

Simulation-based Service Scenarios Analysis for Commercial Deployment: Robot-Friendly Building Case

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ABSTRACT

Robot-Friendly Building is a recent concept that the building is integrated with the robot operation and services within its eco-system. With this concept, the residents or customers in the building can gain robot service experiences such that a robot delivers their food, beverage, and delivery packages and parks their vehicles. To optimize the entire experience of the robot services, we need to determine the optimal number and placement of robots by analysis. The actual deployment in the building is the one way to analyze necessary parameters. However, it is time-consuming and consider no building factors such as the number of elevators available. In this paper, we provide the simulation-based service scenarios analysis approach. In this approach, we analyze and detail the operation procedure of possible robot services and build the scenario operation in a basic 3D simulation framework to measure the service operation delay time over the number of robots. In addition, we analyze the results and provide potential discussion and consideration for the Robot-Friendly Building simulation and business.

keywords

3D Simulation, Service Scenarios, Robot, Robot-friendly building

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