## An Overview of Hardware Platforms Used In Wireless Sensor Nodes

## Attila Buchman

University of Debrecen, Faculty of Informatics, Department of Informatics Systems and Networks, Debrecen, Hungary

*Abstract*— In spite of the large amount of papers covering topics related to wireless sensor networks, a comprehensive overview of hardware platforms used to implement the network nodes is missing. There are several papers presenting particular approaches to implement wireless sensor nodes, there are also a few papers giving a brief presentation of hardware platform evolution in the last decade. This paper gives a survey of available hardware platforms, overviews their sensing, computing and communicating capabilities and focuses on the devices used to implement these platforms.

## REFERENCES

- Yang Yu, Viktor K Prasanna, and Bhaskar Krishnamachari, "Information processing and routing in wireless sensor networks" World Scientific Publishing Co. Pte. Ltd., December 2006. <u>http://www.worldscibooks.com/compsci/6288.html</u>
- [2] I.F. Akyildiz, W. Su, Y. Sankarasubramaniam, E. Cayirci, Wireless sensor networks: a survey, Elsevier Science B.V., Computer Networks 38, pp. 393–422, 2002.
- [3] Paolo Baronti et all, "Wireless sensor networks: A survey on the state of the art and the 802.15.4 and ZigBee standards" in Computer Communications 30 pp. 1655–1695, Elsevier Science B.V. 2007.
- [4] Mark Hempstead, Michael J. Lyons, David Brooks, and Gu-Yeon Wei, Survey of Hardware Systems for Wireless Sensor Networks Journal of Low Power Electronics, Vol.4, pp. 1–10, American Scientific Publishers 2008.

- [5] Mischa Dohler, Wireless Sensor Networks: *The Biggest Cross-Community Design Exercise To-Date*, Recent Patents on Computer Science, vol. 1 no. 1, Bentham Science Publishers Ltd. 2008.
- [6] Can Basaran et all., Research Integration: Platform Survey Critical evaluation of platforms commonly used in embedded wisents research, Embedded WiSeNts consortium, 2006.
- [7] Joseph Polastre, Robert Szewczyk, and David Culler, *Telos: Enabling Ultra-Low Power Wireless Research*. IEEE 0-7803-9202-7/2005.
- [8] Jennifer Yick, Biswanath Mukherjee, Dipak Ghosal, Wireless sensor network survey, Computer Networks 52 pp. 2292–2330, Elsevier, 2008.
- [9] Jason Hill, Mike Horton, Ralph Kling and Lakshman Krishnamurthy, *The Platforms Enabling Wireless Sensor Networks*, Communications Of The ACM, Vol. 47, No. 6, pp. 41-46, June 2004.
- [10] Man Wah Chiang, et all, Architectures of Increased Availability Wireless Sensor Network Nodes, ITC International Test Conference, paper 43.2, IEEE 0-7803-8580-2/2004
- [11] Kay Römer and Friedemann Mattern, The Design Space of

Wireless Sensor Networks, IEEE Wireless Communications, Dec. 2004.

- [12] F. L. Lewis, Wireless Sensor Networks, Smart Environments: Technologies, Protocols, and Applications, ed. D.J. Cook and S.K. Das, John Wiley, New York, 2004.
- [13] Thomas Luckenbach et all., TinyREST a Protocol for Integrating Sensor Networks into the Internet,

ISSN 18474 - 9689