



The Robot Award

SME Venture Prize (Small and Medium Enterprise Agency Director-General Award)

Collaborative Transportation Robot Thouzer Series

Doog Inc.

A collaborative transportation robot that can be easily used by anyone.



■ Functionality and characteristics of the Thouzer series

The Thouzer collaborative transportation robot is similar to conventional AGVs in that it has a line travelling function, but it also has automatic tracking and memory tracing functions. The automatic tracking function uses an infrared laser sensor (LiDAR) to recognize a person standing in front of it, and then tracks the person as they move. It can follow the operator anywhere while avoiding obstacles, and its carrying capacity can be flexibly expanded by connecting multiple Thouzers in a row. The memory trace traveling function, a unique technology developed by Doog, enables autonomous traveling by storing the route traveled by following the operator and tracing the memory. All the operator has to do is push the memory tracing button, and the Thouzer will follow the operator while saving LiDAR data frame by frame, memorizing the scenery around the route it has traveled. Once the route has been travelled once and memorized, the operator can push the replay route start button to have it autonomously travel the same route, referring to the memorized scenery. While general SLAM-type guideless AGVs require specialized technicians to build and change maps, that method is time-consuming and costly. The memory tracing system enables workers onsite to simply walk the route once and store it in the Thouzer, making it possible to change the route easily and flexibly, even if the environment changes weekly or even daily.

The Thouzer can also be customized in various ways. In addition to hardware customization such as attaching walls and shelves to the base unit panel, the main product, the Thouzer E Series, has expandability to add applications and link external devices via a network.

■ Benefits of implementing the Thouzer

The following benefits can be enjoyed by implementing a Thouzer:

- 1. Greater automation and efficiency of work:** For example, of the picking and shipping work that workers would ordinarily do all on their own, the work of carrying the items to the shipping area

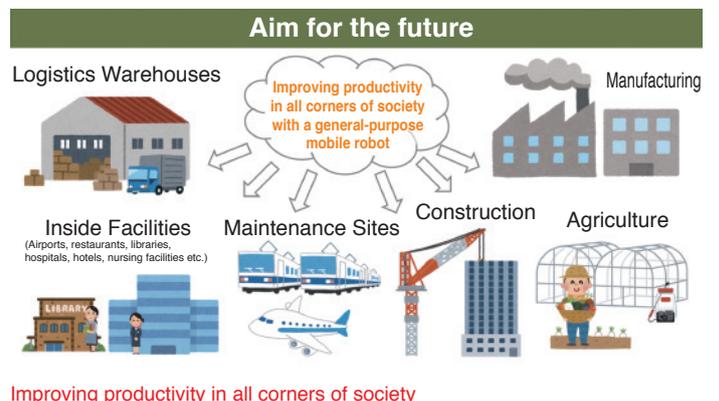
can be done by the Thouzer using line tracing and automated by memory tracing. The Thouzer can also pull another cart to do double the labor a human could, making it possible to have a more efficient operation with fewer people.

- 2. Reduced burden on workers:** By having the Thouzer do the transport work, the labor of moving heavy objects and walking long distances by the workers is reduced, making their physical burden lighter.
- 3. Avoidance of contact:** In particular with COVID-19, deliveries can be made without direct contact with people, for example to places where infected people are staying.

People at places where the Thouzer has been implemented have praised it for its easy implementation, easy operation, and operational flexibility.

■ To every corner of society, through a variety of partners

Thouzer is being implemented in a variety of sites through several partners. Doog provides base units and technical information for customization, and the partner companies provide customization, system construction, and maintenance services based on their unique strengths, with the aim to spread the product to every corner of society.



Improving productivity in all corners of society

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