



Dr. Roberto Sabatini

Professor of Aerospace Engineering at Khalifa University
Honorary Professor of Aerospace Engineering and Aviation at RMIT University
IEEE AESS Board of Governors Member and Vice President for Technical Operations

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Areas of Expertise

- Aerospace and Defence Systems
- Research and Innovation Management
- Digital Transformation and Sustainability
- Intelligent and Autonomous Systems
- Avionics and Air Traffic Management
- Guidance, Navigation and Control
- Sustainable Aviation Technologies

Industry Expertise

- Design, Testing and Certification of Aerospace and Defence Systems
- UAS/UAM Systems Design and Testing
- Space Systems Design and Testing
- ATM, UTM and AAM Systems Design
- Vehicle Communication, Navigation and Surveillance Systems
- Multisensor Data Fusion for Aerospace and Defence Applications
- Cyber-Security of Aerospace and Defence Systems

Education, Professional Memberships and Certifications

- PhD Aerospace Engineering, Cranfield, UK
- PhD Geospatial Systems, Nottingham, UK
- MSc Astronautics, Rome Sapienza, Italy
- MSc Navigation Systems, Nottingham, UK
- EMBA, Quantic, Washington DC, USA
- Flight Test Engineer Licence, Italy
- Aircraft Private Pilot Licence, Italy
- Remote Pilot License, Australia
- RAF Aero-Systems Course, UK
- Air Force Reserve Officer (Colonel), Italy

Professional Profile

With over thirty years of experience in industry, government and academia across five continents, Dr. Sabatini has a proven track record of impactful research, education and entrepreneurship, embracing different engineering, technology and management disciplines. Throughout his career, he has held permanent, visiting and honorary appointments across Europe, North America, Australia, Africa and Asia, reflecting a truly global perspective and a strong commitment to interdisciplinary and transdisciplinary collaborations. My primary focus is on advancing the science, technology and commercial impact of intelligent and autonomous systems, working at the intersection of digital transformation, sustainable development and innovation management. His education and research background encompasses diverse academic disciplines such as Aerospace Engineering, Geospatial Science, Avionics and Air Traffic Management, Intelligent Transport and Mobility Systems, Artificial Intelligence and Technology/Innovation Management. Currently, he is a Professor of Aerospace Engineering at Khalifa University of Science and Technology (Abu Dhabi, UAE), and serves as a Board Member/Chair or Consultant for various industrial, government and professional organizations in the UAE and internationally.

Key achievements

- Author of more than 300 publications, including: 5 edited and 4 authored books; 42 book chapters; 117 articles in peer-reviewed international journals; 184 articles in peer-reviewed conference proceedings; 27 invited plenary and keynote papers; 44 public lectures and seminars; and 127 R&D reports delivered to industry
- Recognized as Best-in-Field National Scientist in Aerospace Engineering and Aviation by the Australian Annual Research Report (2021) and listed in the top 2% most cited researchers globally in Aerospace and Aeronautics.
- Recipient of prestigious national and international awards, including: Distinguished Leadership Award – Aviation/Aerospace Australia (2021); Scientist of the Year – Australian Defense Industry Awards (2019); Professorial Scholarship Award – Northrop Grumman Corporation (2017); Science Award – Sustainable Aviation Research Society (2016); Arch T. Colwell Merit Award – Society of Automotive Engineers (2015); Scientific Achievement Award – NATO Research & Technology Organization (2008).
- Fellow and Executive Member of the Institution of Engineers Australia (FIEAust, EngExec), Fellow of the Royal Aeronautical Society (FRAeS), and Fellow of the Royal Institute of Navigation (FRIN), and Fellow of the International Engineering and Technology Institute (FIETI).
- Board of Governors Member and Vice President Technical Operations – IEEE Aerospace and Electronic Systems Society (AESS); Chair of the AESS Avionics Systems Panel; and AESS Distinguished Lecturer (Aerospace Systems).
- Editorial board member of high-impact Aerospace, Robotics and Navigation Systems journals, including: Progress in Aerospace Sciences (Editor), IEEE Transactions on Aerospace and Electronic Systems (Senior Editor), Robotica (Associate Editor), Journal of Navigation (Associate Editor), and Aerospace Science and Technology (Associate Editor).
- Research grants awarded from industry and government: AU\$35,795,830. Managed industry budgets: >AU\$25M/year.



