

# Summary of SIP-adus Project (FY2017)

**Name of the project**

Development of Vehicle-to-Pedestrian Communication Technology

**Responsible Organization**

Panasonic Corporation

**Name** Okubo Yoshiyuki

**Object of the project**

The project aims to reduce pedestrian accidents through realizing a vehicle-to-pedestrian(V2P) communication system which is capable of alerting drivers or pedestrians timely under potentially dangerous situations. The system will be implemented based on developments for a dedicated pedestrian terminal and a practical V2P communication system, and will be validated with experiments on actual roads. Key technologies include high accuracy positioning, collision prediction, and pedestrian status determination and information sharing adaptive to the pedestrian terminal and the communication system.

**Project Summary****①Technology Development****•High accuracy positioning**

3D map compensation is adopted for improvement of positioning accuracy in deteriorate satellite positioning environments as high-rise building areas.

In FY 2017, real-time execution of 3D map compensation on a smartphone has been implemented and the improvement of performance has been confirmed.

**•Collision prediction**

Advanced collision prediction module, which contains a danger notification method effective for correct avoidance reactions and a determination method to exclude supports in unnecessary situations, is embedded in the safety support application running on pedestrians and in-vehicle terminals.

In FY 2017, applicable categories of places have been expanded and verification experiments have been carried out on actual roads at Odaiba. The experiment results show that the target alert rate of more than 80% for necessary supports, and the target false alert rate of less than 20% for unnecessary supports have both been achieved.

**②Prototype Development**

Prototype pedestrian terminal and in-vehicle terminal to be used for coming large-scale demonstration experiments have been made. Performance of the terminals with respect to portability, antenna sensitivity and battery duration has been fulfilled.

**Future Plan****①Development of More Practical Technologies**

- Stabilization of high positioning accuracy in urban areas
- More reduction of false alert rate for unnecessary supports under wider areas.

**②Improvement and System Evaluation for Prototype Terminals**

- Improvement of user interface with respect to operability, appearance and safety so that ordinary users without technical knowledge can play the terminals and participate in coming large-scale demonstration experiments.
- Quantitative evaluation of the whole system with effectiveness for accident reduction.