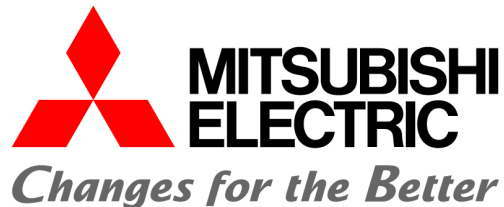**Plenary Speaker 3: Dr. Haruhisa Okuda (MITSUBISHI ELECTRIC CORPORATION, Hyogo, Japan)**
Title: Artificial Intelligence and Technologies of Arm-type and Mobile Robots in Industry

Haruhisa Okuda, Ph.D., Chief Engineer, Mitsubishi Electric Corporation, Japan.
Visiting Professor, Kobe University, Japan. (Concurrent post)

Education: B.E. and M.E. from the Department of Precision Engineering, Kyoto University in 1991 and 1993 respectively. Ph.D. from Hokkaido University in 2007.

Employment: In 1993, he joined Mitsubishi Electric Corporation, where he has been engaged in the research and development of 2D and 3D object recognition system and AI technology for industrial robots at mainly Advanced Technology R&D Center. He has been concurrently serving as a visiting professor at the Graduate School of System Informatics, Kobe University since 2019. He is a member of the RSJ.

Abstract: In recent years, labor shortage has become a serious issue in industrial fields. Various technologies including robot and information processing system to realize flexible work like humans are effective solutions to this issue. Artificial intelligence technology of arm-type robots equipped with 3D sensors and force sensors has been applied in the manufacturing field to cope with different intelligent and highly precise tasks in Mitsubishi Electric. In addition, various technologies to expand the scope of application to the service field, as well as to realize highly functional delivery with mobile robots is under development. Furthermore, IoT technology is also being used for easy and quick on-site implementation and efficient operation. This speech introduces these initiatives with actual examples.