

**Title:** 5G: Above the Horizon

**Speaker:** Jianmin Lu, Director of RAN research department,

**Affiliation:** Huawei Technologies, 2222 Xin Jin Qiao Road, Pudong, Shanghai, China 201206

**E-mail:** [lujianmin@huawei.com](mailto:lujianmin@huawei.com)

**URL:** <http://www.huawei.com>



**Abstract:**

After several years of preparation, 5G is finally above the horizon. In the standardization body 3GPP, 5G SI (Study Item) stage of R14 is approaching to release in 3 months. However, there is still a lot of unknown remaining for the future. This talk will first update the standard progress including the 5G numerology, frame structure, MIMO, and other technologies. Among those, the highlight is given to the duplex, which remains unchanged from 1G through 4G and has the potential to dramatically increase the network throughput and efficiency. Some key challenges and solutions for the advanced duplex are examined. Another key enabler for 5G is the EAI (Embedded Air Interface) which can accommodate varieties of physical channels in one single network. As well known, the paradigm shift from 4G to 5G is to support varieties of service and application, from the voice, video, SMS, to HD video, AR/VR, eHealth, wearable, and URLLC(Ultra Reliable and Low Latency Communication), which impose different requirements on the wireless communication. In the last portion of talk, holding the envisioned future of 5G, the technical challenge is summarized and further academic research will be encouraged.

**Biography:**

Jianmin Lu received the B.S. and M.S degrees in electrical engineering from SouthEast University, Nanjing, China, in 1996 and 1999, respectively. Since graduation, he joined the Huawei Technologies and conducted various researches on digital wireless communications, including UMTS, CDMA2000, EVDO, WiMAX, WiFi, LTE and 5G. He received more than 50 patents and chaired multiple physical and MAC layer sessions in standard, and is now leading the research team in wireless department of wireless product line. His current research interest is in the area of wireless signal processing, protocol and networking.