

Overview of Wireless Body Area Networks

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Abstract : The Wireless Body Area Networks (WBANs) is an emerging interdisciplinary area where small sensors are placed on/within the human body. These sensors monitor the physiological activities and vital statistics of the body. The data from these sensors is aggregated and communicated to a remote doctor for immediate attention or to a database for records. On 6 Feb 2012, the IEEE 802.15.6 task group approved the standard for Body Area Network (BAN) technologies. The standard proposes the physical and MAC layer for the WBANs. The work provides an introduction to WBANs and overview of the physical and MAC layers of the standard. The physical layer specifications have been covered. A comparison of different protocols used at MAC layer is drawn. An introduction to the network layer and security aspects of the WBANs is made. The WBANs suffer certain limitations such as regulation of frequency bands, minimizing the effect of transmission and reception of electromagnetic signals on the human body, maintaining the energy efficiency among others. This has slowed down their implementation.

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