

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 measures for improvement.

Social background and issues

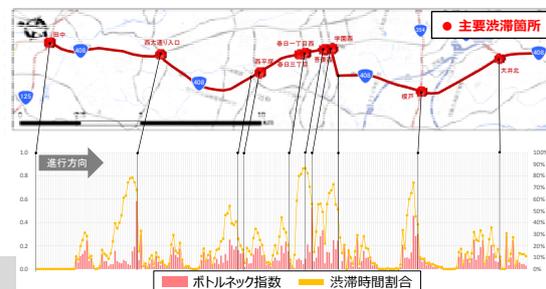
- Roads should continue to play their functions to improve the abundance and quality of public life as important social infrastructure that forms national land even in social environment faced with various issues including depopulation, arrival of a super-aging society, and need for revival of local economy.
- To this end, it is required to demonstrate the functions of roads 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

Study for improvement of the smooth performance and comfortableness in road traffic

Extract original-destination (OD) data, traveling history data, speed data, traffic volume data, etc. from video images 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, use route change, and bottleneck points (Right Figure). Use also for impact analysis by application of road measures.

Bottleneck index indicates the "starting point of traffic congestion" and can identify bottleneck points more accurately than the congestion time ratio (yellow broken line).

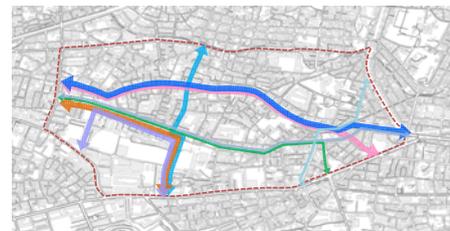


Study of bottleneck point identification method

Study for improvement of safety in road traffic

Extract traveling history data, behavior history data, hazardous event information, etc. from the drive recorder data in addition to ETC2.0 probe information. By merging these basic data and existing data for analysis, establish a technique for monitoring the site / area of hazardous event, route passing through the community road, hazardous event information in individual sites, etc. Use also for impact analysis by application of road measures.

Arrangement of "portable roadside unit" concerning ETC2.0 probe at the entrance of the community road area may enable more efficient / effective analysis of the route passing through the community road (image on Right Figure).



Analysis of the pass-through route in community road district (red broken line)

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

☞ Related articles.

- Collection and utilization of ETC2.0 probe information
- Trend survey of traffic volume measurement technology using AI
- Method of using ETC2.0 probe information for traffic safety measures