / OWNERSHIP

Public body

Funding: European
Commission / 100%

PERSONNEL

Total Personnel 2013:

10 permanent, 15 under contract
(postdocs & engineers)

ADDRESS & WEB SITE

National Observatory of Athens /
Institute for Astronomy, Astrophysics,
Space Applications & Remote
Sensing - IAASARS / BEYOND
Vas. Pavlou & I. Metaxa,
15 236 Penteli
<http://beyond-eocenter.eu/>

CONTACT

Dr. Charalampos Kontoes

Research Director

Tel.: +30 210 810 9186

Fax: +30 210 613 8343

kontoes@noa.gr

CORE BUSINESS

BEYOND is a Center of Excellence for EO-based Monitoring of Natural Disasters, in southeastern Europe. It belongs to the National Observatory of Athens (NOA), the oldest Greek research centre, which operates, among other, the Institute for Astronomy, Astrophysics, Space Applications & Remote Sensing (IAASARS).

BEYOND's core business ranges from fundamental research in the fields of Earth Observation (EO) and remote sensing, signal/image processing and algorithm development, EO based climate change analysis and environmental impact assessment, to the integrated design of complete systems that provide on an operational basis added-value information products and services to end-user community and related stakeholders, for environmental and natural disaster monitoring and management.

Our main activities include the monitoring of the environment, ecosystems management and change detection analysis.

An important aspect of BEYOND's role is that of data provider. This activity relates to ground segment infrastructure capacities for collecting, managing and distributing data and products from diverse satellite platforms, including METEOSAT family of satellites, MODIS, NPP (VIIRS, ATMS), NOAA, FYI, MetOP, and the future Sentinel missions.

PRODUCTS & SERVICES

BEYOND offers a variety of products and services in the following fields:

- Volumes of EO images of different spectral and spatial resolutions are being processed on a systematic basis to derive thematic products that cover a wide spectrum of Emergency Response and Emergency Support applications during and after wildfire crises, from fire detection, fire monitoring and rapid mapping, to damage assessment in the inflicted areas.
- Monitoring and management of flood risks using remote sensing and adapted hydrological models, in close cooperation with the Public Power Corporation S.A. (<http://floodsobservatory.blogspot.gr/>).
- Real time acquisition and high level post-processing of land surface

Certification & Accreditations

BEYOND has been part of the GEO workplan 2012-2015, under chapter, «DISASTERS Reducing loss of life and property from natural and human-induced disasters: Component C1 Disaster Management Systems».

BEYOND is under the umbrella of IAASARS/NOA that has been historically nominated by the Greek government as the sole institution in charge of natural disasters monitoring, with a clear mandate to conduct innovative research for the benefit of the Greek citizens.

National Observatory of Athens (NOA) IAASARS - BEYOND

temperature measurements, building and populating Urban Heat Island patterns database to improve the insight into possible trends, correlation with anthropogenic and climatic factors and comparison between cities.

- Effective exploitation of the growing flow of satellite Synthetic Aperture Radar data, along with development of innovative algorithms and processing chain for systematically mapping surface deformation, pertinent to earthquakes, volcanic eruptions, landslides and ground subsidence occurring from manmade activities.
- Monitoring of atmospheric constituents and air quality degradation and forecasting of atmospheric hazards (e.g. Saharan dust events, smoke dispersion). High quality satellite products used in synergy with atmospheric models, employing sophisticated ground-based instrumentation (lidar and sunphotometric ground stations of IAASARS/NOA).

TECHNICAL MEANS

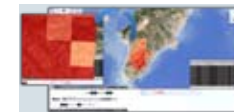
- Ground Segment for satellite data, Light Detection And Ranging (LiDAR) system
- BEYOND has been granted access to ENIGMA, magnetometer network and the NOANET GNSS network for monitoring crustal deformation in Greece. NOA has obtained these permanent GPS observations through several EU funded projects and national research programs, with the aim to investigate the contemporary motions of the Western Greece over the time span of several years.
- Advance software tools

MAIN CUSTOMERS - SPACE

Support for Emergency Planning and Emergency Support, and Disaster Recovery to Environmental Monitoring, Civil Protection and Public Governmental Authorities in Greece at regional and national level. We systematically collaborate with Space Agencies across Europe, including ESA, the German (DLR) and Italian (ASI) space agencies, and the EC, to address the contemporary challenges for a competitive European economy driven by innovation and entrepreneurship in the space sector.

