

## SESSION 3.1 - EXPERIMENTAL RESEARCH AND PROTOTYPING TOWARDS 5G AND BEYOND

### Invited speech - TOWARDS THE NEXT GENERATION OF WIRELESS NETWORKING TESTBEDS

Wireless network testbeds are important for realistic, at-scale experimental evaluation of new radio technologies, protocols and network architectures. A number of existing wireless testbeds are being used for experimental research on a wide variety of research topics including dynamic spectrum access, full duplex, massive and distributed MIMO, cmWave and mmWave, cognitive radio networks, DTN, vehicular networks and so on. With a somewhat belated reality check on 5G, larger tests and demonstration sites have become essential in the validation of next generation wireless platforms. This talk will introduce COSMOS (“Cloud enhanced Open Software defined MOBILE wireless testbed for city-Scale deployment”) project that creates a city-scale platform for advanced wireless research that is being deployed over the period 2018 - 2023 in New York City. The technical focus of the COSMOS platform is on ultra-high-bandwidth and low-latency wireless communications, with tightly coupled edge computing with emphasis on the millimeter-wave radio communications and dynamic optical switching.

**Ivan Seskar**

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Ivan Seskar is an Associate Director at WINLAB, Rutgers University responsible for experimental systems and prototyping projects. He is currently the program director for the COSMOS project responsible for the New York City NSF PAWR deployment, the PI for the NSF GENI Wireless project, which resulted in campus deployments of LTE/WiMAX base stations at several US universities, and the PI for the NSF CloudLab deployment at Rutgers. He has also been the co-PI and project manager for all three phases of the NSF-supported ORBIT mid-scale testbed project at WINLAB, successfully leading technology development and operations since the testbed was released as a community resource in 2005 and for which the team received the 2008 NSF Alexander Schwarzkopf Prize for Technological Innovation. Ivan is a co-chair of the IEEE 5G Testbed Working Group, a Senior Member of the IEEE, a member of ACM and the co-founder and CTO of Upside Wireless Inc.