

A New G-NAF® Processing Environment

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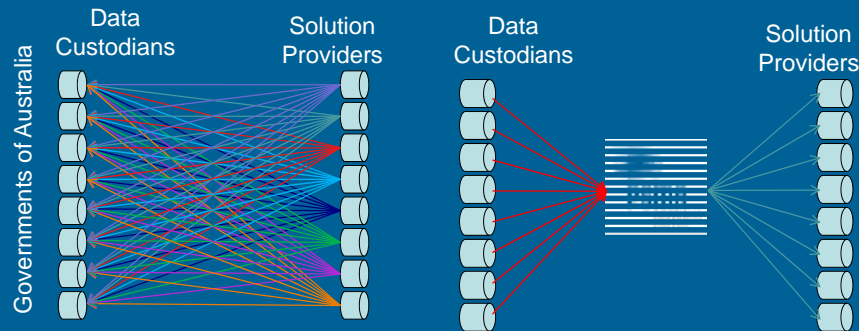
Overview of Presentation

- Introduction
- Overview of PSMA Australia
- Addressing in Australia
- Overview of G-NAF
- Experiences to date in generating G-NAF
- Proposed new G-NAF processing environment
- Summary

PSMA Australia Limited

PSMA Australia Limited is an unlisted public company, established under Australia's Corporations Act, wholly owned by the State, Territory and Australian Governments.

Essentially the organisation formed and now manages a crucial supply chain between creators of fundamental spatial information and users of this information by aggregating, integrating and distributing national spatial datasets.



PSMA Australia

Datasets

Transport & Topography

Over 2,000,000 kms of named road centrelines in a structured hierarchy maintained quarterly.

National rail network including tram lines.

Airports and Landing Grounds.

National Drainage network consisting of Major and Minor water layers and polygon water bodies.

G-NAF

G-NAF (Geocoded National Address File) is the authoritative address index for Australia.

Data is sourced from AEC, Australia Post and Government Mapping Agencies and State and Territory Governments

CadLite

Over 10.8 million polygons representing the registered land parcels in Australia updated quarterly with incremental updates available.

Points of Interest

Over 180,000 Points of Interest including Police Stations, Hospitals, Post Offices, Museums, etc

Postcode Boundaries

This definitive dataset has been developed by Australia Post and PSMA Australia and is updated quarterly

Includes two layers:

- Boundaries – polygon data
- Centroid – point data

Administrative Boundaries

This dataset contains all of Australia's major administrative boundaries including:

- Key ABS Statistical Geography
- State Boundaries
- Electoral Boundaries
- Local Government Areas
- Suburbs/localities
- Town points

Overview of Addresses in Australia

- In most Jurisdictions, addresses are created by local Government .
- Over the years many organisations have built and maintained their own address databases.
- This adhoc approach has led to considerable disparity between the various address datasets
- Since the introduction of AS4819, the Australia and New Zealand Standard for the creation of new addresses, the consistency of address creation has improved.
- The introduction of G-NAF in 2004 has resulted in a number of organisations implementing G-NAF rather than maintain their own address datasets
- To further improve addressing ANZLIC established the National Address Management Framework (NAMF) in 2008

Overview of G-NAF

- G-NAF (Geocoded National Address File) was first released in March 2004
- Updated every three months – 23 updates now completed
- It contains the State, Suburb, Street, Number and coordinate reference or Geocode for street addresses in Australia.
- G-NAF comprises addresses supplied by the States and Territories of Australia, Australian Electoral Commission (AEC) and Australia Post
- The methodology developed by PSMA Australia uses a range of spatial and aspatial validation techniques
- Currently holds some 12.6 million principal addresses

Overview of GNAF Methodology

- Spatial and aspatial Validation of all addresses from multiple Contributors against
 - Gazetted Localities – PSMA Admin Boundaries, Gazetted Place Names – ICSM Gazetteer and Road Centrelines – PSMA Transport
- Geocodes are assigned to addresses based on level of compliance with Reference datasets
 - Locality only = 5, Street Level = 4, Parcel / property level = 2
- Validated Contributor addresses are merged based on a merge criteria which essentially includes all address components such as locality, street name, street type, flat numbers, level numbers, etc
- Merged addresses are assigned a value indicating level of agreement between Contributors (ie 2, 1, 0, -1)
- Corrections can be made to failed addresses through the implementation of rules identified after investigation. The incorrect address details are included in alias locality and street locality tables. These rules are subsequently embedded in the G-NAF processes for all future updates.

