

## Demonstration Experiment of Smart City Solutions in Osaka Using MinebeaMitsumi's LED Streetlights with Sensors

MINEBEA MITSUMI Inc. (MinebeaMitsumi) hereby announces that a demonstration experiment for the development of smart city solutions will start from September 1, 2020 with the support of the Concept Demonstration Promotion Team Osaka (the Promotion Team), which is consisted by the Osaka Prefectural Government, the Osaka City Government and the Osaka Chamber of Commerce and Industry.

With our unique wireless technology and mounted environmental sensors and a camera on smart lighting, MinebeaMitsumi's smart city solution aims to monitor the environmental conditions around the road, traffic volume, flood water on the road, etc.

The Promotion Team has been supporting us to carry out demonstration experiments in Osaka more smoothly and effectively, and this is a part of their support.

In this demonstration experiment, we install street lights with sensors that can monitor surrounding environmental conditions (wind speed/direction, temperature/humidity, atmospheric pressure, rainfall, illumination, UV and acceleration) on six roads managed by Osaka Prefecture. The level of illuminance of these streetlights are centrally controlled wirelessly and we also collect surrounding environmental data. By utilizing the collected data, Osaka Prefecture can immediately check the weather conditions (temperature, wind speed, etc.) of the prefectural roads in mountainous and coastal areas that they manage. In particular, we will verify whether it is possible to monitor the weather conditions that can be utilized for road management operations in summer and winter season.

MinebeaMitsumi was adopted as one of the financing programme for the model projects under the "Joint Crediting Mechanism ("JCM") entrusted by the Ministry of the Environment of Japan. Since then, we have been developing smart lighting solutions in all provinces of Cambodia. We have also conducting the test in Japan, but this demonstration test is of the largest scale ever for our company in Japan. In addition to the environmental sensor mounted on the street lightings in this demonstration experiment, we also plan to have a camera for measuring traffic volume, a water level sensor for detecting flood water, a snow depth gauge for measuring precipitation, and a rain gauge (partly under development). MinebeaMitsumi aims to expand these solutions to be used by local governments in the future.

With a focus on EXPO 2025 OSAKA, KANSAI, JAPAN, which will be held under the concept of the "People's Living Lab," the Osaka Prefectural Government, the Osaka City Government, and the Osaka Chamber of Commerce and Industry (OCCI) are working closely to create an environment suitable for conducting innovative Demonstration Projects and create a virtuous cycle for generating new businesses in Osaka.

## [Demonstration Overview]

Period: From Tuesday, September 1, 2020 to Tuesday, August 31, 2021 \*Demonstration period may vary by several days depending on the installation location

Places: Six roads managed by Osaka Prefecture

Conducted by: MinebeaMitsumi Inc. (Head Office : Miyota-machi, Kitasaku-gun, Nagano, Japan Representative Director, CEO & COO : Yoshihisa Kainuma)



Smart Lighting (Image)

## [MinebeaMitsumi Smart City Solution]

MinebeaMitsumi has developed a high efficiency LED streetlight with wireless functionality together with Iwasaki Electric with whom we have a business alliance, and been promoting the "Smart CityOpen in a new window" project since 2015.

We are building a system that can collectively monitor functions related to urban life by centrally managing the LED streetlights in the cloud with wireless functionality, making it possible to monitor lighting time and power consumption, and combine various sensors (environmental sensors, parking sensors, etc.), power meters, surveillance cameras, etc.

We continue to take on the challenge of evolving lighting equipment devices with various added value beyond simple lights, such as energy saving, enhanced convenience for urban life, and improved safety.

\* About 6LoWPAN: The communications system supporting MinebeaMitsumi's smart city

· Constructs a mesh network that is effective in areas with many trees and buildings.

• If communication goes down, the LED streetlights with wireless functionality will automatically build a new network.





## [About the MinebeaMitsumi Group]

MinebeaMitsumi is a comprehensive precision components manufacturer that integrates a wide range of cutting-edge technologies, from ultra-precision machining technologies, such as miniature and small ball bearings, which boast the No.1\* global market share, to motors, sensors, semiconductors, wireless technologies. We create new value through difference and contribute to the age of IoT (Internet of Things) as an Electro Mechanics Solutions<sup>TM\*\*</sup> provider.

Established: July 16, 1951

Capital: 68,258 million yen (As of March 31, 2020)

Representative: Yoshihisa Kainuma, Representative Director, CEO & COO

Outline of Business:

Machinery Components Business, Electronic Devices and Components Business

Automotive, Industrial Machinery and Home Security Unit Business

Common Stock Listings: Tokyo and Nagoya

Consolidated Net Sales:

MinebeaMitsumi Group<br/>ABLIC Group978,445 million yen (April 1, 2019 - March 31, 2020)<br/>30,574 million yen (April 1, 2019 - March 31, 2020)\*\*\*Consolidated Number of Employees: About 100,000

Operation Sites: 27 countries, total 184 sites (Production and R&D 93 sites, Sales 91 sites)

Website: <a href="http://www.minebeamitsumi.com/english/">www.minebeamitsumi.com/english/</a>

\* Ball bearing market external diameters of 22mm or less. According to our research.

\*\* "Electro Mechanics Solutions" is a registered trademark in Japan of MinebeaMitsumi Inc. Its registration No. is 5322479.

\*\*\* ABLIC Group joined MinebeaMitsumi Group on April 30, 2020 through the business integration.

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