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Employment

2021-present, Professor of Aerospace Engineering, Khalifa University of Science and Technology, UAE
2021-present, Honorary Professor in the STEM College (Aerospace/Aviation and SLWDAC), RMIT University, Australia
2019-present, Director and Chair of the Board, ASTRA Systems Pty Ltd, Melbourne, Australia
2015-2021, Professor of Aerospace Engineering and Aviation, RMIT University, Australia
2013-2015, Associate Professor in Aerospace Engineering and Aviation, RMIT University, Australia
2011-2013, Assistant Professor in Avionics and Air Traffic Management, Cranfield University, UK
2010-2011, R&D Manager for Guided Missiles, MoD Airworthiness & Procurement Agency, Rome, Italy
2006-2010, Software Block Cycle Manager, US DoD, PEO C4I&SPACE/JPRO JTRS10, MIDS IPO, San Diego, USA
1993-2006, Flight Test Engineer/Avionics and Weapon Systems, ITAF Research & Flight Test Centre, Pratica di Mare, Italy

Major Projects

Dr. Sabatini has led several Design, Development, Test and Evaluation (DDT&E) projects and attracted over USD 27 million in external industry/government R&D funding from various sources, including the European Commission, the Australian Government Research Funding Agencies, the Defence Science and Technology Group (DSTG), the Defence Science Institute (DSI), and several industry partners. Recent research projects (2016-2022) include:

- Australian DoD – Above Water Laser Communications
- DSTG – Satellite Resilience and Autonomous Manoeuvring
- Northrop Grumman – Human-Autonomy Teaming for Multiple UAS and ISR Operations
- SmartSat CRC – Artificial Intelligence for Distributed Satellite Systems Autonomous Operations
- Lockheed Martin STELaRLab – Artificial Intelligence for Aerospace/Defence Systems
- Australian DoD Defence Innovation Hub – Stop-Rotor VTOL Unmanned Aircraft Design and Testing
- DSI – Low SWaP-C Navigation and Guidance System for UAS Operations
- Australian DoD/LEA – Diagnostics and Prognostics Models and Software for Health and Usage Monitoring Systems
- Civil Aviation Safety Authority (Australia) – Airspace Risk Modelling Research Program (ATM, UAS & Launch/Re-entry)
- BMT Defence and Security Australia – An Intelligent Vision Based Surveillance System for UAS Search-and-Rescue
- THALES – Human-Autonomy Interactions for Very Low-Level ATM Operations: UTM and Urban Air Mobility
- Northrop Grumman: Cognitive Processing and Machine Learning for Aerospace and Defence Systems
- DSTG: Cognitive and Adaptive Human-Machine Interfaces for Aerospace Systems: UAS Command and Control
- DSI/DSTG Maritime Future Technology Watch Program: Decision Support Tool for Reduced Hazards and Incidents
- Thales Australia – Next Generation ATM Systems: 4D Trajectory Optimization and Dynamic Airspace Management



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- RAF Aero-Systems Course, UK
- Air Force Reserve Officer (Colonel), Italy

Industry Experience

Dr. Sabatini performs research, consultancy and DDT&E activities on aerospace and defence systems, with a focus on: Avionics and Air Traffic Management, Hybrid-Electric Propulsion Systems, Navigation and Flight Control, Unmanned Aircraft Systems, Human-Robotics Interactions, and Trusted Autonomous Systems. His work has led to the development of innovative navigation and guidance techniques; UAS/UMS sense-and-avoid; optimal control and trajectory optimisation software; electro-optical and laser systems; GNSS integrity augmentation; cognitive ergonomics; and enhanced human performance solutions. Dr. Sabatini's research and professional interests include:

- Aeronautics; Astronautics; Geospatial Science; Defence and Security
- Digital Transformation; Innovation Management; Innovation Ecosystem
- Aerospace Information Systems; Digital Avionics; Air Traffic Management
- Cyber-Physical Systems; Intelligent and Autonomous Systems; Cybersecurity
- Unmanned Aircraft Systems (UAS); UAS Traffic Management; Advanced Air Mobility
- Guidance, Navigation and Control Systems; Optimal Control; Trajectory Optimization
- Distributed Space Systems; Space Situational Awareness; Space Traffic Management
- Sustainable Development; Circular Economy; Sustainable Aviation and Space Transport
- Spacecraft Dynamics and Control; Space Transportation Systems; Suborbital Spaceflight
- Human Factors Engineering; Human-Machine Interactions; Cognitive Human-Machine Systems
- Global Navigation Satellite Systems (GNSS); Integrated Navigation Systems; GNSS Augmentation
- Aerospace Remote Sensing; Electro-Optics and Lasers; Acoustic Sensors; Radar and Lidar Systems
- Artificial Intelligence; Machine Learning; Fuzzy Logic; Genetic Algorithms; Knowledge-Based Systems

Teaching Experience

Dr. Sabatini has teaching experience in the following main subjects:

- Sustainable Aviation Technology and Innovation (Melbourne)
- Digital Avionics and Space Systems (Abu Dhabi, Melbourne, Turin)
- Navigation and Guidance Systems (Abu Dhabi, Cranfield, Greenwich)
- Systems and Software Engineering (Melbourne, Abu Dhabi, Turin, Chosun)
- Flight Dynamics and Control (Abu Dhabi, Melbourne)
- Aircraft Systems (Melbourne, Singapore and Hong Kong)
- Spacecraft Systems Design (Melbourne, Abu Dhabi)
- Avionics and Air Traffic Management (Melbourne, Abu Dhabi, Turin, Daejeon)