UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II

Scuola di Dottorato in Ingegneria Industriale

DIPARTIMENTO DI INGEGNERIA INDUSTRIALE

Three day short course 25-27 October 2016

Unmanned Aircraft Systems (UAS) Integration into Civil Airspace and the Future Air Traffic Management (ATM) System

David R. Maroney, MITRE

About the speaker

David Maroney is a Principal Systems Engineer with MITRE's Center for Advanced Aviation Systems Development (CAASD). He has worked in aviation research for over 30 years, most recently on the integration of UAS in the NAS. He is the project team manager for the FAA UAS work program, has been an experiment lead MITRE's Collaborative Experimentation Environment (CEE) for UAS related simulations, and has served as Principle Investigator for internal MITRE research exploring collision avoidance technology for unmanned aircraft operating in an environment with non-cooperative targets. Over the years, he has contributed analysis and operational evaluation expertise to a number of aviation areas, such as air traffic procedural enhancements, program requirements engineering, and advanced concepts development.

Dave obtained his BS in Electrical Engineering from in 1980, and his Masters in EE in 1981, both from the University of Virginia. He is an Associate Fellow in AIAA, and has been a member since 2000. He has served on the Air Transportation Systems (ATS) Technical Committee, including Chair, and has served on the planning committee of the AIAA Aviation Technology, Integration, and Operations (ATIO) conference for years, including Technical Chair. He is currently Deputy Director of the Aircraft and Atmospheric Systems Group, and has helped AIAA develop the New Event Model, serving as the Technical Chair of Aviation 2013, and the General Chair of Aviation 2014.

Course outline

Module 1: Defining UAS
- What are UAS? How they differ from manned aircraft
- Interacting with manned aircraft - issues in flying in the current air traffic control environment
- How to think about unmanned aircraft in a manned aircraft world

Module 2: UAS Issues
- Aircraft Design differences
- Command and Control (C2) issues - manual control vs autonomy
- Detect and Avoid - the most difficult problem to solve

Module 3: UAS Integration
- Other UAS Issues
- Regulatory concerns (past Part 107)
- The path forward - from Accommodation to Integration

About MITRE

MITRE (www.mitre.org) is a not-for-profit organization that operates research and development centers sponsored by the federal government. It operates FFRDCs—federally funded research and development centers. Among these research centers, the Center for Advanced Aviation Systems Development (**CAASD**) works with the Federal Aviation Administration (FAA) to advance the safety, security, effectiveness, and efficiency of aviation in the United States and around the world.
CAASD's groundbreaking contributions to aviation include:
- Creating the prototype for the Traffic Alert and Collision Avoidance System (**TCAS**), one of the most important tools in pilot's safety arsenal.
- Engineering Automatic Dependent Surveillance-Broadcast, or **ADS-B**, which enabled the shift from a radar-based system to one that uses global satellite networks.
- Building the prototype of the User Request Evaluation Tool (**URET**).
- Improving airspace use nationwide through the formulation of satellite-based navigation standards and procedures.
- Developing the first NAS-wide simulation model—the National Airspace System Performance Analysis Capability (**NASPAC**)
- Conducting collaborative research to facilitate the safe integration of unmanned aircraft systems (**UAS**) into the NAS.

Course location and schedule

The course will be held at via Nuova Agnano Engineering Building

Date	Time	Lecture room
October, Tuesday 25th 2016	14:30 – 18:30	T.A.5
October, Wednesday 26th 2016	14:30 – 18:30	I.A.5
October, Thursday 27th 2016	14:30 – 18:30	I.A.5

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