Improvement of the Probe Traffic Result Display System considering Large-Scale Disasters

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1. Introduction

NILIM has developed a system for visually grasping traffic status (Fig. 1) by indicating traffic result using probe information provided from an ETC2.0 loading vehicles and private enterprises, traffic restriction information based on VICS, etc. on the same map in the overlapped state, and is studying on functional improvement, etc. through practical operation.

Large scale disasters occurred in the current fiscal year, including the Northern Osaka Earthquake in June, Western Japan Heavy Rain in July, and Hokkaido Eastern Iburi Earthquake, and this system was used by Regional Development Bureaus for grasping traffic result and preparing "Passable Map." This paper studied mainly on improvement of this system by grasping / analyzing the issues manifested in these disasters through hearings etc. This paper reports one of those issues.

Fig. 1: An example of indication of the traffic result display system

2. Issues recognized and response

(1) Traffic result is displayed even in closed sections.

The issue was made clear that traffic result is displayed even in a closed section since emergency vehicles for road management pass through the closed section. As a solution, since the number of emergency vehicles that travel through closed sections is very small, we have developed a program to add information on the number of traveling vehicles to the KML file generated from ETC2.0 probe information so that traffic result can be displayed only when exceeding a certain number of traveling vehicles.

(2) Difficulty in quick identification of road administrator

Since the existing system only classified road types into expressway and ordinary road, prompt identification of the competent road administrator was difficult when considering rescue operation or detour. Then, we developed a program to determine the road type from the information of DRM (Digital Road Map) to which ETC2.0 probe information is adsorbed so that road types can be classified into expressway, urban expressway, national highway, auxiliary national highway, principal local road, and prefectural road.

(3) Failure to display closed sections accurately

Since the existing system displayed the entire link as a closed section when it includes a closed section, on-site confusion occurred due to difference from actual regulation. Therefore, we developed a program to display only actual closed sections correctly based on detailed position information from VICS Center (Fig. 2).
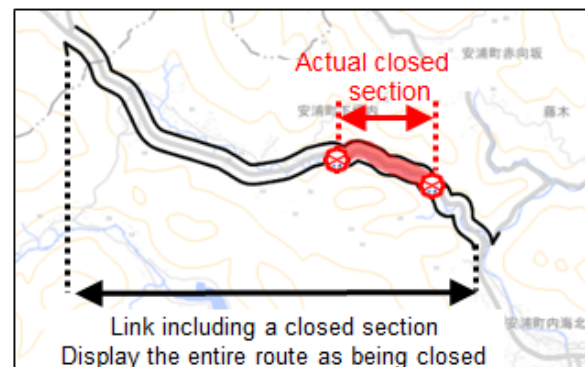

Fig. 2 Example of failure to display closed sections accurately

3. Future development

For other issues not reported herein, we developed some functions including reduction of update frequency from 1 hour to 15 minutes and additionally install them at the end of the current fiscal year.