"Smart Lighting" Paves Way for Brighter Future

In April 2014, Minebea established the joint venture MIK Smart Lighting Network Co., Ltd. ("MIK") with Iwasaki Electric Co., Ltd. and Koizumi Lighting Technology Corp. The companies are combining their respective technologies to contribute to the development of next-generation lighting systems designed for "Smart Buildings" and "Smart Cities."

For Next-generation "Smart Lighting" Systems

Minebea has been a leader in the development of circuit design and manufacturing technology used in optical components for lighting, personal computers and televisions, as well as light guide plate design and manufacturing technology for mobile phone and smartphone backlights. Now, we are combining these technologies with highly energy-efficient LED lighting and IT to create innovative, highly efficient lighting systems for "Smart Buildings" and "Smart Cities." To further this aim, in 2013 we took a capital stake in Paradox Engineering SA, a Swiss leader in wireless networking technologies, and then formed MIK with Iwasaki Electric Co., Ltd. and Koizumi Lighting Technology Corp., respective leaders in exterior and interior lighting. Through MIK, we are now developing "Smart Lighting" products which efficiently use and manage energy.

"Smart Lighting" not only replaces traditional incandescent, fluorescent, and halogen lights with energy-saving LED lighting, but utilizes IT to make great leaps in energy efficiency. These systems feature advanced lighting control and power management. For example, the systems can adjust street lighting based on the volume of pedestrian and vehicular traffic, or automatically adjust a building's external lighting based on the lighting usage inside the building. LED lighting reduces power consumption by about 60-70% compared with traditional lights. By incorporating network controls to efficiently manage the lighting systems, the power consumption can be reduced by about another 15%. Thanks to its high energy efficiency, the "Smart Lighting" market is seen throughout the world as the next-generation of lighting equipment. In 2014, our proposal to promote high efficiency LED street lighting technology in Cambodia was selected as one of the Ministry of Economy, Trade and Industry's projects to encourage the dissemination of Japan's global warming mitigation technologies*, and we have begun efforts to commercialize the systems. In this way, we are realizing the dream of "Smart Lighting."

*Ministry of Economy, Trade and Industry (METI) is aiming to disseminate low-carbon technologies and products in developing countries to reduce the emission of greenhouse gases. The contributions to reducing emissions can be applied to Japan's targeted emissions reduction under the Joint Crediting Mechanism (JCM). METI is soliciting effective projects to propose to the developing countries.

Voice

Wireless Lighting Networks to Make Streets More Comfortable

Michiya Kagami
Managing Executive Officer
Engineering Development Division
Electronic Devices & Component
Manufacturing Headquarters

Our vision for "Smart Lighting" is to link all street lighting in a given area into network which is not only energy efficient, but which serves as a building block for the creation of "Smart Cities." Wireless systems for street lighting can serve a larger purpose than just lighting; they can be the cornerstones for various kinds of networking paradigms.

For example, the network can be used to provide Wi-Fi connection spots or to install wireless security cameras and protect the security of communities. At a time when communities are seeking expanded medical services, these networks can wirelessly transmit data on nearby patients and serve as a monitoring function. Additionally, the networking of sensors embedded in bridges, tunnels, and other traffic infrastructure can continually monitor the status of aging facilities and rapidly notify administrators of abnormalities to help protect public safety. These kinds of social contributions have great significance for society and are emblematic of Minebea's commitment.

Networking technologies tie together and buttress three of the "Five Arrows" of our business strategy, namely EMS products, lighting devices, and measuring components. By utilizing our technological capabilities and solving problems, we can achieve growth in new fields.