MAJOR SPACE ACTIVITIES OR PROJECTS

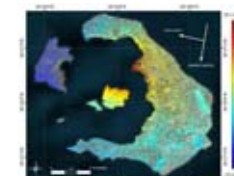
- BEYOND (FP7, start 2013, 36 months): BEYOND aims to maintain and expand the existing state-of-the-art interdisciplinary research potential, by Building a Centre of Excellence for Earth Observation based monitoring of Natural Disasters in south-eastern Europe
- TELEIOS (FP7, start 2010, 36 months): To make the available petabytes of EO data easily accessible by an even larger group of end user applications, the proposed project will design and implement a Virtual Observatory infrastructure for EO data
- Urban Heat Thermography (ESA - DUE, start 2009, 30 months). The main goal of the UHI project was the integration of satellite based remote sensing with meteorological and ancillary ground measurements into urban meteorological forecast and climate modelling
- ACTRIS (FP7-INFRASTRUCTURES-2010-1, start 2011, 48 months). ACTRIS (Aerosols, Clouds, and Trace gases Research Infrastructure Network)
- LIVAS (ESA, start 2011, 24 months). LIVAS (Lidar Climatology of Vertical Aerosol Structure for Space-Borne Lidar Simulation Studies), is an ESA study aiming to provide a global and extensive aerosol and cloud optical database



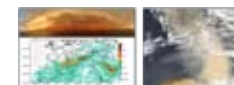
1



2



3



4

1. Real-time Fire Monitoring System using MSG/SEVIRI satellite data
2. Diachronic mapping of burned areas all over Greece for the past 30 years using Landsat data
3. Monitoring volcanic activity from space, quantifying crustal deformation (SAR data)
4. Monitoring Saharan dust dispersion over Greece

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES



MANAGEMENT BOARD

Prof. Yannis Ioannidis

President of R. C. «Athena»

Prof. Emmanuel Sarris

Head of SPU

PERSONNEL

Total Personnel 2013: 12

Space personnel 2013: 12

ADDRESS & WEB SITE

R.C. «Athena» - Space Programmes

Unit - Patroou 1

10557 Athens

www.athena-spu.gr

CONTACTS

Emmanuel Sarris

Head of SPU

Tel.: +30 210 698 3122

Fax: +30 210 698 3629

esarris@athena-spu.gr

Konstantinos Margaritis

Responsible for Dissemination and Communication

Tel.: +30 210 698 3123

Fax: +30 210 698 3629

kmargaritis@athena-spu.gr

CORE BUSINESS

Research on:

- **Innovative Space Missions Concepts Design**
- **Innovative Space Systems**
- **Space Debris Mitigation**
- **Data Processing Units**

PRODUCTS & SERVICES

- Design and development of Space communications protocols and mechanisms
- Evaluation of existing/future communication platforms
- Development of Mixed Signal Rad-Hard ASICs
- Data Processing Units
- Space Weather
- Mission Concepts Design
- Remote Sensing

