



Development of GPS photos database for land use and land cover mapping

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Abstract: In land use and land cover applications, it is essential to validate the result by using the ground survey data. This study builds up a GPS Photos database from those ground survey data. The ground survey data collected from the fields are processed to extract the necessary information and combined in to a database including the thousands of photos with the corresponding latitudes and longitudes, land cover types and descriptions of many places in Vietnam, Laos and Myanmar. With the applications running on iPhone and iPad, the database is updated easily and quickly. This database has been using for generating and validating the classification maps following IGBP (International Geosphere Biosphere Program) 17 land cover classes.

Keywords : Land use and land cover, field survey, GPS Photos, IGBP

Background

The data from field surveys are used to verify the result of land use and land cover change applications and make them more accurate. Almost all of the research institutions of remote sensing, geology, forestry... in many countries have the data taken from the fields including photos and the corresponding information such as latitude, longitude, altitude, land cover type... This is a very large data source which is updated frequently and it will provide very useful information for many studies when it is organized as a database. This study builds up that kind of database from the field data of the Asian countries.

Objective

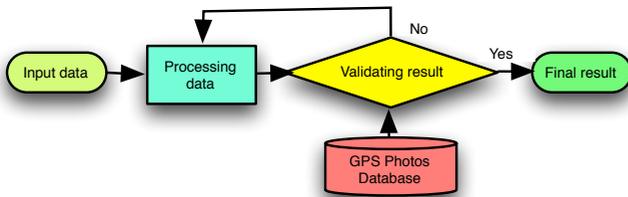


Fig 1. Land use and Land cover change data processing

Build up a GPS Photos Database including



Methodology

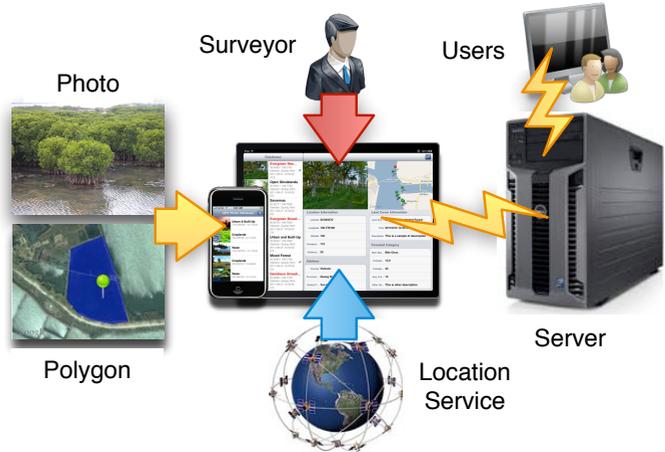


Fig 2. Creating GPS Photos database

Result



Fig 3. Places where data were collected



Fig 4. Collecting information with iPhone



Fig 5. Collecting information with iPad

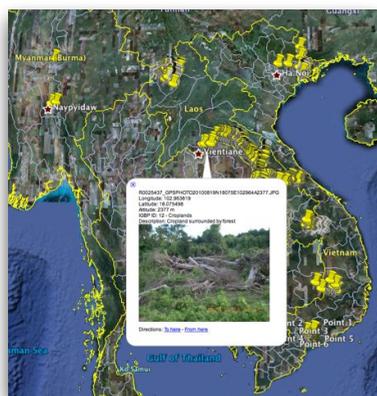


Fig 6. GPS Photos database on Google Earth

Summary

- GPS Photos Database has been built up based on the data collected in the field trips
- Applications on iPhone and iPad make the database updating easy and quick
- User-defined data was included in the GPS Photos Database
- Current database includes nearly 6000 GPS photos of many different places in Vietnam, Laos and Myanmar
- GPS Photos Database has been using to validate the land cover classification results

Future works

- Application for distributing GPS Photos Database will be developed
- Application for other mobile devices running Android operating system will be developed