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SMK Corporation

SMK and Israeli Company EchoCare Contribute to Reduce Accidents in Bathroom with Radar Based Monitoring System

SMK Corporation (President, CEO and COO: Yasumitsu Ikeda, hereinafter referred to as SMK) provides solutions for the problems in the bathroom with “Radar based monitoring system” which EchoCare Technologies Ltd. (CEO: Rafi Zack, hereinafter referred to as EchoCare), an Israeli company with which SMK has a capital and business alliance, has developed.

SMK will initiate sample sales of “Radar based monitoring system” in October 2021 and aims to launch mass production in the spring of 2022.

<Problems in the bathroom>

Approximately 19,000 (*1) fatal accidents occur in bathrooms every year in Japan, however, products and services to detect dangerous situations such as falls and submersion are not yet widely available. In addition, privacy is required in the bathroom which means camera-based system is not acceptable to use.

On the other hand, a system using radio frequency sensors is very sensitive to the specific environment of the bathroom (small room surrounded by steel plates, shower, water movement, etc.), which makes it technically very difficult to achieve a high accuracy of detection.

<Features of Radar based monitoring system>

SMK and EchoCare have conducted multiple PoCs with Chubu Electric Power Co.,Inc., housing complex management companies such as JS Corporation, unit bathroom makers, and elderly care facilities management companies, and have



succeeded in increasing the detection rate of position, posture, falls, and submersion in the bathroom up to 90% (*2) by learning various bathroom sizes and the effects of showers and water surface fluctuations as noise.

The elderly care monitoring system using UWB (*3) radio waves is a unique system that not infringe on the privacy of the elderly as it does not require image recognition and it can cover an area of approximately 40 m² (*4) with a single device.

<Functions enabled by Radar based monitoring system>

By automatically detecting position, posture, falls, drowning in the bathtub and breathing conditions, the system can alert you to emergencies and abnormal conditions. In addition, by monitoring Activity of Daily Living of a person and accumulating data such as activity status and gait profile in the cloud, the system can be used to predict changes in health deterioration or dementia.

By releasing samples before mass production with unique features for bathroom, SMK and EchoCare work together to conduct further PoCs in ordinary houses, elderly care facilities and hospitals, which should lead to mass production launch in the spring of 2022 and aims to achieve sales of more than five billion yen in five years.

(*1) According to the Consumer Affairs Agency on January 20, 2016

(*2) Accuracy results in the SMK test environment

(*3) UWB=Ultra Wide Band

(*4) Coverage in an area with good visibility

**<Demonstration Video>**

For an example of how the system is used in an actual environment, please see the demo video at the following URLs.

- 1) Living room <https://youtu.be/acD6rqfgkV0>
- 2) Bathroom https://youtu.be/XPmfklh-p_U
- 3) Hospital room <https://youtu.be/H7mZHJb4Ntg>

<Webinar Invitation>

We would like to invite EchoCare CEO Rafi Zack to hold a webinar as follows;

-Date: Sep 9th, 2021

-Time: 4:00-5:00pm (Japan Time)

-Register: <https://www.smk.co.jp/news/event/2021/webinar0909/>

(*This webinar will be held in Japanese only)

<Reference>

In May 2019, SMK invested EchoCare and both signed business alliance agreement for the manufacturing and selling of the EchoCare's Radar based monitoring system using UWB radio waves for the Japanese market.

<About EchoCare Technologies>

Israel-based start-up company founded in 2015 that develops Elderly Care Home Observer: ECHO system.

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