

## 2nd International Workshop on Wireless Networking for Unmanned Systems: Architectures, Protocols and Applications

Unmanned systems are increasingly used in a large number of contexts to support humans in dangerous and difficult-to-reach environments: e.g. ground-based robotics, aerial sensor systems, space and underwater applications. In order to fulfill particularly challenging tasks, visionary scenarios foresee unmanned vehicles to be organized in networked teams and even swarms. The corresponding wireless networks need to provide highly reliable and delay-tolerant control links for the management of the behavior of the unmanned vehicles as well as data links to reliably transfer telemetry and sensor data respectively. At the same time, unmanned vehicles offer the capability to provide ad-hoc wireless networks, for example to facilitate temporary hot spots and compensate network outages in case of public events and emergencies.

The successful first workshop at GLOBECOM 2010 focused mainly on unmanned aerial vehicles ([www.wi-uav.org](http://www.wi-uav.org)), while the newly proposed workshop for GLOBECOM 2011 addresses any kind of unmanned systems. The workshop aims to discuss most recent results of various international research initiatives on new communications networks enabling the efficient operation of teams of unmanned vehicles/systems operating on the ground, in the air, underwater and in space scenarios. Contributions addressing heterogeneous scenarios, e.g. combination of aerial and underwater devices are highly welcome.

The focus of the workshop will be solely based on projects and research aiming at civilian applications.

### Committee

#### Organizing Chairs:

Prof. Jonathan How, MIT, USA  
Prof. Christian Wietfeld, TU Dortmund, Germany

#### Technical Program Committee (tentative):

Prof. Mostafa H. Ammar, Georgia Tech, USA  
Prof. Brian Argrow, University of Colorado, USA  
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Prof. Antonios Tsourdos, Cranfield University, UK  
Prof. Kimon Valavanis, University of Denver, USA  
Prof. Luiz Vieira, Universidade de Minas Gerais, Brazil  
Prof. Dario Vlah, Harvard University, USA  
Yifeng Zhou, Comm. Research Centre, Canada

### Technical Topics

- Communication architectures and protocols for unmanned vehicles communication in challenging environments: air, underwater, etc., indoor/outdoor
- Ad-hoc networking, routing, handover and meshing
- QoS mechanisms and performance evaluation
- Agent based mobility, multi-platform control, cognitive capabilities and swarming
- Communication techniques for navigation, control and guidance
- Advances in antenna design and MIMO systems
- Interworking with satellites and terrestrial networks
- Communication and system design of mission control centers (MCC)
- System modeling and performance evaluation
- Results from prototypes, test-beds and demonstrations

### Call for Papers

Proposals for papers related to the topics listed above are solicited. Maximum paper length is five pages. IEEE paper template is to be used.

### Call for Exhibits & Demonstrations

During the workshop participants are welcome to show current prototypes and demonstrators to underline research progress.

### Important Dates

Paper Submission: 5 July 2011

Notification of Acceptance: 15 August 2011

Camera-ready: 30 August 2011

Workshop date: 5 or 9 December 2011