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Selecting network protocols for Internet of things based upon innovation and knowledge management

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Network connectivity is believed to be the backbone for Internet of things and it plays a very dynamic role on how Internet of things applications is designed. In the current scenario there is a wide range of different standard network protocols available including Bluetooth and Bluetooth LE, 6LoWPAN, 3GPP, LTE, IEEE 802.15.4, to ZigBee, etc. and they help to define how the devices or the physical objects communicate with each other and to the cloud or to the gateway device. Further, there are lots of drivers for selecting the most suitable wireless protocol, at one end there is technological push to invent innovative solutions and on the other side there appears a customer demand for enhancing the Internet of things applications. The aim of this paper is to propose a rich network design space based upon the innovation and knowledge management techniques which will help the users to select the desired wireless protocol from the different available technologies to fulfill their Internet of things application requirements. The design is divided into three dimension space and all the standard protocol options can be studied or realized based along these three axes – battery life, duty cycle and device to gateway distance. The result of the paper is an innovating design with very interesting combinations of network protocols that will provide different options for the designers to select the desired technology based upon the requirements of their Internet of things application.

Biography

Dagmar Caganova is an Associate Professor in Industrial Engineering and acts as Vice Dean for International Projects at the Faculty of Materials Science and Technology in Trnava, the Slovak University of Technology in Bratislava, Slovakia. She is also the Co-Founder of the European Alliance for Innovation in Slovakia, management committee member of E-COST (European Collaboration in Science and Technology) TN 1301 Sci Generation, the executive committee member in Danubius Academic Consortium (academic network for integral innovation), steering committee member of Danube strategy PA 7 knowledge society- science, research, innovation and ICT for the Slovak Republic.

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