

September 8, 2021

**MIRAIT Holdings Corporation****[MIRAIT Corporation]****Using the HerbF® golf course lawnmowing robot to pass down veteran skills in golf course maintenance****Demonstration of fully automated lawnmower on September 24 (Fri)**

Hasegawa Laboratory of Shibaura Institute of Technology, Seibu Construction Co., Ltd. and MIRAIT Corporation concluded a memorandum of understanding on mutual cooperation for joint research and development of the HerbF® system for robotization of existing golf course lawnmowers on Tuesday, September 07, 2021. This R&D is for robotization of existing lawnmowers in operation using the “teaching playback method” reproducing the actions of a veteran greenkeeper with the aim of unmanned lawn mowing. This demonstration of automated lawnmowing will be carried out because it has currently almost reached the level of unmanned testing.

In recent years, there have been concerns at golf courses about a crisis of succession of skills of veteran greenkeepers, the increased workload of greenkeepers and the deterioration of the working environment due to the increasingly serious labor shortage. In order to resolve these issues, by robotizing existing equipment, HerbF® will support golf course maintenance where there are concerns about a shortage of skills and a labor shortage to maintain quality. Productivity of lawnmowing in golf course maintenance is also expected to increase by operating HerbF® during idle time such as at night.

The roles of each of the parties in the demonstration are as follows: Shibaura Institute of Technology will conduct research and development of HerbF® (general programming such as autonomous running and LiDAR control), Seibu Construction Co., Ltd. will manufacture and adjust the apparatus for attaching HerbF®, and MIRAIT Corporation will provide 5G communications technology and testing sites, advice from veteran greenkeepers and existing lawnmower equipment.

As the system has presently almost reached the level of unmanned testing, a demonstration of automated lawnmowing using the teaching playback method of the HerbF® system for robotization of existing golf course lawnmowers will be conducted at the Musashigaoka Golf Course (Hanno-shi, Saitama) from 1pm until 5pm on Friday, September 24, 2021.

Going forward, the three parties intend to consider prototype development and commercialization in 2023 based on the data obtained in the demonstration.



Appearance of HerbF®



Memorandum of understanding signing ceremony  
Center) Professor Hasegawa, Shibaura Institute of Technology  
Left) Director and Executive Officer Sekiguchi (Business Management and Corporate Planning), Seibu Construction  
Right) Managing Executive Officer Yagi (Head of MIRAIT Development Headquarters), MIRAIT

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## 1. Organizations (representatives) concluding the memorandum of understanding and key relationships

- (1) Shibaura Institute of Technology Hasegawa Laboratory (Professor Tadahiro Hasegawa)  
Research and development of HerbF (general programming such as autonomous running and LiDAR control), etc.
- (2) Seibu Construction Co., Ltd. (Makoto Sato, President)  
Manufacture and adjustment of apparatus for attaching HerbF, etc.
- (3) MIRAIT Corporation (Toshiki Nakayama, President and Chief Executive Officer)  
Provision of 5G communications technology and testing sites, advice from veteran greenkeepers and existing lawnmower equipment, etc.

## 2. Effects of the research and development

- HerbF will provide support and maintain quality in the maintenance of golf courses where there are concerns about labor shortages
- Productivity will be improved by operating HerbF at idle times such as at night

## 3. Joint research period

From the date of conclusion of the memorandum of understanding until March 31, 2022  
(automatically renewed according to research and development conditions)