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Security aspects of Internet of Things

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Internet of Things (IoT) is one of the most prominent technologies on the Internet. Simple objects gain the ability to store, process and exchange information among themselves or with external entities, by observing and controlling the environment. Thanks to the rapid development of this innovation, IoT opens possibilities to a huge number of objects and applications that promise to improve our daily life. The main scenarios of the development of IoT are home automation/domestic and Industrial IoT. According to such scenarios, several applications could be implemented: from smart thermostats, light bulbs, refrigerators, ovens, door window sensors to volumetric, flow, heat and connected data processing devices. The objective of this seminary is to present results obtained after an evaluation of the security of IoT networks and devices implemented using different protocols. Such exploitation provides the ability to analyze the effects of common and innovative attacks designed to target common wireless networks, when they are perpetrated against IoT environments.



BIO

Ivan Vaccari is a PhD student in computer science and research fellow in the Network Security Group at CNR. He obtained his MSc Degree Cum Laude in Computer Engineering from the University of Genoa, Italy, with a thesis entitled “Study of security issues on ZigBee networks in reference to the Internet of Things phenomenon”. For this work, he received a price for the “Best project 2017” for IoT networks implementation offered by the company ABB. His research activities are focused on cyber security, in particular in IoT and network security. His main activities are focused on the development of blockchain solution and on the implementation of Internet of Things networks for monitoring sensitive data and ensuring a secure communication of information through networks.