DATA CONTROL FOR SIGNAL SCAVENGING FOR A PERSONNEL DETECTION SYSTEM

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ABSTRACT

Injurious falls have been one of the major problems in elderly people and not providing medical assistance to those patients on time may increase complications. We developed a 'Smart Carpet', which detects the personal motion. It can be utilized to detect the falls and automatically call for assistance. This system has two major parts: the sensors, which sense the walking and the personal computer with internet connectivity, which displays the motion as well as can call automatically for assistance after detecting a fall. The lack of feasibility to maintain one computer per room raises the need of a smart electronic instrument to gather the sensor data of a room and forward it to a central computer. The use of a smart electronic device reduces the number of computers used and hence the cost. Our aim was to develop a low cost and reliable electronics system, which can consistently accumulate data from sensors and transmit it to the personal computer. In the initial stages of development to gain the confidence on the system, we implemented systems using low numbers of sensors and after achieving success, built systems with larger numbers of sensors but using only one microcontroller. In the final stage of development, we created a wireless network in which 4 microcontrollers act as nodes and communicate with each other using wireless channel for transferring the sensor data of different areas to the personal computer. By achieving satisfactory results, we have gained a confidence that the electronics system developed in the concluding stage is highly reliable, accurate and can be extensively used for further development.