



## Modelling the Effects of Property Addressing Uncertainty

### Project Description:

#### Introduction

This proposal is made by the Cooperative Research Centre for Spatial Information in association with the Department of Natural Resources and Mines, which is the Lead Agency in Queensland Government for Land and Spatial Information. A very important geospatial dataset for use across society is the property address information that links street addresses with legal property descriptions and a physical location or geocode.

Accurate and consistent locations of addresses are vital to the successful delivery of government services such as energy and telecommunication distribution, emergency and police services, asset management, property valuations and local government services. Private businesses also rely on accurate address locations for delivery of their services.

#### The Problem

As with any dataset, the property address information can contain errors in both the textual information and the assigned location.

***Therefore, the proposal is for MISG to model the possible errors and attempt to quantify the impact of those errors on the various users of address information.***

One approach might be to determine the probability of time delays in reaching a particular location when the addressing information is in error. Downstream impacts of those time delays can range from the human cost of emergency and police service vehicles being delayed to the economic and environmental costs when delivery services are unable to find the customer's correct location.

#### Motivation

The motivation for the Department, given limited resources, is that better quantifying the social and economic effects may contribute to better business cases for securing the resources required to address the underlying errors.

## Problem Background

Some typical problems that are known to arise include:

- In urban areas, significant problems are caused for emergency services by so-called “gated communities” where a single land parcel has a single street address but has many dwellings in the form of townhouses or retirement communities that do not have individual addresses.
- In rural areas, many properties have access tracks that traverse multiple land parcels such that the property location and the point of access from the nearest road is not well reflected in current datasets.
- There is also a time dimension to the problem where there is a lag between when new property developments are assigned addresses by a local authority and when those new addresses are reflected in state or national datasets.
- Another time dimension to the problem is where addressing and mapping information used in vehicle navigation systems are significantly out of date.
- There are also routing dimensions to the problem where road works or natural disasters may change how routing should be calculated.

More detailed background information specific to Queensland is available at:

<http://www.dnrm.qld.gov.au/qsic> - click on “Rural and urban addressing” where there are a number of relevant Fact Sheets.

From a national perspective, the Public Sector Mapping Agency takes Queensland addressing information and combines it with other State and Territory datasets to create the Geocoded National Address File (G-NAF) see: <http://www.pdma.com.au/?product=g-naf>

## Data Available

It is possible for MISG participants to access the fundamental Street Addressing Information. However, it is felt that meta-data about known and suspected inconsistencies and errors might be more useful for the MISG analysis. Existing activities to improve data quality involve identifying inconsistencies between data held by various agencies, e.g. the Department regularly compares its data with data held by Australia Post and the Australian Electoral Commission. The Department can supply meta-data about those levels of inconsistency and their improvement over time, which might be a useful measure of likely error for any MISG analysis. The Department will also seek to obtain information from agencies like Australia Post, such as rates of failure in their deliveries due to incorrect addressing.