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Special Session on
Recent Advances in Flying Ad Hoc Networks (FANETs)

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Dr. Panagiotis Sarigiannidis is an Assistant Professor in the Department of Informatics and Telecommunications Department of University of Western Macedonia, Kozani, Greece since 2016. He received the B.Sc. and Ph.D. degrees in computer science from the Aristotle University of Thessaloniki, Thessaloniki, Greece, in 2001 and 2007, respectively. He has published over 130 papers in international journals, conferences and book chapters. He has been involved in several national, EU and international projects. He is currently the project coordinator of the H2020 project SPEAR: Secure and PrivatE smArt gRid (H2020-DS-SC7-2017) and the Operational Program MARS: sMart fArming with dRoneS (Competitiveness, Entrepreneurship, and Innovation), while he serves as principal investigator in the H2020 project SDN-microSENSE: SDN-microgrid reSilient Electrical eNergy SystEm (H2020-SU-DS-2018) and in the Erasmus+ KA2 ARRANGE-ICT: pArtneRship foR AddressiNG mEgatrends in ICT (Cooperation for Innovation and the Exchange of Good Practices). His research interests include telecommunication networks, internet of things and network security.

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Dr. Thomas Lagkas is a Senior Lecturer (Assistant Professor) with The University of Sheffield International Faculty - CITY College, since 2012. He is the Research Director of the Computer Science Department, and Leader of the ICT Research Track, South-East European Research Centre, since 2017. His research interests are in the areas of IoT communications and distributed architectures, wireless communication networks, QoS in medium access control, mobile multimedia communications, power saving/fairness ensure for resource allocation in wireless sensor-cooperative-broadband networks as well as in hybrid Fiber-Wireless networks, e-health data monitoring, 5G systems, flying ad hoc networks, communication security, and computer-based educational technologies with relevant publications at a number of widely recognized international scientific journals and conferences. He is an IEEE and ACM Member, and Fellow of the Higher Education Academy in UK. He also participates in the Editorial Boards of the following journals: Computer Networks, Telecommunication Systems, and the EURASIP Journal on Wireless Communications and Networking.

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Vasilis Argyriou received a BSc degree in computer science from Aristotle University of Thessaloniki, Greece, in 2001 and the MSc and PhD degrees from the University of Surrey, in 2003 and 2006, respectively, both in electrical engineering working on registration. From 2001 to 2002, he held a research position at the AIIA Lab, Aristotle University, working on image and video watermarking. He joined the Communications and Signal Processing (CSP) Department, Imperial College, London, in 2007 where he was a Research Fellow working on 3-D object reconstruction. Now, He is a Professor at Kingston University working on computer vision and AI for crowd and human behaviour analysis, computer games, entertainment and medical applications. Also research is conducted on educational games and on HCI for augmented and virtual reality (AR/VR) systems.

Scope of the session

Flying Ad Hoc Networks (FANETs) is one of the most promising multi-node communication systems, where an ad hoc network of multiple Unmanned Aerial Vehicles (UAVs) is defined for addressing numerous, challenging military, civilian, smart farming, industrial monitoring and surveillance applications. FANETs enclose UAV systems, which can fly autonomously or can be operated remotely without carrying any human personnel. As a result, they are featured by versatility, easy installation and relatively small operating expenses, by providing a flexible FANET architecture that ensures that all UAVs are connected to each other and to the base station for without any infrastructure, while supporting inter-UAV communication, which is crucial to realize the collaboration among UAVs. Although FANETs offer a lot of advantages, several challenges are emerged when implementing FANETs in real applications, including multi UAV coordination and management, energy efficiency, modeling, performance analysis, security and privacy issues.

Prospective authors are invited to submit original and unpublished work on the following research topics related to this Special Session:

- Real deployments and case studies of FANETs.
- Management and coordination of multi UAVs in FANETs.
- FANETs testbed and simulators.
- Routing algorithms and schemes in FANETs.
- Human-FANETs interaction for effective communication.
- Energy efficiency and management of FANETs.
- Military, monitoring and surveillance applications in FANETs.
- Smart farming systems through FANETs.
- Modern Geographic Information System (GIS) and remote sensing techniques for FANETs.
- Modeling tools for FANETs.
- Cloud-enabled techniques and in-the-field integration using UAVs and FANETs.
- Big data innovation in sustainable applications using UAVs and FANETs.
- Security issues and solutions in FANETs.
- Privacy issues and solutions in FANETs.
- Blockchain technologies and applications in FANETs.
- Cloud- and edge-based systems in FANETs.
- Disaster management through FANETs.
- Cyber threats and anomaly detection in FANETs.
- Machine learning applications in improving Key Performance Indicators (KPIs) in FANETs.
- Trust-enabling techniques and methods in FANETs.
- FANET applications to increase synergies between crops and livestock.
- Models and tools adapted to real farm management to grasp the inherent complexity of mixed farming and agroforestry systems using multi UAVs.
- Embedding sensors and actuators on multi UAVs systems for real-time applications.
- FANETs-based edge and Fog computing.
- Quality of Service (QoS) in FANET applications.
- Regulations and recommendations for FANETs in real applications.