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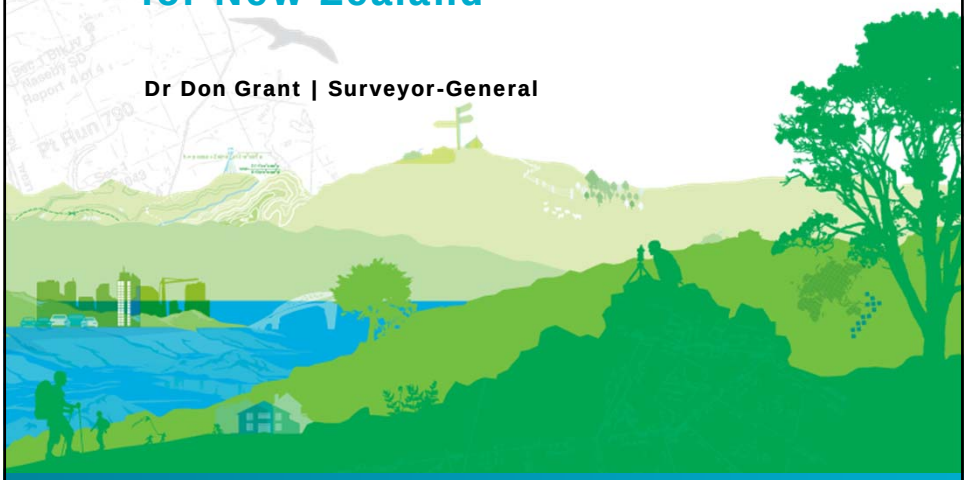
A Sustainable Cadastre for New Zealand

Dr Don Grant | Surveyor-General



Expected changes

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- Accurate positioning for everyone
  - Few cm accuracy in most locations
- Online access to spatial data for everyone
  - Delivered to mobile devices
- Spatially accurate data in most populated areas
  - Dynamic coordinates (regularly updated)?
- Diverse spatial and tenure datasets integrated
  - Integration happens behind the scenes (smart services)
- Increased expectation of 3D visualisation

Current cadastre

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- Cadastre based on marks
  - Legal coordinate cadastre has limitations in NZ
  - Earth deformation
  - Coordinates must change
- But can we do better?
- What do landowners want?
  - Intelligent boundaries?
  - Augmented reality?

Survey / Spatial Convergence

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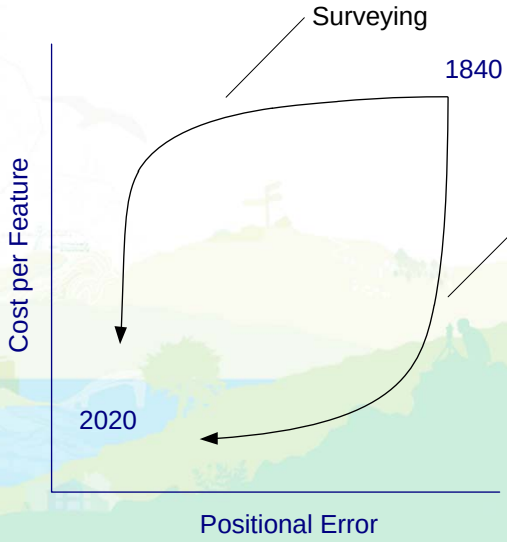

2D vs 3D

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- Complex 3D rights
- Shown as 2D on survey plans
- Unintelligent images
- Spatial cadastre shown as 2D
- Users expect 3D