TECHNICAL MEANS

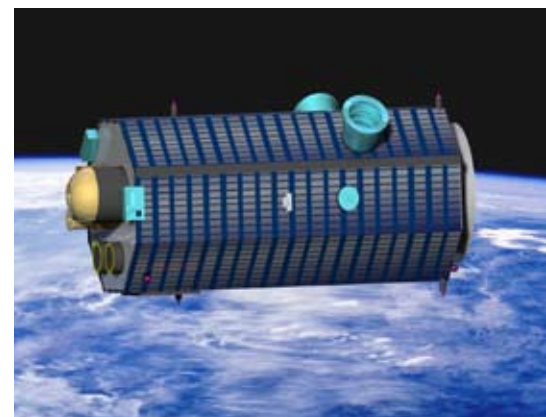
- ENVISAT Terminal
- Satellite Tool Kit

MAIN CUSTOMERS • SPACE

- European Space Agency
- European Commission
- Greek Government

MAJOR SPACE ACTIVITIES OR PROJECTS

- «Feasibility Study for a Low-Flying Spacecraft for the Exploration of the Mesosphere and Lower Thermosphere»
ESA/ESTEC project, 3/9/2007-24/2/2009
- «Low-Flying S/C Synergies for coordinated Campaign»
ESA/ESTEC project, 15/7/2009-30/10/2009
- «Study and Monitoring of Earth Mesosphere by means of Lidar Techniques»
ESA/ESTEC project, 30/10/2007-2/2/2009
- «New Instruments and extended Objectives for the Lidar Mission»
ESA/ESTEC project, 1/7/2009-31/10/2009
- «Assessment of snow cover as climate change indicator»
ESA/ESTEC project, 20/5/2008-20/5/2009
- «Electrodynamics Study of Upper Atmosphere in Support to Future MLTI Missions»
ESA/ESTEC project, 1/9/2011-30/11/2012
- «Joule Heating in the MLTI»
ESA/ESTEC project, 1/11/2012 – 1/7/2013
- DE-ORBIT SAIL: «De-Orbit of Satellites using Solar Sails»
EC FP7 project: Security of space assets from on-orbit collision, 1/3/2011 – 1/11/2014
- DEPLOYTECH: «Large Deployable Technologies for Space»,
EC FP7 project: Space critical technologies, 1/2/2012-31/1/2015
- SpacePLAN 2020: «Space Technology Road-mapping and Planning for Europe EC FP7 project: Research Activity Road-Maps for a European Research Framework, 1/2013-1/2016
- NFOFRAS: «National Forest Fire Risk Assessment System», Corralia Si-Cluster, NSRF: Space Technologies and Applications



1

R.C. «Athena» Space Programmes Unit (SPU)



2



3

1. Feasibility Study for a Low-Flying Spacecraft for the Exploration of the "Ignorosphere" (Mesosphere & Lower Thermosphere)

2. Definition of Low-Flying Spacecraft Subsystems by R.C. "Athena"-SPU

3. GLEME: Feasibility Study for the Global Exploration of the Mesosphere by Twin-Lidar Techniques

SPACE SEGMENT

GROUND SEGMENT

SPACE-BASED SERVICES

**MANAGEMENT BOARD**

University council

Odysseas Koufopavlou
Director of VLSI Laboratory**SHAREHOLDERS / OWNERSHIP**

Public body

PERSONNELTotal Personnel 2013: 30
Space personnel 2013: 5**ADDRESS & WEB SITE**University of Patras, Dept.
of Electrical and Computer
Engineering, VLSI Laboratory
University Campus
26504 Rio
<http://www.vlsi.ics.ece.upatras.gr/>**CONTACTS****Odysseas Koufopavlou**
Director of VLSI Laboratory
Tel.: +30 261 099 6444
Fax: +30 261 099 4798
odysseas@ece.upatras.gr**Costas Goutis**
Em. Professor
Tel.: +30 261 099 6442
Fax: +30 261 099 4798
goutis@ece.upatras.gr**CORE BUSINESS**

University of Patras, founded in 1964, began functioning in the academic year 1966-67. The Department of Electrical & Computer Engineering was the first department of the School of Engineering founded at the same year and now is comprised of four divisions. The VLSI design Laboratory belongs to the Division of Computer & Electronics and currently employs more than 30 individuals (teaching, research positions, support staff) mostly with funding from research projects.

The VLSI Laboratory has extensive experience in the research fields of **integrated circuits and systems, digital signal and image processing systems** as well as **embedded systems** (hardware and software) and **cryptographic hardware design**. Apart from the postgraduate, educational, and research activities, the scientists and engineers of the Laboratory also aim to facilitate the proliferation of the use of innovative hardware solutions like ASICs in Greek industry.

PRODUCTS & SERVICES**1. Network security, secure hardware design and trusted systems**

The Hardware security group of the VLSI design lab has a well-established track record of achievements in security, trust, hardware design and networks. Beyond these areas the VLSI Lab in cooperation with the Network and Management Architecture Group of the Wired Communications Laboratory developed an expertise in network management, in particular monitoring, P2P systems, programmable and active networks and autonomic networking.

