

Intelligent Unmanned Store Management System



SPIDER-GO



Tactracer, Innovation Innovated

About the Company

Tactracer is a venture capital firm established in 2015 and currently operating in the Hanyang University ERICA Business Incubator in Ansan. Members include the CEO and four developers each covering key areas, and Tactracer's main products are Spider-Go, an inventory management robot, and Bumblebee, a next-generation food-serving robot whose development was launched this year. Tactracer applied for and registered patents for both products for the first time in the world.

Background

Existing inventory management methods have been performed based on manual work, such as with the human eye, barcodes or RFID scans. Therefore, regular inventory surveys were not available for warehouses with various items and a large warehouse, and the low reliability of survey information was also an issue. For the past decade, there have been attempts to use drones or self-driving robots, but these efforts remain at the level of pilot application due to technological limitations in applying them in the field. By complementing the shortcomings of existing technologies and learning from their advantages, Spider-Go was designed from the beginning as a product optimized for inventory management.

About the Product

Tactracer's products are all named after insects in line with the company's eco-green management. Inspired from the movements and appearance of spiders, Spider-Go moves through every corner of the warehouse/store on rails and wires to track the inventory status, just like spiders move along their webs. Spider-Go reads various types of labels including barcodes, letters and RFID tags attached on products, boxes and pellets and transfers data in real-time along with the location information. Spider-Go is designed as a hardware platform capable of configuring different modules, allowing the installation of modules according to customer needs. Tactracer is currently focusing its R&D efforts on the 3D inventory image analyzing technology, which measures the volume of inventory with LiDAR sensors and individually calculates quantities with AI analysis, as the features are the ultimate goal of Spider-Go's scanning technology. The robot can be used on high racks of up to twenty meters as it moves along wires, and it is a full-fledged all-in-one device as it detects fire, monitors temperature and humidity and also serves as a security camera. Just by extending the rails, a single device can manage the inventory of an entire warehouse regardless of the warehouse size, while inventory information can be updated in real-time when more devices are installed. Considering that most warehouses only need an inventory survey on a daily basis, one or two devices will suffice.

Bumblebee is a food-serving robot whose development was launched this year. The next-generation food-serving robot was built by thoroughly analyzing the strengths and weaknesses of existing self-driving food-serving robots and completely resolving the existing problems. Bumblebee does not interfere with human traffic and detects and navigates to tables on its own. It can even deliver food to low wooden benches with raised spots, rooms and even outdoors. Bumblebee will be showcased in more detail through a video by mid-year.

Competitive Edge and Business Strategy

The biggest advantage of Spider-Go is that a single



Photo 1. Spider-Go

device can be installed regardless of the rack height or size, and it can also be leased on an affordable monthly rental fee. Despite the low cost, Spider-Go fulfils various functions including scanning the inventory of different locations, timely evaluating major disasters including fire, creating a cold chain using temperature and humidity sensors, and serving as a security camera to determine responsibility for theft or accidents. Different features can be combined according to the detection target and objective.

In order to minimize the initial costs of users and flexibly cope with malfunctioning issues that may arise after a product purchase, Spider-Go's business model is to only provide warehouse management services by leasing products to subscribers.

Charging a monthly rental fee of KRW 2 million per device, Tactracer rents Spider-Go to supply vendors designated for each country, who will then provide services to end users. Driving rail installation costs KRW

30,000 per meter, and the installation cost can also be paid over the lease period according to the installation space and the term of agreement.

Tactracer's competitiveness comes from the management's brilliant ideas and product planning capabilities, as well as the team members' agile and thorough execution. These are proven by the fact that all of Tactracer's products including Spider-Go and Bumblebee are drawing the attention and expectations of global players even before the product launch.

Future Plans

Korea

- Harim
 - MOU signing (<https://www.venturesquare.net/870223>, <https://www.mk.co.kr/news/business/10577079>)
 - Participation in Yangjae Urban High-Tech Logistics Complex Project http://data.tactracer.com/article_harim.pdf
 - Bumblebee to be introduced to ten of Harim restaurants in Pangyo
- SK Shielders
 - Requested for an exclusive service provision in Korea for Tactracer's Spider-Go and Bumblebee. Follow-up meeting with the president scheduled.
- Daeyoung Engineering (<http://m.newstap.co.kr/news/articleView.html?idxno=183299>)
 - Tier 1 vendor of Hanwha Precision Machinery. Parts management facility in Changwon, Gyeongnam installed with Spider-Go.
 - Hanwha Precision Machinery reviewing to introduce Spider-Go across subsidiaries.
- Uji Electronics (https://comp.fnguide.com/SVO2/ASP/SVD_Main.asp?giccode=A065680)
 - Decision finalized to introduce Spider-Go in its domestic facilities in March. To be scaled up to the factory in Vietnam.

Overseas

- Korean American Chamber of Commerce USA
 - Investment and request for an exclusive distribution/



Photo 2. Bumblebee

- service provision in the United States.
- Aurora World, Inc.
 - Requested the introduction of Spider-Go in its logistics warehouse in California, US.

By Jay Chulwoo Jun

CEO

TACTRACER Co., Ltd.

gte483w@tactracer.com

** The opinions expressed in this article are the author's own and do not reflect the views of KOTRA.*