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Introduction

The Unmanned Systems Technology X Conference consisted of ten sessions during a three-and-a-half-day time period devoted to current robotic technologies relevant to commercial and military applications. The four sessions on Wednesday were Self-Organizing Collaborative ISR Robotic Teams I and II and Special Topics I and II were joint sessions with Conference 6981, Defense Transformations and Network-Centric Systems. Several papers in the joint session discussed UGV/UAV/manned vehicle collaborative operations on the future battlefield, describing in some detail the role of network-centric warfare in a collaborative environment.

The Perception session contained a number of papers on novel sensor technologies for positive and negative obstacle detection, avoidance, and negotiation in complex terrain. There was considerable discussion on the sensor performance requirements necessary for autonomous navigation in difficult terrain mobility environments as well as motion tracking and situational awareness for UAV systems. Tuesday contained sessions titled Intelligent and Autonomous Behaviors I and II along with Mobile Manipulators. The latter session discussed a number of topics including the synergism of manipulator arms on highly mobile platforms and their impact upon the design of intelligent behavior algorithms for complex tasks. Other technology topics ranged from bio-inspired sensor paradigms, ultrawideband radar, GPS and dead reckoning localization applications systems, LADAR/LIDAR, and vision-based imaging systems. The Government session contained papers from U.S. and Canadian authors discussing current robotics technology programs including subjects such as cooperative robotics, autonomous systems, tactical behaviors, and EOD robots.

Other sessions examined current topics on safety issues for UxVs; standards, metrics, and architectures related to urban search and rescue robots; and intelligent behaviors and learning. The poster session contained six additional papers on a variety of subjects including mobility analysis of robotic platforms, self learning strategies, and EOD dexterous mobile arm manipulators. Two invited papers of special interest were: "Perspectives on the DARPA urban challenge" by Doug Gage and "Robotics technology development at GDRS" by Chuck Shoemaker.

We hope you enjoy these proceedings and are able to attend our conference next year.

Grant R. Gerhart
Douglas W. Gage
Charles M. Shoemaker