

Internet Of Things Frameworks for Smart City Applications – A Systematic Review

José Joaquín Peralta Abadía,¹ and Kay Smarsly¹

¹Institute of Digital and Autonomous Construction, Hamburg University of Technology, Hamburg, Germany; email: [joaquin.peralta](mailto:joaquin.peralta@tuhh.de); [kay.smarsly](mailto:kay.smarsly@tuhh.de)@tuhh.de

ABSTRACT

The advent of smart monitoring and cyber-physical systems in civil engineering has significantly propelled a broad wealth of smart city applications. Representing a vital technological basis of smart city applications, Internet of Things (IoT) frameworks have been an increasing topic of research in recent years. However, different definitions of the terms “smart city” and “IoT framework” are used without consensus, and the technical aspects of IoT frameworks for smart city applications have not been fully reviewed, causing ambiguities and redundant developments in the community. This paper aims to condense the definitions of the terms “smart city” and “IoT framework” by summarizing and comparing concepts. Besides critical IoT technologies, sensor node hardware utilized in IoT frameworks is summarized in a systematic review. As a result of this study, IoT framework trends for smart city applications are provided. It is expected that the findings of trends of IoT frameworks for smart city applications presented in this study may serve as a basis for future IoT framework implementations that advance smart city applications.