CALL FOR PAPERS
SPECIAL SESSION ON
"Decentralized controllers in robot swarm systems"
for CODIT'20
June 29 - July 2, 2020 ▪ Prague, Czech Republic

Session Co-Chairs:
Dr. Belkacem Khaldi, Computer Science Higher School of Sidi Bel Abbes, Algeria
Dr. Fouzi Harrou, King Abdullah University of Science and Technology (KAUST), Computer, Electrical and Mathematical Sciences and Engineering (CEMSE) Division, Saudi Arabia (*fouzi.harrou@kaust.edu.sa*)
Dr. Abdelkader Dairi, University of Science and Technology of Mohamed Boudiaf, Oran, Algeria
Prof. Foudil Cherif, University of Mohamed Khider, Biskra, Algeria.

Session description

Swarm robotics is the systematic coordination of groups of simple autonomous robots with low computational and communication capabilities designed specifically to perform cooperative tasks that are beyond the capability of a single robot. Swarm robotics systems are used today in many applications scenarios that generally require collaboration, coordination and communication between robots. They can be applied to perform missions such as search and rescue, and monitoring and surveillance. In this special session, the interest is devoted to address decentralized controllers in such swarm robotics systems to tackle complex tasks. In particular, we are interesting in achieving desired collective objectives via decentralized controllers distributed over individual robots.

The aim of this special session is to discuss innovative methods and emergent techniques for modeling and designing decentralized controllers addressed to tackle collaborative tasks with swarm robotics systems. The call particularly encourages submissions on formal methods and approaches that are inspired from nature.

Potential topics include but are not limited to:

- Bio-inspired swarm robots controllers
- Decentralized swarm robots control systems
- Monitoring approaches on swarm robotics systems
- Swarm robotics Collective behaviors
- Fault detection in swarm robotics systems
- Secure/Robust Communication among robots swarm Systems
- Modeling, simulation and design of large-scale robots swarm.
- Swarm intelligence based control approaches
- Distributed controllers for Swarm Unmanned Areal vehicles (UAVs), swarm autonomous underwater vehicles (AUVs), and swarm Autonomous surface vehicles (ASVs)
- Machine learning and deep learning applied to multi-robotics and swarm robotics.

SUBMISSION

Papers must be submitted electronically for peer review through PaperCept by **January 24, 2020: http://controls.papercept.net/conferences/scripts/start.pl**. In PaperCept, click on the **CoDIT 2020 link "Submit a Contribution to CoDIT 2020" and follow the steps.**

IMPORTANT: All papers must be written in English and should describe original work. The length of the paper is limited to a maximum of 6 pages (in the standard IEEE conference double column format).

DEADLINES

January 24, 2020: deadline for paper submission

April 10, 2020: notification of acceptance/reject

May 7, 2020: deadline for final paper and registration