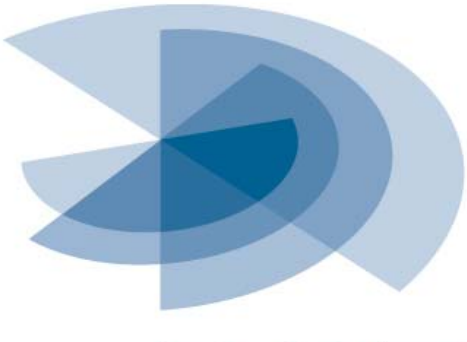

Product Description

G-NAF®

Version 1.6

G-NAF® Product Description

First Published 2006

PSMA Australia G-NAF® Product Description
Version 1.6

Published by
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PSMA Australia acknowledges the assistance of LogicaCMG Pty Ltd & Geometry Pty Ltd in the preparation of this guide.

Table of Contents

1 General Information

1.1 Custodian

PSMA Australia Limited

1.2 Jurisdiction

PSMA Australia content covers Australia's eight states and territories:

- New South Wales
- Queensland
- Victoria
- Tasmania
- South Australia
- Western Australia
- Northern Territory
- Australian Capital Territory

1.3 Contact Details

Custodian

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2 Dataset Description

2.1 Content

G-NAF (Geocoded National Address File) is the authoritative address index for Australia. It contains the State, Suburb, Street, Number and coordinate reference or Geocode for street addresses in Australia.

The G-NAF Data Model (see Section 4 - Data Model) is derived from the AS/NZS 4819:2003 Geographic information-Rural and urban addressing standard.

Names are not part of the G-NAF, nor does G-NAF contain any personal information.

G-NAF uses existing and recognised address sources including the state and territory Government land records, as well as address data from Australia Post and the Australian Electoral Commission. Through a rigorous process involving textual address comparison, matching and geospatial validation, both national consistency and national coverage are achieved at levels not previously obtainable (see Section 2.3 - Methodology for detailed discussion of the build methodology). This world first methodology provides a mechanism to create and maintain a national address index of all addresses in use and importantly identifies those considered official. The process is repeatable and the relationships established for access to the address data are long standing to ensure that maintenance of the index can be assured.

2.2 Contributors

G-NAF is an exercise in collaboration. The concept of a national index of addresses has been evolving since 1995. Some 15 significant organisations have and continue to contribute and support the initiative.

The G-NAF data contributors include:

- The mapping agencies and land registries of each of the Commonwealth, state and territory governments;
- Australia Post; and
- The Electoral Council of Australia and the Australian Electoral Commission.

Whilst each of these organisations has a very different core business, they each have a critical reliance on addresses for the delivery of that core business. G-NAF stands as a credit to Australia's capacity to collaborate and cooperate for a common goal of national significance.

2.3 Methodology

2.3.1 G-NAF Maintenance Process

Maintenance activities are triggered by PSMA Australia receiving updated address data from the data custodians according to a pre agreed schedule for data delivery. At present, this schedule defines a quarterly update process. Over time, PSMA Australia will monitor:

- user demand; and
- custodian capacity to deliver more frequently than quarterly

to determine whether monthly or even on-the-fly updates to G-NAF need to be considered.

At this time, the scope of G-NAF maintenance does not extend to updates triggered by users supplying 'corrections' to the dataset. End-user initiated changes will also be considered by PSMA Australia as part of the longer-term vision for G-NAF Maintenance.

During the maintenance phase, contributed addresses are analysed and compared to existing records in G-NAF. This analysis and comparison gives rise to new records being inserted and existing records being updated or retired.

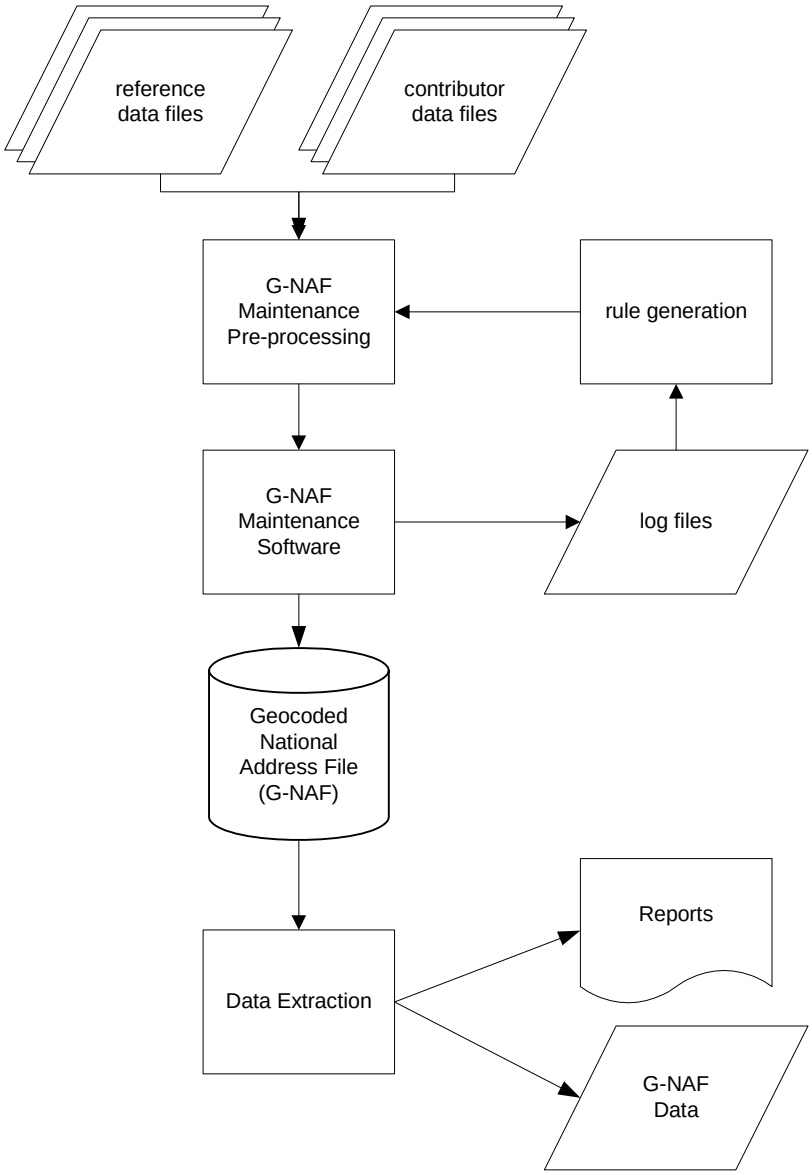


Figure 1 - High Level Diagram of G-NAF Maintenance Process

Figure 1 illustrates a high-level view of the G-NAF system including G-NAF Maintenance Pre-processing, G-NAF Maintenance Software and G-NAF outputs.

2.3.2 G-NAF Maintenance Pre-processing

The G-NAF Maintenance Pre-process as indicated in Figure 1 takes the input files from the PSMA Australia reference datasets and Contributor data and performs processing prior to data being processed by the G-NAF Maintenance Software.

Pre-processing is used to describe the following activities:

- Conversion of file format (e.g. MapInfo to G-NAF files);
- Mapping from Contributor model to G-NAF model (with parsing as necessary);

- Creation of an incremental file from a full re-supply (if required);
- Application of rules that make corrections to mis-spellings, abbreviations and erroneous characters. These business rules are all supplied back to the Custodians. Where it is not absolutely evident that an element of an address is erroneous no change is made without reference back to the relevant jurisdiction; and
- Application of updates to suburb data and propagating the changes through all effected parts of the data.

2.3.3 G-NAF Maintenance Software

The G-NAF Maintenance Software, as indicated in Figure 1, processes data passed to it from the pre-process stage. The G-NAF Maintenance Software then stores verified data in a database and log files are created which contain those records that could not be verified. These log files are then reviewed and pre-processing rules are created that are used by the pre-process function. This process is iterative and the cycle continues until all logged records are accepted or confirmed as invalid and unrepairable.

2.3.4 Processing Data

The data is processed in the G-NAF Maintenance Software in a similar fashion to the way it was processed in the G-NAF build Software, that is, it uses a modified version of the six main steps listed below:

1. Address scrubbing
2. State-Locality validation and geocoding
3. Street Validation
4. Merging
5. Street geocoding
6. Address Geocoding

The primary difference between the G-NAF build and G-NAF maintenance Software is that the maintenance software will process a subset of the address set from a contributor. Only those addresses that are deemed to have changed (inserted, updated or retired) either by notification from the Contributor or by association with a modified reference dataset element (locality or road) will be reprocessed.

2.3.5 Maintenance Software Process Flow

Figure 2 illustrates at a high level the flow of data through the G-NAF Maintenance Software.

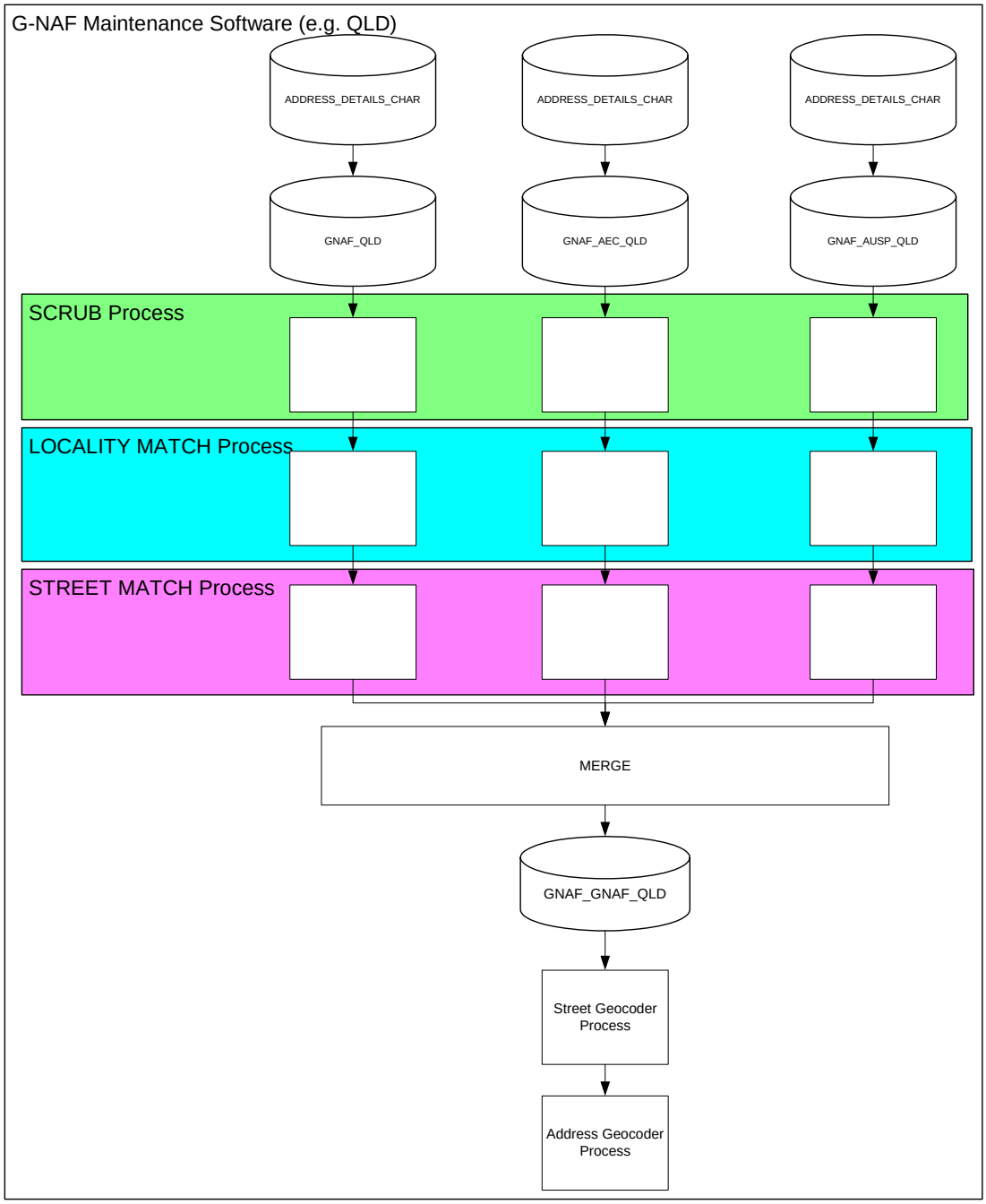


Figure 2 - G-NAF Maintenance Software

2.3.6 Update and Retire Examples

The Maintenance software handles two scenarios for the updating or retiring records as they change. These are:

a. Maintaining ***date_created/date_retired*** columns when retiring old records and creating new records.

b. Maintaining ***date_last_modified*** column when modifying data rather than retiring it.

A third scenario exists where the merge criteria has changed.

c. A **merge criteria** change causes a new record to be inserted and the existing record being kept, unchanged and active.

A description of these scenarios is as follows:

Scenario a.

date_created/date_retired method does not change any data. This method will retire a previous record and create a new record based on the previous one, but with the data changed. This method is used when contributor defined fields that are not part of the merge criteria change. For example when a building name changes or a geocode changes.

An example of a building name change is provided at Annexure B.

This example shows building name "PONDEROSA" being changed to "EL RANCHO".

