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REPLACED

ABSTRACT

A plurality of reflectors are disposed along a travelling path, an automatic guided vehicle is started up at a position where a laser scanner can recognize four or more reflectors, and data on the angles and distances of the reflectors is obtained. When the first reflector is recognized, there are N possible hypotheses that would specify the reflectors. When a second reflector is recognized, the distance to the first reflector is rational, therefore, there are kN possible hypotheses (k is 10 or less). When a third reflector is recognized, the triangle formed by the three reflectors coincides with that on a reflector map, therefore, there are mN possible hypotheses ($m < 1$). Then, the present position is estimated according to mN possible hypotheses. The fourth reflector is recognized and the conformity is checked, the present position of the automatic guided vehicle is specified. Its error rate is about equal to the standard deviation obtained from angular resolution / 360 degrees x distance resolution / distance between the reflectors. To enable an automatic guided vehicle to be started up without initial position data.

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