SIP-adus Workshop 2017
on Connected and Automated Driving Systems

Dynamic Map

Research for the advancement of driving support by utilizing traffic regulation information

■ Object of the Project

To realize safe driving support and automated driving systems, it is considered crucial that the vehicle recognizes traffic regulations in real time and implements control. Each Prefectural Police has its own database for traffic regulation information. But its data format and function are different each others. To integrate traffic regulation information from each Prefectural Police, a standard electronic data format(the standard format) was built in fiscal 2015 and a model system of traffic regulation information for a Prefectural Police department was developed at Kyoto Prefectural Police in fiscal 2016. With the aim of developing and verifying a system that integrates traffic regulation information managed by each prefectural police and provides it to vehicles, the following will be implemented to build a centralized database of traffic regulation information by gathering traffic regulation information managed by each prefectural police:

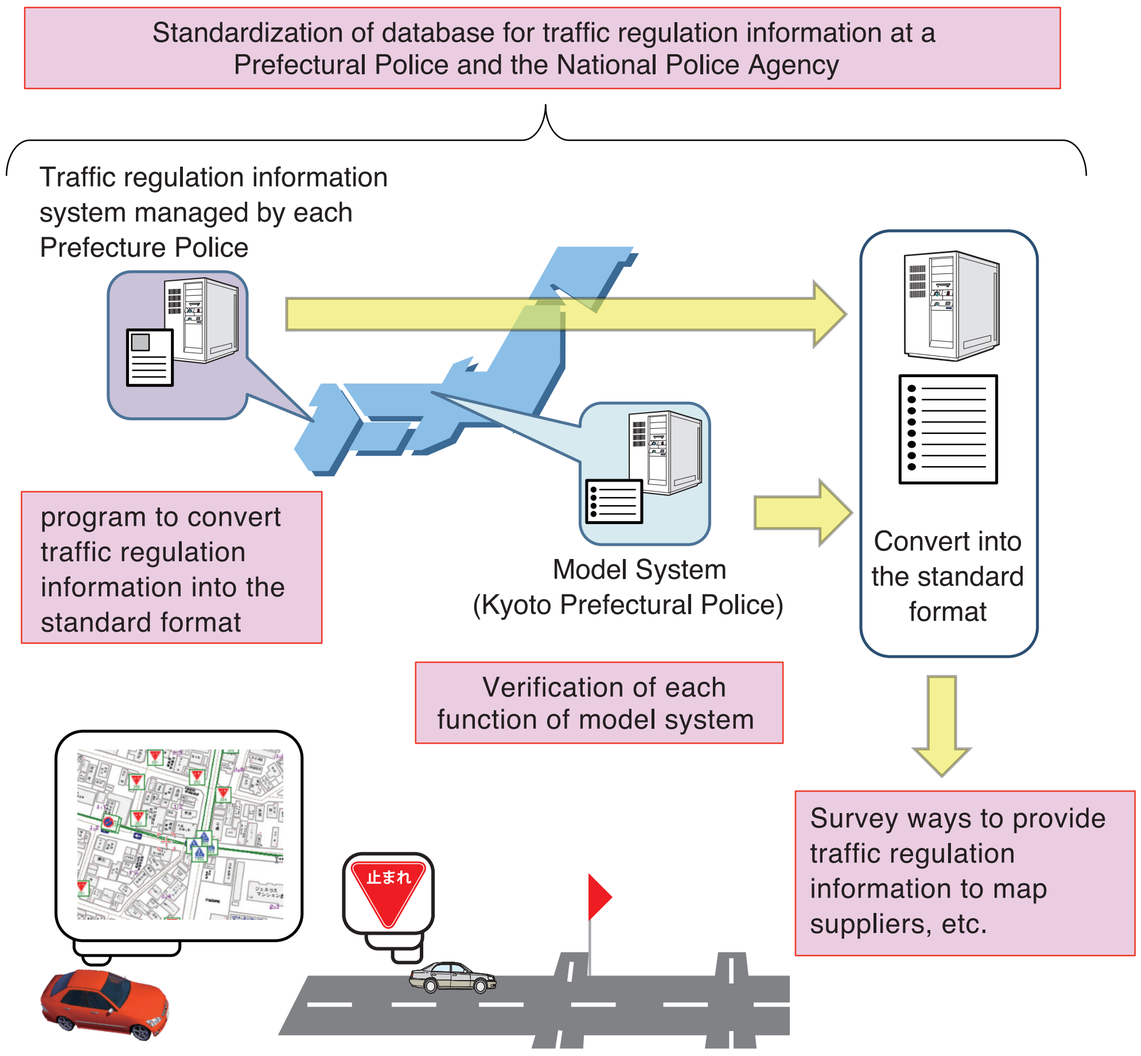
a) Verification of each function of the model system at Kyoto Prefectural Police.
b) Survey ways to provide traffic regulation information to map suppliers, etc.
c) Standardization of database for traffic regulation information at a Prefectural Police Department and the National Police Agency
d) Electronic conversion traffic regulation information data into the standard format.

