

# 21<sup>st</sup> MEDITERRANEAN CONFERENCE ON CONTROL AND AUTOMATION

## Workshop Proposal

**Title:** *UAV Autonomy and State-of-the-art Technologies and Applications in Mediterranean Countries*

**Duration:** Half Day

**Organizers:** Dr. George J, Vachtsevanos  
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### Workshop Summary

Autonomy, in the context of an integrated system (unmanned system, spacecraft, aircraft, etc.) is the capability of the system to operate independently from external control. Autonomy is also related to system functionality and capabilities, and as such, there are levels of autonomy in a system from basic automation (mechanistic execution of action or response to stimuli) through partial autonomy, flexible autonomy and fully autonomous systems, which are capable of acting independently in dynamic and uncertain environments.

UAVs are playing an increasingly important role in civilian/public domain applications such as forest protection, early fire detection, search and rescue, emergency response, surveillance and reconnaissance, traffic monitoring, crime prevention, infrastructure inspection, environmental monitoring and border patrol, to name but several potential applications.

Focusing on European Union (EU) in general and on Mediterranean countries in particular, UAV research and development has produced remarkable results and UAV systems are currently demonstrating applicability and utilization for diverse applications. Funding from the EU has also contributed to the advancement of the field.

This workshop is aiming at bringing together representative groups to discuss cutting edge UAV technologies and their implementation on specific applications, demonstrating the tools for navigation/control and improved system autonomy. The Workshop will include presentations from the different groups, followed by a panel discussion on challenging issues preventing full utilization of UAVs in civilian domains.

The Workshop is suitable for scientists, engineers and practitioners involved in R&D in the area of complex and/or unmanned systems.

A list of representative presentations follows. The list will be finalized / updated.

### **Tentative List of Presentations**

1. Matt. J. Rutherford and Kimon P. Valavanis, *UAV/UAS Challenges in civilian/public domain Applications*
2. George J. Vachtsevanos, *The Concept of Autonomy in Design and Operation of Complex Autonomous Systems*
3. George J. Vachtsevanos, *Unmanned Systems in Surveillance, Rescue and Forest Fire Prevention*
4. Kimon P. Valavanis and Matt J. Rutherford, *UAV Systems for traffic Monitoring*

Invitations have also been extended to Italian, Greek and Spanish groups to present their findings.