



Name: **Roberto Sabatini**
 Position: **Professor of Aerospace Eng. and Aviation. Group Leader, Intelligent Transport Systems (Aero & Surface)**



Field of Research:
Aerospace Systems, Unmanned Aircraft Systems, Avionics and Air Traffic Management Systems, Aviation and Intelligent Transport

**School of Engineering
 Aerospace and Aviation**

Professional Background

Education

- PhD, Cranfield University, UK
- MEng, University of Rome, Italy
- MSc, Nottingham University, UK
- Flight Test Engineer Licence, Italy
- Aircraft Private Pilot Licence, Italy
- Electronic Warfare Officer, UK
- RAF Aero-Systems Course, UK
- Air Force Officer Training (Avionics), Italy

Employment

- 2015- , Professor of Aerospace Engineering & Aviation, RMIT University, Australia
- 2014- , Head of Group for Intelligent Transport Systems
- 2014- , Aviation and Aerospace Systems Research Program Leader, RMIT University, Australia
- 2013-2015. Associate Professor in Aerospace Engineering, RMIT University, Australia
- 2011-2013. Lecturer, Avionics and ATM Systems, Cranfield University, UK
- 2010-2011. PM Avionics/Weapon Systems, Defence Airworthiness & Procurement Agency, Rome, Italy
- 2006-2010. SW Block Cycle Manager, US Dep. of Defense, JPRO JTRS10, MIDS IPO, San Diego, USA
- 1993-2006. Flight Test Eng./Avionics R&D, ITAF Research and Flight Test Centre, Pratica di Mare AFB, Italy

Teaching and Research

Courses

Professor Sabatini teaches into the following courses:

- Avionics and Air Traffic Management Systems (Melbourne)
- Engineering Sustainability in Aviation (Melbourne)
- Sustainable Aviation (Melbourne, Singapore and Hong Kong)
- Aircraft Systems (Melbourne, Singapore and Hong Kong)

Research Experience

Professor Sabatini performs research in aerospace and intelligent transport systems, with a focus on Communication, Navigation and Surveillance/Air Traffic Management (CNS/ATM), avionics, airport technology and Unmanned Aircraft Systems (UAS). Prof Sabatini's research has led to significant discoveries, including innovative techniques for air/surface navigation and guidance; optimal control and trajectory optimisation; GNSS integrity augmentation; aeronautical communications; dynamic airspace management; military C4ISR; UAS sense-and-avoid; and aviation human factors engineering (cognitive ergonomics, trusted autonomy and enhanced human performance). Prof Sabatini has authored more than 300 publications, which include including 5 books, 193 articles in refereed international journals and conference proceedings, 5 book chapters, 21 invited plenary and keynote papers, 33 research seminars/tutorials, and 94 research reports. In his career, he received several scientific awards including the NATO Research and Technology Organization Scientific Achievement Award (2008), the SAE Arch T. Colwell Merit Award (2015), and the SARES Science Award (2016).

Research Projects and other Activities

Recent Research Projects

Professor Sabatini has attracted over \$10 million in external research funding over the past 15 years from various sources, including the European Commission, the Australian Government Research Funding Agencies, the Defence Science and Technology (DST) Group, the Defence Science Institute, and several industry partners. Recent projects include:

- Defence Science and Technology Group: Cognitive and Adaptive Human-Machine Interfaces for Aerospace Applications - Chief Investigator
- THALES-Australia: Development of Cognitive Human-Machine Interfaces and Interactions for Next Generation Air Traffic Management Systems - Chief Investigator
- Defence Science Institute: Decision Support Tool to Reduce Maritime Platform Hazards and Incidents - Chief Investigator
- Defence Science Institute: Development of the dynamics model of the Stoprotor UAV for accurate performance evaluation - Chief Investigator
- THALES-Australia: Next Generation Air Traffic Management (NG-ATM) Systems (Multi-Objective 4D Trajectory Optimisation in Dynamic Airspace) - Chief Investigator

Other Professional Activities

Professor Sabatini is a Fellow of the Royal Aeronautical Society (FRAeS) and of the Royal Institute of Navigation (FRIN), a Senior Member of IEEE and AIAA, and a Life Member of AFCEA. Prof Sabatini is Technical Editor for the IEEE Transactions on Aerospace and Electronic Systems, Senior Editor for the Journal of Intelligent and Robotic Systems and Associate Editor for Aerospace Science and Technology.

Selected Publications

1. S. Bijjahalli, S. Ramasamy and R. Sabatini, "A Novel Vehicle-Based GNSS Integrity Augmentation System for Autonomous Airport Surface Operations." J. of Intelligent and Robotic Systems, Vol. 85, pp. 1-25. 2017.
2. T. Kistan, A. Gardi, R. Sabatini, S. Ramasamy and E. Batuwangala, "An Evolutionary Outlook of Air Traffic Flow Management Techniques." Progress in Aerospace Sciences, Vol. 88, pp. 15-42. 2017.
3. F. Cappello, S. Ramasamy and R. Sabatini, "A Low-Cost and High Performance Navigation System for Small RPAS Applications." Aerospace Science and Technology, Vol. 58, pp. 529-545. 2016.
4. J. Liu, A. Gardi, S. Ramasamy, Y. Lim and R. Sabatini, "Cognitive Pilot-Aircraft Interface for Single-Pilot Operations." Knowledge-Based Systems, Vol. 112, pp. 37-53. 2016.
5. V. Sharma, R. Sabatini and S. Ramasamy, "UAVs Assisted Delay Optimization in Heterogeneous Wireless Networks." IEEE Communications Letters, Vol. 20, Issue 12, pp. 2526-2529. 2016.
6. S. Ramasamy, R. Sabatini, A. Gardi and J. Liu, "LIDAR Obstacle Warning and Avoidance System for Unmanned Aerial Vehicle Sense-and-Avoid." Aerospace Science and Technology, Vol. 55, pp. 344-358. 2016.
7. A. Gardi, R. Sabatini and S. Ramasamy, "Multi-Objective Optimisation of Aircraft Flight Trajectories in the ATM and Avionics Context." Progress in Aerospace Sciences, Vol. 83, pp. 1-36. May 2016.
8. R. Sabatini, M.A. Richardson, A. Gardi and S. Ramasamy, "Airborne laser sensors and integrated systems." Progress in Aerospace Sciences, Vol. 79, pp. 15-63. Nov 2015.