■ Project Summary

a) Verification of each function of the model system at Kyoto Prefectural Police : A database was built at the Kyoto Prefectural Police Department, by converting all of the traffic regulation information (about 57,000 items) which is managed with a paper ledger. In building the database, a field survey was also conducted for the installation status of traffic regulation signs (about 65,000) in fiscal 2016. Through operating the model system, functions of the model system that need to be added to was surveyed.
b) Survey ways to provide traffic regulation information data to map suppliers, etc.: To provide traffic regulation data gathered from each Prefectural Police to map supplier, etc., it was surveyed that which traffic regulation information was needed and how traffic regulation data was transferred to automated driving. An inquiring survey to map suppliers and car makers was also conducted.
c) Standardization of database for traffic regulation information at a Prefectural Police Department and the National Police Agency: A result of a) and b), “specifications for a traffic regulation database system for a Prefectural Police and the National Police Agency” was developed with focus on more efficient traffic regulation work and maintaining fresh data.
d) Electronic conversion traffic regulation information data into the standard format: The traffic regulation information of Nagasaki Prefectural Police Department, which had already been converted into its own electronic format, was converted into the standard format.

■ Future plan

Based on the specifications for a traffic regulation database system, each Prefectural Police and the National Police Agency will develop its own system to provide traffic regulation information. The traffic regulation information of a Prefectural Police, which had already been concerted into its own electronic format will be converted into the standard format.



Research for advanced Traffic Signal Prediction Systems

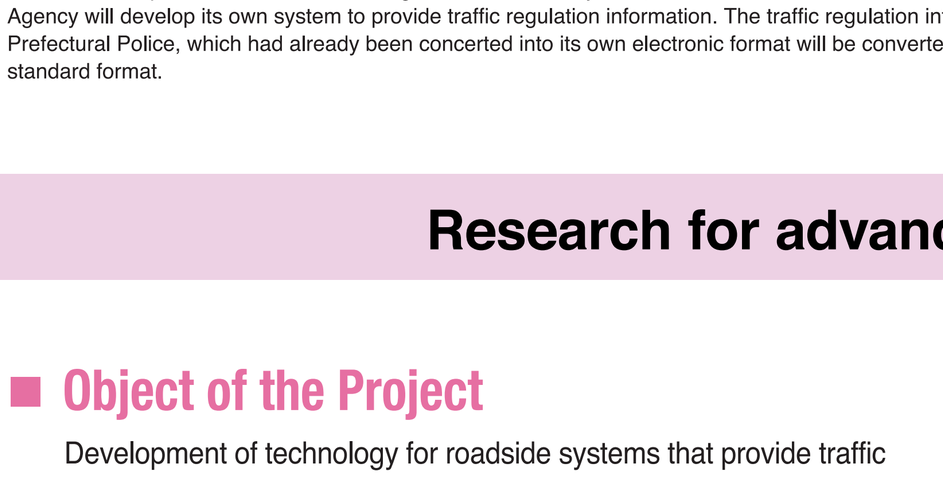
■ Object of the Project

Development of technology for roadside systems that provide traffic signal information to vehicles

