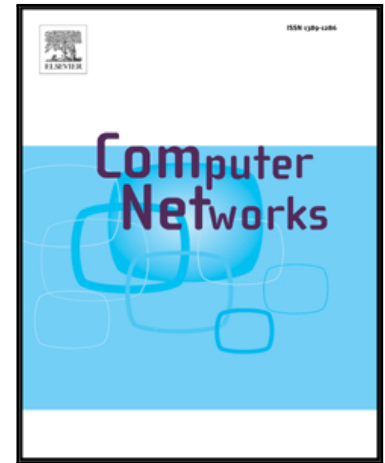


Accepted Manuscript

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PII: S1389-1286(18)30220-2
DOI: [10.1016/j.comnet.2018.05.010](https://doi.org/10.1016/j.comnet.2018.05.010)
Reference: COMPNW 6489



To appear in: *Computer Networks*

Received date: 13 November 2017
Revised date: 28 April 2018
Accepted date: 14 May 2018

Please cite this article as: Fatma Karray, Mohamed W. Jmal, Alberto Garcia-Ortiz, Mohamed Abid, Abdulfattah M. Obeid, A Comprehensive Survey on Wireless Sensor Node Hardware Platforms, *Computer Networks* (2018), doi: [10.1016/j.comnet.2018.05.010](https://doi.org/10.1016/j.comnet.2018.05.010)

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A Comprehensive Survey on Wireless Sensor Node Hardware Platforms

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Abstract

Wireless sensor nodes are the main components in wireless sensor networks. Such devices affect the performance and the accuracy of the network. Countless commercial and research nodes exist and their comparison is critical. Literature surveys do not provide a comprehensive overview about all the existing nodes' technologies.

The main goal of this paper is to provide a deep overview of the current state of the art with enough background, to allow to design evolutionary nodes and to analyze thoroughly the node design components and application trends. This survey is helpful not only for researchers but also for industry. Therefore, a work that gives an inclusive overview is required. With the exponential growth of technologies and electronics, it is essential to know the latest trends, the innovative future directions and to eliminate redundancies. This paper allows a global overview about existing nodes in industrial and research works to get decisions about the future of node fabrication.

Keywords: Wireless Sensor Networks, Node hardware Platforms, Microcontroller, FPGA, ASIC, SoC.

1. Introduction

Wireless Sensor Network (WSN) has spread as a suitable, cost effective and scalable technology in wide range of applications for monitoring, au-

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