Topics

Large Vehicle Traveling Route Confirmation Using ITS Spots Public Experiment

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1. Introduction

As road structures in Japan deteriorate, there is a demand that existing infrastructure be effectively used longer than in the past, and it is important to monitor the routes traveled by large vehicles, which impose loads which have a relatively great effect on structures.

Our division uses ITS Spot services that permit two-way communication between road side devices (ITS Spots) and on-board equipment (ITS Spot compatible on-board equipment) as a technology which effectively clarifies the routes traveled by large vehicles, and is verifying this vehicle traveling route clarification technology on actual roads. (Shows a map of range in which data can be collected.)

Beginning in January 2014, a public experiment conducted by installing ITS Spot compatible on-board equipment in about 3,000 large vehicles to collect and confirm traveling route information will be conducted. This report introduces an outline of this public experiment.

2. Clarifying traveling route using ITS Spots

ITS Spot service, which started in 2011, can communicate large volumes of information in two directions, so it can not only provide road traffic etc. information to vehicles, but also collect probe information (traveling history and behavior history of vehicles).

Using these types of probe information to clarify the traveling route of individual vehicles is not permitted in order to protect personnel information. But, it is possible to clarify the traveling routes of individual vehicles by especially adding information to identify each vehicle to the probe information for vehicles operated by companies which have exchanged permission to use traveling routes with the Ministry of Land, Infrastructure, Transport and Tourism.

3. Outline of the public experiment

ITS Spot compatible on-board equipment will be installed on about 3,000 large vehicles owned by logistics companies throughout Japan and probe information will be collected on a nation-wide scale. Running control

records (daily reports) containing traveling routes will be recovered from some of the commercial operators and these will be compared with probe information collected by ITS Spots to verify the probability of the traveling route obtained from the probe information.

Specifically, based on vehicle stopped time and continuous traveling time etc. obtained from the probe information, it will be verified how accurately locations where they loaded or unloaded cargoes can be hypothesized and whether or not it is possible to abstract a single trip chain. And the precision of travel route information in double-deck sections and in dense urban districts will also be verified.

Figure. Range where Probe Information can be Collected
Data period: November 2011 to August 2012 (10 months)

Legend
Roads where data is obtained (expressways)
Roads where data is obtained (national highways)
Expressways
ITS Spots