"Intelligent" Traffic Signals Help to Ease Traffic Congestion in 14 Cities Across Russia
–Congestion reduction of up to 66% achieved and 8 cities are very interested in bringing the system to their roads–

NEDO, **Kyosan Electric Manufacturing Co., Ltd., and Nomura Research Institute, Ltd. confirmed through a joint traffic simulation study in 14 cities in Russia that an up to 66% reduction in traffic congestion can be expected with the introduction of intelligent traffic signals to intersections. Based on this result, eight out of 14 cities are showing a keen interest in bringing the traffic signals to their roads. Kyosan Electric Manufacturing Co., Ltd. and Nomura Research Institute, Ltd. aim to disseminate the signals in Russia, including those eight cities, and to promote them to the former Soviet Union and Commonwealth of Independent States (CIS) countries.**

1．Overview

In Russia, various investment projects are being launched mainly in major cities with the aim of transforming them into smart cities. One of the most important issues is how to reduce chronic traffic congestion. From 2015 to 2017, NEDO, Kyosan Electric Manufacturing Co., Ltd., and Nomura Research Institute, Ltd. carried out a demonstration project for intelligent traffic signals[1] in Moscow and achieved a nearly 40% reduction in traffic congestion[2].

NEDO, Kyosan Electric Manufacturing Co., Ltd., and Nomura Research Institute, Ltd. then carried out a traffic simulation study in 14 cities[3] in Russia from 2018 to 2019 with the goal of expanding the promotion of intelligent traffic signals in Russia.

As a result of the study, a congestion mitigation effect of between 12% to 66% (33% on average) was observed, as well as a reduction of environmental impact coupled with a positive economic effect expected in all cities. A study report was compiled and submitted to the relevant Russian ministries (the Ministry of Foreign Affairs, the Ministry of Economic Development, the Ministry of Construction Housing and Utilities, the Ministry of Transport, and the Ministry of Industry and Trade). In cooperation with Japan's Ministry of Economy, Trade and Industry, and Japan's Ministry of Land, Infrastructure, Transport and Tourism, NEDO has been working to introduce support measures for the traffic signals in local cities by utilizing Japan-Russia intergovernmental dialogue.

As a result, in February 2021, Russia's Ministry of Construction, Housing and Utilities made an announcement on behalf of eight[4] of the 14 cities about their interest in bringing the traffic signals to their roads.

This demonstration project and simulation study have led to the introduction of intelligent traffic signals in Russia. At the Japanese-Russian Working Group on Urban Environment set up by Japan's Ministry of Land, Infrastructure, Transport and Tourism and Russia's Ministry of Construction, Housing and Utilities, this project was cited as one of the successes of the Japan-Russia cooperation project based on the eight-point cooperation plan[5].

2．Future plans

Based on the results of our demonstration project and simulation study, Kyosan Electric Manufacturing Co., Ltd. and Nomura Research Institute, Ltd. aim to disseminate the traffic signals in Russia, including the above-menitoned eight cities, and then expand to the former Soviet Union and CIS countries. In addition, Kyosan Electric Manufacturing Co., Ltd. plans to carry out a pilot project in 2023 in St. Petersburg, which is one of the 14 cities in the simulation study and is also a model city for Japan-Russia urban development[6].

[Notes]

1 Intelligent traffic signals (ARTEMIS：Autonomous and Real‐Time signal control based on Estimation traffic demand for Minimization of Signal waiting time)

When the traffic signals are installed at adjacent intersections, they exchange traffic information with each other over multiple signals and calculate the optimum signaling parameter using an information such as estimated arrival time and the number of cars.

2 Reduction in traffic congestion

The effect of reducing the traveling time required to move the target section during peak morning and evening hours before and after the introduction of intelligent traffic signals.

3 14 cities

Moscow, St. Petersburg, Yekaterinburg, Perm, Voronezh, Saratov, Tyumen, Izhevsk, Ryazan, Lipetsk, Kaliningrad, Murmansk, Yuzhno-Sakhalinsk, Gatchina

4 Eight cities

Moscow, St. Petersburg, Perm, Voronezh, Saratov, Tyumen, Kaliningrad, Murmansk

5 The eight-point cooperation plan

In May 2016, at the Japan-Russia summit meeting in Sochi, then Japanese Prime Minister Abe presented Russian President Putin a cooperation plan consisting of eight points to promote economic exchange between Japan and Russia.

6 Model cities for Japan-Russia urban development

Voronezh, Vladivostok, St. Petersburg

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