INDOOR NAVIGATION ALGORITHM FOR MOBILE ROBOT

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Recently there has been increasing research on the development of localization and navigation systems. Whereas most of the proposed approaches are suitable for outdoor operation, only a few techniques have been designed for indoor environments. This paper details the development of an indoor navigation system. It presents a general system consisting of sensors and algorithms for localization and navigation which enables to operate indoors. This is done by using trilateration method which has been successfully applied on complex nature of indoor environments. Set of experiments presented to validate our system using MATLAB program. Testing verified that good accuracy, sufficient for navigation, was achieved. This technique shows promise for future handheld indoor navigation systems that can be used in malls, museums, hospitals, and college campuses.

Key Words: *Wireless sensor network, beacons; localization, navigation*