

Next-Generation Intelligent Transport Systems (ITS) utilizing Information and Communication Technology (ICT) by MLIT

Object of the Project

The technical requirements for the communication system between a pedestrian and a vehicle as well as the communication system between a vehicle and a vehicle using ICT to make a contribution to prevention of injury and fatal accidents by a crossing collision and a rushing out in front of vehicles are investigated through demonstration experiments performed under real situations simulated in the test course.

Project Summary

Content of implementation

Typical scenes expected reductions of traffic accidents with the communication systems were extracted based on the data of traffic accidents in Japan. In addition, demonstration experiments were performed on public roads to clarify problems of the communication systems in the current situation. As a result, a current GPS device with the positioning error is only useful for providing information about the existence of a vehicle or a pedestrian.

However, an improvement of positioning accuracy of a GPS device is being investigated in the other SIP project. Based on this situation, under the condition such as GPS positioning error is within 10cm, the technical requirements to activate assistance system to a driver and a pedestrian on appropriate timing for preventing injury and fatal accidents between a pedestrian and a vehicle as well as between two vehicles were considered in demonstration experiments in simulated situations at the test course. And the assistance system was constructed levels of "collision caution" and "collision warning", which are more effective to reduce traffic accidents, in addition to "collision information".

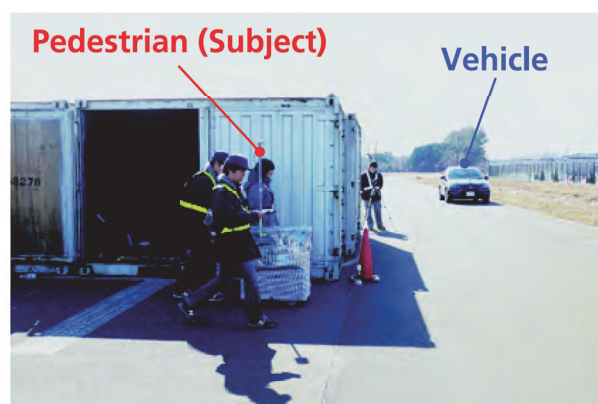
Summary of results

In some traffic accident scenes selected from the typical scenes, experiments by the Driving Simulator (DS) were performed to measure data to investigate the appropriate timing of activating assistance system levels of "collision information", "collision caution" and "collision warning". Based on those results, some timings of activating assistance system were selected.

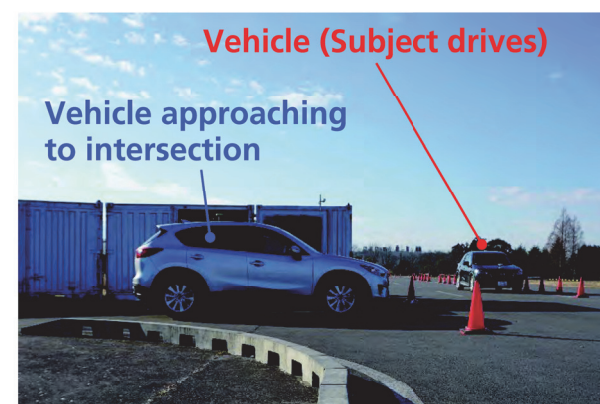
Based on the selected timing by DS experiments, demonstration experiments were performed under real situations simulated in the test course and the more practical timings were considered by subjective evaluation by drivers and pedestrians.



Aspect of Measurement on Public Road



Vehicle to Pedestrian



Vehicle to Vehicle Aspects of Experiments at Test Course