

IEEE ICUS 2021

Invited Session Summary

Title of Session

Distributed Control and Optimization for Unmanned Systems

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Details of Session(including aim and scope)

As an important ingredient of artificial intelligence, unmanned systems have been extensively studied all over the world in recent years, which have a large number of stunning applications in reality, such as target protecting by formation control of UAVs and robots. As efficient techniques and tools for unmanned systems, distributed control and optimization has been a hot topic in recent decades, especially for multi-agent networks, mostly inspired by enormous advancement of low-cost devices, nimble robots, and high-speed computing, etc. Therefore, a wide range of literature has addressed distributed control and optimization for unmanned systems until now, whose applications include autonomous driving, intelligent transportation, and artificial intelligence, etc.

In general, the objective of distributed control and optimization for unmanned systems is to design controllers/algorithms to deal with a specified global task, including localization, formation control, online decision making, and target protection.

The purpose of this session is to bring together the researchers and practitioners to discuss frontiers in distributed control and optimization for unmanned systems over multi-agent networks, including learning based control, and distributed estimation for multi-agent systems, and machine learning, etc.