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Wireless and Internet System Monitoring and Control

Martin A. Hebel

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Remote sensing and control of systems can be achieved using either local Wireless Sensor Networks (WSNs) that allow local communications or the use of Internet Of Things (IoT) technology for Internet communications. Embedded device programming for system interfacing and computer-based software are commonly used for end-to-end monitoring and control with WSN and IoT technologies. These technologies are being used extensively in industrial, biomedical, agricultural, building, and home automation and security.

As examples of applied research over the years, I have taught and published in these areas and worked with others in applying this technology including: wirelessly monitoring forces on citrus as it was shaken from trees for harvest, with the University of Florida; wirelessly monitoring crops for irrigation needs with the USDA, resulting in a patent; performing biological sensing with University of Sassari, Italy, presented at a NATO Conference. I have developed computer-based software packages for use with these technologies.

The use of WSN and IoT technologies can be relatively inexpensive and easily implemented for a variety of needs in research or application in the community. My research has spanned the application of monitoring and control technologies and I am seeking collaboration with researchers, community industries, and other interested parties.