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Development of Toponym Data Acquisition System in Indonesia

Submitted by Indonesia**

Introduction

In UNCSGN 2012, Indonesia has introduced a toponym data acquisition tool called Topkit. During its initial development, the application was attached to a certain navigation GPS. The development did not quite finish and was finally discontinued before the final product was launched to public.

Despite the failure of the first development, an existence of a tool to collect toponym data has become a necessity. Currently toponym data collection was equipped with some standardized forms (paper-based and digital documents) to record the data, accompanied with a navigation GPS to get the coordinates of the data, a camera to take the photo, and a recorder to record the pronunciation. Last year Geospatial Information Agency of Indonesia (*Badan Informasi Geospasial* or BIG) has finished developing an initial stage of a toponym data acquisition system named SAKTI (*Sistem Akuisisi Toponim Indonesia*). This application was designed to run on Android-based mobile phones (minimal Android version 4.4), and can be operated online or offline.

This year there will be some enhancements to improve functionalities and user-friendliness of the mobile application. In addition, a web-based application will also be developed and integrated with the mobile application. The web-based application will be mainly used for verification and standardization processes.

Goals

The main goal of developing this application was to provide a tool which can help collecting toponym data from the field. Instead of using various instruments (papers, GPS, camera and voice recorder), with SAKTI a mobile phone would be sufficient. SAKTI were designed to perform 2 main tasks:
1. Collecting toponym data into a storage in the mobile phone;
2. Sending collected data to BIG server using internet connection.

Functionalities of SAKTI

Some functionalities of SAKTI are as follow:

1. SAKTI provides a user registration modul.
   There are 2 types of user for SAKTI, "guest" and "surveyor". A guest user may be able to use the application to gather toponymy data, but will not be able to send the data to BIG server. In order to become a surveyor user, one must be assigned by an authorized official (must upload a proper letter of assignment and verified by BIG administrator).
2. SAKTI uses a standardized basemap provided by BIG.
   When used online, the basemap will be a map service provided by BIG. When used offline, the basemap will be a file provided by BIG and must be stored in a specific folder in the mobile phone.
3. SAKTI collects toponym data into a standardized database.
   For most fields users only need to select an appropriate item from provided drop down lists. What needs to be typed in are the name and some relevan information about it, such as history and other names. Users can also modify the data later.

4. SAKTI records pictures and pronunciation of the object.
   Users can store up to 4 pictures and 2 pronunciations per object. All the picture and sound files are linked to the object.
5. SAKTI records coordinates of the object.
   In case of a low GPS accuracy or the object is difficult to access, users can also shift position of the object based on the basemap.

Conclusion

SAKTI mobile application has been ready for used in collecting toponym data in Indonesia. Currently it is being introduced to personnel of Regional Governments and Institutions related who are expected to become users of this application. Hopefully with SAKTI, toponym data of Indonesia will be collected more quickly, more accurate and easier than before.