

Road Traffic Management Using Big Data

Road Traffic Department

In order to realize safe, smooth, and comfortable road traffic using road networks at the maximum, we have been studying on road traffic monitoring using various big data including ETC2.0 probe information (*) and development of road traffic improvement measures.

* Information obtained through roadside units including ITS spot about the positions, time, etc. of vehicles provided with ETC2.0 compatible in-vehicle equipment, etc.

Social background and issues

- Roads should continue to play their functions to improve the wealth and quality of public life as important social infrastructure that forms national land even in social environment faced with various issues including depopulation, arrival of a super-aging society, and need for revival of local economy.
- To this end, it is required to demonstrate road functions at the maximum through the grasp of road traffic condition and development of improvement measures by using ICT (big data, AI, etc.), in which technical innovation is rapidly progressing.

Study contents

Road traffic monitoring and study for development of improvement measures

Extract various data (i.e., original-destination (OD) data, travel history data, behavior history data, speed data, traffic volume data, details of dangerous events, etc.) from video images etc. in addition to probe data including ETC2.0 probe information. By merging these basic data and existing data for analysis, establish a technique for monitoring OD traffic volume, automobile route, bottleneck points, dangerous event spot / area, and details of dangerous events at individual points. Also, organize the method of developing road traffic improvement measures in response to results of this monitoring.

Aim to use the monitoring method above also in effect analysis after application of the road traffic improvement measures.

Study for efficient / effective data collection and utilization of ETC2.0 probe information

We also study the following for maximum demonstration of road functions

○ Efficient / effective data collection using portable roadside units

In order to solve the issues closely related to communities, such as traffic congestion at an event area or tourist area and road traffic safety, study the points etc. where ETC2.0 portable roadside units should be installed, and establish survey and analysis methods, aiming for efficient / effective data collection.

○ Further utilization of ETC2.0 probe information

Study services etc. for reducing "floating cars" that are looking for a parking space by integrated use of ETC2.0 probe information and data held by private sectors.

ETC2.0 portable roadside units are smaller and lighter than existing roadside units and can be installed easily on existing poles, etc. The same type of data as obtained from existing roadside units is collectable.



Example of ETC2.0 portable roadside unit installation

Contribute to improvement in the abundance and quality of public life by the maximum demonstration of road functions and stable use of road networks.

See the following for related articles.

- Introduction of Image Recognition Type Traffic Count using AI (P. 135)
- Proposal of Effective Utilization Method for ETC2.0 Probe Information in Traffic Safety Measures (P. 61)