Research expertise in cryptographic hardware design is going to contribute on research and development of the security element to be used for providing security and trust services to the network.

References: The VLSI Laboratory and the Wired Communications Laboratory have been actively involved in a wide range of European and National projects. Among other FP6 –FP7 EU projects (Autonomic Communications Coordinated Action (ACCA), PHOSPHORUS, PII, etc.) the university had strong contribution in the FLEXINET (WP leader), VITAL (WP leader), VITAL++ (Project Coordinator) projects where novel network architectures and security protocols for distributed systems and secure context delivery were researched. Recently, the two laboratories were involved in the SECRIOM project (HW optimisation of asymmetric crypto accelerators, side channel attack resistance and trusted communication for crisis management systems).

2. Hardware architectures for digital communications.

The group has extensive expertise in the design of baseband digital processors for wireless communications, including a 60GHz-band point-2-point link for gigabit wireless backhauling applications and multigigabit-

rate components for modern Wifi, such as 802.11ac. Innovative research activities target gigabit and low-bit error rate communications (<1E-12) implemented onto ASIC technology and FPGA-based platforms. Group's activities are funded through national and European projects as well as industry contracts. Research results are published in patents, technical journals and conference proceedings.

3. High speed and low power embedded software

A methodology was developed for speeding up data intensive applications for both embedded and general purpose processors, which have one or more cores with or without SIMD unit. The methodology can be extended to GPU and cluster architectures (distributed computing), with reasonable effort. This is achieved by fully and simultaneously exploiting the specific algorithm's information (e.g. algorithm structure, data reuse) and the hardware architecture parameters (e.g. data cache size and associativity). This is not done by existing software technology.

The proposed methodology that achieves higher execution speed than the state of the art SW libraries. gives also lower power SW and can be extended to work with power constraints.

4. Low-power all-digital delay sensors and on-chip sensor networks

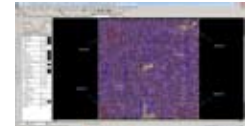
VLSI Lab has developed circuits for monitoring variations in the performance of integrated systems occurring due to both environmental and manufacturing causes. Particular emphasis is given to low-power operation. Recent VLSI Lab research has achieved a power dissipation reduction of 30% by applying an introduced design methodology. Further research activities target low-power networks of delay sensors, used to monitor and characterize large systems on-chip. Furthermore, research is conducted on temperature-aware system design and system operation practices. The integration of sensors within a larger system has been demonstrated in the context of JU-ENIAC END project, using as test system a baseband digital processor for a wireless telecommunications base station.

