

Exploring Research, Development and Innovation in the Parcel Fabric: a LADM-conformant Data Model for Representing, Storing and Adjusting Land Boundaries

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SUMMARY

The cadastral market is a highly specialized, diverse, and slower-moving market compared to other IT sectors. While potential shareholders and investors might not be inclined to invest in cadastral markets due to these factors, Esri, a privately held and debt-free company can invest up to 30% of its annual revenue into the research and development of such markets. Esri is the global market leader in geographic information system (GIS) software.

With their research and development efforts, Esri has released its 4th generation parcel fabric solution for the cadastral industry. This solution is designed to meet the business requirements for cadastral markets for the next 15-20 years.

Development of a parcel fabric that caters to a diverse array of cadastral markets requires a group of experienced subject matter experts working together with highly skilled programmers. This paper explores the development of innovative solutions to meet modern business requirements and expectations. These expectations include:

- Accessibility of cadastral data from any client (desktop, web, mobile) as well as editing online and offline
- An LADM-conformant data model
- Multi-user, concurrent editing supported by versioning
- Support for editing and display in 3D and 4D

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(time)

-Easy migration of data from multiple different sources and in different states

-Easy adoption by inexperienced users

-Localization of the system

-Management of data quality (the system administrator should be able to configure quality checks and apply fix methods)

-Support for parcel lineage display

-Support for cloud deployment and SaaS

-A robust, scalable, and sustainable system

-A system that increases productivity and enhances data quality

This paper will examine the requirements above as well as new research and development efforts in the areas of machine learning, web application, automated interpretation of legal documents and more.

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