Shaping the Cadastral Infrastructure for a Digital Future

Craig Sandy
Director Surveys – Surveyor General
Survey Branch
NT Australia

Presentation Content

• Digital Cadastral Databases
• The Requirements for a Successful Cadastral Infrastructure
• A Practical Approach
• The Future
• Visual Representation of the physical cadastre
• Its importance is growing exponentially
  – GIS Systems
  – Location analytics
  – Land information systems
• It is being used by consumers without them knowing or caring and they are relying on it

The Requirements for a Successful Cadastral Infrastructure

• A Geodetic Control infrastructure
• Capture of Digital Survey Data
• Creating and Exporting the Cadastral Fabric
• Statutory requirements
• The role of 3D
Geodetic Control

- It provides the platform for the Fabric
- It constrains the fabric and improves the accuracy
- For this to occur the geodetic control must be linked to the cadastre
- CORS networks enable the maintenance of the geodetic control and the reinstatement of the cadastre

Capture of Digital Surveying Data

- Key working with the surveying consultants
- Provide a method for transferring of digital survey data
- Need to have data models, suitable process and examination applications
- Supporting IT systems
Creating and Exporting the Cadastral Fabric

- Ability to create a seamless fabric
- IT Systems that support the replication of the Fabric
- Business systems with the ability to use the fabric
- An upgrade process that is timely and mostly automated

Statutory Requirements

- Ensuring that planning requirements are met
- Survey data complies with survey legislation and directions
- Local government approvals are in place
- Registration of Titles and Rights requirements are met
The Role of 3D

- The key to 3D is ensure that 2D is correct and accurate
  - Plan the appropriate use of 3D data to provide tangible benefit
  - It is not going to solve all challenges in the fabric
  - 3D has limited benefit in most areas of Northern Territory
    » Most benefit in Darwin – Capital City

A Practical Approach

- The Northern Territory – Department of Lands, Planning and the Environment Survey Branch
- Small in population under 200,000 people
- Large in area, equivalent to Mongolia, Peru, Chad, Niger
- Well established Geodetic network with CORS
- Long history of capturing survey data digitally
- Consulting surveyors about to lodge digital survey files (1 July 2014)
  - First step in progressing to full digital lodgement
- A seamless cadastral fabric has been created
- Working to use this data to replace existing DCDB
- Coordinated Cadastre
  - Legislation in place
  - First areas will be declared July 2014
The Future

- Survey data will be transferred in two directions
- No survey plan, as such, a table of added and deleted data
- Survey information will be presented on PDF or as an image
- Almost instantaneous update of DCDB
  - Still requires Registrar-General approval

FIG 2014 Congress – Kuala Lumpur, Malaysia

Summary

- The future maybe changing but the role of surveyors in establishing, and maintaining a cadastral infrastructure is more critical than ever.
- The community is utilising the information we acquire without realising it.
- Spatial accuracy is becoming more important
- Our skills as land professionals are needed as much now as ever before.
- The challenges are complex and surveyors are needed to assist in creating the solutions.
- The concepts are still emerging but practical steps are needed to progress the management of the cadastral fabric and have it ready for the future uses.

FIG 2014 Congress – Kuala Lumpur, Malaysia
The Process

Capture
- Capture Once
- Crowd Sourced from Surveyors

Compile
- Compile – create the Fabric
- Check Statutory Requirements

Share
- Disseminate
- Allow anyone to use it

References

Questions

• Thank you for the contribution of the Staff of DLPE Survey Branch
• Geodata Australia – Ian Harper and Michael Elfick