MAIN CUSTOMERS

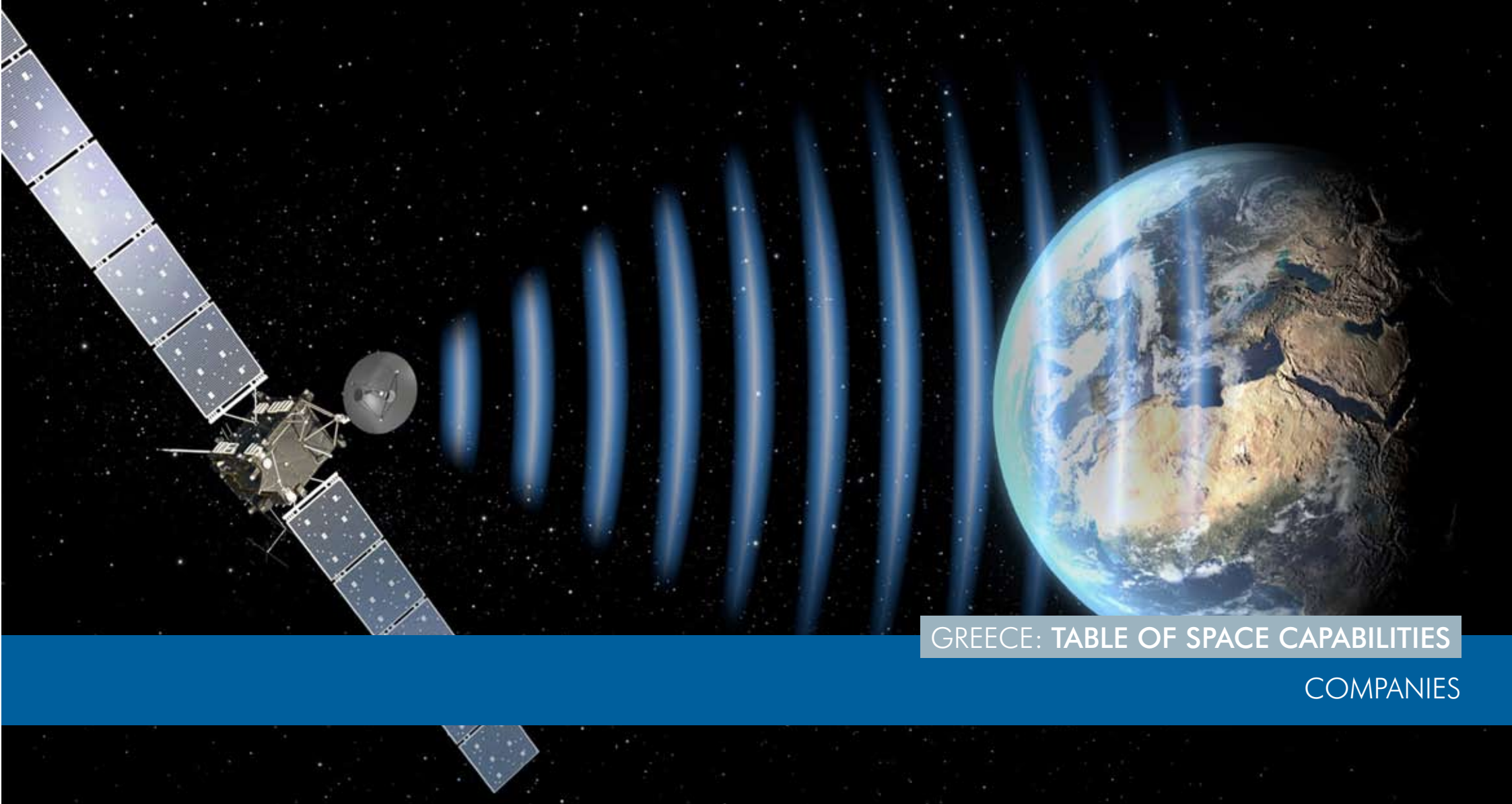
- European Commission (R&D Projects)
- Greek General Secretariat of Research and Technology - GSRT
- Greek Companies

SPACE TECHNOLOGICAL CAPABILITIES

In EC FP7, VLSI Lab in collaboration with wired communications laboratory is still involved in PII and STEER projects. It has deployed and maintained an IMS testbed while it has under implementation a Cloud Computing infrastructure testbed. In addition, VLSI Lab has designed and developed a new P2P client for live streaming which is currently under test in the university campus with real users.



Layout of all-digital delay sensors placed within a larger digital system, part of a digital processor implementing wireless baseband base station functionality, developed within ENIAC END Project



