

# IEEE ICUS 2021

## Invited Session Summary

<b>Title of Session</b> Cross-Domain Collaborative Unmanned Systems
<b>Name, Salutation, Affiliation and Email of Organizers</b> <b>1. Prof. Yi Yang</b> Beijing Institute of Technology, China yang_yi@bit.edu.cn <b>2. Dr. Yufeng Yue</b> Beijing Institute of Technology, China yueyufeng@bit.edu.cn
<b>Details of Session(including aim and scope)</b> <p>Recently, cross-domain collaborative unmanned systems have attracted increasing attention due to their highly complementary perception and mobility characteristics. Cross-domain collaborative unmanned systems can be evident as physical difference between unmanned systems (UAV, UGV, USV, etc.) or as behavioral difference when unmanned systems serve diverse roles in a cooperating team. As we look to the future, cross-domain collaborative unmanned systems that can operate autonomously in complex environments remain a significant challenge. This invited session will focus on cross-domain collaborative unmanned systems, including areas of perception, localization, mapping, navigation, control, machine learning, multi-robot systems and relevant applications.</p> <p>The purpose of this invited session is to create a forum for scientists, engineers and practitioners throughout the world to present the latest theoretical and technological achievements in cross-domain collaborative unmanned systems. Papers presenting newly emerging fields and applications are especially welcome. Topics to be covered in this invited session include, but not limited to, the following:</p> <ul style="list-style-type: none"><li>• multi-sensor fusion for cross-domain collaborative unmanned systems;</li><li>• intelligent perception for cross-domain collaborative unmanned systems;</li><li>• localization and mapping for cross-domain collaborative unmanned systems;</li><li>• autonomous navigation for cross-domain collaborative unmanned systems;</li><li>• intelligent control for cross-domain collaborative unmanned systems;</li><li>• deep learning for cross-domain collaborative unmanned systems;</li><li>• cross-domain collaborative unmanned systems applied in construction, agricultural, rescue or exploration tasks.</li></ul>