

Ioannis A. Mourtsiadis

Telecommunications Engineer (MSc) | CTO | Inventor | Technology Entrepreneur

Professional Profile

Telecommunications Engineer (MSc), technology entrepreneur, CTO, inventor, product designer, and R&D leader with more than 38 years of experience in telecommunications, embedded systems, satellite communications, RF systems, industrial electronics, military systems, IoT, and product development.

Current Positions

2025–Present: Co-Founder & CTO, Bladeless Technologies L.P.

2023–Present: Co-Founder & CTO, Pi Modules Technologies L.P.

2013–Present: Founder, PiModules.com

Previous Positions

2007–2013: Co-Founder & Technical Director, INFITHEON Technologies Ltd.

1997–2012: Founder, I.A. Mourtsiadis Elcom Research

1987–2007: MARAC Electronics S.A.

Positions held: R&D Engineer, Senior R&D Engineer, Team Leader, Project Manager, Deputy Technical Director

1986–1987: Microsystem S.A. – R&D Engineer

Pi Modules Technologies L.P. Overview

Raspberry Pi Approved Design Partner and Manufacturer, serving:
USA, New Zealand, Australia, Canada, Japan, Switzerland, Norway, United Kingdom, Poland, Greece, Germany, Italy.

More than 200,000 products manufactured and sold worldwide and exported to over 70 countries. Provides custom design and manufacturing services from prototype quantities through mass production.

Patents, Inventions and Advanced Technology Developments

- Co-Inventor of European Patent EP 2 492 881 B1
- Inventor of infiSENSIS® Infrasonic Autonomous Security System
- Inventor of FORTRAK® Battlefield Tracking System
- Inventor of Long-Range Self-Organising Wireless Military Network Technologies
- Inventor of Wireless Sensor Network Technologies for Space Applications

- Inventor of Remote RF Powering and Passive Telemetry Technologies
- Inventor and Lead Designer of High-Efficiency Axial Flux Electric Motor Technologies
- Inventor and Lead Designer of Bladeless Drone Propulsion Technologies
- Inventor and Lead Designer of CoHSD (High-Speed RF Link for Satellite Terminal last-mile extensions)

Representative Products and Systems Delivered

- Raspberry Pi UPS PiCO HAT family
- Raspberry Pi DiPPi Product family
- Raspberry Pi Glasses
- CM5 TSN System (U.S.)
- Confidential AI Platform (U.S.)
- ISIDORE™ 50 – Confidential Secure Networking Platform
- Confidential Edge Platform (U.S.)
- MOTUS 32-3 (Satways, Greece)
- CoHSD (MARAC Electronics S.A., Greece)
- NAVTEX Receiver (MARAC Electronics S.A., Greece)

Technical Expertise

Embedded Hardware Design, Firmware Development, RF and Wireless Systems, Satellite Communications, FPGA Design, Industrial Automation, IoT Systems, Raspberry Pi Platforms, Telecommunications Networks, Product Design and Manufacturing, Project Management, Team Leadership.

Languages

Greek (Native), **English** (Professional), **Polish** (Professional)

Detailed Project Portfolio

ISIDORE™ 50

Period: 2025–Present

Role: Lead System Architect and Principal Hardware Designer

Description: High-performance secure networking platform based on three NXP LS1022A processors. Designed for cryptographic and secure-communications applications, it integrates six 1G/2.5G Ethernet ports, USB connectivity, and high-speed packet processing for demanding mission-critical environments.

Participants / Partners: Confidential commercial programme; client identity withheld.

Technologies Used: NXP LS1022A processors, multi-processor embedded-system architecture, 1G/2.5G Ethernet, USB, high-speed packet processing, secure networking and cryptographic-application hardware integration.

DITSEF

Period: 2009–2012

Role: Technical Director, Technology Inventor

Description: Digital & Innovative Technologies for Security & Efficiency of First Responder Operations.

Participants / Partners: EU FP7 Project

Technologies Used: Wireless sensor networks, embedded systems, RF communications, security and emergency-response systems.

ESA (European Space Agency) Wireless Sensor Network

Period: 2010–2012

Role: Lead Designer

Description: Ultra Low Power Heterogeneous Reconfigurable Wireless Sensor Network for spacecraft telemetry.

Participants / Partners: European Space Agency

Technologies Used: Ultra-low-power embedded systems, RF telemetry, wireless sensor networks, low-power electronics and energy-harvesting interfaces.

infiSENSIS

Period: 2010–2011

Role: Inventor and Designer

Description: Patented infrasonic autonomous security system (formerly iCERBERUS).