The existing G-NAF record was created on: 29/04/2004 11:01:24

Because BUILDING_NAME is a contributor defined field the existing record (GAVIC411711441) is retired and a new record (GAVIC996543256) is created.

Scenario b.

date_last_modified simply changes the data without maintaining a history. This method is used when non-contributor defined fields change (fields we have created for our own purposes). For example when a confidence level has changed or an alias/principal relationship changes.

An example of a confidence level change is provided at Annexure B

This example shows G-NAF pid Unit 3 21 Smith Street Burwood (gnaf_pid: GAVIC411711441) being removed from one of the contributors data. This causes the confidence value to be reduced from 2 to 1.

Scenario c.

When ***merge criteria*** *change*, the new record is treated as a new address and inserted into G-NAF as such.

An example of a street name change is provided at Annexure B. This example shows Unit 3 21 Smith Street Burwood (gnaf_pid: GAVIC411711441) being changed to Unit 3 21 Brown Street Burwood. Because of the street name change it is no longer possible to match the new incoming record to an existing G-NAF record, so a new G-NAF record (GAVIC998999843) is created.

In this example it is assumed that Unit 3 21 Smith Street Burwood is provided by only one contributor and so has a CONFIDENCE of 0.

The criteria used during the merge process are identified in the G-NAF Data Dictionary under two headings:

1. Major Address Field? Field:
   If this field is marked with Y then the field is deemed to be a major component of an address.
   A GNAF_PID relates to a unique combination of these major fields.
   If the value of this field changes for an address a new gnaf_pid will be created.
2. Value Provided By G-NAF Contributors? Field:
   If this field is marked with a Y then the values in this field were provided by a G-NAF contributor(s) i.e. it is not metadata that PSMA Australia has generated (such as confidence, date_created, internal_record_id etc)

2.3.7 Continual Improvement Timetable

The iterative processing utilised within the G-NAF build and maintenance provides opportunity to thoroughly analyse not just the address data but its interaction with the spatial datasets used for validation. The capacity to do this has ensured that the processes utilised can be continually improved. In many instances, the nature of the interactions between datasets and the many dataset idiosyncrasies lead to very complicated rules being developed. Once applied the rules return exception addresses generally conforming to a normal distribution.

During the build and maintenance process, a number of issues have been identified for further investigation. Users have also identified inconsistencies within the G-NAF that require attention.

Fixes and enhancements made to the dataset are detailed in the Dataset Pre-Release Reports and Production Reports.

Users should also refer to the FAQs (see Annexure C) for answers to common questions on the installation and usage of G-NAF. Users are encouraged to forward other questions to PSMA Australia. Answers will be provided directly and will also be incorporated into the FAQs document.

2.3.8 Important Note for Users

Geocodes should not be used as a unique identifier for addresses. The experience gained through the G-NAF update process indicates that in some states there have been some minor shifts of geocodes (although they remain within the parcel). Users should use the G-NAF PID as the unique identifier.

2.4 Data Quality

Positional Accuracy

G-NAF is not 100% accurate nor does it have 100% coverage. The G-NAF project is a concerted effort to deliver the best possible geocoded national address dataset available and there is significant commitment to ensuring that it will improve with every release.

The magnitude of this dataset, the complexity of its content, and the multiplicity of its sources in both initial construction and ongoing maintenance, means that there is still a great deal of work to be done to improve the content, quality and coverage of the G-NAF.

Since there is no simple means of determining the absolute accuracy and coverage of the G-NAF it is not possible at this time to provide statistically valid indicators of the degree to which G-NAF meets these criteria. However, PSMA Australia is in discussions with the AEC to access data relating to a statistical sampling project, which may enable PSMA Australia to derive these key accuracy and coverage figures in a statistically valid way.

Relative accuracy and coverage can be gauged to an extent through comparison between contributor datasets. Inbuilt procedures have been developed to ensure data conformity & accuracy.

Attribute Accuracy

Attribute accuracy is determined from rigorous scrubbing processes and matching of the three contributor datasets as well as the matching of addresses against gazetted localities and the Roads Layer of the PSMA Australia Transport & Topography™ dataset.

Logical Consistency

The G-NAF Data Model is derived from the AS/NZS 4819:2003 Geographic Information-Rural and urban addressing standard.

The dataset data structure has been tested for conformance with the data model. The following have been tested and confirmed to conform:

- File names
- Attribute names
- Attribute lengths
- Attribute types
- Attribute domains
- Attribute Order in file.
- Compulsory attributes populated

Completeness

Theme Coverage: The dataset is complete for mainland Australia. In the maintenance program, the External Territories of Cocos (Keeing) Islands and Christmas Island addresses will be added to the dataset.

Attribute Completeness: All attributes for each object are populated.

2.5 Features

2.5.1 Addresses Included

G-NAF aims to include all physical addresses in circulation. In accordance with AS 4819:2003, the primary or officially recognised rural or urban address is referred to as the Principal. However, unofficial addresses also appear in G-NAF as aliases and these addresses are linked to the principal where the linkage could be derived through the validation process. The inclusion of aliases in G-NAF should not be seen as an endorsement of the use of unofficial addresses but as an aid to assist licensees in matching to their existing addresses databases.

Only addresses that have a 'real' physical location are included in G-NAF. For this reason, postal addresses and PO Boxes are not included. However due to the lack of rural address information in some states, roadside mail box (RMB) numbers, Lot numbers and Block & Section numbers (South Australia) have been included until the rural addresses have been implemented, after which the RMB, Lot and Block & Section numbers will be retained as aliases to the rural road numbers.

2.5.2 Alias Addresses

Alias addresses are addresses, other than the principal address, that refer to the same physical location as another address record.

The inclusion of alias information greatly enhances the usability of G-NAF by supporting addresses in popular use regardless of their official status. PSMA Australia recognises that G-NAF has a role to play in progressing usage of official, gazetted addresses. However, it is also acknowledged that the issue cannot be forced and in some cases, it will take generational change to see alias or incorrect addresses taken out of everyday usage.

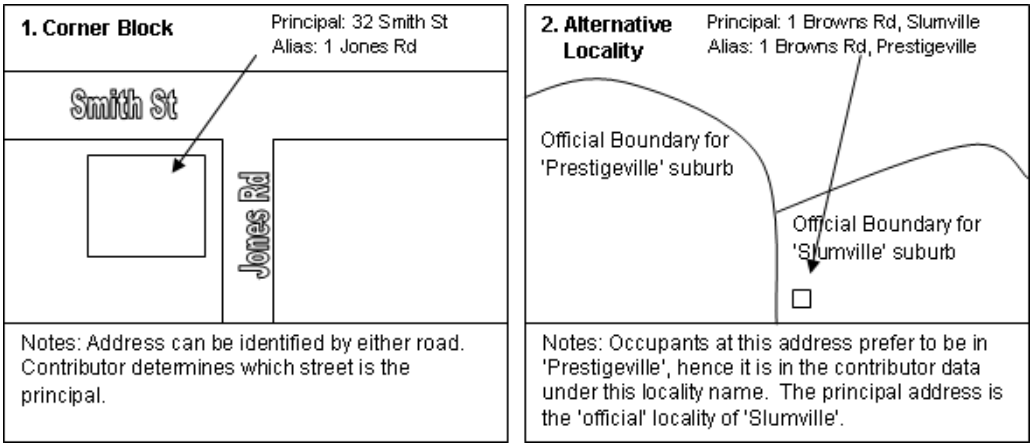
It is also considered that the benefits of the inclusion of aliases outweigh the costs; particularly in the application of G-NAF by emergency services.There are three levels of aliases in the G-NAF schema:

Alias Address: where an individual address is also known by another name

Locality Address: where a locality does not exist in the reference data and is the synonym or incorrect spelling of a locality that does exist.

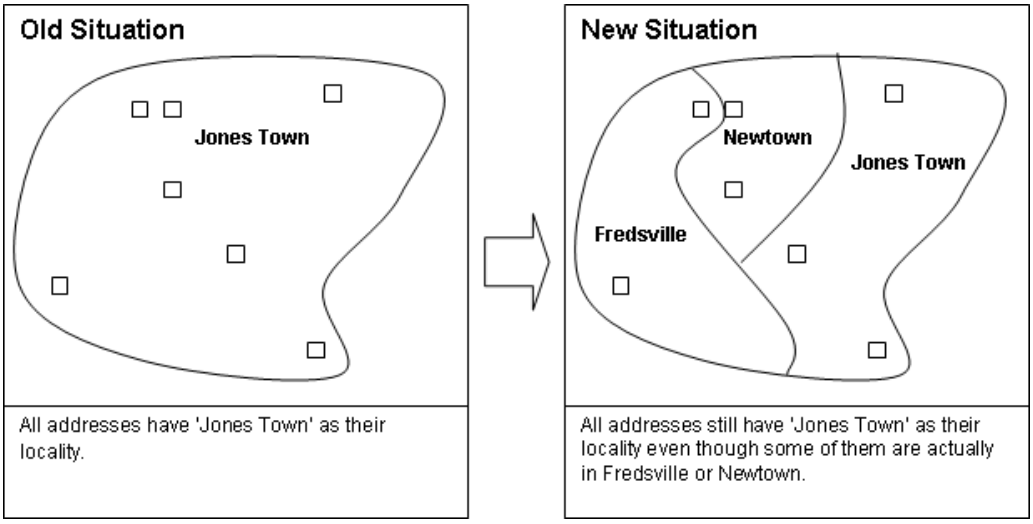
Street/Locality Address: where a street/locality pair does not exist in the reference data and is the synonym or incorrect spelling of a street/locality pair that does exist.

Consider the following examples:



Number of Alias Records

During the build process, it was discovered that many records were not using gazetted locality names. Many of these cases were larger townships that had been recently subdivided into suburbs, with many addresses still referencing the old township name.



The build process creates correct 'Alternative Locality' principal records for the addresses with incorrect/ old/ unofficial localities.

In recent times, there has been significant progress made by all states and territories in the gazettal of suburbs and localities. Because of this, G-NAF holds very large numbers of alias addresses that reflect the 'Jones Town' example supplied above.

Alias Locality

Similar to the address aliases, the locality aliases are used to ascertain those addresses that refer to the same physical location as another address record, where the locality is different (as shown in the Alternative Locality diagram above). Where it is identified that the locality in an address from a contributor was incorrect (e.g. spelling error or vanity addressing) a rule (see below) is created to manipulate the data during the scrubbing process.

```
<sql_update>
    <sequence>2</sequence>
    <statement>update address_details_scrub set locality_name = 'CITY'
                where locality_name = 'CANBERRA CITY' </statement>
</sql_update>
```

The example locality 'CITY' will exist in the LOCALITY table and an entry for 'CANBERRA CITY' will exist in the LOCALITY_ALIAS table. When validating an address, if the locality of the address is 'CANBERRA CITY' it should be changed to 'CITY' prior to checking the address in G-NAF.

Alias Street/Locality

Similar to the other aliases, the street/locality aliases are used to ascertain those addresses that refer to the same physical location as another address record, where the street/locality is different (as shown in the Alternative Locality diagram above). Where it is identified that the street/locality in an address from a contributor was incorrect (e.g. spelling error or vanity addressing) a rule (see below) is created to manipulate the data during the scrubbing process.

```
<sql_update>
    <sequence>4</sequence>
    <statement>update address_details_scrub set street_name='AITKENS',street_type = 'ST',
                locality_name = 'KAMBAH' where street_name = 'ATKINS' and street_type = 'ST'
                and locality_name = 'KAMBAH' </statement>
</sql_update>
```

The street ‘AITKENS ST’ will exist in the STREET table and locality ‘KAMBAH’ will exist in the LOCALITY table and an entry for ‘ATKINS ST’ will exist in the STREET_LOCALITY_ALIAS table. In this way, a link exists to the principal address even if the licensee is presented with an alias.

Using Alias Datasets

When using G-NAF to validate an address the steps are:

1. Is there a principal address for this address?
2. Is there an alias address for this address?
3. Is there an alias locality for the locality of the address?
    a. This can be determined by checking the locality name of the address against the LOCALITY_NAME field in the LOCALITY_ALIAS table, the locality_pid is then used to determine the correct locality_name from the LOCALITY table.
    b. The next step would be to retry steps 1 & 2 with the new locality_name.
4. Is there an alias street/locality for the address?
    a. This can be determined by checking the street name of the address against the street_name, street_type, street_suffix fields in the STREET_LOCALITY_ALIAS table, the street_pid is then used to determine the correct street_name from the STREET table.
    b. The next step would be to retry steps 1, 2 & 3 with the new street name.

2.5.3 Metadata

The G-NAF data model allows metadata to be stored for each address attribute. An overview of this metadata is provided below.

Address Usage

Each address and geocode can be related to the dataset that contained it, which in turn can be related to the contributor who provided it. This feature is essential to being able to supply the information back to the address contributors. However, for Value Added Resellers (VARs) and end users of G-NAF, the address custodian identifier has been removed. Instead, the VAR/end user is provided address level metadata indicating how many source datasets each address was found in

The Address Usage is reflected in the Confidence field included in the ADDRESS_DETAIL table and is expressed as a number representing the number of datasets the address was found in, less one. Given G-NAF has been built with three Contributor datasets, the Address Usage (Confidence Level) possibilities are as follows:

Confidence Level	Description
Confidence level = 2	This reflects that all three Contributors have supplied an identical address.

