The Cycle of Digital Cadastral Survey Information in New Zealand

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Overview

- The Cadastral Survey System in New Zealand
- Approach to 3D
- Work being Undertaken to Realise 3D
- Applicability to Other Juridictions
- Discussion
The Cadastral Survey System in New Zealand

- Surveys undertaken entirely by private licensed cadastral surveyors (currently 668)
- Surveyor-General sets regulations
- Monument based legal cadastre
- Connected to national geodetic system
- Cadastral survey data managed in Landonline, in 2D
- +2,500,000 primary parcels

New Zealand
Population: 4.5 million
Land area: 268,000 km²
Distance from Melbourne: 2,571 km
The Current New Zealand 3D Cadastre

- A 3D legal cadastre since the 1800s
- Unit titles primary means of multi-unit property ownership (approx. 145,000 unit titles)
- 3D parcels not spatially captured in Landonline system
Approach to Achieving 3D

✔ Legislative framework exists

❌ Technical and operational changes are required
Requirements

Fundamental Requirements of 3D Digital Cadastre

Search, visualise and retrieve 3D parcels stored in the digital cadastre
Create new 3D parcels via 3D cadastral survey datasets
Lodge new 3D cadastral survey datasets
Validate 3D cadastral survey datasets against regulatory and system requirements
Integrate 3D cadastral survey datasets into the digital cadastre
Maintain spatial alignment of 3D parcels in digital cadastre

Gulliver, Haanen and Goodin (2017)
3D Spatial Objects to Represent 3D Parcels

3D spatial object
underling ‘2D’ primary parcel

permanent reference mark

$(X, Y)$
permanent reference mark $(X, Y, Z)$
Work underway to Realise 3D

Advanced Survey and Title Services – ASaTS:

- To replace Landonline
- To modernise the system and provide a better service
- Incorporates a 3D digital cadastre
- Scheduled completion 2021
Cycle of Cadastral Survey Information
Applicability to Other Jurisdictions

- 3D spatial objects - generic approach
- Off-the-shelf solutions available
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