IEEE RTSI 2018 – Track 3 – 3.6

5G, FROM TECHNOLOGY TO ITS ENABLED APPLICATIONS

5G will bring new unique service capabilities for consumers but also for new industrial stakeholders. In 5GPPP vision Telecommunications and Information Technology will be integrated towards a common multitechnology converged and high capacity infrastructure. To provide scalability and flexibility, the network functions will be "virtualised" on general purpose, programmable and specific high performance hardware that will offer resources for data transport, routing, storage and execution. 5G will integrate telecom, compute and storage resources into one programmable and unified infrastructure which will allow for an optimized usage of all distributed resources.

Three different classes of use cases have been individuated for 5G: enhanced mobile broadband (eMBB), ultra-reliable & low latency communications (URLLC), and massive machine type communication (mMTC).

5G will be a key enabler for the Internet of Things by providing the platform to connect a massive number of objects (drones, robots, wearable devices and other smart objects) to the Internet. 5G will allow all these objects to connect independently from a specific available network infrastructure. Moreover, some mission critical services will become feasible natively on the 5G infrastructure thanks to the unprecedented performance achievable on demand. It will cover new services requiring a real time reactivity such as Vehicle-to-Vehicle or Vehicle-to-Road services paving the way towards the self-driving car and Intelligent Transport Systems (ITS), factory automation or remote health services.

Expected contributions will focus on the new technology aspects of 5G network such as Network Softwarisation and Convergence, as well as services and applications enabled by 5G technology. A wide spectrum of applications can be covered: 5G based Internet of Things, 5G enabled Machine Type Communications scenarios, Ultrareliable and low latency communications applications. Finally, contributions regarding trial experiences and experimental activities are expected.

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Short Curriculum Vitae

Fabio Graziosi was born in L'Aquila, Italy, in 1968. He received the Laurea degree (cum laude) and the Ph.D. degree in electronic engineering from the University of L'Aquila, L'Aquila, in 1993 and 1997, respectively. Since February 1997, he has been with the Department of Electrical Engineering (today Department of Information Engineering, Computer Science and Mathematics), University of L'Aquila, where he is currently an Associate Professor. His current research interests are mainly focused on wireless communication systems with emphasis on IoT, spatial modulations, energy neutral networks, and cooperative communications. He authored more than 200 papers in technical journals and conference proceedings.

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