Confidence Level	Description
Confidence level = 1	This reflects that a match has been achieved between only two Contributors.
Confidence level = 0	This reflects that a single contributor holds this address and no match has been achieved with either or the other two Contributors.
Confidence level = -1	This reflects that none of the contributors hold this address in their address dataset anymore.

An Archival Policy has been instituted for G-NAF, which has resulted in all addresses with a Confidence of –1 before the February 2005 release, being tagged as -2 and removed from the G-NAF release database. These were addresses no longer used by any of the Contributors. Given the volume of changes made by the Contributors since the initial G-NAF Build, these addresses had grown to in excess of 1 million and were considered to be no longer of any value to the database. It should be noted that Update 5 continued to reflect the changes made by Contributors in that -1 addresses increased by some 300,000 in this update. Addresses with an attribute of -1 will remain with the G-NAF release database for a period of 4 updates, after which time they will become -2's and be archived. The -2's stay within the production database and are available on request.

2.5.4 Geocoding

Multiple geocodes and multiple types of geocodes can be stored for each address. All geocodes are stored in G-NAF in the GDA94 spatial reference system.

Geocode Level Type

Every principal address within G-NAF must have *at least* a locality level geocode. It may also have a street level geocode and a parcel level geocode. The table GEOCODE_LEVEL_TYPE indicates which of these Geocode Level Types are associated with an address in accordance with the table below:

Geocode_Level_Type	Description
0	No Geocode
1	Parcel Level Geocode Only (No Locality or Street Level Geocode)
2	Street Level Geocode Only (No Locality or Parcel Level Geocode)
3	Street and Parcel Level Geocodes (No Locality Geocode)
4	Locality Level Geocode Only (No Street or Parcel Level Geocode)
5	Locality and Parcel level Geocodes (No Street Level Geocode)
6	Locality and Street Level Geocodes (No Parcel Level Geocodes)
7	Locality, Street and Parcel Level Geocodes

Geocode Reliability

Reliability of a geocode refers to the geocode precision and is linked to how the geocode was generated.

Every geocode in G-NAF has a reliability level. The levels and their descriptions are stored in the table GEOCODE_RELIABILITY. These descriptions and an example are given in the table below.

Reliability Level	Description	Example
1	Geocode resolution recorded to appropriate surveying standard	Address level geocode was manually geocoded with a GPS

Reliability Level	Description	Example
2	Geocode resolution sufficient to place centroid within address site boundary	Address level geocode was automatically calculated by centroiding the cadastre parcel it correlated to
3	Geocode resolution sufficient to place centroid near (or possibly within) address site boundary	Address level geocode was automatically calculated by calculating where on the road the address was likely to appear based upon other bounding geocoded addresses
4	Geocode resolution sufficient to associate address site with a unique road feature	Street level geocode automatically calculated by using the road centreline reference data.
5	Geocode resolution sufficient to associate address site with a unique locality or neighbourhood	Locality level geocode automatically calculated by centroiding the gazetted locality for this address
6	Geocode resolution sufficient to associate address site with a unique region	Locality level geocode derived from topographic feature

Every geocode has a reliability level. These levels are stored with the geocodes in the following tables:

- STREET_LOCALITY_POINT
- LOCALITY_POINT
- ADDRESS_SITE_GEOCODE

Provision has also been made for G-NAF to cater for multiple types of geocodes for an address. This field is not currently populated and offers users the opportunity to record address site geocodes relevant to their application of G-NAF. The fields are:

Geocode Level	Allowable Types
Address	Address Site Centroid
	Building Footprint Centroid
	Centre Road Setback
	Centre of Block Face
	Building Access
	Centre of Driveway
	Letterbox
	Meter Box
	Service Connection Point - Gas
	Centreline Dropped Frontage
	Centre of Access Point Setback
	Street Centroid
Street	Suburb Centroid
Locality	Topographic Feature Point

2.6 Delivery

LYNX is a cutting-edge warehouse to hold, quality assure and distribute PSMA Australia's suite of national spatial datasets. It will streamline PSMA Australia's data delivery. The core of LYNX is the Integrated Database (IDB), which holds our suite of datasets in one location and within a single environment.

Clients are able to obtain data updates using LYNX, either by downloading the data or requesting a DVD.

PSMA Australia has provided Clients with a detailed User Guide for utilising the LYNX system, and can provide advice and support to Clients accessing the system.

LYNX can be accessed from the PSMA Australia Website.

2.7 G-NAF Import Utility

The purpose of the G-NAF Import Utility is to make loading the G-NAF address data into a database a simple process. The G-NAF Import Utility is provided through the G-NAF distribution on LYNX.

The G-NAF Import Utility is licensed separately to G-NAF and VARs are encouraged to on-licence it to their clients.

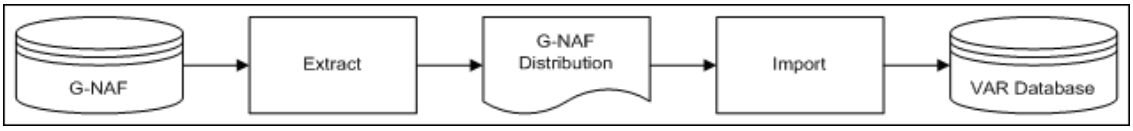
Please see G-NAF Data Import Utility technical documentation for further details.

2.7.1 Overview

The Data Import Utility provides a freely available Open Source relational database and a schema/data loading utility along with G-NAF data. The user is given the opportunity to select whether they install the free database and load the data into this or whether they load the data into their own database. The data load utility handles either option. The only requirement of the data loading utility is that there is a JDBC driver available for the database of choice. JDBC drivers for all popular databases are provided with the Data Import Utility.

Data is be extracted from the G-NAF Build database into binary files which can be read by the data loading utility. A binary file format has been selected because of efficiencies in file size and processing speeds. There will typically be a single process for the licensee to run to install the G-NAF data. This process will initiate the Schema creation utility and the Data loading utility.

Once the G-NAF data is loaded into the user's database they will be able to link it directly to their internal datasets or applications as required.

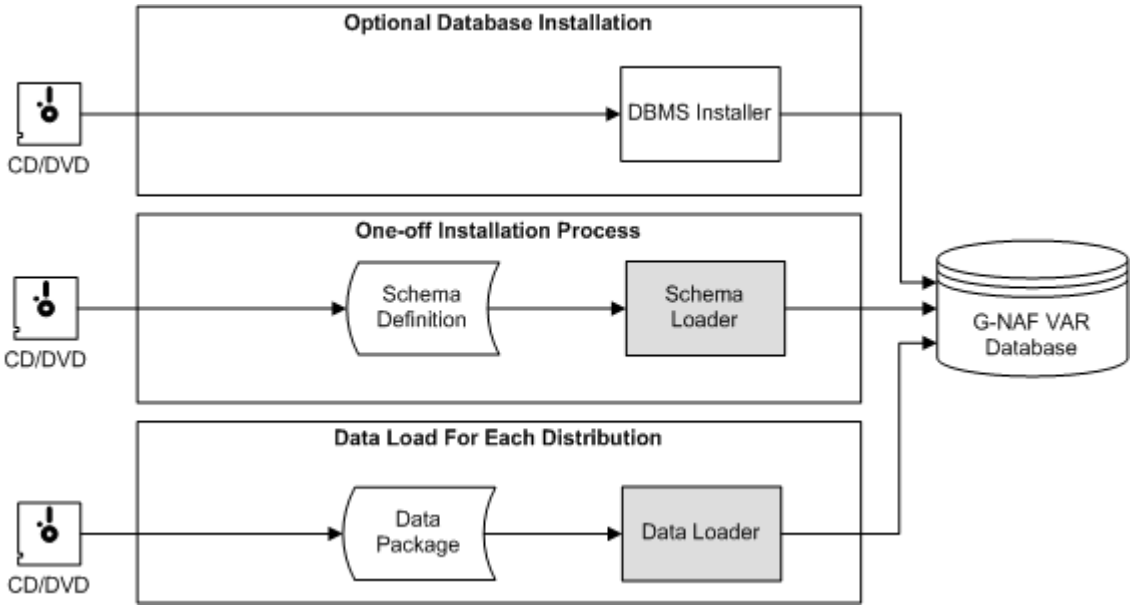


Once the Open Source database software is installed at the users' site, there will be no need to do this again; and creating the G-NAF schema in the database is a one-off task. Each subsequent supply of data to the licensee will simply require the execution of a single process distributed along with the data to refresh the users G-NAF database.

2.7.2 Import Architectural Components

The import process requires a utility to create the G-NAF schema and load the G-NAF data. The DBMS Installer is the installer for the free relational database and is an optional step for installing the G-NAF data.

The following diagram shows the components of the import process.



2.7.3 Licensee Installation Procedure

To Install the G-NAF database at their site the licensee will need to follow these steps:

1. Install the Open Source database software or provide connection details for their own database.
2. Execute a utility to create the G-NAF schema in the database.
3. Load the G-NAF data into their database.

Installers are provided for each of the above steps with the emphasis on making the installation process as simple as possible for the licensee.

Subsequent re-supplies of the G-NAF data will require the licensee to only run the data load process only.

The Java application uses JDBC to load the G-NAF to the databases specified below:

Database Type	Comments
MySQL	A free ANSI SQL-92 compliant database. For more information see www.mysql.com.
Oracle	ANSI SQL-92 compliant production-level database from Oracle. For more information see www.oracle.com/database.
Microsoft SQL Server	A production-level database from Microsoft. Is not ANSI SQL-92 compliant. For more information see www.microsoft.com/sql/default.asp.
ODBC Database Connection	The destination database must be ANSI SQL-92 compliant.

2.7.4 Frequently Asked Questions

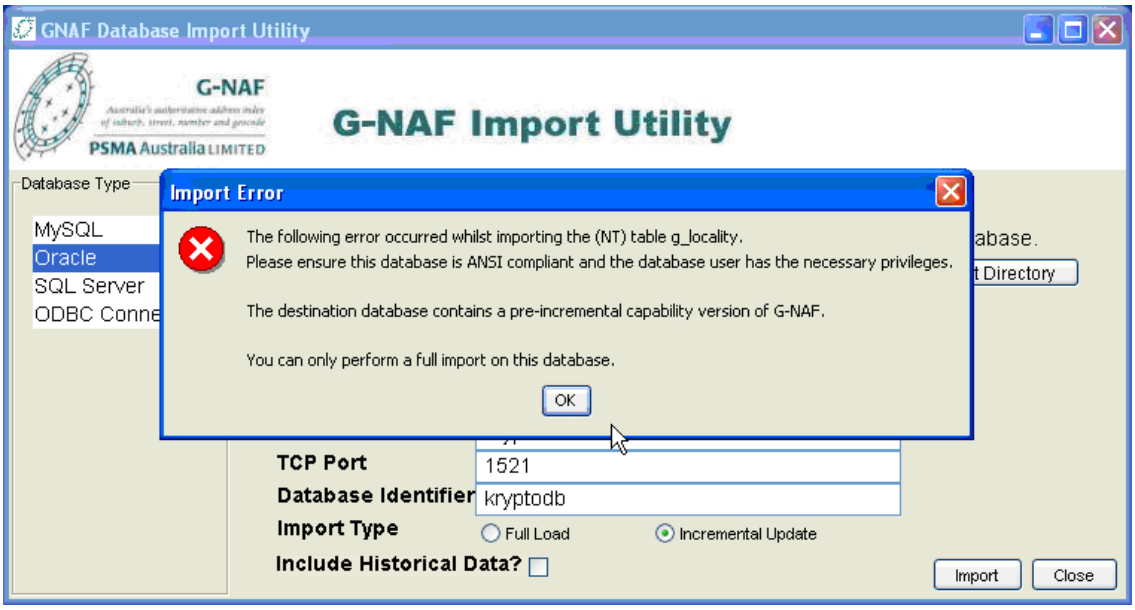
What platforms does Version 1.1 of the import utility support?

Same as for Version 1:

- Oracle
- MySQL
- SQLServer (tested with Version 8)
- Any ODBC connection – as long as the destination database is ANSI compliant

What happens if I try to do an incremental update on a database created with Version 1 of the software?

The user will be shown the following error message:

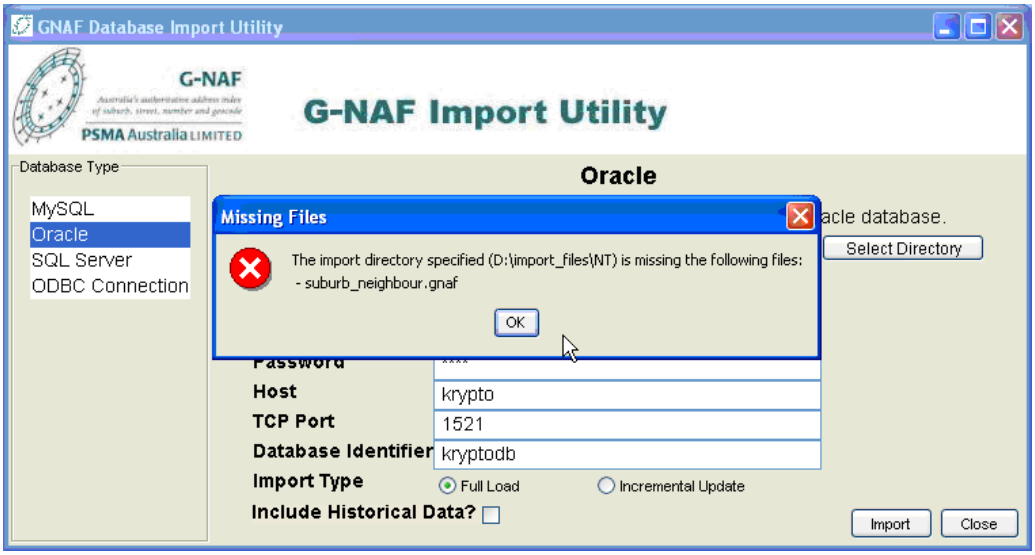


What happens if I perform a full load on a database created with Version 1 of the software?

