

Effect of tag-to-anchor and multiple tag interference on uwb sensors accuracy for dynamic real-time position tracking of mobile robot in indoor environment

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ABSTRACT

Autonomous mobile robot application in industry application shows that there is an increase in productivity in a certain process that boost the output of the production, especially in an indoor environment. The main key component of an autonomous mobile robot is to have a precise navigation system. However, to increase the precision of the navigation system, the localization of the mobile robot is required. One of the methods to perform localization is by using Ultra-width band technology (UWB). Thus, this paper presents the study of the effect of interference on the UWB sensor's accuracy. Based on this study, the result shows that the accuracy of the UWB sensor is 20cm. Also, the possibility of data spread in the reading of the UWB sensor increase due to the increasing number of active tags.

KEYWORDS

Indoor positioning; Mobile robot; Ultra-width band

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