

Section Sciences et Ingénierie de l'environnement Design Project 2017 (semestre de printemps)

Proposition N°14

Use of GIS to extend and improve the register of users for fee collection of public services (application to waste)

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Descriptif du projet

In low income countries, financing public services is a big challenge. Paying for waste collection is often a cultural issue when a sustainable public service must involve the users, the citizens, including through fees payments. In many cases, implementing a billing system is very challenging for the municipalities, when there is no updated register of population and no billing system in place, which is the usual case. Developing a full and traditional cadaster is often too expensive.

Developing a tool that would help the municipalities coping with these issues would facilitate a lot the implementation of public services in low income countries, where, very often, the finances are more limitative than the technic.

Today, low cost solution can be offered by using free data. We propose to work on these solution through this design project, applied on a municipality where a register of users of waste collection services exists, but is very partial. A big part of the population receive the service of waste collection but do not receive any bill and therefor never pay for it.

Objectif

The Objectives of the project are the following:

Estimate the potential of improvement of the waste collection billing system. By comparison of the different existing databases of population (property register, civil register, database for water or electricity distribution,...) and a simple Google map image of the city, it should be possible to evaluate how many users are probably not in the present waste client register.

Test the possibility of merging the different data bases in order to establish a common and comprehensive GIS database of the population (family and businesses).

Descriptif tâches

The fee collection is presently assumed by the company in charge of the waste collection service. The fees are defined per family and per different categories of businesses. The company has a register of users. This register is not complete and users don't receive bill and never pay.

The Municipality who contracted the Company has access to the property register, which is used to bill the property tax once a year. It is mentioned that this register includes the GPS coordinates of each property. It is not known how accurate this register is.

On another hand, the water company has another register of clients. The content of this register is for the moment not known, but should include the address.

Based on these information, identify the different existing databases and define a low cost methodology to establish the most complete and accurate database possible, for the purpose of implementing a billing system, which will help implementing a sustainable public service.

The project will be based on a real present data and situation of a city in Kosovo. Data will be provided by the municipality and public service Company, with the support of the DEMO Project, an SDC Project managed by Helvetas- Swiss Cooperation developed with the technical support of CSD.

Divers

French and English are needed. Report will be delivered in English,