

Research Proposal

Now reaching 2020, the world is witnessing the initial diffusion of 5G networks, which promise to revolutionize the mobile wireless communications, providing faster services, very low delays, and a very pervasive connectivity via mobile devices. It is worth to remark that the main paradigm which will take advantage from 5G is really the Internet of Things (IoT). However, the spreading of 5G technology also generates important concerns in terms of security and privacy, due to the continuous and wireless connection to the network, which hinders the reliability of the involved devices. This paper deeply analyzed the current state of the art about the existing security and privacy solutions tailored to 5G. More in detail, the following requirements are discussed: data integrity, confidentiality, authentication, access control, non-repudiation, trust, privacy, identity management, key management, policy enforcement, and intrusion detection. Furthermore, the paper aims to shed the light on future research directions towards the realization of secure and privacy aware 5G systems. To this end, the role of emerging paradigms, such as IoT, fog computing, and blockchain is investigated.