

# Technical Considerations for Implementing 3D Cadastre

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## SUMMARY

Cadastrals are the core of the modern land administration system. To be effective, the map needs to accurately reflect the rights, restrictions, and responsibilities (RRRs) associated with a given land parcel. With the world's population now mostly living in urban areas, the standard 2D approach does not reflect the true complexity of property ownership being above and below the earth's surface. To reflect the physical and legal reality, we need to turn to 3D cadastrals. However, there are many challenges associated with this advancement.

With the assumption that the legal framework has been created, this paper aims to outline some of the technical considerations for implementing 3D cadastrals. Discussions around what the end goal of the legal framework (e.g. Digital Twin, Infrastructure management, facilities management) bring to light many aspects of technology that must be considered. Methods for data capture, data modeling, storage, and use cases all merit their own examination. With the abundance of data types, we need a system that can ingest, aggregate, and disseminate. GIS is the technology that not only creates the environment for data integration but serves as an integral part of the agency's dissemination strategy. Thereby developing a positive public perception. While the legal framework serves as the statutory foundation for the cadastre, GIS serves as the technical foundation for the land administration system.

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