Participants / Partners: INFITHEON Technologies

Technologies Used: Infrasonic sensing, analogue and digital signal processing, embedded systems and security alarm systems.

FORTRAK

Period: 2010–2011

Role: Inventor and Core Designer

Description: Battlefield tracking system offered to Greek Special Forces.

Participants / Partners: Greek Special Forces

Technologies Used: GPS, embedded systems, military radio communications and wireless networks.

Infrasonic Area Protection Patent

Period: 2010

Role: Co-Inventor

Description: European Patent EP 2 492 881 B1 - System and method for anti-theft protection/alarm.

Participants / Partners: European Patent Office

Technologies Used: Infrasonic sensing, analogue signal conditioning and embedded security/alarm-system design.

ESA (European Space Agency) RF Powering

Period: 2007–2009

Role: Inventor and Lead Designer

Description: Remote RF powering and passive telemetry link for wireless strain sensors.

Participants / Partners: European Space Agency

Technologies Used: RF power transfer, passive telemetry, wireless strain sensing and RF/analogue electronics design.

COASTS

Period: 2006–2007

Role: Technology Supplier

Description: Military ad-hoc long-distance wireless self-organized network.

Participants / Partners: US Army

Technologies Used: Mobile ad hoc networks (MANET), long-range RF communications and self-organising wireless networks.

MARAC AVL

Period: 2004

Role: Technical Project Manager

Description: Automatic Vehicle Location system.

Participants / Partners: MARAC Electronics

Technologies Used: GPS, GPRS, embedded systems and long-distance wireless LAN.

CONCLORE

Period: 2004

Role: Technical Project Manager

Description: Controlled Closed Loop Recycling for Life-Cycle Optimized Industrial Production.

Participants / Partners: EU FP6 Consortium

Technologies Used: RFID, data acquisition and industrial automation.

NAVTEX Receiver II

Period: 2004

Role: Technical Project Manager

Description: Software-defined NAVTEX receiver project.

Participants / Partners: Greek Consortium

Technologies Used: Software-defined radio, RF receivers, digital signal processing and embedded systems.

SaTISFY2000

Period: 1999–2001

Role: Technical Project Manager

Description: Satellite Integrated Services for the Year 2000.

Participants / Partners: Ceryx New Media, ComCenSus, France Telecom, MediaMobile, USHA, Nera, University of Bremen

Technologies Used: Satellite ISDN, DVB-S, FPGA, TCP/IP, TDMA and FDMA.

ArchiPELAGO

Period: 1999–2001

Role: Technical Project Manager

Description: Radio network technology for short-range maritime communications.

Participants / Partners: ENYCA, DDNet, SASEMAR, SOFRELOG

Technologies Used: AIS, SOTDMA, wireless modems and UHF/VHF radio communications.

COMMAN

Period: 1998–2000

Role: Technical Project Manager

Description: Communication Manager System for Data Exchange for Ship Operations.

Participants / Partners: British Aerospace, DERA, EUTELIS, SINTEF, University partners

Technologies Used: Satellite ISDN, TCP/IP, wireless terminals and satellite communications.

PRESTO

Period: 1998–2000

Role: Technical Project Manager

Description: Precision Weather Forecasting System for Multimodal Transport.

Participants / Partners: VTT Finland, Weather Service Finland, Thomson-CSF Airsys

Technologies Used: GSM/SMS, wireless modems, now-casting and telemetry/data communications.

SUMO

Period: 1998–2000

Role: Technical Project Manager

Description: Satellite-UMTS Multimedia Service Trials Over Integrated Testbeds.

Participants / Partners: MediaMobile, Nera, University of Bradford, University of Surrey, Telenor

Technologies Used: S-UMTS, B-ISDN/ATM, satellite terminals, software radio and ISDN bonding.

TOMAS

Period: 1997–1999

Role: Technical Project Manager

Description: Inter-Trial Testbed of Mobile Applications for Satellite Communications.

Participants / Partners: MediaMobile, AXON, INMARSAT, Nera, University of Bremen, Bosch

Technologies Used: Satellite terminals, B-ISDN, software radio, video conferencing and Viterbi/Turbo coding.

EIES

Period: 1995–1998

Role: Technical Project Manager

Description: European Information Exchange Service for Communication Between Harbour Areas.

Participants / Partners: MediaMobile, EUTELIS, ENYCA, Santander Port Authority

Technologies Used: N-ISDN, high-speed radio, video conferencing and Viterbi coding.

