A STATE OF THE ART REVIEW ON WIRELESS SENSOR NETWORKS WITH ITS APPLICATIONS

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Abstract

Wireless Sensor Networks are considered to be among the most rapidly evolving technological domains thanks to the numerous benefits that their usage provides. As a consequence, Wireless Sensor Networks have had a continuously increasing variety of applications from their first introduction until the present day. The goal of this paper is to provide an up-to-date presentation of both traditional and most recent Wireless Sensor Networks applications and, hopefully, not only to encourage the understanding of this scientific field, but also to promote the perception of new applications. The key categories of Wireless Sensor Networks applications are defined in order to achieve this objective and characteristic examples of them are studied. Their basic features are clarified, while their pros and cons are denoted. First, there is a discussion of the variables that are relevant to each of these particular categories. Finally, the final comments are drawn.

***Keywords:** Applications, Sensor Node, Wireless Sensors, Wireless Sensor Networks.*

I.   INTRODUCTION

In different fields, such as distant ecological monitoring as well as in object tracking and many others, the WSNs have various applications[1]. Such types of sensors have a wireless interface through which communication takes place in the most acceptable and effective way according to the requirements of communication systems[2]. In recent years, comprehensive study in the field of WSNs around the globe has been carried out for many important purposes. These sensors have been widely used globally in some applications to provide more realistic solutions to current problems[3].
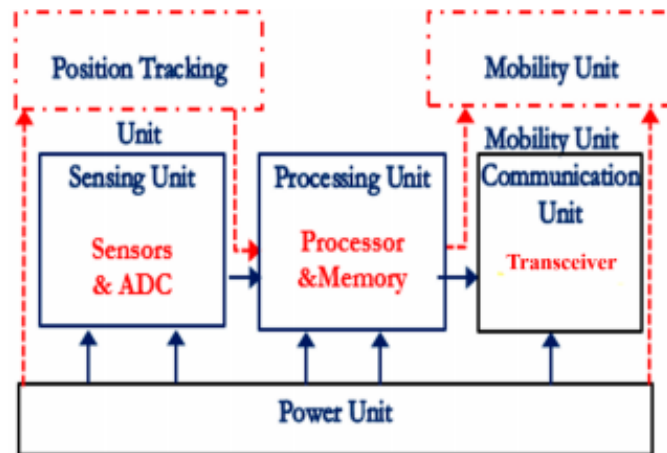
Fig. 1: Illustrates the architecture of a sensor node used in Wireless Sensor Networks (WSNs).

Fig. 2: Illustrates a typical architecture of a Wireless Sensor Networks (WSN).

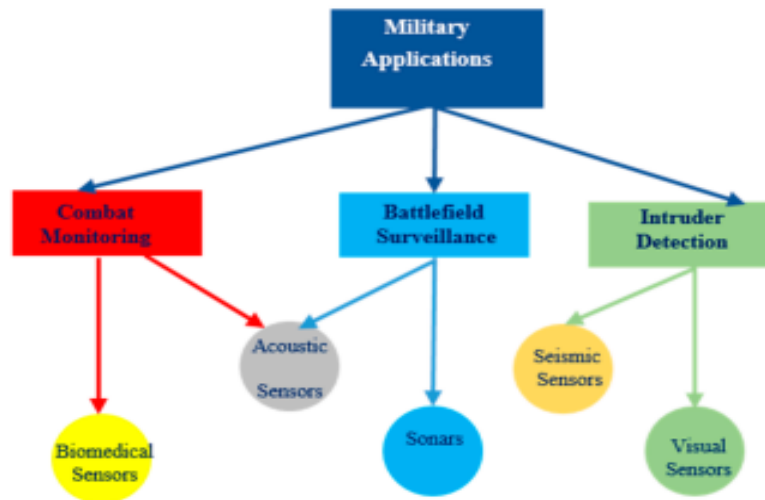Fig. 3: Illustrates the applications of the WSN.

Fig. 4: Illustrates the military applications of WSNs.

Figure 1 illustrates the architecture of a sensor node used in Wireless Sensor Networks (WSNs). Figure 2 shows a typical architecture of a Wireless Sensor Networks (WSN). Figure 3 illustrates the applications of the WSN. Figure 4 illustrates the military applications of WSNs.

II.   LITERATURE REVIEW

Bartosz et al. explored conducted another survey on the wireless sensor network and its importance in the healthcare. Wireless sensor network innovations are regarded as one of the main research areas in the computer science and healthcare application industries to become mature enough to be used to enhance the quality of life. With constant surveillance, the omnipresent healthcare networks provide rich contextual knowledge and alerting mechanisms against odd conditions. This minimizes the need for caregivers and allows the chronically ill and elderly to survive an independent life, as well as offering quality treatment for babies and small children whose parents both have to work[4].

III.   DISCUSSION AND CONCLUSION

For different areas of human life, the use of WSNs already offers remarkable benefits. Thanks to the constant advancement of technology, the capacities of sensor nodes will continue to increase and their production costs will decrease. This is the reason why the range of applications for WSN is expected to continue to expand.

The use of WSNs in particular fields, namely military, environmental, flora and fauna, health, industrial and urban, was explored in this article through the investigation of corresponding typical examples, both novel and well-known. From this review, it became apparent that not only does the use of WSNs give various advantages in particular domains compared to the

relative means and methods commonly used, but it also introduces novel applications. In addition, both the issues and solutions produced have been defined and addressed for different applications.

IV.   REFERENCES

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