An Overview on Wireless Body Area Networks

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***Abstract*—Da fare**
***Index Terms*—Da mettere???**

I. Introduction

Da fare

II. WBAN Applications and Devices

The employment of Wireless Body Area Network was mainly focused on medical field, nevertheless in the last years, from these discoveries, have been introduced some innovations in non-medical fields too.
The most common application of this technology is for healthcare, where WBAN is used to collect biomedical signals monitoring patients with health problems remotely and continually. Knowing the patient's history this type of applications can reduce medical accidents and increase public safety alerting medical personnel in time. Some parameters monitored are heartbeat, body temperature and blood pressure thanks to wearable applications (e.g. ECG); instead implanted applications are used to monitor more particular diseases (e.g. diabetes, cancer) implanting them under the skin or in the stream of blood.
The non-medical fields in which WBAN is recently taking place are sports, entertainment and military environment. Both in the first and last case this technology can improve performances of athletes and soldiers keeping a log of physiological data, and detect life threatening situations in military context. Entertainment environment use WBAN for different purposes compared to the other, for example to register body motions of actors during the making of a film.
There are three classes of devices that constitute WBAN and allow its applications: wireless sensor node, actuators and wireless personal device. The first type concerns components, wearable or implantable, that provide wireless monitoring of people or environment, communicating physiological parameters to other devices. Indeed, the work of actuators depends on the data received: if sensors detect an abnormal parameter, actuator administer medicine to the patient. Finally, Personal Device (PD) is the device responsible for the communication between sensors, actuators and cellular phone through wireless connection. [1]

III. WBAN Standards

A. IEEE 802.15.4

B. IEEE 802.15.6

C. Comparison between WBAN standards

References

[1] M. Salayma, A. Al-Dubai, I. Romdhani, and Y. Nasser, "Wireless body area network (wban): a survey on reliability, fault tolerance, and technologies coexistence," *ACM Computing Surveys (CSUR)*, vol. 50, no. 1, p. 3, 2017.