

ABSTRACT

A method and related system design for autonomous navigation of a robot in structured indoor environments is presented. The robot platform comprises of two primary modules, one each for navigation and user interaction. A semantic map of the environment is created and stored for robot navigation purposes. To navigate its way to any destination in the indoor environment, the robot computes a set of optimal policies that direct its way through the various intersections. Moreover, a localization algorithm helps the robot in obtaining an estimate of its current location through the count of number of intersections passed, wheel odometry information, and/or other passive markers. The robots can communicate with a remote operator on the central management system of the indoor environment for information when needed. The invention is intended for use in the field of service robotics, for instance, hotels and hospitals, and surveillance robotics meant for indoor corporate environments.

FIG. 8 best represents the invention to be published.

REFERENCES

US20080009965A1, Autonomous Navigation System and Method.

US6694233B1, System for relative vehicle navigation.