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Network Function Virtualization of Software-Defined Internet of Things

Abstract—One of the challenges of 5G (5-th Generation) wireless networks will be the integration of mobile radio access with the Internet of Things (IoT) paradigm. Billions of objects equipped with sensors and radio interfaces will be connected to network entities managing the control plane in a centralized way, as postulated by many stake-holders. To pave the way towards this novel approach, we present an architecture for virtualization of IoT networks, including an intent-based north-bound interface and a virtualized infrastructure manager, allowing virtualization of IoT resources. The architecture exploits the Software-Defined paradigm, including an IoT Controller able to program different networks with the aim of providing to users the intended service at the requested QoS. A first prototype of the architecture is presented and some preliminary results, related to round trip time are provided.

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