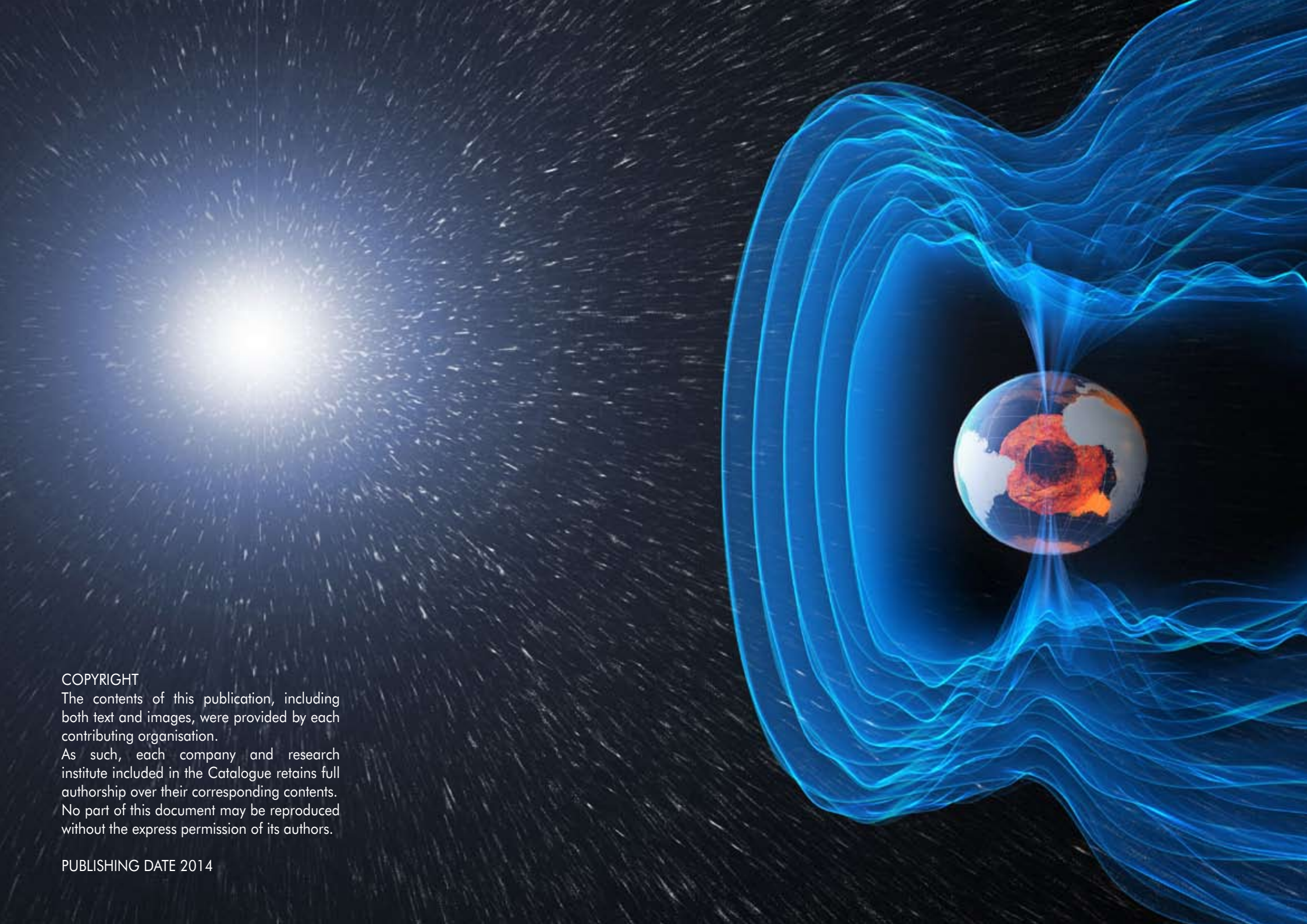
GREECE: TABLE OF SPACE CAPABILITIES

COMPANIES



GREECE: TABLE OF SPACE CAPABILITIES
ACADEMIA & RESEARCH INSTITUTES

[illegible]



COPYRIGHT

The contents of this publication, including both text and images, were provided by each contributing organisation.

As such, each company and research institute included in the Catalogue retains full authorship over their corresponding contents. No part of this document may be reproduced without the express permission of its authors.

PUBLISHING DATE 2014



CONTACT

General Secretariat for Research and Technology

International S&T Cooperation Directorate
International Organisations Department

Mesogeion 14-18
11510 Athens - Greece

Dr. Nikolaos Prekas

Head of International
Organisations
Department

Tel.: +30 213 130 0116
n.prekas@gsrt.gr

Dr. Vassilis Kaleridis

International
Organisations
Department

Tel.: +30 213 130 0118
vkas@gsrt.gr

Michael Kotsias

International
Organisations
Department

Tel.: +30 213 130 0115
m.kotsias@gsrt.gr

European Space Agency

Directorate of Industry, Procurement and Legal Affairs
Industrial Policy Department

8-10 rue Mario-Nikis
75738 Paris Cedex 15 - France