Statistics – G-NAF

Summary of Confidence of Principal Addresses				
Confidence Level		February 2010 (Update 23)		August 2004 Update 1
		No. of Addresses	Percentage	Percentage
2	Three Contributors	7,380,718	57.58%	43.93%
1	Two Contributors	2,235,757	17.52%	20.43%
0	One contributor	3,142,157	24.63%	35.63%
Total Principal Addresses		12,598,975	100.00%	100.00%

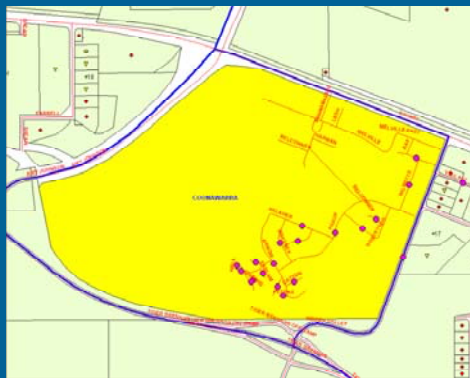
Summary of Geocode reliability of Principal Addresses in G-NAF				
Geocode Reliability		February 2010 (Update 23)		August 2004 (Update 1)
		No. of Addresses	Percentage	Percentage
1	GPS Derived level	0	0.00%	0.00%
2	Within Address Site Boundary	11,632,845	91.18%	82.18%
3	Gap Geocoded	172,562	1.35%	1.88%
4	Street Level	892,856	7.00%	11.38%
5	Locality Level	58,640	0.47%	4.28%
6	Topo Level	599	0.00%	0.27%

Experience to date

- At a National level there are no quick fixes to improve address as evidenced by the progressive improvement over the past five years
- The quality of G-NAF is directly impacted by the quality of the underlying Reference datasets. For example, if roads are unnamed or missing, geocoding of addresses is impacted.
- Given the many differences that occur between gazetted localities and road names and the actual addresses provided by the three contributors, the building of alias locality and street locality tables is crucial to G-NAF.
- The creation of rules to align addresses with the Reference Datasets has been a key feature in the progressive improvement of G-NAF.
- A number of key issues impacting the quality of the addresses in G-NAF remain to be resolved.

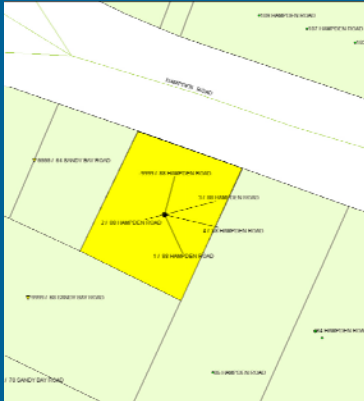
Major Issues impacting the Quality of G-NAF

- Complex or Private developments (e.g. Retirement villages, gated communities, Federal Government sites such as Defence bases)



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- Complex or Private developments (e.g. Retirement villages, gated communities, Federal Government sites such as Defence bases)
- Historical and phantom Addresses
- Alternative road names (ie local name vs state highway name)
- Frequency of Updates

A New G-NAF Processing Environment

A New G-NAF processing environment is required to facilitate:

- More frequent updating with the potential for Continual updating
- Integration in the PSMA Australia LYNX Environment
- The potential for other Contributors
- Improved metadata

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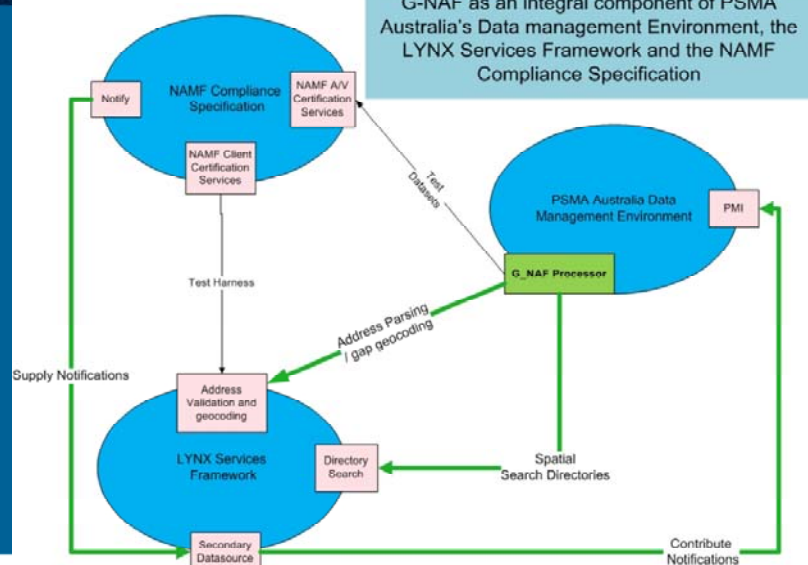
- More frequent updating with the potential for Continual updating
- Integration in the PSMA Australia LYNX Environment
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This will require the processing environment to support:

- The use of web services
- The non sequential updating of the Reference datasets and G-NAF
- Improved rules management

A New G-NAF Processing Environment

G-NAF as an integral component of PSMA Australia's Data management Environment, the LYNX Services Framework and the NAMF Compliance Specification





Summary

- The G-NAF methodology has proved to successful over the 23 updates by bringing together three major address databases in Australia and generating a consistent incremental address improvement over a five year period
- During this time, G-NAF's use within Government and the community has increased significantly
- Further improvement in addressing by all Contributors is still required to significantly improve the Confidence Levels and geocode quality in G-NAF
- Improved timeliness through direct linkages with web services and support for continual updating is now required to meet user requirements



Questions

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