

A Joint Press Release by Fraunhofer Singapore and LDR Technology

Fraunhofer Singapore's Augmented Reality SmartInstructor tackles manpower and training issues for Chef-in-Box, a vending machine SME



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Fraunhofer Singapore in cooperation with LDR Technology introduces the first version of an Augmented Reality maintenance platform for vending machines.

“For small and medium enterprises, time consuming and human resource intensive training can be costly. With AR instructions on a mobile device, the worker is provided with real-time guidance in their maintenance, repair and operations work on-site. The AR SmartInstructor delivers a cost-effective training method that can be accessed by a worker anytime, anywhere for improved performance. Fraunhofer Singapore actively works with forward-thinking SMEs to optimize their processes, with augmented reality and virtual reality solutions that brings about scalability and flexibility. “Professor Wolfgang Müller-Wittig, director of Fraunhofer Singapore says.

The proof of concept developed in Singapore was well received at its debut at the Food and Hotels Asia Expo 2018.

At the SME Technology and Innovation Day 2018 held at Resort Worlds Sentosa, Fraunhofer Singapore uses this concrete example of the AR SmartInstructor to demonstrate the capabilities and potential of Industrie 4.0 for maintenance, repair and operations (MRO).

Chef-in-Box's vending machines at various locations dispense ready-meals which are heated by microwave. The maintenance of the vending machines includes the reloading of set meals, depending on the location and popularity of the selection.

Knowledge of the touch interface, storage tower, freezing mechanisms is necessary for effective maintenance. One-to-one training is necessary to equip the maintenance person with the required skills, which is manpower and time-intensive. Further to this, the installation of vending machines overseas needs the adequate skills set of the technical team on-site.

The SmartInstructor on a mobile device makes training flexible and available anytime and anywhere the worker and machine are. AR SmartInstructor technology bridges the gap between the machine and information by bringing relevant available digital information into the real-world context. Workers just need to learn how to use the augmented reality hardware, and they will be prepared for field work.

In the next phase, the AR solution will include predictive maintenance via smart analytics of sensors and machine behaviour, providing essential information in real-time for the technician to effectively maintain vending machines. Here Fraunhofer Singapore will also work with the Software-Cluster, one of the German leading-edge clusters supported by the German Federal Ministry of Education and Research.

The SmartInstructor digitally superimposes a user guide that interacts with real-time objects to place augmented instructions directly into the technician's field of view. A digital checklist enhanced with diagnostic data, allows the user of Fraunhofer Singapore's SmartInstructor to identify parts of the machine which requires attention.

By providing reminders and step-by-step instructions with the SmartInstructor, errors and time spent on complex tasks are reduced. Automatic maintenance reports will also improve the quality management of the hot food vending machines.

Png Bee Hin, CEO of LDR Technology comments that, "The average consumer has embraced apps for convenient transport, and it is just a matter of time before the average business owner embraces apps that makes training easier."

As Singapore's small and medium enterprises look to expand locally or overseas, the cost and logistics of training new maintenance personnel can be kept low with Fraunhofer Singapore's AR training technology.

Jocelyn Chng, Group CEO of JR Group Holdings Pte Ltd, brand-owners of Chef-in-Box which is expanding to the United Kingdom says, "Being a first-mover when it comes to disruptive innovation, I believe in embracing technology to stay ahead of my competition. We are constantly looking at technology to help us and our partners overseas."

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