

AUTONOMOUS MOBILE ROBOT HAVING ROBOT ARM WITH MULTIPLE DEGREES OF FREEDOM FOR ELEVATOR RIDING

ABSTRACT OF THE DISCLOSURE

An autonomous mobile robot having robot arm with multiple degrees of freedom for riding an elevator without communication ability is disclosed and includes a control unit, a sensing and perception unit, a cognition unit and an actuator unit. The control unit is configured to receive task instructions for performing a task at a target floor and generate control signals including floor information. The sensing and perception unit is configured to sense images and identify objects related to the elevator according to the control signal. The cognition unit is configured to derive position and orientation of objects. The actuator unit has multiple joints and an end effector in at least 3 degrees of freedom. The control unit is configured to send control commands including position and orientation information to the actuator unit. The actuator unit is configured to receive and execute the control command to perform an operation with the object by the end effector.

FIG. 2