The import utility will remove, recreate and reload the G-NAF tables. The import will complete successfully.

What happens if I try to load Version 1 import files using the Version 1.1 import utility?

The user will receive an error message since the now required G-NAF table suburb_neighbour is not included in the Version 1 export files. E.g.:



Why is an incremental update slower than a full load?

When running the import utility from a complete extract file the incremental update option is slower than the full load option. This is because for each record the import utility has to determine if it is an insert or an update to an existing record in the database. The full load on the other hand just automatically inserts each record.

Why is loading onto SQLServer much slower than the other databases?

There are 3 main reasons as to why loading into SQLServer is slower than loading onto Oracle or MySQL. These are:

1. SQLServer's java driver does not support prepared statements. Prepared statements are a feature in databases which allow SQL statements to be processed more efficiently.
2. SQLServer's java driver does not support batch updates. Again, batch updates are a feature in databases which allow SQL statements to be processed more efficiently.
3. Due to the fact that SQLServer is not ANSI compliant all date fields have to be reformatted.

2.7.5 Delivery Format

- Pipe Delimited files; and
- Binary files for the G-NAF Loader.

3 Licensing & Access

3.1 Accessing PSMA Australia Datasets

PSMA Australia is the crucial link between the supply and demand sides of the market for the fundamental national spatial datasets that it offers. The organisation eliminates the difficulties of negotiating multiple licence agreements with Australian, state and territory governments, and the problems of integrating the data into a seamless consistent national dataset. Furthermore, the existence of PSMA Australia minimises the duplication of effort within the market for organisations wishing to access national data.

The position held by PSMA Australia is a delicate balance. As a Government owned company, it is not the intention of the organisation to compete with the existing industry players. On the contrary, the organisation actively seeks industry participation and support and endeavours to be an industry stimulator of growth by ensuring the availability of critical and timely framework national datasets. To this end, PSMA Australia does not deal with end users but rather with organisations that develop products and services for end users through a process of value adding.

PSMA Australia facilitates access to its datasets through licensing arrangements with VARs. VARs on-sell the data bundled with a value added component. A VAR is required to enter into a Licence Agreement with PSMA Australia for access to PSMA Australia datasets. In return, the VAR is required to pay an annual access fee and royalties based on sales of the VAR product. This revenue stream is used for the investigation and creation of new national datasets and the maintenance and improvement of existing datasets.

More information on PSMA Australia's Value Added Resellers can be found at www.psma.com.au, or by contacting Gerry Stanley at gerry.stanley@psma.com.au.

3.2 Pricing

The pricing model for PSMA Australia's national datasets incorporates a range of variables that need to be considered when determining pricing. As there is the potential for the pricing model to be misinterpreted, it is PSMA Australia's preference to discuss pricing on a case-by-case basis.

In order for PSMA Australia to supply pricing information for its datasets, potential licensees will need to be able to provide a description of the planned use(s) for the data.

As PSMA Australia is only a small team the preferred approach would be that this description is provided in email form. From there the office can contact enquirers and commence more detailed discussions.

Gerry Stanley, PSMA Australia's Relationship Manager, will be the first point of contact for all new and existing VARs interested in accessing our datasets. Gerry can be contacted at gerry.stanley@psma.com.au.

3.3 Exclusion of Liability

PSMA Australia makes every effort to provide and maintain accurate, complete, useable and timely digital spatial information. However, datasets and information are provided with the understanding that they are not guaranteed to be correct or complete. Users are cautioned to consider carefully the nature of the data before using it for decisions that concern personal or public safety or the conduct of business that involves substantial monetary or operational consequences.

Conclusions drawn from or actions undertaken on the basis of, this data are the sole responsibility of the user.

PSMA Australia does not warrant that this document and the datasets are free from errors or omissions. PSMA Australia shall not be in any way liable for any loss, damage or injury suffered by the licensed user of the data or any other person or organisation consequent upon or incidental to the existence of errors or omissions in the datasets or this document.

3.4 Privacy Statement

PSMA Australia is very confident that its datasets do not constitute 'personal information' as defined under the Privacy Act. However, in the licensing of data from PSMA Australia, Value Added Resellers and their end-users must comply with the Privacy Act (1998) (Commonwealth) and the (Commonwealth) Privacy Amendment (Private Sector) Act 2000. In support of the requirements of this legislation, PSMA Australia has incorporated lengthy privacy related provisions into its Value Added Reseller licence agreement.

These conditions are reproduced below:

The Licensee agrees:

(a) that it is responsible for ensuring that its exercise of rights under this Agreement does not infringe the Privacy Act 1988 (Cth);

(b) to use or disclose personal information obtained during the course of providing services under this Agreement then only for the purposes of this Agreement;

(c) to take all reasonable measures to ensure that Personal Information in its possession or control in connection with this Agreement is protected against loss and unauthorised access, use, modification, or disclosure;

(d) not to do any act or engage in any practice that would breach any Information Privacy Principal (IPP) contained in Section 14 of the Privacy Act, which if done or engaged in by an Agency, would be a breach of the IPP;

(e) to carry out and discharge the obligations contained in the IPPs as if it were an Agency under that Act;

(f) to disclose in writing to any person who may ask, the content of the provision of this Agreement (if any) that are inconsistent with a NPP or APC binding a party to this Agreement;

(g) to immediately notify PSMA Australia if the Licensee becomes aware of a breach or possible breach of any of the obligations contained in, or referred to in this clause, whether by the Licensee or any subcontractor;

(h) to cooperate with any reasonable demands or inquiries made by PSMA Australia on the basis of the exercise of the functions of the Privacy Commissioner under the Privacy Act 1988;

(i) to ensure that any person who has access to any Personal Information is made aware of, and undertakes in writing, to observe the National Privacy Principles and other obligations referred to in this clause;

(j) to comply, as far as practicable, with any policy guidelines issued by the Privacy Commissioner from time to time relating to the handling of Personal Information;

(k) to comply with any direction PSMA Australia to observe any recommendation of the Privacy Commissioner relating to acts or practices of the Licensee that the Privacy Commissioner considers to be in breach of the obligations in this clause; and

(l) to indemnify PSMA Australia for:

i. *any loss, liability, or expense suffered or incurred by PSMA Australia arising out of or in connection with a breach of the obligations of the Licensee under this clause; or*

ii. *any misuse of Personal Information by the Licensee; or*

iii. *any disclosure by the Licensee in breach of an obligation of confidence whether arising under the Privacy Act 1988 or otherwise.*

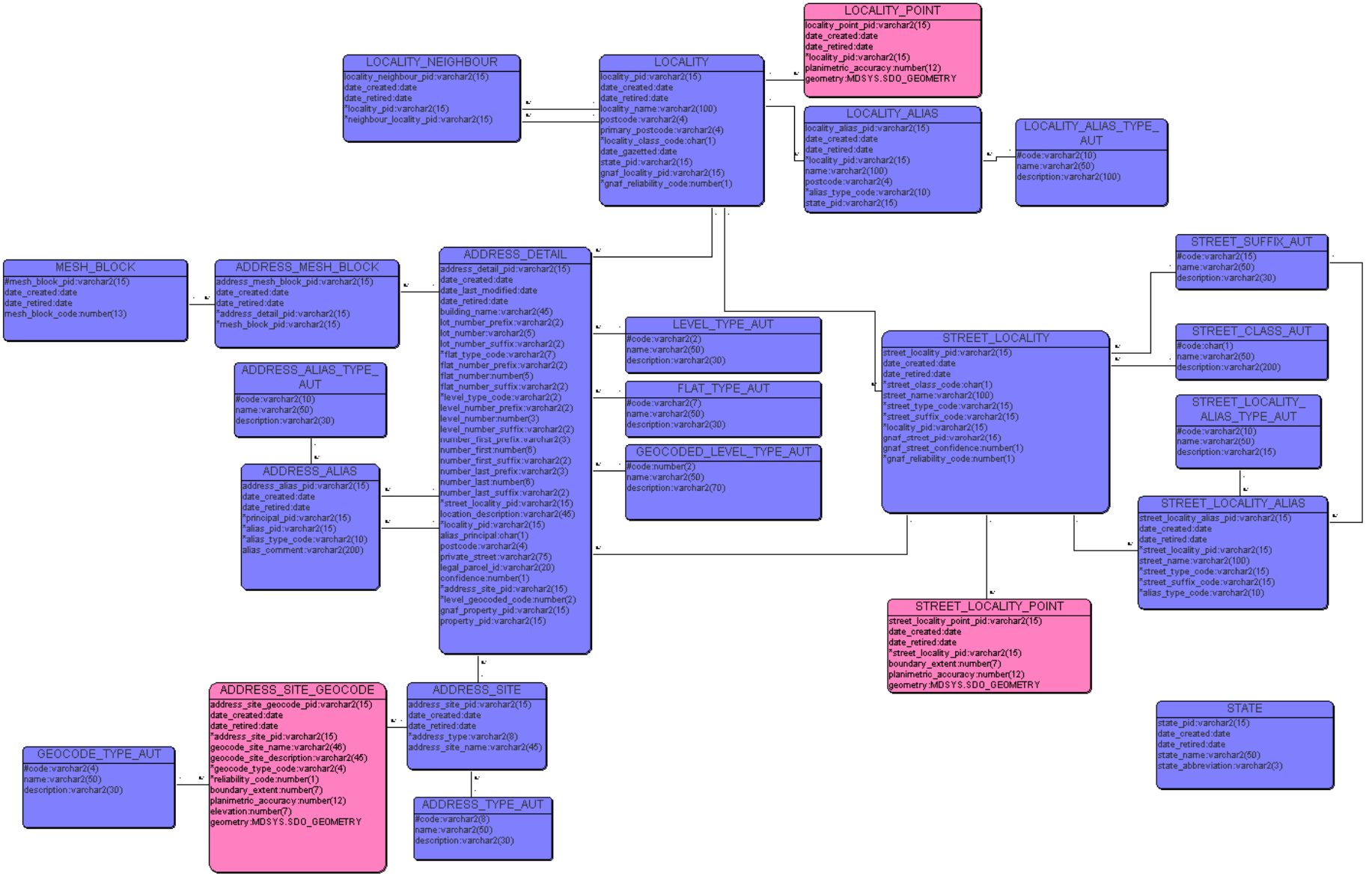
4 Data Model

The data model for G-NAF is derived from the AS/NZS 4819:2003 Geographic Information-Rural and Urban Addressing Standard. Data types and codes are derived from the address standard where applicable. However, in some cases the codes have been extended to handle exceptional cases (eg. street type of 'BRETT').

The model is hierarchical in nature, storing information about streets and localities separate from address sites.

Alias addresses are stored in the exact same way as principal addresses. There is simply a 'mapping' table provided to determine which address is an alias of which principal address.

The data model allows multiple geocodes and associated metadata for an address to be stored. It also allows multiple addresses to be kept under a single geocoded address site.


