A Method for Co-existing Heterogeneous IoT Environments based on Compressive Sensing

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***Abstract*—Compressive Sensing (CS) is a stable and robust technique that allows for the sub-sampling of data at a given data rate: `compressive sampling' or `compressive sensing' at rates smaller than the Nyquist sampling rate. It makes it possible to create standalone and net-centric applications with fewer resources required in Internet of Things (IoT). CS-based signal and information acquisition/compression paradigm combines the nonlinear reconstruction algorithm and random sampling on a sparse basis that provides a promising approach to compress signal and data in information systems. In this paper, we investigates how CS can provide new insights into coexisting heterogeneous IoT environments. First, we briefly introduce the CS theory with respect to the sampling through providing a compressed sampling process with low computation costs. Then, a CS-based framework is proposed for IoT, in which the hub nodes measure, transmit, and store the sampled data into the fusion center.**

***Keyword*—Compressive Sensing (CS), Fusion Center, Internet of Things (IoT), Wireless Sensor Networks (WSNs)**

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