Summary of SIP-adus project (FY2015)

Name of the project	Basic design for the next generation public transportation system
Responsible Organization	UTMS Society of Japan

Name:　　Hiroshi Kato

Object of the Project

Realization of the smart transportation system that utilizes public buses is required to cope with traffic demand during the 2020 Tokyo Olympic and Paralympic Games and after the urban development which follows the 2020 Olympics. On the other hand, public transport has been discontinued one after another in local areas due to the population decrease, but the importance of public transport increases as a means of transportation for the elderly in Japan which reached a super ageing society. Therefore we performed the basic design for the development of the next-generation public transport system which has economic rationality and convenience.

Project Summary

1. Needs investigation
As a detailed needs investigation, we carried out a survey with bus companies and an investigation about the bus priority control operation during the rush hour bus operation to find problems of the current PTPS(Public Transportation Priority Systems) .

2. Design of the function plan for new systems
We designed seven new functions that utilized a recent ITC technology and, of these, decided to implement three functions in a model system. The summaries of the three functions are as follows.
a) Bus priority control by the 700MHz band wireless communication: The current system receives a bus priority request from an infrared beacon installed at the crossing. Upper reaches. The new system receives a bus priority demand at the time of crossing upper reaches spot and a crossing approach by 700MHz zone wireless communication to enhance the effect of priority control.
b) Crossing passage support for the bus driver: We offer signal information to the bus on board unit from the new system, and the on board unit performs signal passage support, red light slowdown support for the bus driver.
c) Bus priority control effect confirmation function: At the time of passing through the crossing, an on board unit estimates the effect of the bus priority control and notify it to the driver to grasps the operation state.

Future plan

1. Validation test of the basic design by the simulation
We will validate the basic design using a traffic simulator and prototype.
2. Field examination with the model system
We will build the model system based on the basic design, and verify functions, performances, etc.