Wireless ISDN

Period: 1996–1997

Role: Technical Project Manager

Description: Wireless ISDN technology development project.

Participants / Partners: MediaMobile Communication GmbH

Technologies Used: Altera FPGA, channel coding, ISDN NT/TE interfaces and radio systems.

Cordless High Speed Data Link

Period: 1995–1996

Role: Technical Project Manager

Description: Commercial high-speed wireless data link project.

Participants / Partners: MediaMobile Communication GmbH

Technologies Used: FPGA design, multiplexing, synchronous/asynchronous data interfaces and hardware/firmware development.

GMDSS Simulator

Period: 1995

Role: Senior Engineer

Description: Global Maritime Distress and Safety System Simulator.

Participants / Partners: MARAC Electronics

Technologies Used: C programming, PC architecture and maritime communications simulation.

MOEBIUS

Period: 1992–1995

Role: Senior Engineer / Team Leader

Description: Mobile Experimental Broadband Interconnection Using Satellites.

Participants / Partners: ABB NERA, INMARSAT, University of Bremen, NTUA and others

Technologies Used: Satellite communications, ISDN bonding, FPGA and broadband wireless systems.

Digital Selective Calling

Period: 1991–1992

Role: Engineer / Team Leader

Description: Maritime communication equipment.

Participants / Partners: MARAC Electronics

Technologies Used: RF modems, Intel 80188, embedded systems and real-time communications.

Real-Time NAVTEX Simulator

Period: 1991

Role: Engineer

Description: Real-time NAVTEX simulator under DOS.

Participants / Partners: MARAC Electronics

Technologies Used: C programming, real-time simulation and PC architecture.

NAVTEX Receiver NMR-100

Period: 1987–1992

Role: Engineer, Team Leader, Technical Project Manager

Description: Commercial maritime NAVTEX receiver. Over 5,500 units sold.

Participants / Partners: MARAC Electronics

Technologies Used: RF receiver design, embedded C/Assembly, Zilog and Intel processors and production engineering.

Microsystem R&D Projects

Period: 1986–1987

Role: Engineer

Description: Embedded hardware and software design projects.

Participants / Partners: Microsystem S.A.

Technologies Used: Z80, 8080 and 8086 processors; Pascal, Assembly and PL/M; CP/M and DOS; embedded hardware/software development.

Patents, Inventions and Advanced Technology Developments

- Co-Inventor of European Patent EP 2 492 881 B1
- System and Method for Anti-Theft Protection and Alarm Using Infrasonic Area Protection Technology.
- Inventor of infiSENSIS® Infrasonic Autonomous Security System
- An innovative perimeter protection and intrusion detection system based on infrasonic sensing technology.
- Inventor of FORTRAK® Battlefield Tracking System
- A real-time battlefield and personnel tracking system for military and security applications.
- Inventor of Long-Range Self-Organising Wireless Military Network Technologies
- Self-healing wireless communication networks for military and emergency-response applications.
- Inventor of Wireless Sensor Network Technologies for Space Applications
- Ultra-low-power wireless sensor networks for spacecraft telemetry and monitoring under ESA programmes.
- Inventor of Remote RF Powering and Passive Telemetry Technologies
- Remote RF-powered sensing systems and passive telemetry solutions.

- Inventor and Lead Designer of High-Efficiency Axial Flux Electric Motor Technologies
- Lightweight, high-torque axial flux electric motors employ PCB stators and permanent magnet rotors.
- Inventor and Lead Designer of Bladeless Drone Propulsion Technologies
- Development of novel bladeless aerial propulsion systems incorporating axial flux motors, ducted airflow architectures, advanced aerodynamic principles, and intelligent control systems for next-generation unmanned aerial vehicles (UAVs). The technology focuses on achieving high propulsion efficiency, improved safety, reduced acoustic signature, enhanced reliability, and innovative airflow management for commercial, industrial, and specialized aerospace applications.

Representative Products and Systems Delivered

- **Confidential Encryption AI Platform (U.S.)**
- **ISIDORE™ 50 – Confidential Secure Networking Platform**
- **MOTUS 32-3 Early Warning Seismograph (Satways, Greece)**
- **infiSENSIS® Infrasonic Security System**
- **FORTRAK® Battlefield Tracking System**
- **High-Efficiency Axial Flux Motor Platform**
- **Various Raspberry Pi dedicated HATs**
- **Industrial Raspberry Pi PLC Controllers**
- **Industrial IoT and Telemetry Platforms**