

Special Issue

Swarm Communication, Localization and Navigation

Message from the Guest Editors

Autonomous robotic swarms are an emerging concept envisioned for a variety of sensing applications in the field of space exploration, search and rescue, disaster management, and environmental monitoring. In a swarm system, a plethora of spatially separated autonomous agents regularly exchange information and coordinate to achieve a certain task in various environments, such as on the surface, in the air, in space or in the deep sea. Collaboration based on communication is key to increase the agent's situational awareness and navigation capability, which is essential for a high degree of autonomy. Despite the great potential of autonomous robotic swarms, navigation and joint system optimization is a challenging problem due to the high dimensionality of the network. Additionally, the interdisciplinary involvement of signal processing, communications, control, robotics, and artificial intelligence makes the design of a swarm system an exciting and timely relevant topic.

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