LOCALITY_POINT
locality_point_pid:varchar2(15)
date_created:date
date_retired:date
*locality_pid:varchar2(15)
planimetric_accuracy:number(12)
geometry:MDSYS.SDO_GEOMETRY
LOCALITY_NEIGHBOUR
locality_neighbour_pid:varchar2(15)
date_created:date
date_retired:date
*locality_pid:varchar2(15)
*neighbour_locality_pid:varchar2(15)
LOCALITY
locality_pid:varchar2(15)
date_created:date
date_retired:date
locality_name:varchar2(100)
postcode:varchar2(4)
primary_postcode:varchar2(4)
*locality_class_code:char(1)
date_gazetted:date
state_pid:varchar2(15)
gnaf_locality_pid:varchar2(15)
*gnaf_reliability_code:number(1)
LOCALITY_ALIAS
locality_alias_pid:varchar2(15)
date_created:date
date_retired:date
*locality_pid:varchar2(15)
name:varchar2(100)
postcode:varchar2(4)
*alias_type_code:varchar2(10)
state_pid:varchar2(15)
LOCALITY_ALIAS_TYPE_AUT
#code:varchar2(10)
name:varchar2(50)
description:varchar2(100)
STREET_SUFFIX_AUT
#code:varchar2(15)
name:varchar2(50)
description:varchar2(30)
MESH_BLOCK
#mesh_block_pid:varchar2(15)
date_created:date
date_retired:date
mesh_block_code:number(13)
ADDRESS_MESH_BLOCK
address_mesh_block_pid:varchar2(15)
date_created:date
date_retired:date
*address_detail_pid:varchar2(15)
*mesh_block_pid:varchar2(15)
ADDRESS_DETAIL
address_detail_pid:varchar2(15)
date_created:date
date_last_modified:date
date_retired:date
building_name:varchar2(45)
lot_number_prefix:varchar2(2)
lot_number:varchar2(5)
lot_number_suffix:varchar2(2)
*flat_type_code:varchar2(7)
flat_number_prefix:varchar2(2)
flat_number:number(5)
flat_number_suffix:varchar2(2)
*level_type_code:varchar2(2)
level_number_prefix:varchar2(2)
level_number:number(3)
level_number_suffix:varchar2(2)
number_first_prefix:varchar2(3)
number_first:number(6)
number_first_suffix:varchar2(2)
number_last_prefix:varchar2(3)
number_last:number(6)
number_last_suffix:varchar2(2)
*street_locality_pid:varchar2(15)
location_description:varchar2(45)
*locality_pid:varchar2(15)
alias_principal:char(1)
postcode:varchar2(4)
private_street:varchar2(75)
legal_parcel_id:varchar2(20)
confidence:number(1)
*address_site_pid:varchar2(15)
*level_geocoded_code:number(2)
gnaf_property_pid:varchar2(15)
property_pid:varchar2(15)
LEVEL_TYPE_AUT
#code:varchar2(2)
name:varchar2(50)
description:varchar2(30)
FLAT_TYPE_AUT
#code:varchar2(7)
name:varchar2(50)
description:varchar2(30)
GEOCODED_LEVEL_TYPE_AUT
#code:number(2)
name:varchar2(50)
description:varchar2(70)
STREET_LOCALITY
street_locality_pid:varchar2(15)
date_created:date
date_retired:date
*street_class_code:char(1)
street_name:varchar2(100)
*street_type_code:varchar2(15)
*street_suffix_code:varchar2(15)
*locality_pid:varchar2(15)
gnaf_street_pid:varchar2(16)
gnaf_street_confidence:number(1)
*gnaf_reliability_code:number(1)
STREET_CLASS_AUT
#code:char(1)
name:varchar2(50)
description:varchar2(200)
STREET_LOCALITY_ALIAS_TYPE_AUT
#code:varchar2(10)
name:varchar2(50)
description:varchar2(15)
ADDRESS_ALIAS_TYPE_AUT
#code:varchar2(10)
name:varchar2(50)
description:varchar2(30)
ADDRESS_ALIAS
address_alias_pid:varchar2(15)
date_created:date
date_retired:date
*principal_pid:varchar2(15)
*alias_pid:varchar2(15)
*alias_type_code:varchar2(10)
alias_comment:varchar2(200)
STREET_LOCALITY_ALIAS
street_locality_alias_pid:varchar2(15)
date_created:date
date_retired:date
*street_locality_pid:varchar2(15)
street_name:varchar2(100)
*street_type_code:varchar2(15)
*street_suffix_code:varchar2(15)
*alias_type_code:varchar2(10)
STREET_LOCALITY_POINT
street_locality_point_pid:varchar2(15)
date_created:date
date_retired:date
*street_locality_pid:varchar2(15)
boundary_extent:number(7)
planimetric_accuracy:number(12)
geometry:MDSYS.SDO_GEOMETRY
ADDRESS_SITE_GEOCODE
address_site_geocode_pid:varchar2(15)
date_created:date
date_retired:date
*address_site_pid:varchar2(15)
geocode_site_name:varchar2(46)
geocode_site_description:varchar2(45)
*geocode_type_code:varchar2(4)
*reliability_code:number(1)
boundary_extent:number(7)
planimetric_accuracy:number(12)
elevation:number(7)
geometry:MDSYS.SDO_GEOMETRY
ADDRESS_SITE
address_site_pid:varchar2(15)
date_created:date
date_retired:date
*address_type:varchar2(8)
address_site_name:varchar2(45)
GEOCODE_TYPE_AUT
#code:varchar2(4)
name:varchar2(50)
description:varchar2(30)
ADDRESS_TYPE_AUT
#code:varchar2(8)
name:varchar2(50)
description:varchar2(30)
STATE
state_pid:varchar2(15)
date_created:date
date_retired:date
state_name:varchar2(50)
state_abbreviation:varchar2(3)

5 Data Dictionary

Note: All Persistent Identifiers that do not identify spatial geometry in the Integrated Data Model are unique nationally and are preceded by the state abbreviation e.g. LGA_PID = NSW12345678.

All Persistent Identifiers for spatial geometry are only unique within the associated dataset and within the state they reside e.g. LGA_POLYGON_PID = 1234567.

Column	Description
Name	The name of the column in the Integrated Database
Data Type	The Oracle data type of the column
Description	If 'Y' then this column must always have a value
Primary Key?	A description of the column and what the expected contents are
Mandatory?	If 'Y' then this column is a primary key. By primary key, we mean all ACTIVE records must have unique values in this column.
Foreign Key Table	Represents a column in the 'Foreign Key Table' that this column is a lookup to.
Foreign Key Column	Represents a table in the Integrated Database that this column is a lookup to.
10 Character Alias	An alias for this column name - up to 10 characters maximum. Used to define the name of the column when in ESRI Shapefile format.

Table: ADDRESS_ALIAS

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
address_alias_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	add_al_pid
date_created	Date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create
date_retired	Date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
principal_pid	varchar2(15)	Persistent identifier (i.e. gnaf_pid) of the principal address	N	Y	ADDRESS_ DETAIL	principal_pid	princ_pid
alias_pid	varchar2(15)	Persistent identifier (i.e. gnaf_pid) of the alias address	N	Y	ADDRESS_ DETAIL	alias_pid	alias_pid

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
alias_type_code	varchar2(10)	Alias type (e.g. "Synonym").	N	Y	ADDRESS_ALIAS_TYPE_AUT	code	altyp_code
alias_comment	varchar2(200)	Comment about the alias (e.g. Corner address)	N	N	-	-	alias_cmt

Table: ADDRESS_ALIAS_TYPE_AUT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
code	varchar2(10)	Unique abbreviation of address alias type. This is the persistent identifier.	Y	Y	-	-	code_aut
name	varchar2(50)	Name	N	Y	-	-	name_aut
description	varchar2(30)	Description of type abbreviation.	N	N	-	-	dscpn_aut

Table: ADDRESS_DETAIL

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
address_detail_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	add_dt_pid
date_created	Date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create
date_last_modified	Date	Date this record was last modified (not retired/recreated in line with ICSM standard)	N	N	-	-	dt_lst_mod
date_retired	Date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
building_name	varchar2(45)	Combines both building/property name fields. Field length: up to 45 alphanumeric characters (AS4590.8.5).	N	N	-	-	bldng_name
lot_number_prefix	varchar2(2)	Lot number prefix	N	N	-	-	ltnbr_pref
lot_number	varchar2(5)	Lot number. Field length: five alphanumeric characters (AS4590.8.7)	N	N	-	-	lot_number
lot_number_suffix	varchar2(2)	Lot number suffix. Field length: two alphanumeric characters (AS4590).8.7)	N	N	-	-	lt_nb_suff

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
flat_type_code	varchar2(7)	Specification of the type of a seperately identifiable portion within a building/complex. Field Length: one to seven upper case alpha characters (AS4590.8.3)	N	N	FLAT_TYPE_AUT	code	fttyp_code
flat_number_prefix	varchar2(2)	Flat/unit number prefix. Field length: two alphanumeric characters (AS4590.8.3)	N	N	-	-	fltnb_pref
flat_number	number(5)	Flat/unit number. Field length: five numeric characters (AS4590.8.3)	N	N	-	-	flt_nbr
flat_number_suffix	varchar2(2)	Flat/unit number suffix Field length: two alphanumeric characters (AS4590.8.3)	N	N	-	-	fltnb_suff
level_type_code	varchar2(2)	Level type. Field length: two alpha characters (AS4590.8.4)	N	N	LEVEL_TYPE_AUT	code	lvtyp_code
level_number_prefix	varchar2(2)	Level number prefix. Field length: two alphanumeric characters (AS4590.8.4)	N	N	-	-	lvlnb_pref
level_number	number(3)	Level number. Field length: three numeric characters (AS4590.8.4)	N	N	-	-	lvl_nbr
level_number_suffix	varchar2(2)	Level number suffix. Field length: two numeric characters (AS4590.8.4)	N	N	-	-	lvlnb_suff
number_first_prefix	varchar2(3)	Prefix for the first(or only) number in range. Field length: two uppercase alphanumeric characters (AS4590.8.6).	N	N	-	-	nbfst_pref
number_first	number(6)	Identifies first (or only) street number in range. Field length: six numeric characters (AS4590.8.6).	N	N	-	-	nbr_frst
number_first_suffix	varchar2(2)	Suffix for the first(or only) number in range. Field length: two uppercase alphanumeric characters (AS4590.8.6).	N	N	-	-	nbfst_suff
number_last_prefix	varchar2(3)	Prefix for the last number in range. Field length: two uppercase alphanumeric characters (AS4590.8.6).	N	N	-	-	nblst_pref
number_last	number(6)	Identifies last number in range. Field length: six numeric characters (AS4590.8.6).	N	N	-	-	nbr_last
number_last_suffix	varchar2(2)	Suffix for the last number in range. Field length: two uppercase alphanumeric characters (AS4590.8.6).	N	N	-	-	nblst_suff
street_locality_pid	varchar2(15)	Street/Locality of this address - not mandatory as some records in G-NAF do not have street	N	N	STREET_LOCALITY	street_locality_pid	st_loc_pid

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
location_description	varchar2(45)	A general field to capture various references to address locations alongside another physical location. Field length: up to 45 alphanumeric characters (AS4590.8.14)	N	N	-	-	loc_desc
locality_pid	varchar2(15)	locality pid	N	Y	LOCALITY	locality_pid	loc_pid
alias_principal	char(1)	A = Alias record, P = Principal record	N	N	-	-	als_prncpl
postcode	varchar2(4)	The postcode provided for the address. Four numbers, no delimiters or spaces between characters. Leading zeros shall be displayed. (AS4590.8.13) A Postcode will only be populated when there are duplicate localities in use in the one state. These states are New South Wales, Queensland & Victoria. It is left blank in all other states.	N	N	-	-	postcode
private_street	varchar2(75)	Private street information. This is not broken up into name/type/suffix. Field length: up to 75 alphanumeric characters (AS4590.8.5).	N	N	-	-	priv_st
legal_parcel_id	varchar2(20)	Legal parcel id. Generic parcel id field to be used where custodial data provides such.	N	N	-	-	lglparc_id
confidence	number(1)	Reflects how many datasets this address appears in (0 = 1 dataset, 1 = 2 datasets etc...)	N	N	-	-	confidence
address_site_pid	varchar2(15)	Address site pid	N	Y	ADDRESS_SITE	address_site_pid	add_st_pid
level_geocoded_code	number(2)	Binary indicator of the level of geocoding this address has. eg. 0 = 000 = (No geocode), 1 = 001 = (No Locality geocode, No Street geocode, Address geocode), etc...	N	Y	GEOCODED_LEVEL_TYPE_AUT	code	lvlgc_code
property_pid	varchar2(15)	Property persistent identifier referenced to relevant cadastral model	N	N	PROPERTY	property_pid	pr_pid
gnaf_property_pid	varchar2(15)	This field stores the G-NAF property_pid for the address. It is a temporary work-around until the PROPERTY dataset becomes available.	N	N	-	-	gf_prp_pid

Table: ADDRESS_MESH_BLOCK

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
address_mesh_block_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	add_mb_pid

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
date_created	date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create
date_retired	date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
address_detail_pid	varchar2(15)	Persistent identifier (ie. gnaf_pid) of the principal address	N	Y	ADDRESS_DETAIL	address_detail_pid	add_dt_pid
mesh_block_pid	varchar2(15)	mesh block pid	N	Y	MESH_BLOCK	mesh_block_pid	mb_pid

Table: ADDRESS_SITE

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
address_site_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	add_st_pid
date_created	date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create
date_retired	date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
address_type	varchar2(8)	Address type (e.g. "Postal", Physical")	N	N	ADDRESS_TYPE_AUT	code	addr_type
address_site_name	varchar2(45)	Address site name. Equates Complex name of AS4590.8.5. Field length: forty-five alphanumeric characters (AS4590.8.5)	N	N	-	-	name

Table: ADDRESS_SITE_GEOCODE

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
address_site_geocode_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	as_gcd_pid
date_created	date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
date_retired	date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
address_site_pid	varchar2(15)	Address site pid	N	N	ADDRESS_SITE	address_site_pid	add_st_pid
geocode_site_name	varchar2(46)	An identifier that relates to this specific geocoded site (e.g. "Transformer 75658").	N	N	-	-	gc_st_name
geocode_site_description	varchar2(45)	Additional textual data e.g. "Warning: Access to water riser is located at rear of building via SMITH LANE"	N	N	-	-	gcd_st_des
geocode_type_code	varchar2(4)	Unique abbreviation for geocode feature. (e.g. "PRCL") (SAWG 7.4.1).	N	N	GEOCODE_TYPE_AUT	code	gctyp_code
reliability_code	number(1)	Spatial precision of the geocode expressed as number in the range, 1 (unique identification of feature) to 6 (feature associated to region ie. postcode) . AS4590.8.16	N	N	GEOCODE_RELIABILITY_AUT	code	rlbty_code
boundary_extent	number(7)	Measurement (metres) of a geocode from other geocodes associated with the same address persistent identifier	N	N	-	-	bndry_ext
planimetric_accuracy	number(12)	Planimetric accuracy	N	N	-	-	planim_acc
elevation	number(7)	Elevation	N	N	-	-	elevation
longitude	number	longitude	N	Y	-	-	longitude
latitude	number	latitude	N	Y	-	-	latitude