■ Current system

【 Traffic Signal Prediction Systems (TSPS) 】

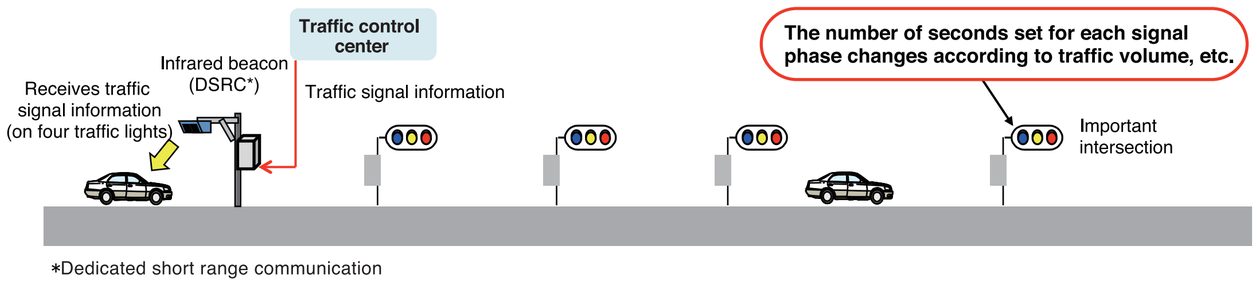
TSPS (Traffic Signal Prediction Systems) aims to encourage drivers to practice safe and eco-friendly driving through Signal passing support, Signal stopping support, Idling stop support and Signal change starting support by providing driving support information based on the phase schedule of each traffic signal ahead of vehicles.



Infrastructure provides information to the vehicle’ s on-board unit, such as signal information of an intersection through which the vehicle is going to pass and the distance to the intersection. The on-board unit provides the above-mentioned four support via HMI based on the information obtained from the infrastructure and the information on its own vehicle.

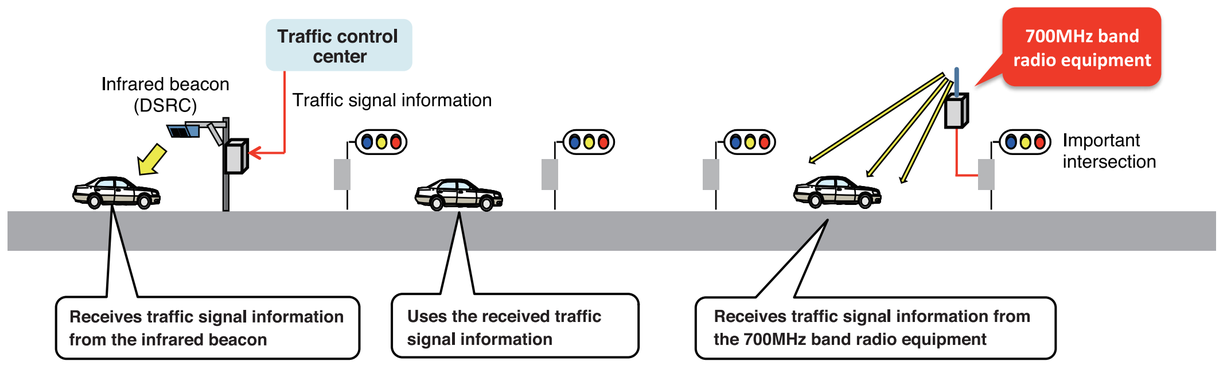
■ Issues in providing signal information using infrared beacons

Unable to provide definite signal information about important intersections and traffic-actuated intersections



■ Solution

By using the 700MHz band radio communication, provision of stable and highly-accurate signal information is realized.



Content of the project for fiscal year 2017

Field operational tests for the provision of traffic signal information will be carried out by using two systems, Traffic Signal Prediction Systems (TSPS) that were installed in fiscal 2016 and the signal information provision system that utilizes the 700 MHz radio frequency band, on routes where both of the systems are installed.