



## Selected Areas in Communications Symposium Access Networks/Systems & Power Line Communications

### SYMPOSIUM CO-CHAIRS:

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### SCOPE AND MOTIVATION:

The rising of new services and the definition of novel networking paradigms always inspire researchers to investigate solutions for Access Networks and Systems that continue to be one of the hottest topics in the communication and networking fields. This is due to the evolution of systems and technologies and these come together to create technological challenges in the access domain. Advances in Voice over IP (VoIP), conventional and ultra-high-definition video, multimedia including virtual reality (VR) and immersive technology have significantly impacted the access segment of service-provider networks. Moreover, many access networks today terminate on multiple home devices. This led to a need for home networks that are designed for a blend of multi-computer Internet access, multi-platform entertainment, and voice support, in other words multimedia, today, is the environment leading to the necessity of investigating the access since the node is no more the user but the smart device. The evolution towards multi-service platforms and the emergence of a spectrum of new IP-based applications are fueling more demand for bandwidth. Broadband access utilizes a variety of transmission media and systems, such as twisted-pair copper-based systems (xDSL), coaxial-cable plants, fiber-based solutions (passive and active optical networks), wireless systems (Wi-Fi, WiMAX, and cellular technologies) and hybrid combinations of these. Various protocols are also required to support both downstream and upstream traffic. Understanding the performance characteristics of all the technological ingredients of tomorrow's access networks/systems is critical for delivering the desired Quality of Service (QoS) to the end users.

Power Line Communication (PLC) systems have significantly evolved in the last decade, where their bit-rate and robustness have significantly increased. Accordingly, narrowband (NB) PLC has become the most widely employed technology for Smart Metering in many regions, and broadband (BB) PLC has proven to be a feasible solution for enabling high data-rate applications like in-home and small-office networking and multimedia content delivery. PLC is a natural choice for Smart Grid (SG) communications and can play an important role in Internet of Things (IoT) applications, where it can complement radio technologies in many scenarios, improving coverage and robustness. PLC can also integrate with other wireless technologies like visible light communications (VLC), providing the uplink channel. These hybrid solutions add interesting research problems to the classical catalogue of PLC challenges.

The aim of the Access Networks/Systems & Power Line Communications track is to bring together researchers from both academia and industry in order to have a forum for discussion and technical presentations on the recent advances in these fields.



## IEEE Global Communications Conference

9-13 December 2019 • Big Island, Hawaii, USA

*Revolutionizing Communications*

### CALL FOR PAPERS AND PROPOSALS

#### MAIN TOPICS OF INTEREST:

Topics of interest include, but are not limited to:

#### Power Line Communications

- PLC for the Smart Grid, in-building, access and in-vehicle networks
- PLC Channel characterization, channel modelling and emulation
- MIMO, modulation, coding and signal processing for PLC
- Multiple access and protocols for PLC
- PLC modem and low level design
- Layer 2 (switching) and Layer 3 (routing) techniques in PLC systems
- Cross-layer optimization and service integration
- Network planning, optimization and management
- Experience from field trials and large scale PLC roll-outs
- Signal coupling and EMI issues in PLC
- Cognitive and cooperative communications
- Standardization and regulation

#### Access Networks/Systems

- New technologies and architectures in access networks
- 5G and beyond 5G front/mid-haul networks
- Flexible/on-demand access networks (flying platforms)
- Municipal and community networks
- Home/building/neighborhood area networks
- Twisted pair copper systems and networks; xDSL
- Hybrid Fiber Coaxial (HFC) systems and networks
- FTTx and Passive/active optical systems and networks (PONs and AONs)
- Integrated/hybrid wired/wireless access networks protocols
- Network virtualization for access
- Optical-wireless integration and radio over fiber
- Free-Space Optical-Access (components, systems, and networks)
- Synchronization (time & frequency) support in the access
- Service convergence and multimedia networks
- Quality of Service (QoS): characterization and provisioning
- Access network survivability and security
- Networked appliances (Internet of Everything)
- Applications (video streaming/VR/Immersive Technology etc.)
- Access network management aspects
- Standardization and regulations



**IMPORTANT DATES:**

- Paper Submission: 15 April 2019
- Acceptance Notification: 15 July 2019
- Camera-Ready: 16 Aug 2019

**SUBMISSION:**

All papers for technical symposia should be submitted via EDAS through the following link:

<https://edas.info/N25074>