Table: ADDRESS_TYPE_AUT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
code	varchar2(8)	Defines the type of address (e.g. "postal","physical")	Y	Y	-	-	code_aut
name	varchar2(50)	Name	N	Y	-	-	name_aut
description	varchar2(30)	Description of address type	N	N	-	-	dscpn_aut

Table: FLAT_TYPE_AUT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
code	varchar2(7)	Specification of the type of a separately identifiable portion of a building complex. Field length: one to seven uppercase alpha characters (AS4590.8.3). This is the persistent identifier.	Y	Y	-	-	code_aut
name	varchar2(50)	Name	N	Y	-	-	name_aut
description	varchar2(30)	Description of flat type	N	N	-	-	dscpn_aut

Table: GEOCODE_RELIABILITY_AUT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
code	varchar2(1)	code. This is the persistent identifier.	Y	Y	-	-	code_aut
name	varchar2(50)	Name	N	Y	-	-	name_aut
description	varchar2(100)	Description	N	N	-	-	dscpn_aut

Table: GEOCODE_TYPE_AUT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
code	varchar2(4)	Stores unique abbreviations for geocode features. (E.g. "PRCL") (SAWG7.4.1). This is the persistent identifier.	Y	Y	-	-	code_aut
name	varchar2(50)	Name	N	Y	-	-	name_aut
description	varchar2(30)	Description of geocode type	N	N	-	-	dscpn_aut

Table: GEOCODED_LEVEL_TYPE_AUT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
code	varchar2(4)	Stores unique abbreviations for geocode features. (E.g. "PRCL") (SAWG7.4.1). This is the persistent identifier.	Y	Y	-	-	code_aut
name	varchar2(50)	Name	N	Y	-	-	name_aut
description	varchar2(30)	Description of geocode type	N	N	-	-	dscpn_aut

Table: GNAF_REJECT_AUT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
code	varchar2(10)	code. This is the persistent identifier.	Y	Y	-	-	code_aut
name	varchar2(50)	Name	N	Y	-	-	name_aut
description	varchar2(30)	Description	N	N	-	-	dscpn_aut
terminal	char(1)	Does this reject code represent a final reject?	N	N	-	-	terminal

Table: LEVEL_TYPE_AUT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
code	varchar2(2)	Level type. Field length: two alpha characters (AS4590.8.4). This is the persistent identifier.	Y	Y	-	-	code_aut
name	varchar2(50)	Name	N	Y	-	-	name_aut
description	varchar2(200)	Description of level type	N	N	-	-	dscpn_aut

Table: LOCALITY

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
locality_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	loc_pid
date_created	date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create
date_retired	date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
locality_name	varchar2(100)	name	N	Y	-	-	name
primary_postcode	varchar2(4)	Required to differentiate localities of the same name within a state.	N	N	-	-	prim_pcode
locality_class_code	char(1)	Describes the class of locality this is (eg. Gazetted, topographic feature...). Lookup to locality_class.	N	Y	LOCALITY_ CLASS_AUT	code	loccl_code
state_pid	varchar2(15)	State Persistent Identifier	N	Y	-	-	state_pid

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
gnaf_locality_pid	varchar2(15)	The locality PID used for this record in the G-NAF (if applicable)	N	N	-	-	gf_loc_pid
gnaf_reliability_code	number(1)	= 5 if suburb locality, else = 6. Spatial precision of the geocode expressed as number in the range, 1 (unique identification of feature) to 6 (feature associated to region ie. postcode) . AS4590.8.16	N	N	GEOCODE_RELIABILITY_AUT	code	gf_rl_code

Table: LOCALITY_ALIAS

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
locality_alias_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	loc_al_pid
date_created	date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create
date_retired	date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
locality_pid	varchar2(15)	locality pid	N	Y	LOCALITY	locality_pid	loc_pid
name	varchar2(100)	The alias name	N	Y	-	-	name
postcode	varchar2(4)	postcode	N	N	-	-	postcode
alias_type_code	varchar2(10)	alias type code	N	Y	LOCALITY_ALIAS_TYPE_AUT	code	altyp_code
state_pid	varchar2(15)	State Persistent Identifier	N	Y	-	-	state_pid

Table: LOCALITY_ALIAS_TYPE_AUT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
code	varchar2(10)	Code (eg. SR). This is the persistent identifier for the record.	Y	Y	-	-	code_aut
name	varchar2(50)	Name	N	Y	-	-	name_aut
description	varchar2(100)	Description of what the code means (eg. Spatially Related).	N	N	-	-	dscpn_aut

Table: LOCALITY_NEIGHBOUR

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
locality_neighbour_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	loc_nb_pid
date_created	date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create
date_retired	date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
locality_pid	varchar2(15)	locality pid	N	Y	LOCALITY	locality_pid	loc_pid
neighbour_locality_pid	varchar2(15)	neighbour locality pid	N	Y	LOCALITY	neighbour_ locality_pid	nb_loc_pid

Table: LOCALITY_POINT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
locality_point_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	lc_pnt_pid
date_created	date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create
date_retired	date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
locality_pid	varchar2(15)	locality pid	N	Y	LOCALITY	locality_pid	loc_pid
planimetric_accuracy	number(12)	Planimetric accuracy of geocode (if known)	N	N	-	-	planim_acc
longitude	number	longitude	N	Y	-	-	longitude
latitude	number	latitude	N	Y	-	-	latitude

Table: MESH_BLOCK

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
mesh_block_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	mb_pid
date_created	date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create
date_retired	date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
mesh_block_code	number(13)	mesh block code	N	Y	-	-	mb_code

Table: STREET_CLASS_AUT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
code	char(1)	Street class code. This is the persistent Identifier of the record.	Y	Y	-	-	code_aut
name	varchar2(50)	Name	N	Y	-	-	name_aut
description	varchar2(200)	Description of what this street type represents (eg. Gazetted Street, Unconfirmed Street)	N	N	-	-	dscpn_aut

Table: STREET_LOCALITY

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
street_locality_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	st_loc_pid
date_created	date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create
date_retired	date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
street_class_code	char(1)	Defines whether this street represents a confirmed or unconfirmed street.	N	Y	STREET_ CLASS_AUT	code	stcls_code
street_name	varchar2(100)	Street name. eg. "POPLAR"	N	Y	-	-	name
street_type_code	varchar2(15)	street type. eg "PLACE"	N	N	STREET_ TYPE_AUT	code	sttyp_code

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
street_suffix_code	varchar2(15)	street suffix. eg. "WEST"	N	N	STREET_ SUFFIX_AUT	code	stsfx_code
locality_pid	varchar2(15)	locality pid	N	Y	LOCALITY	locality_pid	loc_pid
gnaf_street_pid	varchar2(15)	The street pid used for this street in the G-NAF (if appropriate)	N	N	-	-	gf_st_pid
gnaf_street_ confidence	number(1)	Street confidence	N	N	-	-	gnaf_s_cnf
gnaf_reliability_code	number(1)	Always = 4. Spatial precision of the geocode expressed as number in the range, 1 (unique identification of feature) to 6 (feature associated to region ie. postcode) . AS4590.8.16	N	N	GEOCODE_ RELIABILITY_ AUT	code	gf_rl_code

Table: STREET_LOCALITY_ALIAS

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
street_locality_alias_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	sl_ali_pid
date_created	date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create
date_retired	date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
street_locality_pid	varchar2(15)	street locality pid	N	Y	STREET_ LOCALITY	street_locality_pid	st_loc_pid
street_name	varchar2(100)	street alias name. eg. "POPLAR"	N	Y	-	-	name
street_type_code	varchar2(15)	street type. eg "PLACE"	N	N	STREET_ TYPE_AUT	code	sttyp_code
street_suffix_code	varchar2(15)	street suffix. eg. "WEST"	N	N	STREET_ SUFFIX_AUT	code	stsfx_code
alias_type_code	varchar2(10)	alias type	N	Y	STREET_ LOCALITY_ ALIAS_TYPE _AUT	code	altyp_code

Table: STREET_LOCALITY_ALIAS_TYPE_AUT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
code	varchar2(10)	Street class code. This is the persistent Identifier of the record.	Y	Y	-	-	code_aut
name	varchar2(50)	Name	N	Y	-	-	name_aut
description	varchar2(30)	Description of what this street type represents (eg. Gazetted Street, Unconfirmed Street)	N	N	-	-	dscpn_aut

Table: STREET_LOCALITY_POINT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
street_locality_point_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	sl_pnt_pid
date_created	date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create
date_retired	date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
street_locality_pid	varchar2(15)	Street locality pid	N	Y	STREET_LOCALITY	street_locality_pid	st_loc_pid
boundary_extent	number(7)	Boundary extent is defined as the straight-line distance from the street centroid to the furthest centreline point on the street segment. The value of the street boundary extent will be expressed in km.	N	N	-	-	bndry_ext
planimetric_accuracy	number(12)	Planimetric accuracy of geocode (if known)	N	N	-	-	planim_acc
longitude	number	longitude	N	Y	-	-	longitude
latitude	number	latitude	N	Y	-	-	latitude

Table: STREET_SUFFIX_AUT

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
code	varchar2(15)	Code (e.g. "WEST" or "W").(AS4590.8.8). This is the persistent identifier.	Y	Y	-	-	code_aut

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
name	varchar2(30)	Name	N	Y	-	-	name_aut
description	varchar2(30)	Description of street suffixes	N	N	-	-	dscpn_aut

Table: State

Name	Data Type	Description	Primary Key?	Mandatory?	Foreign Key Table	Foreign Key Column	10 Char Alias
state_pid	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents. See ICSM Policy and Guidelines for Incremental Update.	Y	Y	-	-	state_pid
date_created	date	Date this record was created. See ICSM Policy and Guidelines for Incremental Update.	N	Y	-	-	dt_create
date_retired	date	Date this record was retired. See ICSM Policy and Guidelines for Incremental Update.	N	N	-	-	dt_retire
state_name	varchar2(50)	Feature name. All in uppercase. eg TASMANIA	N	Y	-	-	state_name
state_abbreviation	varchar2(3)	state abbreviation	N	Y	-	-	st_abbrev

6 Other PSMA Australia Datasets

There are six datasets currently licensed by PSMA Australia with several others in various stages of assembly. These datasets are:

DATASET	THEME	LAYER
Administrative Boundaries	ABS Boundaries	Collector Districts (CDs)
		Statistical Local Areas (SLAs)
		Urban Centre Localities (UCLs)
		Mesh Blocks (MBs)
	Electoral Boundaries	Commonwealth Electoral Boundaries
		State Electoral Boundaries
	Local Government Areas (LGAs)	
	Suburbs/Localities	
	State Boundaries	
	Town Points	
CadLite®	Cadastre (Registered land parcel polygons and attributes)	
	Property	
POI	Points of Interest	
Transport & Topography™	Transport	Roads
		Rail
		Rail Stations
		Airports
	Hydrology	Hydrology Polygons (Water bodies, major rivers, oceans)
		Minor Water (102, 103, connectors)
	Greenspace	Urban Parks
		National Parks & Other Reserves
G-NAF®	Geocoded physical addresses	
Postcodes	Australia Post spatial postcodes	Postcode Polygons
		Postcode Centroids

6.1 Administrative Boundaries

The Administrative Boundaries dataset is comprised of five themes:

- Australian Bureau of Statistics (ABS) Boundaries
- Electoral Boundaries
- Local Government Areas
- Suburbs/Localities
- State Boundaries
- Town Points

The ABS Boundaries theme includes four layers — collector districts, statistical local areas, mesh blocks and urban centre localities.

The Electoral Boundaries theme comprises two layers — Commonwealth electoral boundaries and state/territory electoral boundaries.

6.2 CadLite®

CadLite has two themes, Cadastre, which is a digital representation of all cadastral boundaries excluding easements and road/drainage casements for Australia, and Property.

6.2.1 Cadastre

Cadastre is a seamless national cadastral database of Australia's 10.4 million parcels.

It incorporates Local Government Area boundaries and is designed to meet the needs of organisations that require a graphical representation of land parcel boundaries on a broad scale, to integrate with other data in servicing their business needs.

This graphical index of digital cadastre or registered land parcels can be used to reference other geographic and land administrative data available from respective jurisdictions.

The digital cadastral boundaries and their legal identifiers have been derived from the relevant bodies from each Australian State and Territory jurisdiction.

6.2.2 Property

The PSMA Australia Property theme of CadLite® provides a national (excluding WA) dataset that identifies the three relationships that exist between a property and a cadastral parcel. These are:

4. where one cadastral parcel is equal to one property;
5. where many cadastral parcels make up one property; and
6. where one cadastral parcel contains many properties.

The Property Theme is currently released as a *Beta Version*, due to the fact that it does not incorporate data from Western Australia. It is PSMA Australia's intention to release a complete Property Theme in the August 2006 data release however; this will be contingent on the inclusion of WA data.

6.3 Transport & Topography™

The Transport & Topography™ dataset is underpinned by a road centreline layer of over one million kilometres of roads, together with more than 30 feature types within transport, hydrology and greenspace themes.

The Transport component of this dataset encompasses the roads, rail, rail stations and airport infrastructure networks across the entire nation of Australia. The roads layer includes more than 1,000,000 kilometres of named roads. The rail and rail station layers depict the national rail network (including tram lines). The airports layer also includes landing grounds.