2D plans & spatial cadastre

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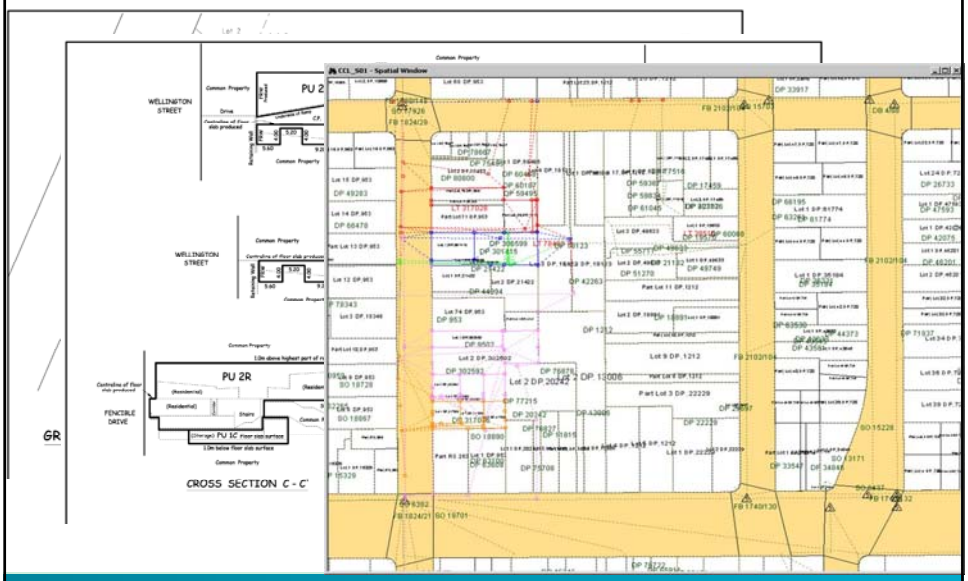

Sensing the environment

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- Wireless sensor networks
  - Spatial positioning chips
  - RFID chips
  - Wireless communications
- Cost effective
- Sense change in physical environment
- Data streams of enormous value
- Potential to assist boundary location

Augmented reality - Google Goggles

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Augmented Reality Cadastre?

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- Is this what surveyors will want?
- Is this what landowners will want?
- What is possible in 10-20 years?

Surveyor user – definition 1

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Surveyor user – definition 2

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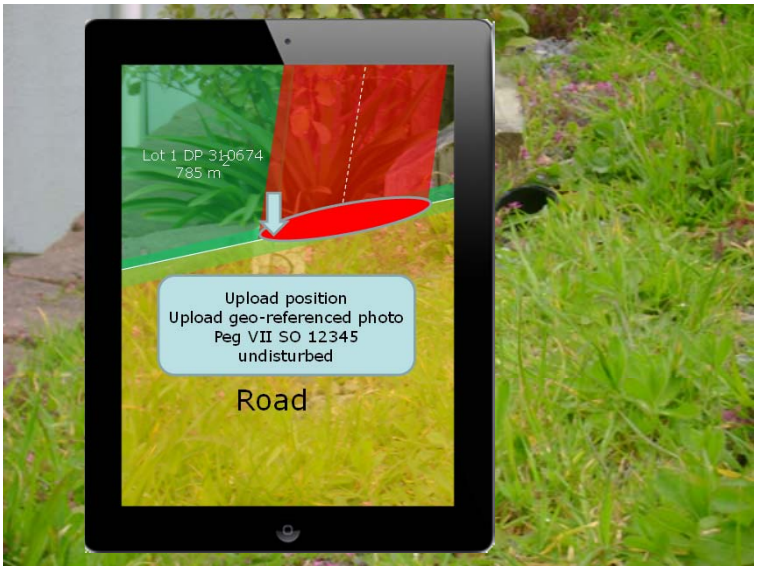

Surveyor user – definition 3

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Landowner view

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Coordinated Cadastre?

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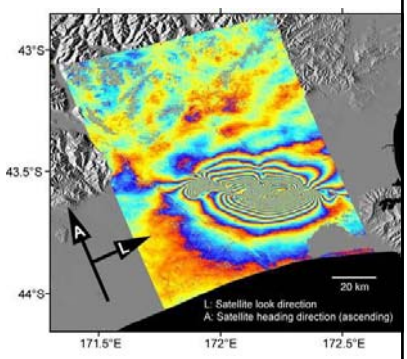
Can we make this work?

- Technical issue - earth deformation
- Boundary movements complex
- Improving models
- More reliable in the future?



Coordinates and earth deformation

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Draft vision statement

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A cadastre that enables people to readily and confidently identify the spatial extent of all rights, restrictions and responsibilities related to land

Three important "stretch" words

- people (not just surveyors);
- readily (finding boundaries is not easy now)
- all (currently only focus on a subset of RRRs)

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