

## PAPER SUBMISSION:

Authors are encouraged to submit high-quality, original work that has neither appeared in, nor is under consideration by, other journals.

All papers will be reviewed following standard reviewing procedures for the Journal.

Papers must be prepared in accordance with the Journal guidelines:

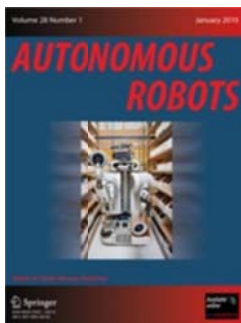
<http://www.springer.com/10514>

Manuscripts must be submitted to: <http://AURO.edmgr.com>. Choose "Online Decision Making in Multi-Robot Coordination" as the article type.

### Important Dates

- **Paper submission deadline:**  
December 10, 2016
- **Notification to Authors:**  
February 10, 2017
- **Final manuscript due:**  
March 31, 2017
- **Final decision:**  
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# AUTONOMOUS ROBOTS

*~Special Issue Call for Papers~*

## Online Decision Making in Multi-Robot Coordination

### Guest Editors:

**Jan Faigl**, Czech Technical University in Prague, Czech Republic

**Geoffrey A. Hollinger**, Oregon State University, USA

**Jen Jen Chung**, Oregon State University, USA

Online decision making is an important part of robotic problems where mobile robots operate in unknown or partially known dynamic environments in order to acquire information about some studied phenomena. This problem can be found in the robotic problems like autonomous data collection, environment monitoring, and robotic exploration missions that can be generally considered as variants of robotic information gathering. The key aspect of these problems is that the overall mission performance can be evaluated after the mission is completed and efficient decision making depends on local in-situ decisions made according to the information acquired during the mission.

This special issue aims at presenting the state of the art on approaches of online (in-situ) decision making to coordinate a team of mobile robots to fulfill a global mission objective by individual actions performed by particular team members. The particular focus is on missions like multi-robot exploration, persistent environment monitoring, and adaptive information gathering. The fundamental challenge of these missions is that little or no information about the environment is known in advance. Therefore, one of the problems needed to be addressed is how to trade-off exploration of the unknown parts of the environment to collect new information about the operational environment and exploitation of the current knowledge acquired so far to improve the mission performance.

Submissions of original research papers addressing online decision making and multi-robot coordination are invited with a particular emphasis on theoretical and experimental results with robotic systems deployed in real-world scenarios.

Related topics of interest include, but are not limited to:

- Distributed algorithms and decentralized approaches for multi-robot coordination
- Robustness of online decision making policies
- Communication dependency in multi-robot systems
- Exploration, patrolling, or search tasks in unknown or dynamic environments
- Multi-robot informative path planning and cooperative persistent environment monitoring
- Benchmarks, performance metrics, and experimenting methodology for in-situ decision making strategies
- Applications of multi-robot systems with ground, aerial, underwater, and other types of homogenous or heterogeneous teams of robots
- Theoretical foundations for multi-agent online decision making with limited prior knowledge about the problem domain
- Single robot approaches that deal with foundations for online decision making and that can be extended to multi-robot systems