



XXVII FIG CONGRESS

11-15 SEPTEMBER 2022
Warsaw, Poland

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3D Cadastral Modelling for Registration of Sectional Rights, Tax Collection and Integration into the National Land Information Management System in Kenya

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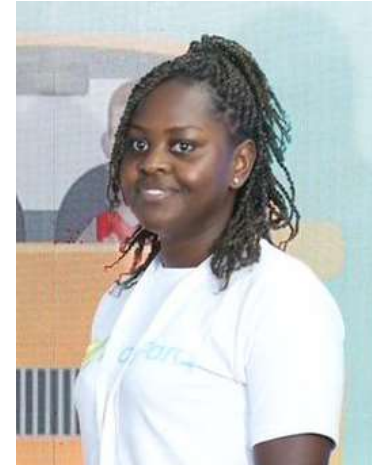
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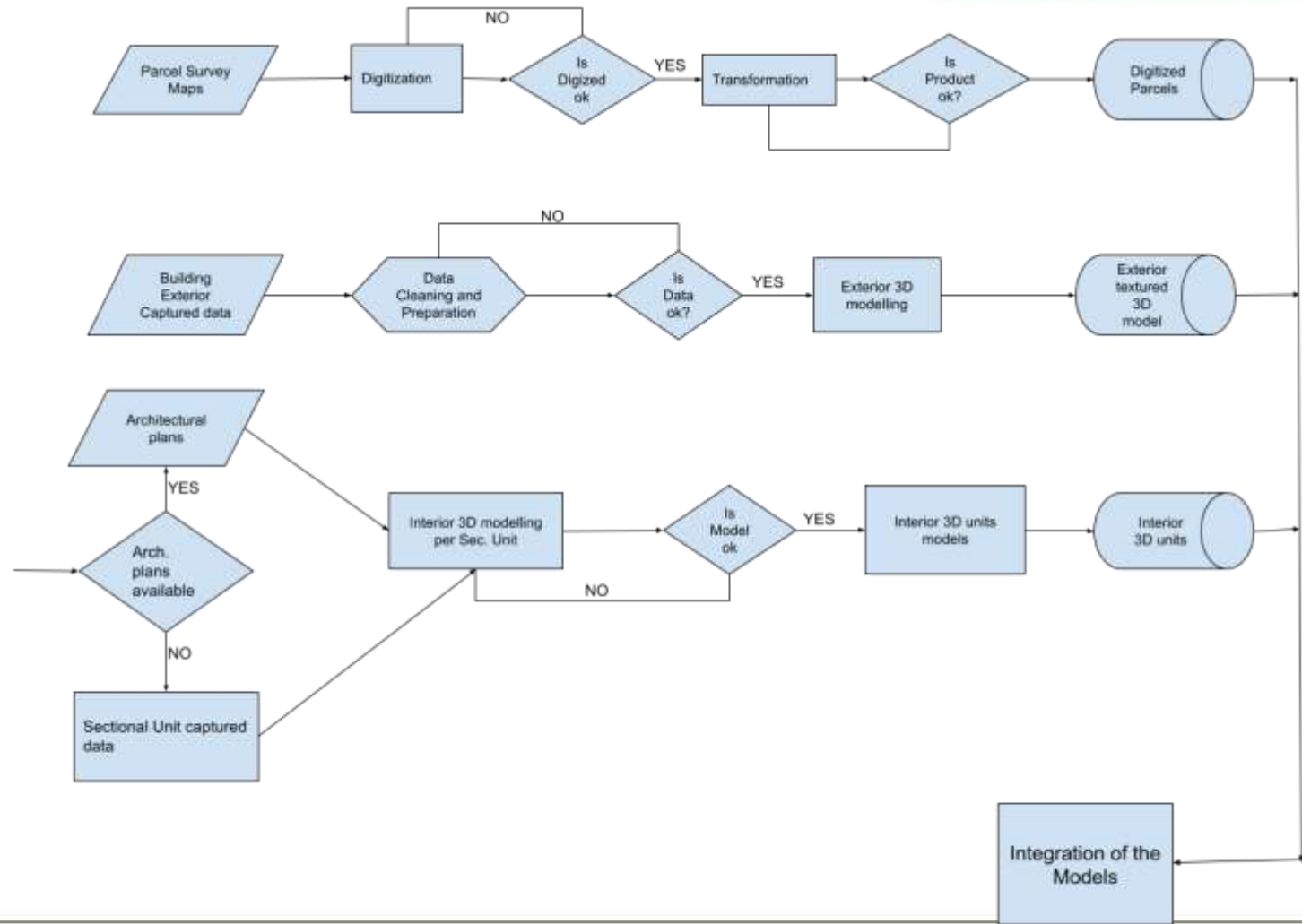
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Most High Rise Buildings in Kenya have not been mapped and cannot be integrated in the LIMS. There are many reasons for this:

