executing each task and make calculations to see how much a task can enter the wait state for pre- emption. This can also be used as a benchmark to make an analysis into the propagation delays incurred in the transmission of data over the wireless network. This can thus be proposed as an initiative for future work/scope into the analysis of timing simulations in microcontroller programming and communication. The study can also be extended into a situation whereby various sensor nodes are controlled by the same master node and timing analysis done to ascertain the response of the system since an industrial setup might comprise sensor nodes stationed at different locations. This will on the overall result in more time critical system performance.

References

[1] L. E. Levya-del-Fayo and P. Mejia-Alvarez, "Custom Interrupt Management for Real Time and Embedded System Kernels", Proceedings of the Embedded Real-Time Systems Implementation Workshop at the 25th IEEE International Real-Time Systems Symposium (RTSS).
[2] Aldo Briano, "MSP430 Launchpad Interrupt vs Polling", Texas Instruments.
[3] T. Zwavashe, "A Zigbee Based Inter-Processor Communication Architecture for the Management of Bedchambers for the Physically Challenged", International Journal of Innovative Research in Computer and Communication Engineering, vol2, issue4, April 2014.
[4] Zwavashe, Tinotenda, and Rudo Duri. "Integrating GSM and Zigbee Wireless Networks for Smart A2 farming Enterprises in Zimbabwe.", International Journal of Science and Research, Vol3, Issue6, June 2014
[5] Phillips Semiconductors, "LPC2148 User Manual Volume 1", 2005.
[6] J. Maki-Turja, G. Fohler and K. Sandtrom, "Towards Efficient Analysis of Interrupts in Real Time Systems, Proceedings of Work in progress Session, 11th Euro micro Conference on Real Time Systems, New York.
[7] Digi International. "X-CTU Configuration and Test Utility User's Guide", August 2008.
[8] Jean Labrosse, "MicroC/OS-II: The Real Time Kernel 2nd Edition", CMP Books, 1999.
[9] Jean. J. Labrosse, "Embedded Systems Building Blocks, 2nd Edition, Complete and Ready –to-Use Modules in C", 2000.

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