

Spatial Legal Identity Through the Spatially Enabled Addressing System. a Case for Informal Settlements

Augustus Aturinde, Raymond Peter Lubwama and Ejulu Wilson (Uganda)

Key words: e-Governance; Geoinformation/GI; Informal settlements; Spatially-enabled; address system; informal settlements; legal identity

SUMMARY

An addressing system is an important aspect of modern-day society. In addition to contributing to one's legal identity, it serves as a linking point between service providers (mainly government and businesses) and the citizenry. While traditional addressing systems are very important and in use, they are very few in most developing countries – Uganda inclusive. Characterised by unplanned settlements, the scarcity and in most cases absence of such systems make service provision at an individual household level difficult if not impossible.

The lack of addressing systems emanates from a lack of an enabling infrastructure in most developing settings. By utilizing cascading geographies and the enabling qualities of Geographical Information Systems (GIS), however, spatially-enabled address systems can be conceptualized and realized.

This paper proposes and realises an addressing system using a six-character alpha-numeric cascading coded geographies that divided the country into enveloping polygons from the national- to the household level. The households were generated from national building footprints, themselves derived from Open Street Map (OSM) and updated with high-resolution satellite imagery. Python framework was used for the management of both the front-end and the back-end manipulations. In the end, a harmonised geospatial database of both building footprints and the corresponding enveloping addresses was developed enabling a 2-way retrieval of spatial location given the address code and vice-versa.

Visualised through an interactive website and a corresponding mobile application, results show that each household can be located with a six-character alpha-numeric code, enabling independent navigation to the address code when a building footprint location is specified. This independent

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location of households provides improved service provisioning, data integration, linking, and prospects of aiding electronic (e-) governance through facilitated 2-way communication between businesses, government and the citizenry.

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