- General Lack of technology and Academic capacity to carry out 3D surveys
- Most of the spatial data are in analogue format despite many efforts to digitize the same
- GoK recently initiated a comprehensive digitization of all the spatial data and development of NLIMS for the Cadastre, called the Ardhi-Sasa
- So far most of the City of Nairobi data digitization and integration into the NLIMS is in progress
- However for a more comprehensive and long lasting solution, a project was initiated between TuK and 8TEq to develop a *iLand* system for the Kenya Cadastre
- This paper presents the results of the project

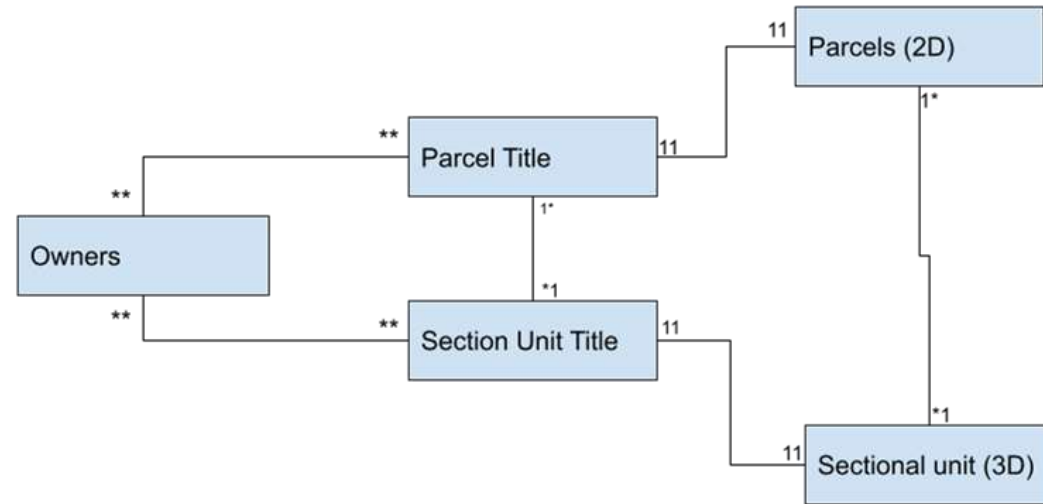
Methods

- Terrestrial lidar Scanning
- UAV photogrammetry
- 3D Reconstruction
- 3D LIMS development.



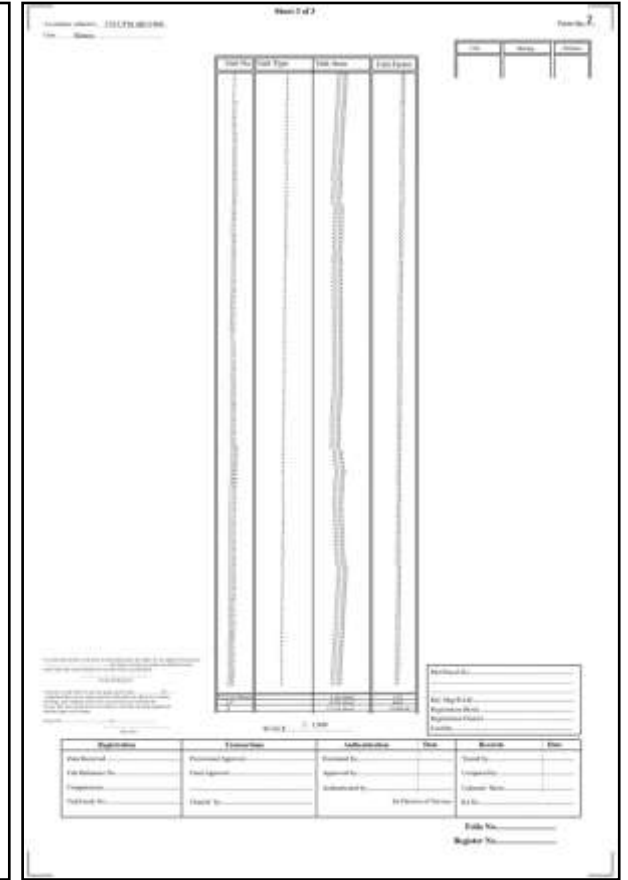
Methods

- Database Design(LADM ISO)
- Database modelling.
- Web Visualization.



Results

- Realistic presentation of the high rise buildings in a 3D reality model
- Sectional property plans and area list for registration of sectional plans.
- Accurate spatial 3D Data for other applications



Results

- A web-based application to interact with the sectional properties. It enabled for retriever of each property information and scanned supporting documents used for it registration.
- It also supports tax collection from the sectional Buildings in Kenya
- This has not been possible due to lack of 3D Cadastral mapping for many years
- Sectional Plans can now be generated automatically from the database and these can be fed into the NILMS



Conclusion and Recommendation

- The results of this study show that the 3D product can support the registration of sectional properties, collection of land-based taxes and the integration with the local NLIMS
- The model has been adopted by Kenya Government for large scale implementation even in areas where the Architectural plans are not available
- The model will greatly support the documentation of Heritage Buildings in Kenya
- The model will greatly facilitate the registration of complex buildings
- It will support user interface for 3D spatial visualization and virtual Reality Modelling



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