Overview

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Foreword to Special Issue on Audiovisual and Communication Technologies for a Safe, Secure, and Comfortable Society

A digital transformation (DX) to use new advanced technologies, such as the Internet of Things (IoT), big data analysis, and artificial intelligence (AI), in various fields is under way around the world. This transformation is improving convenience and comfort in society while also making social systems more complex in both the real world and cyberspace, increasing the risks to both security and safety. The Mitsubishi Electric group is therefore promoting initiatives to create value, such as simultaneous achievement of "sustainability" and "safety, security, and comfort", by helping to solve social issues.

Audiovisual and communication technologies are important for improving convenience and comfort while reducing risks. Mitsubishi Electric Corporation has been working on video surveillance and video content analysis (VCA) technologies and the underlying communication technologies as follows.

For audiovisual technologies, our proprietary compact AI "Maisart" and VCA technologies are being used to help ensure safety, resolve labor shortages, and improve quality by detecting people with white canes and by improving the quality and productivity of operations by analyzing the movement of workers at plants.

For optical communication technologies, we have been working on the following to cope with the increase in communication traffic due to 5G: developing next-generation passive optical network (PON) systems for optical access networks; and improving the speed and reliability of optical cross-connect systems for core metro networks, thus making communication flow more comfortable.

Regarding wireless technologies, we have rapidly deployed smart meter systems over a wide area of Japan, making meter-reading more intelligent for the electric infrastructure. For transportation infrastructure, we have been improving the level of operation management and the convenience and comfort of various services on trains by digitizing and speeding up train radio communications and adding more functions.

Regarding IoT, we have increased the throughput of IoT gateways, provided different models based on environmental resistance, and implemented cybersecurity functions.

Mitsubishi Electric will continue to develop audiovisual and communication technologies and appropriately apply advanced technologies such as IoT, 5G, and AI, to help build a safe, secure, and comfortable society.

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