

R&D of a large-scale automated warehouse system utilizing optimized fleet control for resolving the logistics crisis (RENATUS ROBOTICS K.K.)



City	Year of Establishment	Founder
Tokyo	2022	Takuma Osawa

Partner VC	Latest round of Fundraising	Valuation
Dawn Capital	-	-

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○ Business Plan
Alongside the growth of e-commerce, the large-scale growth of warehouses is an urgent matter. On the other hand, automation is necessary as large warehouses lead to an increase in worker walking distance. However, existing robots have a critical flaw of severe congestion occurring when multiple units are operating simultaneously. In order to resolve this issue, this project will lead to the development of RENATUS Myria, a large-scale automated warehouse system utilizing optimized fleet control.

- Research Outline
In this R&D effort, RENATUS Myria, an automated warehouse system which implements the simultaneous operation of multiple shuttle robots in any given floor, will be developed. By realizing a new system with significantly higher throughput and scalability compared to existing systems, RENATUS Myria will aim to resolve the severe labor shortage issue in the warehouse industry. The R&D items for RENATUS Myria are as follows:
- ① In a physical environment, verify that 2 robots (per floor) can share and operate on the same floor through the proprietary dispatch algorithm.
 - ② After pre-operation inspections, verify that the shuttle robot can operate continuously for 8 hours without malfunctions or errors.
 - ③ With numerical experimentation, verify that the real-time control of 3000 shuttle robots is possible through the algorithm.
 - ④ Keep the time delay between the dispatch software's route planning and the actual shuttle to under 1 second.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Energy & Infrastructure	STS 2024FY	JPY 41 million	United States

- International collaborative technology demonstration
- Relationship development with potential local partner
- Conduct a patent search in the US in order to assess the feasibility of business expansion in the US.
This information is essential for developing an intellectual property portfolio with global expansion in mind.