

Launch of the Experiment to Collect the Fundamental Geospatial Data of Road Utilizing In-Car Sensing Technology

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1. Introduction

Recently, the development of sensing technologies utilizing in-car cameras whose performance is rapidly developing, even in the case of commercially available products, is in progress, and such technologies are expected to be increasingly utilized in the future. The Ministry of Land, Infrastructure, Transport and Tourism aims to utilize a simplified map created with in-car sensing technology that satisfies the required accuracy and is low in costs, including introduction cost, as well as operation cost, in order to utilize it in road management, such as the acceleration of the examination for permitting the passage of specialized vehicles. This year, we pursued technologies in practical use concerning in-car sensing technology (including the ones under development) and conducted an experiment to compare and verify the accuracy and costs of geospatial data created with such technology.

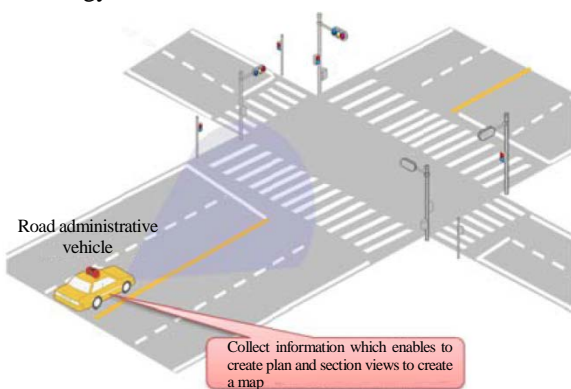


Figure-1: An image of obtaining the position information of major features on a road (latitude, longitude, and altitude) from a running vehicle

2. Outline of Experiment

(1) Test run on the testing track of NILIM

Experimental period: From January 10 (Tue.) to 13 (Fri.), 2017

An example of verified items:

- The position information (latitude, longitude, and altitude) of major features (shape of the intersection of driveways and compartment line) can be obtained three dimensionally, and the position information (latitude and longitude) can be depicted two dimensionally.

- The accuracy that automatically satisfies the standard deviation of 25 cm can be secured.
- The costs including introduction and operation costs are low.

(2) Test run on public roads

Experimental period: From January 16 (Mon.) to 19 (Thu.), 2017

Running section: National Routes 16 and 126 (Chiba city, Chiba prefecture)

An example of verified items:

- In addition to the verified items described in (1), the position information of bus stops, distance marks, and signs can be obtained three dimensionally and depicted two dimensionally.

Nine companies participated in the experiment at the above two locations.

	Companies participated in the experiment open to the public	Major measuring instruments used			
		Laser	Camera	GNSS	IMU
1	Aero Asahi Corporation	○	○	○	○
2	Asia Air Survey Co., Ltd.	-	○	○	○
3	Asco-Daito Co., Ltd.	○	-	○	○
4	Iwane Laboratories, Inc.	-	○	○	-
5	Kokusai Kogyo Co., Ltd.	○	○	○	○
6	Kokusai Kogyo Co., Ltd. D-e Tech Corporation	○	○	○	○
7	Pasco Corporation	○	○	○	○
8	Mitsubishi Electric Corporation Aisan Technology Co., Ltd.	○	○	○	○
9	Mirukuru Co., Ltd.	○	○	○	○

Table-1 List of companies participated in the experiment

3. Future study

Based on the experiments and evaluations conducted this year, we will understand the performance of current sensing technology and prepare technical documents regarding the performance of sensing technology that will be required for road management in the future.

☞ For details, refer to the following:

- 1) Topics on the website of Intelligent Transport Systems Division of NILIM: Research "ITS Division" on the Internet