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Abstract
Conventionally, automatic guided vehicles (AGV) are navigated either by guide wire or by a laser scanner. Those methods restrict the flexibility of AGV path planning and their movement. This paper proposes an efficient method that provides VR-based AGV path guidance. This system uses the generation of virtual force as force feedback and virtual 3D scene as visual feedback in the teleautonomous control loop, whereas a human intervention is required. To guide an AGV through environments, where some areas are marked as restricted yet not bounded with a closed wall, it is necessary to create a virtual wall in the 3D scene. Whenever the operator moves the AGV near to a predefined forbidden zone or an obstacle, a virtual force exerts on the joystick forbidding further movement. Meanwhile the operator obtains acoustic and visual signal through VR system. Simulation results show that this method provides better AGV guidance with less error.
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