Summary of SIP-adus project (FY2015)

Name of the project	Research for the advancement of DSSS, Driving Safety Support Systems, which utilize ITS radio communication
Responsible Organization	UTMS society of Japan

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Object of the Project

In order to realize automated driving and advanced safety driving support systems, it is indispensable to grasp the surrounding conditions including the blind area of the vehicle by the sensors installed on the roadside and to provide traffic information, which contribute to the prevention of traffic accidents, in real-time. Therefore, we conduct research & development for the advancement of DSSS, Driving Safety Support Systems, which utilize ITS radio communication to provide traffic information that changes every moment.

Project Summary

We conducted research to examine and develop a system (the low-priced version for deployment) that can be deployed at a reasonable cost while still satisfying functional requirements. This research covers a communication protocol between a vehicle and roadside infrastructures to ensure communication feasibility in the mixture environment of I2V and V2V communication and functional requirements for the roadside sensors such as 79GHz high resolution radars used for the detection of vehicles and pedestrians.

In fiscal year of 2015, we examined the comparison in system configuration and deployment cost between the conventional and the low-priced version system. We also carried out the proof experiment of the low-priced version in a test course in which we completed the examination of the vehicle autonomic positioning, precision requirements of the road geographical information, functional requirements for a roadside sensor such as detection area and the I2V message set specifications.
In addition, we examined the procedures on utilizing ITS radio communication and functional requirements to operate the low-priced version and developed guidelines for the traffic control center such as the role of the traffic control center in the system life cycle (deployment – operation - disposal), a rule for security management and a measure in case of incident outbreak.

Future plan

- Feasibility examination of the low-priced version,
- Deployment and verification of the low-priced version,
- Service expansion and investigation of future issues for automated driving.