

## ● Research Trends and Results

# EMV Payment in Vehicle: New Type of Cashless Payment Using ITS SPOT

KANAZAWA Fumihiko, Head

MOTOMIZU Shota, Researcher

MAEDA Takeyori, Guest Researcher

Research Center for Advanced Information Technology, Intelligent Transport System Division

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### 1. Introduction

The NILIM conducted Research on “Systems to Provide Next-Generation Road Services” in March 2006, and has been developing information provision services, an internet connection service, and a payment service. This report introduces an outline of the cashless payment service.

### 2. EMV Payment in Vehicle

The NILIM promotes the research and development of a cashless payment system called “EMV Payment in Vehicle”. It will allow drivers to make cashless payments through ITS SPOTs from within their cars by using an IC credit card in the car’s On-Board Equipment (OBE). EMV is an international standard for IC credit card settlements.

Figure 1 shows the system configuration. The system manages vehicles’ parking period through ITS Spots installed at both the entrance gate and exit gate of a parking lot, while settlement is done at the exit.

Joint Research on “EMV Payment in Vehicle Using DSRC Communications” was organized to conduct this research by five private companies and the NILIM in November 2009. Each company developed its corresponding devices and interfaces, then the group installed and tested the whole system.

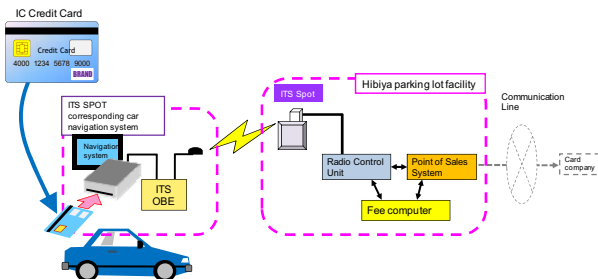


Figure 1. System Configuration

### 3. Proving test

A proving test was conducted at the Hibiya Parking Lot in Chiyoda Ward, Tokyo, from October 2010 to

February 2011. The operation of the system was tested.

The whole system and each device operated as expected, confirming that each device and interface is appropriate in terms of its technical aspects.

Vehicles passed smoothly through the entrance gate, confirming that the entrance gate system is operationally feasible. But it takes longer to pass the exit gate than the entrance gate because of the long time needed to settle the parking charge. To deploy the system operationally, it is necessary to shorten the settlement time at the exit gate.



Figure 2. View of the Test and Car Navigation Operating Screen

### 4. Conclusion

The EMV Payment in Vehicle system is expected to reduce traffic congestion on roads caused by vehicles queuing to enter parking lots. It is also expected to contribute to removing barriers to taking parking tickets at entrance gates and paying parking fees at exit gates, especially for elderly and handicapped drivers whose numbers have been recently increasing.