

# Methodological Cadastral Baseline for the Multipurpose Physical Survey of Properties Using SFM CRP Photogrammetric Techniques for 3d Reconstruction.

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## SUMMARY

Conventional methods of mass land survey in Colombia today can represent high costs, as well as institutional wear and tear when it comes to prioritizing processes or geographic locations for the applicability of these methodologies. Part of this panorama reflects the existing gaps in the stages that include the property survey, not having updated information or not having a baseline that allows speeding up the processes of the surveyors in the field; even representing temporary overexertion, with which other geographic spaces could be prioritized for multipurpose purposes.

From the 3D reconstruction of building facades by means of short-range photogrammetry methods, precise and updated three-dimensional information of the buildings is provided, allowing the identification of characteristics such as finishes, materials, state of conservation and heights. With this technique, it is possible to obtain valuable information on the variables of the property file, which facilitates the cadastral processes of formulation, updating, conservation and interoperability of the information. Consequently, 3D reconstruction with a property approach promises to be a useful tool to obtain accurate and reliable data on buildings, contributing to a more efficient management of cadastral information by facilitating decision making in the urban and territorial sphere.

Although modern technologies are available, which provide centimeter or millimeter information, such as LIDAR scanners, drone flights or aerial photography with very high resolution sensors, it must be recognized that they still represent high costs and an institutional effort in their coordination. Thus, it is highlighted that the methodology proposed here, by using mobile cellular devices with average characteristics, saves costs, processes, and promises to be a potential tool for property characterization of populated centers from small villages to large cities.

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Finally, its applicability is highlighted and as a functional channel in the identification of homogeneous land areas, city planning and management. Therefore, it is important to consider the potential of this type of indirect format methodology in the Colombian multipurpose cadastre prospect and its linkage with the LADM COL model or land administration model.

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