WebGIS Application for Cadastral Surveys

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SUMMARY

Cadastral surveying in Ghana is characterised by a high number of survey beacons that are widely distributed. Local authorities usually communicate the coordinates and other attribute information of these beacons to users in paper form. Basically, the users require these attribute information of the control pillars to process cadastral survey-related data and to identify a control beacon that is closer to their specific site of survey. The constraint of sharing data in paper format leads to delay in timely provision of essential information for processing cadastral data. This work, thus, seeks to provide a technological solution (WebGIS) that can be accessed by a large number of users (both onsite and remote), has a lower cost, is easy to use and maintain for the dissemination of the attribute information of the control pillars to the geospatial community and also enable the users realise the spatial distribution of the control beacons.

WebGIS, a combination of the web and GIS is one platform that is currently on the rise allowing the exchange of geospatial information among multiples of users across the globe. It allows the integration of multisource data on a single platform using a 3-tier architecture, removing the constraint of distance in accessing data of geospatial objects. WebGIS is thus suggested as a solution for the identified geospatial need, to store the data and present them to the users on a web browser.

In this work, a prototype of this proposed solution is being developed, taking into consideration the geospatial needs of the users, obtaining data from the authorities in charge of the survey beacons in the locality. For the standardisation of the system to be developed, the standards and specifications of the Open Geospatial Consortium for the exchange of geospatial information using web services among a large audience will be the building block. The application will then be presented to the users in a more user-friendly web environment. Thus, the final application will display map layers,

attribute information of the control pillars and allow the user to perform basic operations. Also, an additional feature will be implemented for the management of cadastral survey transactions.

Although the proposed system will be an optimal solution, further improvement will be necessitated to serve additional needs of the users such as the capability to store observed survey data in a database. Also, higher capacity servers will be needed to reach a larger user community.