The Topography component of this dataset is made up of two themes—hydrology and greenspace. Two layers of hydrology are made up of water bodies, major rivers, minor waters and oceans. The two greenspace layers are urban parks plus national parks and other reserves.

6.4 POI

The Points of Interest dataset contains in excess of 130,000 points of interest with feature code and name attribution. Some of the feature categories are:

- accommodation
- community services
- cultural
- defence
- education and training
- emergency
- facilities
- finance
- gaols
- government
- grounds
- homesteads
- medical
- mines and quarries
- mountains and hills
- places of worship
- post offices
- public assembly
- relief feature names
- sewage
- transport
- utilities
- waste disposal
- water

The PSMA Australia POI dataset is currently under re-development.

6.5 Postcodes

Postcodes have recently been developed in co-ordination with Australia Post. A postcode may be classed either as a gazetted area or a point-type postcode (eg. Post office box).

A gazetted postcode may have many polygons defining its boundary. Postcode boundaries do not have to match locality boundaries.

A point-type postcode will have 1 active centroid defining its location.

It may be necessary to include a link between the CAD and Postcodes to enable the definition of postcode boundaries when this information cannot be sourced in other ways (eg. Northern Territory). This has not been included in the Data Model as it is still currently under investigation by PSMA.

7 Australia Post Datasets

Australia Post is widely recognised as having a high quality address dataset for the purposes of addressing articles of mail. This dataset contains two significant fields that are not present in G-NAF: postcode and the Delivery Point Identifier (DPID).

7.1 Postcodes

While postcodes are widely associated with address, they are nonetheless an attribute of address that has been introduced by Australia Post for the sole purpose of assisting with efficient delivery of mail. Australia Post maintains Postcode on the basis of mail delivery areas. These areas may be large or a single point, they may be contiguous or non-contiguous and they may change. Not all postcodes are spatially definable. For these reasons postcode has not been included in G-NAF. If postcode information is required, the licensee will need to access postcode data from Australia Post or some other source and determine a means of matching it to addresses within G-NAF.

7.2 DPID (Delivery Point Identifier)

The DPID is a unique eight digit number allocated randomly to every mailing address in Australia and appears as a barcode on mail. DPID is owned by Australia Post and stored within the Postal Address File (PAF). Organisations may access the DPID via strict licensing arrangements for the purpose of building address matching and mail barcoding software under the AMAS (Address Matching Approval System) program. There are currently a number of AMAS suppliers who have passed the rigorous testing and are approved to supply address matching software.

For more information on Australia Post datasets visit www.auspost.com.au.

Annexure A - Variable Domain Dictionary

GEOCODE_RELIABILITY_AUT

Process	Description
1	Geocode accuracy recorded to appropriate surveying standard
2	Geocode accuracy sufficient to place centroid within address site boundary
3	Geocode accuracy sufficient to place centroid near (or possibly within) address site boundary
4	Geocode accuracy sufficient to associate address site with a unique road feature
5	Geocode accuracy sufficient to associate address site with a unique locality or neighbourhood
6	Geocode accuracy sufficient to associate address site with a unique region
7	All levels of geocode present

ADDRESS_ALIAS_TYPE_AUT

Alias type	Description
SYN	Synonym
CD	Contributor Defined
AL	Alternative Locality

ADDRESS_TYPE_AUT

Address type	Description
Postal	Postal
Physical	Physical
R	Rural
UNK	Unknown
U	Urban
R/BLOCK	Rural Block
R/CABIN	Rural Cabin
R/FLAT	Rural Flat
R/HOUSE	Rural House
R/LOT	Rural Lot
R/RES	Rural Reserve
R/RMB	Rural Roadside mail box
R/ROOM	Rural Room
R/RSD	Rural Roadside mail delivery
R/RSM	Rural Roadside mail service
R/SEC	Rural Section
R/SITE	Rural Site
R/UNIT	Rural Unit
UNK/BLOCK	Unknown Block
UNK/CABIN	Unknown Cabin
UNK/FLAT	Unknown Flat

Address type	Description
UNK/RES	Unknown Reserve
UNK/RMB	Unknown Roadside mail box
UNK/ROOM	Unknown Room
UNK/RSD	Unknown Roadside mail delivery
UNK/RSM	Unknown Roadside mail service
UNK/SEC	Unknown Section
UNK/SITE	Unknown Site
UNK/UNIT	Unknown Unit
U/BLOCK	Urban Block
U/CABIN	Urban Cabin
U/FLAT	Urban Flat
U/HOUSE	Urban House
U/LOT	Urban Lot
U/RES	Urban Reserve
U/RMB	Urban Roadside mail box
U/ROOM	Urban Room
U/RSD	Urban Roadside mail delivery
U/RSM	Urban Roadside mail service
U/SEC	Urban Section
U/SITE	Urban Site
U/UNIT	Urban Unit

Address type	Description
UNK/HOUSE	Unknown House
UNK/LOT	Unknown Lot

Address type	Description
UNK/RMS	Unknown Roadside mail service
U/RMS	Unknown Roadside mail service

FLAT_TYPE_AUT

Flat type	Description
ANT	Antenna
APT	Apartment
BBQ	Barbecue
BLDG	Building
CAGE	Cage
CARP	Carpark
CARS	Carspace
CLUB	Club
CTGE	Cottage
DUP	Duplex
FY	Factory
F	Flat
GRGE	Garage
HALL	Hall
HSE	House
KSK	Kiosk
LSE	Lease
LOT	Lot
MSNT	Maisonette
MB	Marine berth
OFF	Office
PTHS	Penthouse

Flat type	Description
RSVE	Reserve
RM	Room
SHED	Shed
SHOP	Shop
SHRM	Showroom
SIGN	Sign
SITE	Site
SL	Stall
ST	Store
SU	Strata unit
STU	Studio
SUBS	Substation
SE	Suite
TNCY	Tenancy
TNHS	Townhouse
U	Unit
VLT	Vault
VLLA	Villa
WARD	Ward
WE	Warehouse
WSHP	Workshop

GEOCODED_LEVEL_TYPE_AUT

Level Geocoded	Description
0	000 = (No geocode)
1	001 = (No Locality geocode, No Street geocode, Address geocode)
2	010 = (No Locality geocode, Street geocode, No Address geocode)
3	011 = (No Locality geocode, Street geocode, Address geocode)
4	100 = (Locality geocode, No Street geocode, No Address geocode)
5	101 = (Locality geocode, No Street geocode, Address geocode)
6	110 = (Locality geocode, Street geocode, No Address geocode)
7	111 = (Locality geocode, Street geocode, Address geocode)

GEOCODE_TYPE_AUT

Geocode Type	Description
ACS	Address Site Centroid
BFC	Building Footprint Centroid
CRS	Centre Road Setback
CBF	Centre of Block Face
BA	Building Access
CD	Centre of Driveway
LB	Letterbox
MB	Meter Box
SCPG	Service Connection Point - Gas
CDF	Centreline Dropped Frontage
APS	Centre of Access Point Setback

LEVEL_TYPE_AUT

Level Type	Description
B	Basement
FL	Floor
G	Ground
L	Level
LB	Lobby
LG	Lower ground floor
M	Mezzanine
PF	Platform
PD	Podium
RT	Rooftop
UG	Upper ground floor

LOCALITY_ALIAS_TYPE_AUT

Alias Type	Description
SYN	Synonym

STREET_LOCALITY_ALIAS_TYPE_AUT

Alias Type	Description
SYN	Synonym

STREET_SUFFIX_AUT

Suffix Type	Description
CN	Central
E	East
EX	Extension
IN	Inner
LR	Lower

Suffix Type	Description
OF	Off
ON	On
OT	Outer
S	South
SE	South East

Suffix Type	Description
ML	Mall
N	North
NE	North East
NW	North West

Suffix Type	Description
SW	South West
UP	Upper
W	West

STREET_CLASS_AUT

Street Type	Description
ACCS	Access
ALLY	Alley
ALWY	Alleyway
AMBL	Amble
ANCG	Anchorage
APP	Approach
APTS	Apartments
ARC	Arcade
ARCH	Arch
ART	Artery
AVE	Avenue
BANK	Bank
BASN	Basin
BAY	Bay
BCH	Beach
BDGE	Bridge
BDWY	Broadway
BELT	Belt
BEND	Bend
BLK	Block
BLUF	Bluff
BOWL	Bowl
BRAE	Brae
BRCE	Brace
BRK	Break
BROW	Brow
BVD	Boulevard
BWK	Boardwalk
BYPA	Bypass
BYWY	Byway
CAUS	Causeway

Street Type	Description
FORD	Ford
FORM	Formation
FRMS	Farms
FRNT	Front
FRTG	Frontage
FSHR	Foreshore
FTRK	Firetrack
FTWY	Footway
FWY	Freeway
GAP	Gap
GDN	Garden
GDNS	Gardens
GLD	Glade
GLEN	Glen
GLY	Gully
GR	Grove
GRA	Grange
GRN	Green
GRND	Ground
GTE	Gate
GTES	Gates
GWY	Gateway
HEAD	Head
HILL	Hill
HLLW	Hollow
HRD	Highroad
HTH	Heath
HTS	Heights
HUB	Hub
HVN	Haven
HWY	Highway

Street Type	Description
RAN	Ranae
RCH	Reach
RD	Road
RDGE	Ridge
RDS	Roads
RDSD	Roadside
RDWY	Roadway
REEF	Reef
RES	Reserve
REST	Rest
RGWY	Ridgeway
RIDE	Ride
RING	Ring
RISE	Rise
RMBL	Ramble
RND	Round
RNDE	Ronde
RNGE	Range
ROW	Row
ROWY	Right of way
RSBL	Rosebowl
RSNG	Rising
RTE	Route
RTN	Return
RTT	Retreat
RTY	Rotary
RUA	Rua
RUE	Rue
RUN	Run
RVR	River
RVRA	Riviera

Street Type	Description
CCT	Circuit
CDS	Cul-de-sac
CH	Chase
CIR	Circle
CL	Close
CLDE	Colonnade
CLM	Claim
CLR	Cluster
CLT	Circlet
CMMN	Common
CNR	Corner
CNTN	Connection
CNWY	Centreway
CON	Concourse
CONR	Connector
COVE	Cove
COWY	Crossway
CPS	Copse
CRCS	Circus
CRD	Crossroad
CRES	Crescent
CRF	Crief
CRSE	Course
CRSG	Crossing
CRSS	Cross
CRST	Crest
CRTS	Courts
CSEO	Corseo
CSO	Corso
CT	Court
CTR	Centre
CTTG	Cutting
CTYD	Courtyard
CUL	Cul
CUWY	Cruiseway
DALE	Dale
DELL	Dell

Street Type	Description
ID	Island
INTG	Interchange
INTN	Intersection
JNC	Junction
KEY	Key
KNOB	Knob
LADR	Ladder
LAGN	Lagoon
LANE	Lane
LDG	Landing
LEA	Lea
LEDR	Leader
LEES	Lees
LGH	Leigh
LINE	Line
LINK	Link
LKT	Lookout
LNWY	Laneway
LOOP	Loop
LPS	Loops
LT	Little
LWR	Lower
MALL	Mall
MEAD	Mead
MEW	Mew
MEWS	Mews
MILE	Mile
MNDR	Meander
MOTU	Motu
MT	Mount
MWY	Motorway
NOOK	Nook
NTH	North
NVS	Neaves
OAKS	Oaks
OTLK	Outlook
OVRB	Overbridge

Street Type	Description
RVWY	Riverway
SBWY	Subway
SDNG	Siding
SHOR	Shore
SHWY	State Highway
SLPE	Slope
SND	Sound
SPA	Spa
SPUR	Spur
SQ	Square
ST	Street
STAA	Straat
STH	South
STP	Steep
STPS	Steps
STRA	Strand
STRP	Strip
STRS	Stairs
STRT	Straight
SWY	Serviceway
TARN	Tarn
TCE	Terrace
THOR	Thoroughfare
THRU	Throughway
THWY	Thoroughway
TKWY	Trunkway
TLWY	Tollway
TMWY	Tramway
TOP	Top
TOR	Tor
TRAM	Tram
TRI	Triangle
TRK	Track
TRL	Trail
TRLR	Trailer
TRS	Trees
TUNL	Tunnel

Street Type	Description
DEVN	Deviation
DIP	Dip
DIV	Divide
DOWN	Down
DR	Drive
DRWY	Driveway
DSTR	Distributor
DWNS	Downs
EAST	East
EDGE	Edge
ELB	Elbow
ELM	Elm
END	End
ENT	Entrance
ESP	Esplanade
EST	Estate
EXP	Expressway
EXTN	Extension
FALL	Fall
FARE	Fare
FAWY	Fairway
FEN	Fen
FERN	Fern
FITR	Firetrail
FLAT	Flat
FLNE	Fireline
FOLW	Follow

Street Type	Description
PADK	Paddock
PAKU	Paku
PARK	Park
PART	Part
PASS	Pass
PATH	Path
PDE	Parade
PHWY	Pathway
PIAZ	Piazza
PKLD	Parklands
PKT	Pocket
PKWY	Parkway
PL	Place
PLAT	Plateau
PLZA	Plaza
PNT	Point
PORT	Port
PROM	Promenade
PRRS	Priors
PRST	Pursuit
PSGE	Passage
QDGL	Quadrangle
QDRT	Quadrant
QUAD	Quad
QY	Quay
QYS	Quays
RAMP	Ramp

