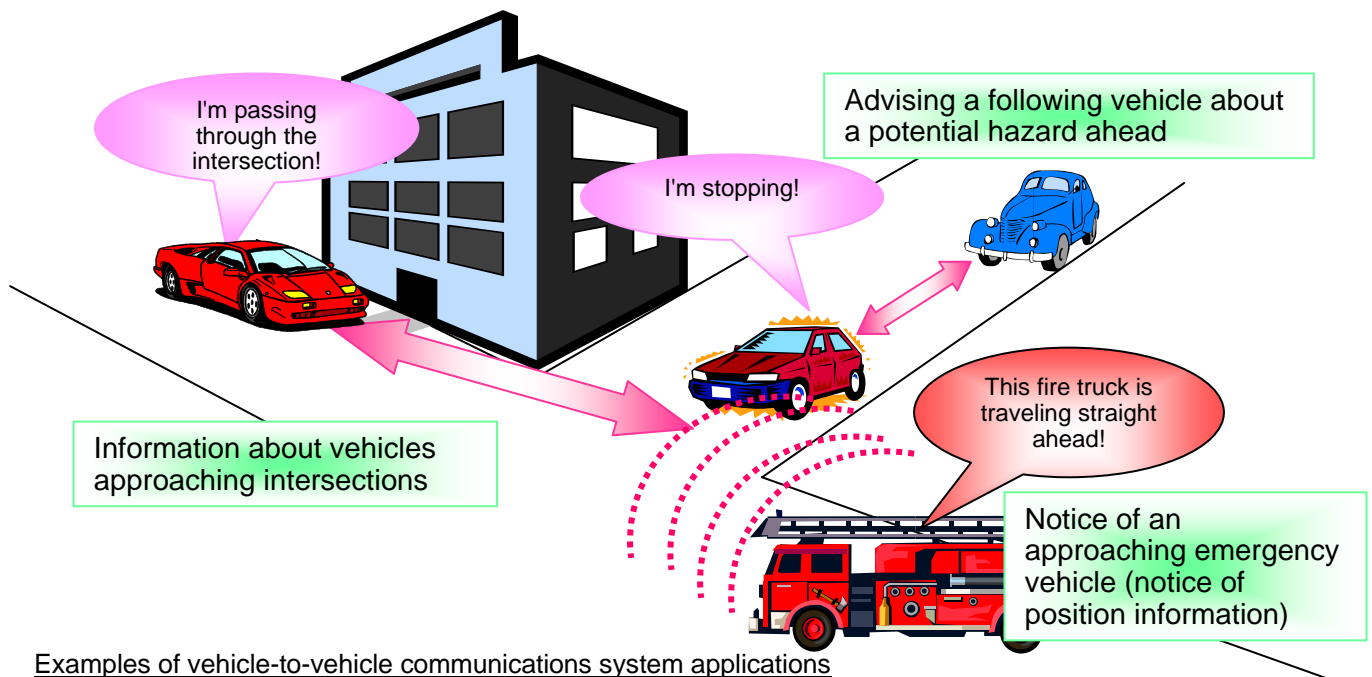


Research Studies Concerning Standardization of an Inter-Vehicle Communications System



Using communications to support safe driving

● Necessity and objective of this research

Various studies are currently under way on systems for supporting safe driving. One type of stand-alone system on vehicles is a headway distance control system, examples of which have been implemented using radar technology. However, various ways can be considered for using information obtained from the outside world to enhance traffic safety further. For instance, hazard information obtained by roadside sensors could be provided to drivers via road-vehicle communications, or warnings to other drivers could be transmitted via Inter-vehicle communications (IVC).

IVC in particular requires the capability to communicate with every vehicle. This means that communications protocols must be determined and the data to be transmitted must be standardized prior to system implementation. The JARI-ITS Center has accumulated a wealth of research data regarding IVC. The data are being utilized to promote standardization work on IVC systems in collaboration with domestic, European and American research institutes.

● Uniqueness and significance of this research

The JARI-ITS Center especially supports the standardization activities of ISO/TC204. While IVC might be taken up by WG14, WG15 or WG16, our standardization efforts are mainly concerned with vehicle-to-vehicle communications services, communications protocols and data formats.

(This project has been commissioned by the Ministry of Economy, Trade and Industry and is being carried out as one part of the ITS Standardization Project.)

● Details of this research

1. Concept of IVC and construction of a reference model

This activity deals with the construction of a framework for undertaking standardization studies. This includes clarifying the definition of IVC, categorizing potentially feasible services, and identifying the form in which each service is to be implemented as well as the requirements for the communications system specifications. By clarifying the themes that need to be examined to advance standardization work and their respective positions, we aim to present proposals at an early stage for conducting studies to develop standards for IVC.

2. Research on communications reliability for improving traffic safety

Typical services envisioned for IVC include advisories at intersections with poor visibility and communication between vehicles sandwiched between large trucks. We plan to conduct tests to verify the reliability of communications in such situations via a system operating at a frequency of 5.8 GHz.

3. Technical exchanges with overseas organizations

Concrete efforts are also under way in Europe and the U.S. to develop standards for IVC with an eye toward supporting safe driving. Information is exchanged with related European and American organizations to keep abreast of their activities and confirm the direction of standardization work.

