

Research Trends and Results

Initiatives to provide airport pavement etc. inspection support system using smartphones etc.

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1. Introduction

Airport pavement and other facilities are inspected every day, visually on foot or while driving a vehicle. But preparing inspection records is labor-intensive because the facilities are wide and it is done at night, so it takes time to identify the locations of problems. For this reason, to increase the efficiency of inspections, we are studying the development of an airport pavement etc. inspection support system using smartphones, which have come into wide use in recent years.

2. Image of the airport pavement etc. inspection support system

To inspect facilities, inspectors now carry a field notebook and pen to keep records, a camera to take pictures, and measuring tape to identify locations. A smartphone etc. contains built-in functions to enter records, take pictures, and obtain location information, so an inspector can perform an inspection carrying one smartphone. (Fig. 1)

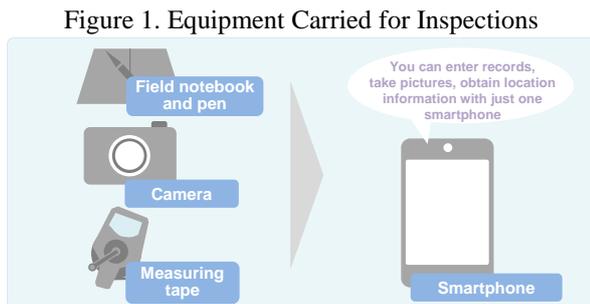


Figure 1. Equipment Carried for Inspections

This development can lower the costs of introduction because it uses smartphones available on the market. And using a free map data provision service can lower the development cost and maintenance cost.

The system can be used by installing the newly developed App into smartphones etc.

At the scene, it must be done during the limited period at night, so to reduce the entry work, recording will be done with a pull-down menu, pictures taken using the built-in camera, and positioning done at the same time using the GPS function. And sending the recorded data to a database server (DB server) using its communication function, will permit the office to immediately clarify the status of an inspection and automatically prepare records in a time series. (Fig. 2) And by storing each airport's data centrally in a database server, users can count on being able to see all data and to perform strategic management using these data.

3. Future initiatives

In the future, we plan to [1] develop the application, [2] study and build the DB server environment, and [3] verify its feasibility by field testing.

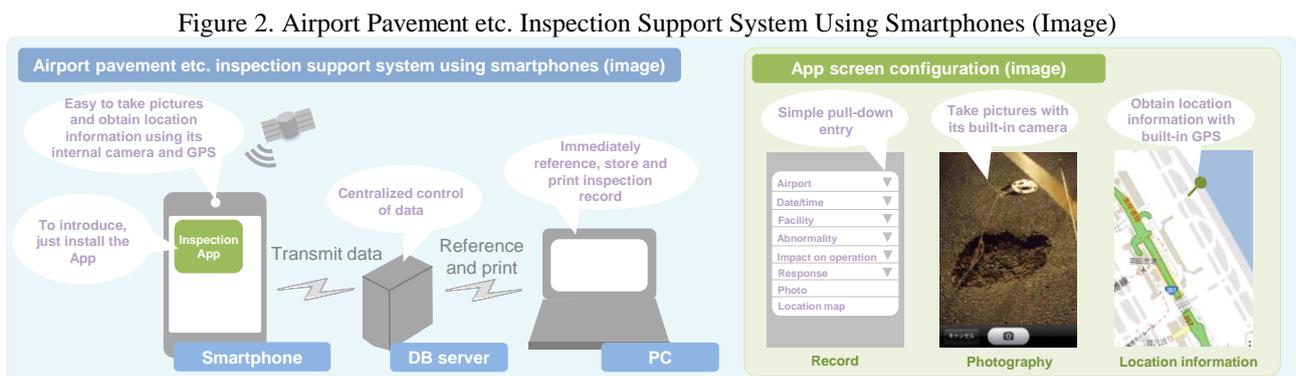


Figure 2. Airport Pavement etc. Inspection Support System Using Smartphones (Image)