



IEEE **pimrc'17**

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## WORKSHOP WS-03 ON COEXISTING RADIO AND OPTICAL WIRELESS DEPLOYMENTS (CROWD 2017)

### SCOPE

The proliferation of wireless devices in the upcoming evolution of 5G will have a profound impact on the communications industry. Wireless traffic will also surge due to the increasing per-device data demand from novel services and applications. These changes to the wireless communications landscape are driving the demand for ultra-dense wireless network deployments. In recent years, this demand has led to a growing interest in optical wireless (OW) networks as a novel solution. Researchers have shown promising data rates for OW communications via Infrared (IR), visible light communication (VLC), and ultraviolet (UV) technologies. These high data rate capabilities coupled with the directionality of the optical medium allow OW small cells to provide very high bandwidth density (b/s/m<sup>2</sup>). Accordingly, densely distributed OW small cells have the potential to provide additional wireless capacity in the indoor environments where it is needed most.

Compared to traditional RF networks; these OW deployments can provide very high aggregate capacity; however, densely distributed OW small cells are challenged to accommodate highly dynamic environments. Specifically, the OW channel is susceptible to blocking and the smaller coverage region of each cell implies that devices with high mobility will change connections frequently. In order to mitigate the impact of these limitations, heterogeneous networks (HetNets) have been proposed where OW networks supplement traditional RF small cell networks - combining the aggregate capacity gains of the former with the coverage and reliability of the later. These Coexisting Radio and Optical Wireless Deployments, or CROWD networks, are of high interest as we look for new ways to accommodate the demand that will be placed on next generation wireless networks.

### TOPICS

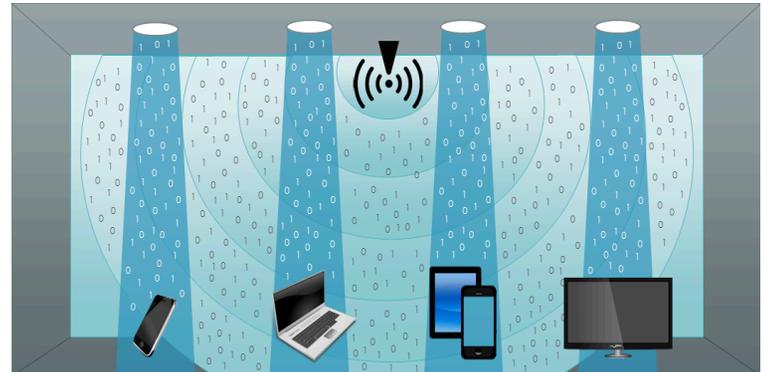
The intent of this workshop is to bring together researchers who are exploring analysis and implementation techniques for integration of RF and OW networks through a coexistence framework. The scope of this workshop will cover a broad range of heterogeneous RF/OW network topics including, but not limited to:

- Adaptive RF/OW networks
- Asymmetric connectivity
- Data aggregation techniques
- Hardware integration for RF/OW HetNets
- Mobility and handoff in RF/OW HetNets
- Multimedia communications in RF/OW HetNets
- Network architecture
- Network layout
- OW and 5G
- Reliability in the presence of OW signal outages
- Resource allocation techniques
- RF/OW HetNet Infrastructure

- RF/OW HetNets for IoT
- Seamless connectivity in dynamic environments
- Security and privacy in RF/OW HetNets
- Testbed development and deployment

EDAS submission link: <https://edas.info/N23908>

Accepted and presented papers will be published in the IEEE PIMRC 2017 Conference Proceedings and submitted for inclusion in IEEEExplore®.



### IMPORTANT DATES

Review paper submission: **04 August 2017**  
Notification of acceptance: **18 August 2017**  
Camera-ready submission: **25 August 2017**

### WORKSHOP WS-03 CO-CHAIRS

**Moussa Ayyash**, Chicago State University, USA  
**Hany Elgala**, University at Albany, USA  
**Abdallah Khreishah**, New Jersey Institute of Technology, USA  
**Thomas D.C. Little**, Boston University, USA  
**Michael Rahaim**, Boston University, USA (*Lead Co-Chair*)

### MORE INFO

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Workshops webpage: <http://pimrc2017.ieee-pimrc.org/authors/call-for-workshop-papers/>