Street Type	Description
TURN	Turn
TWR	Tower
TWRS	Towers
UPAS	Underpass
UPR	Upper
VALE	Vale
VDCT	Viaduct
VIEW	View
VIEWS	Views
VLGE	Village
VLLS	Villas
VLLY	Valley
VNUS	Venus
VSTA	Vista
VUE	Vue
WADE	Wade
WALK	Walk
WAY	Way
WDS	Woods
WEST	West
WHNA	Whenua
WHRF	Wharf
WKWY	Walkway
WTRS	Waters
WYND	Wynd
YARD	Yard

Annexure B - G-NAF Update Examples

Scenario A (date_created/date_retired)											
Existing G-NAF Record											
GNAF_ PID	FLAT _TYPE	FLAT_ NUMBER	BUILDING _NAME	NUMBER _FIRST	STREET _NAME	STREET _TYPE	LOCALITY _NAME	CONFIDENCE	DATE_ CREATED	DATE_ RETIRED	DATE_LAST_ MODIFIED
GAVIC411711441	UNIT	3	PONDEROSA	21	SMITH	STREET	BURWOOD	2	29/04/2004		
New Incoming G-NAF Record											
GNAF_ PID	FLAT _TYPE	FLAT_ NUMBER	BUILDING _NAME	NUMBER _FIRST	STREET _NAME	STREET _TYPE	LOCALITY _NAME	CONFIDENCE	DATE_ CREATED	DATE_ RETIRED	DATE_LAST_ MODIFIED
	UNIT	3	EL RANCHO	21	SMITH	STREET	BURWOOD				
Updated G-NAF Records											
GNAF_ PID	FLAT _TYPE	FLAT_ NUMBER	BUILDING _NAME	NUMBER _FIRST	STREET _NAME	STREET _TYPE	LOCALITY _NAME	CONFIDENCE	DATE_ CREATED	DATE_ RETIRED	DATE_LAST_ MODIFIED
GAVIC411711441	UNIT	3	PONDEROSA	21	SMITH	STREET	BURWOOD	2	29/04/2004	14/06/2004	
GAVIC996543256	UNIT	3	EL RANCHO	21	SMITH	STREET	BURWOOD	2	14/06/2004		

Scenario B (date_last_modified)											
Existing G-NAF Record											
GNAF_ PID	FLAT _TYPE	FLAT_ NUMBER	BUILDING _NAME	NUMBER _FIRST	STREET _NAME	STREET _TYPE	LOCALITY _NAME	CONFIDENCE	DATE_ CREATED	DATE_ RETIRED	DATE_LAST_ MODIFIED
GAVIC411711441	UNIT	3	PONDEROSA	21	SMITH	STREET	BURWOOD	2	29/04/2004		
New Incoming G-NAF Record											
Address has been removed from one of the contributor's data.											
Updated G-NAF Records											
GNAF_ PID	FLAT _TYPE	FLAT_ NUMBER	BUILDING _NAME	NUMBER _FIRST	STREET _NAME	STREET _TYPE	LOCALITY _NAME	CONFIDENCE	DATE_ CREATED	DATE_ RETIRED	DATE_LAST_ MODIFIED
GAVIC411711441	UNIT	3	PONDEROSA	21	SMITH	STREET	BURWOOD	1	29/04/2004		14/06/2004

Scenario C (merge criteria changed)											
Existing G-NAF Record											
GNAF_ PID	FLAT _TYPE	FLAT_ NUMBER	BUILDING _NAME	NUMBER _FIRST	STREET _NAME	STREET _TYPE	LOCALITY _NAME	CONFIDENCE	DATE_ CREATED	DATE_ RETIRED	DATE_LAST_ MODIFIED
GAVIC411711441	UNIT	3	PONDEROSA	21	SMITH	STREET	BURWOOD	2	29/04/2004		
New Incoming G-NAF Record											
GNAF_ PID	FLAT _TYPE	FLAT_ NUMBER	BUILDING _NAME	NUMBER _FIRST	STREET _NAME	STREET _TYPE	LOCALITY _NAME	CONFIDENCE	DATE_ CREATED	DATE_ RETIRED	DATE_LAST_ MODIFIED
	UNIT	3	PONDEROSA	21	BROWN	STREET	BURWOOD				
Updated G-NAF Records											
GNAF_ PID	FLAT _TYPE	FLAT_ NUMBER	BUILDING _NAME	NUMBER _FIRST	STREET _NAME	STREET _TYPE	LOCALITY _NAME	CONFIDENCE	DATE_ CREATED	DATE_ RETIRED	DATE_LAST_ MODIFIED
GAVIC411711441	UNIT	3	PONDEROSA	21	SMITH	STREET	BURWOOD	1*	29/04/2004		
GAVIC998999843	UNIT	3	PONDEROSA	21	BROWN	STREET	BURWOOD	0	14/06/2004		

* The confidence value of the original record will be reduced because the Data Manager is creating retire/insert records of this type.

* This example is where the contributor has changed the street name for the previously supplied address and no longer supports Smith Street Burwood therefore the confidence is decremented.

Annexure C - Frequently Asked Questions

C.1 Data & Delivery

C.1.1 With regards to flat file format delivery: Would it be possible to provide a reconciliation table between previous delivery, to current delivery?

Answer:

This would effectively require the development of an Incremental update file for each update. Given the manner in which addresses can change (ie Road name changes, suburb changes plus new and deleted addresses) this represents a significant challenge. We would really need to understand the purpose of the requirement. Is it merely as a data integrity tool or is it to understand how the data is changing. For example, the changes in the confidence levels of addresses within a State.

C.1.2 Would it be possible to provide a generic build script to be supplied on the same media as the flat file delivery option?

Answer:

There has been a fair amount of effort put in to building the GNAF Importer which caters for the loading of data into the major/expected use formats ie oracle, sql server, odbc connection and mysql. There are no plans to provide load scripts with the flat files at this stage.

C.1.3 What is your strategy for change management and how are you going to communicate this to users? This would include changes to the data model, changes to records (e.g. confidence codes) and methods of data processing.

Answer:

Any changes to the data model will be reflected in the user guide that goes out with the release of data. Change records answer in next question.

C.1.4 With regards to the PID's – once a PID has been retired can the same number be reissued be reissued i.e. are PIDs recycled? How is the lifecycle of PIDs managed?

Answer:

The PID's are generated during the processing from a sequence table and would not be reused once retired.

C.1.5 Issues with Suburb/Locality duplication: An example is 1-5 Mcinnes Street, Big Hill which appears four times in the state of Victoria (as GAVIC421957115, GAVIC421796354, GAVIC422252386, GAVIC423169344 – all with different Locality_PIDs). The record GAVIC423169344 is indicated as the Principal with a Locality_PID of 250190829. This is the 'Big Hill' in the Bendigo area as opposed to the locality near Lorne. What is the process used to dedup these 4 address records and what is the outcome for identifying the result and why are the other elements maintained?

Answer:

Considerable effort is currently taking place within Update 4 to resolve the issues associated with localities with the same name and different PID's. There is no doubt this has caused the processing software to generate incorrect results. In some cases, these are Gazetted Suburbs and Topographic Localities that are in fact the same locality, in other cases they are suburbs with the same name and in different parts of the State (eg Big Hill).

C.1.6 Parsing inconsistencies – Some address components seem to be in wrong fields eg Lot appears in the Flat_Type field for GNAF_PID GAVIC423109132. Can you outline the logic of the parsing?

Answer:

The parsing of addresses is an area that is constantly under review because of the dynamic nature of the source data. Ongoing developments to parsing continue to show improvements.

C.1.7 Future Addresses – are addresses included which are for property parcels that do not yet have a physical street address eg new sub-division which is being planned but not yet executed. What sort of time-lag is there on new addresses being added and can you outline the process?

Answer:

Because of the interaction between local government and state government in allocating addresses the G-NAF does not get an address until it is approved by both these bodies in most cases

C.1.8 Confidence codes seem to focus mostly at the geocode level – would it be possible to expand these to include confidence codes covering other aspects of the data more explicitly e.g. address validation during aggregation indicating how sure the "process" is that the 4 addresses matched are indeed the same address?

Answer:

Geocodes are not used in the matching process and as such have nothing to do with the Confidence codes. For an address to match, it must match the following:

Number First, Number Last, Street Name, Street Type, Locality and postcode if applicable. If this information all matches it is assumed they are in fact the same address.

C.1.9 Where are the street and locality aliases derived from and how are they going to be improved and maintained?

Answer:

Where the addresses provided by a Contributor do not match the PSMA Australia reference files (i.e. Roads and Localities) and we can identify with some degree of confidence that the Contributor's information is referring to a particular road name or suburb in PSMA Australia's reference data, the Contributor data becomes the alias. This may be an alias street locality where either an incorrect road name or suburb name has been used. Where geocodes are provided with an address, a point in polygon process is run to ensure that the address is actually within the correct locality. Where this is not the case an alias locality is created for that address.

We have been finding that the Jurisdictions are upgrading road names with the introduction of G-NAF and at times the alias names have in fact been correct. Processes are now being put in place to ensure the aliases created are current with each update. This was not being done in the first three updates in all cases. It is anticipated there will continue to changes to the alias information as the data improvement process over the next couple of years.

C.1.10 Will PSMA Australia be encouraging others to add to the street and localities aliases?

Answer:

Whilst PSMA Australia will not be encouraging the expansion of alias localities, should custodians expand the number of alias localities that they provide, they will be incorporated into G-NAF. Obviously it is preferred that the gazetted locality if available be adopted as the

standard. Alias street names or alternate street names will be accepted if the addresses are carried in the G-NAF.

C.1.11 How are bordering localities of non-gazetted localities derived?

Answer:

Non gazetted localities or aliases are usually only point features and are not bounded polygons, so they cannot be derived as such.

C.1.12 How do "building" names filter through from the AEC? How many are filtered out? This information can be very important in geocoding people to Non-Private Dwellings.

Answer:

Very little filtering has been done of the Building Names provided by any Contributor. Only those names that have been considered to be possibly invalid have been removed.

C.1.13 What future processes are going to be used to minimise address that are associated with Street/ Locality and Locality centroids?

Answer:

Some work has been undertaking as part of Update 4 to reduce the locality only geocoded addresses. In particular those involving in excess of 50 addresses have been resolved in many cases. This will be an ongoing task as part of each update to reduce the number ofv Locality only geocoded addresses. The Street level only geocoded addresses will be reviewed after Update 4.

C.1.14 How will the new GAP geocoder work?

Answer:

The new gap geocoder will utilise the Cadlite parcel structure in selected areas to assist in ensuring gap geocoded addresses fall within parcels and to generally improve the integrity of the gap geocoding. It will be only used within limited Urban Centre Localities in the initial phases. The Gap Geocode will be introduced during the AUG05 update to G-NAF.

C.1.15 Has the data model stabilised or are future changes to the structure envisaged?

Answer:

The G-NAF data model has reached a stage of stabilisation, but could have minor changes in the future depending upon what future enhancements users would like to see adopted.

C.1.16 Can G-NAF build lists of features (e.g. a list showing me the name, phone numbers, co-ordinates etc of all roadhouses in Australia)?

Answer:

No. G-NAF cannot build list of features a VAR would have to do this from other lists in conjunction with G-NAF

C.1.17 We currently have PSMA Australia data loaded into Oracle Spatial. Could G-NAF communicate with this data in Oracle Spatial or is G-NAF a stand-alone system?

Answer:

G-NAF can be linked to other spatial data in Oracle depending on the application being used.

C.1.18 I checked that each unique street in the STREET table had a corresponding entry in the STREET_LOCALITY_PONT table (even if the longitude and latitude was set to 0.0). In all

states except NSW this was the case. Should every unique street_pid in NSW also have had an entry in the STREET_LOCALITY_POINT table?

Answer:

Yes. If they are used by an active address.

C.2 Coordinates

C.2.1 Is there an accuracy figure associated with the physical Longitude/Latitude (not the reliability but a deviation estimate -/+)?

Answer:

No deviation estimates are provided by the Jurisdiction for the geocodes and hence this information is not available. G-NAF is based on a containment approach in that an address level geocode (ie 2) is contained within a parcel, a street level geocode lies on the mid point of a road centre line within a locality and a locality geocode is the centroid of the locality polygon.

C.2.2 We have a list of Winery and Caravan Park addresses that we need to locate on maps with a symbol, we have no way of actually accurately getting geographical co-ordinates for these properties other that with a GPS. Could G-NAF provide us with a set of co-ordinates for each property in the address list and enable us to upload into Oracle Spatial for use in our mapping?

Answer:

Yes, G-NAF can provide a geocode and some cases a building name or other identifier to pin point these features.

C.2.3 We make maps of cities and our editors have a lot of trouble locating features such as Visitor Information, Accommodation, Restaurants etc, a lot of time and money is spent on pin-pointing these features on a map,. Could G-NAF help us by providing a visual of the features actual location and potentially a set of co-ordinates for upload to Oracle Spatial for all of these features within a certain location?

Answer:

See above

C.3 Delivery Schedule

C.3.1 The delivery of G-NAF is currently quarterly – is this likely to change as the dataset matures? Or is this cycle a fixed delivery in line with other PSMA Australia product delivery schedules?

Answer:

At this stage, both the time taken to complete an update and user feedback indicates that quarterly releases are frequent enough. PSMA Australia will continue to monitor both its capacity as well as the demand for more frequent updates.