

Development of Advanced TPS for Global Production Strategy: Proposal and Demonstration of V-MICS-VM for Intelligence Operators

Hirohisa Sakai

Kawasaki Heavy Industries, Ltd., Japan

Corresponding author: Hirohisa Sakai

Senior Staff Officer, Automotive Group, Robot Business Division

Precision Machinery & Robot Company

Kawasaki Heavy Industries, Ltd.

105, Shobuike, Nagakute-shi, Aichi, 480-1115 Japan

 sakai_hirohisa@khi.co.jp

Abstract

To achieve simultaneous, worldwide high-quality assurance and other global production developments, today's task is to maintain high reliability in production facilities. In response to the increasing expansion of overseas plants, it is necessary to improve and maintain highly accurate production equipment through the development of intelligence operators. The authors have clarified *Advanced TPS* as a global production technology and management model designed to realize high quality assurance in global production. Furthermore, the authors propose *V-MICS-VM* (*Virtual - Maintenance Innovated Computer System – utilizing Visual Manual*) as a new people-centered principle that contributes to *Advanced TPS* utilizing a visual manual that consists of three elements, (i) fundamental skill acquisition (-FSA), (ii) equipment knowledge acquisition (-EKA) and (iii) preventive maintenance acquisition (-PMA). Specifically, the authors have developed a visual manual that can be simultaneously distributed and used throughout the world. The effectiveness of this system has been verified at the domestic and overseas Toyota plants.

Received: January 24, 2022; **Accepted:** January 28, 2022; **Published:** February 16, 2022

Biography

Dr. Sakai had received a bachelor's degree in Electrical Engineering from Nagoya Institute of Technology in 1986 and joined Toyota Motor Corporation. He has been responsible for Research & Development and Application of Robots in Body Production Engineering Division, specifically Fully Automated Assembly Processes.

He has a Doctoral Degree (PhD.) in Industrial Engineering from Meiji University in 2010. From 2016 to 2018 he was engaged in Vice President of Toyota Motor Manufacturing, Texas, Inc. From the beginning of this year, he is currently being sent on loan to Kawasaki Heavy Industries, Ltd., Senior Staff Officer of Robot Business Division.