

Call for Contributions

1. Inform the Chair: Title, Authors, and email addresses.

2. Submission URL:

<https://www.iariasubmit.org/conferences/submit/newcontribution.php?event=ICWMC+2021+Special>

Please select Track Preference as **UAV5GB**

3. Note: *For 2021, all events will be held in a hybrid mode: on site or virtual choices (live, prerecorded videos, voiced presentation slides, and .pdf slides). We hope for better times allowing us to return to the traditional on site scientific events. However, we are ready to adapt any which way the conditions dictate.*

Special track

UAV5GB: UAV Communications for 5G and Beyond

Chairs

Dr. Xuesong Cai, PhD, Department of Electronic Systems, Aalborg University, Denmark
xuesong.cai@ieee.org

Assistant Prof. Dr. José Rodríguez-Piñeiro, PhD, College of Electronics and Information Engineering, Tongji University, China
j.rpineiro@tongji.edu.cn

along with

ICWMC 2021: The Seventeenth International Conference on Wireless and Mobile Communications
<https://www.aria.org/conferences2021/ICWMC21.html>
July 18, 2021 to July 22, 2021 - Nice, France

Unmanned aerial vehicles (UAVs) have attracted a surge of interest in both academia and industry during the last few years. Different paradigms have been identified for UAVs. For example, they can be exploited as aerial base stations to quickly provide wireless connections for rescue after disasters or be utilized as relays to enable energy-efficient sensing by leveraging the nearly LoS (Light of Sight) radio channels between UAV relays and ground sensors. Moreover, UAVs can also be used for some fancy applications such as network optimization, smart agriculture, and so forth. Meanwhile, UAVs are becoming a new type of user equipments (UEs) in cellular networks. It is expected that ultra-reliable command and control (C2) communication links for beyond visual-LoS missions and high-throughput uplink communication links for, e.g., video streaming can be enabled for UAV-UEs.

The above use cases, among others, are closely related to the vision of 5G and beyond (B5G) communications either utilizing UAVs to assist the enhanced mobile broadband (eMBB), massive machine-type communications (mMTC), and ultra-reliable and low latency communications (URLLC); or providing these fancy services to UAVs. However, there are many challenges to be tackled. Although the nearly-LoS links are favorable for UAVs, leading to high received power values, UAVs can in turn cause severe interferences to the ground UEs or other UAVs in the air. This motivates the necessity of designing sophisticated scheduling, interference management and power control schemes, etc. On the other hand, UAVs usually have limited battery life.

Thus, it is important to maximize the energy usage efficiency as much as possible via, e.g., flight trajectory optimization, coordination, more efficient communication schemes, etc. Moreover, novel technologies, such as millimeter waves (mmWave), massive multiple-input-multiple-output (MIMO) and large intelligent surfaces (LIS) can provide UAVs with a higher level of integration in the B5G global communication scope.

In this special track, we focus on recent developments in enabling various UAV-assisted and cellular-connected UAV communications or added value UAV applications.

Topics include, but not limited to

- Air-to-ground radio channel characterization
- Air-to-air radio channel characterization
- Air-to-anything radio channel characterization
- Communications performance evaluation for UAV-connected applications
- Advances on standardization for civil aviation communications
- UAV-aided terrestrial network deployment characterization and optimization
- Joint resource allocation and trajectory design
- Power control and interference management
- Massive MIMO aided UAV communications
- LIS-aided UAV communications
- System and Link-level performance evaluation
- UAV enhanced Internet-of-Things (IoT)
- UAV assisted network optimization
- UAV-based added value applications for the development of society

Contribution Types

- Regular papers [in the proceedings, digital library]
- Short papers (work in progress) [in the proceedings, digital library]
- Posters: two pages [in the proceedings, digital library]
- Posters: slide only [slide-deck posted on www.iaia.org]
- Presentations: slide only [slide-deck posted on www.iaia.org]
- Demos: two pages [posted on www.iaia.org]

Important Datelines

Inform the Chair or Coordinator: As soon as you decide to contribute.

Submission: June 14, 2021

Notification: June 26, 2021

Registration: July 2, 2021

Camera ready: July 3, 2021

Note: The submission deadline is somewhat flexible, providing arrangements are made ahead of time with the chair.

Paper Format

- See: <http://www.iaia.org/format.html>
- Before submission, please check and comply with the editorial rules: <http://www.iaia.org/editorialrules.html>

Publications

- Extended versions of selected papers will be published in IARIA Journals: <http://www.iaiajournals.org>
- Print proceedings will be available via Curran Associates, Inc.: <http://www.proceedings.com/9769.html>
- Articles will be archived in the free access ThinkMind Digital Library: <http://www.thinkmind.org>

Paper Submission

<https://www.iaiasubmit.org/conferences/submit/newcontribution.php?event=ICWMC+2021+Special>

Please select Track Preference as **UAV5GB**

Registration

- Each accepted paper needs at least one full registration, before the camera-ready manuscript can be included in the proceedings.
- Registration fees are available at <http://www.iaia.org/registration.html>

Contact

Chair: Xuesong Cai, xuesong.cai@ieee.org

Logistics: steve@iaria.org