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Special Session on
UAV Communications: Energy Efficiency, Resource Management and Security

Name and affiliation of organizers:

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Panagiotis Sarigiannidis is the Director of the ITHACA lab (https://ithaca.ece.uowm.gr/) and an Assoc. Prof. at the ECE Dept. of the University of Western Macedonia, Kozani, Greece. 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 200 papers in journals, conferences and book chapters. He has been involved in several national, European and international projects. He is currently the project coordinator of three H2020 projects: SPEAR, EVIDENT and TERMINET. Also he coordinates the Operational Program MARS and the Erasmus+ KA2 ARRANGE-ICT: SmartROOT. He also serves as a principal investigator in H2020 SDN-microSENSE, and in three Erasmus+ KA2: ARRANGE-ICT, JAUNTY and STRONG. His research interests include telecommunication networks, internet of things and network security. He is an IEEE member and participates in the Editorial Boards of various journals.

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Vasileios Argyriou received his BSc degree in computer science from Aristotle University of Thessaloniki, Greece, in 2001 and his 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 3D 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.

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Thomas Lagkas is Assistant Professor of the Department of Computer Science of the International Hellenic University. He received his PhD in computer science from the Aristotle University of Thessaloniki, Greece, in 2006. He has been Lecturer and then Senior Lecturer of The University of Sheffield International Faculty - CITY College, from 2012 to 2019. He also served as Research Director of the Computer Science Department of CITY College and Leader of the ICT Track of the South-East European Research Centre. His research interests are in the broad area of IoT communications with more than 90 publications at widely recognized international scientific journals and conferences. Dr. Lagkas is Fellow of the Higher Education Academy in UK. He also participates in the Editorial Boards of respectful scientific journals and is actively involved in drafting research funding proposals, as well as in the implementation of the corresponding EU projects.

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Stamatia Bibi received the B.Sc. degree in informatics and the Ph.D. degree in software engineering from the Aristotle University of Thessaloniki, Greece, in 2002 and 2008, respectively. She is currently an Assistant Professor in software engineering with the Department of Electrical and Computer Engineering, University of Western Macedonia, Kozani, Greece. Her research interests include software process models, cost estimation, quality assessment, and cloud computing. She is/has participated as an investigator for her university in 7 research and development projects in information and communication technologies with funding from national and international organizations

Scope of the session

Living in the era of climate change and digital economies, the evolution of the future wireless networks (beyond 5G and 6G) provides ubiquitous computing services, comprising a growing number of Internet of Things (IoT) applications, including e-healthcare, industrial automation, precision agriculture and the smart electrical grid. The Unmanned Aerial Vehicles (UAVs) play a significant role in multiple IoT applications, especially in emergencies like disaster management, remote monitoring and rescue actions. Unlike terrestrial communication technologies, UAVs constitute a significant technology enabler, including wide-area coverage, controlled mobility and flexible deployment. However, resource management in UAV networks is a challenging aspect since UAVs may be located anywhere, either by forming a swarm or operating individually. This special session intends to bring together the latest research outcomes from academia and industry with respect to UAV applications and resource management in UAV networks, paying special attention to energy efficiency, high reliability and resilience, security and privacy.

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

- *Energy efficiency in UAV communications*
- *UAV/Multi-UAV applications*
- *Resource management for UAV-integrated terrestrial cellular networks*
- *Artificial Intelligence for resource management in UAV communications*
- *Software Defined Networking (SDN) for resource management in UAV communications*
- *Virtualization for resource management in UAV networks*
- *Spectral efficiency optimization in UAV networks*
- *Cybersecurity and privacy issues in UAV networks*
- *Risk assessment in UAV networks*
- *Intrusion detection and mitigation against UAV networks*
- *Blockchain-based authentication and access control systems for UAV networks*
- *Protocols, standardization and certification activities in UAV networks*
- *Experimental studies, testbeds and simulators related to UAV networks*