

Replacing Survey Plans with Fully Digital Cadastral Survey Datasets

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Key words: Cadastre; Digital cadastre; Keyword 1; Keyword 2; Keyword 3

SUMMARY

New Zealand is undertaking major digital transformation activities that will eventually require surveyors to submit digital datasets of their cadastral surveys instead of survey plans. Currently, surveyors lodge over 95% of the information in their cadastral surveys as digital data, while also including a fixed image survey plan generated from that data.

The vision is to achieve a cyclic flow of digital data from the cadastre, to the surveyor to undertake the survey, and the resultant survey information submitted back into the cadastre. This future rests upon cadastral surveyors creating and lodging fully digital cadastral survey datasets, as traditional survey plans are unable to meet the evolving needs of data-driven users of the cadastre.

Surveyors will save significant effort through no longer being required to prepare and lodge a survey plan. Having the information in the form of intelligent data enables cadastral survey data to be validated internally and against the data already held in the cadastre.

LINZ has developed a prototype tool that enables a user to visualise a cadastral survey dataset as a survey plan in a browser. That tool provides powerful presentation tools that enables the user to interactively explore the data that is not possible with a fixed image plan. The prototype uses JSON as the encoding format.

While NZ has successfully used LandXML to exchange cadastral data for over 20 years, more efficient and interoperable options with purposeful structures are required to meet the needs of surveyors and the cadastre.

To provide a sustainable future, LINZ has been working with our colleagues in Australia to develop

a standard model for 3D cadastral survey data and its exchange. The model uses existing internationally recognised standards and ontologies wherever possible. Profiles are included in the model to meet jurisdictional-specific requirements. The model is currently being exercised and tested for 2D cadastral survey data using the JSON encoding format.

Future iterations of the New Zealand prototype will utilise the refined Australia / New Zealand model. Implementation will start with generating compliant datasets from the cadastre. This will enable further engagement with survey software suppliers to enable their software to import the datasets and export compliance datasets for lodging in the cadastre.