

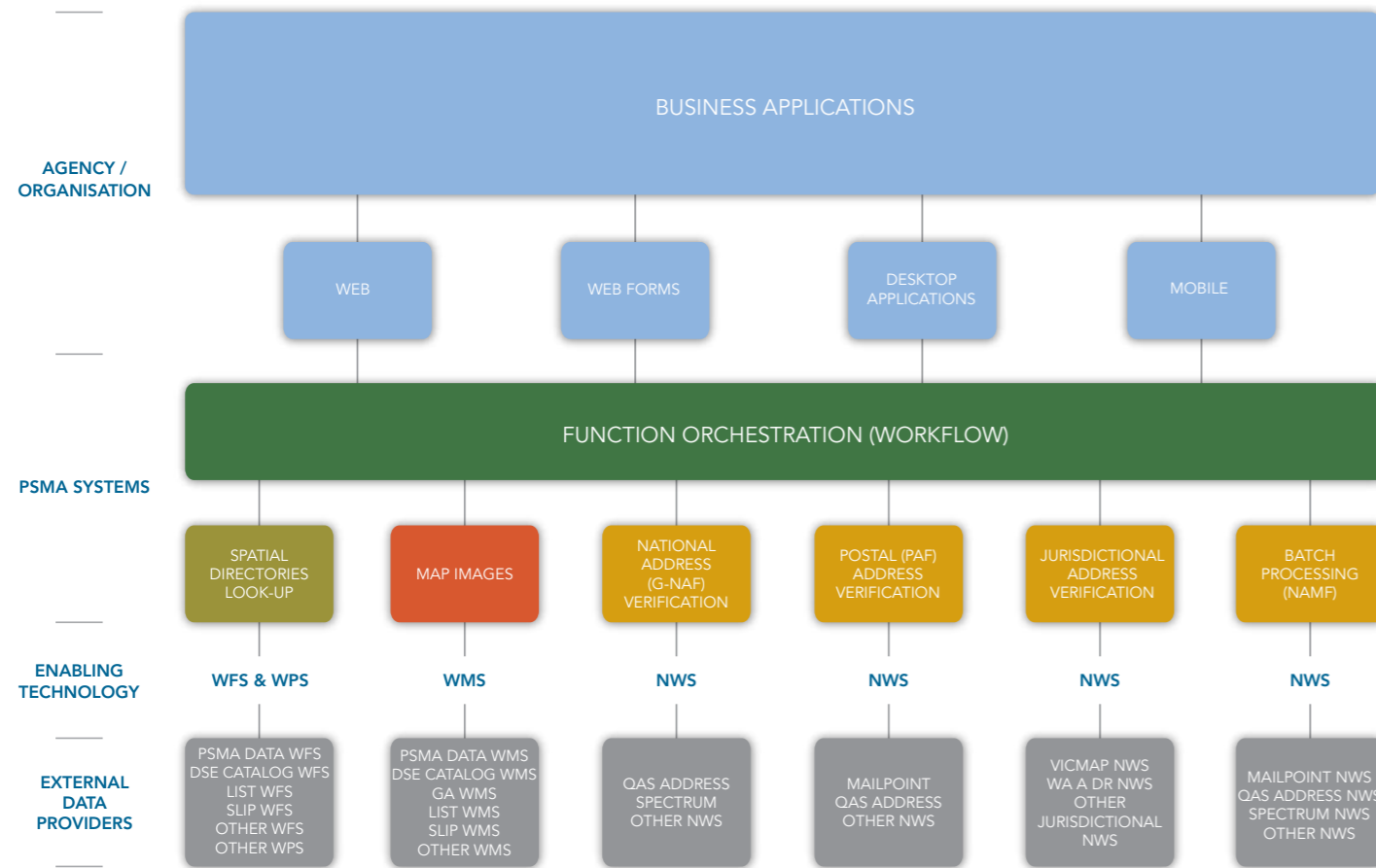
DEVELOPING INNOVATIVE SPATIAL INFRASTRUCTURE

The spatial information user community has grown exponentially in recent years, fuelled by rapid growth in technology, computing power and mobile communications. As the market matures, this community expects more from the data it uses. These demands encompass and challenge all aspects of quality such as accuracy of content and structure, completeness and currency as well as the flexibility of delivery and existing business models.

PSMA Australia is committed to developing innovative spatial management infrastructure to improve the quality and currency of Australia's authoritative spatial datasets. This commitment has involved a redevelopment of PSMA Australia's

infrastructure to significantly advance its existing mechanism for collection, assembly and delivery of national datasets through the use of services orientated architecture (SOA).

Today's PSMA Systems is a powerful and flexible automated information management environment that will be a key component of Australia's national spatial data and information infrastructure. It will provide government with a powerful tool supporting collaboration, with PSMA Systems being rolled out to a number of state governments to support whole-of-government applications over the next 12 months.



This diagram shows some of the web services provided by private vendors, state government entities and PSMA Australia that are in production or being tested in PSMA System. Additional services are easily integrated.

ACRONYMS

ADR - Western Australian Address Register
GA - Geoscience Australia
NAMF - National Address Management Framework
PAF - Postal Address File
WFS - Web Feature Service
WPS - Web Processing Service

DSE - Department of Sustainability and Environment (VIC)
LIST - Land Information System Tasmania
NWS - National Address Management Framework Web Service
SLIP - Shared Land Information Platform (WA)
WMS - Web Mapping Service



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PSMA SYSTEMS UNLOCK THE FULL POTENTIAL OF LOCATION INFORMATION



**AUSTRALIA'S NATIONAL PROVIDER OF
AUTHORITATIVE LOCATION INFORMATION
AND SERVICES.**

PSMA SYSTEMS



SIMPLE AND FLEXIBLE ENABLING SERVICES THAT MAKE EXTRACTING MORE VALUE FROM PSMA DATA EASY AND COST EFFECTIVE.

Location-based information is increasingly valued as a significant contributor to effective public policy development and decision-making.

The linkage of location and proximity with other forms of information – whether social, demographic, economic or environmental – has been proven to reveal valuable new insights that improve the effectiveness and efficiency of government service delivery.

The challenge is how to ensure that the question of ‘where’ is fully integrated with the decision-making process. This includes how to factor location and factored into the way that service delivery needs and other issues are identified, understood and managed.

PSMA Systems introduces ‘location’ into your thinking, problem-solving and decision-making, making spatial enablement possible.

Typically, conventional business applications are not inherently spatial. Given the complexity that has been historically associated with spatial technology, this is not surprising. Many organisations have found the integration of location complicated and expensive, while the spatial data itself has often been difficult to source.

To address this, PSMA Australia has developed PSMA Systems to provide a framework that makes it simple, fast and cost-effective to introduce location into the decision-making process. PSMA Systems has been developed to facilitate these linkages and enable the value of spatial information to be more easily accessed and applied within a range of business applications across an organisation.

This is achieved by PSMA Systems’ fundamental focus on address. Address is the one attribute that is virtually universal across government and business activities and provides the key to unlocking the value from location. Once an address is geocoded, a new world of location opportunity opens.

WHAT PSMA SYSTEMS OFFERS

PSMA Systems provides an easy and reliable way to incorporate location into existing processes, workflows and applications. This is achieved by the use of web service technology to underpin this functionality.

Developed on standards-based service integration, the power of PSMA Systems comes from the ease with which spatial data can be efficiently accessed and reliably applied within existing applications and workflows. PSMA Systems leverages the ability of web services to gain access to new functionality with very little development time, no capital investment and low operational costs based on transaction volume.

By using address as the key entry point, PSMA Systems facilitates a variety of functionality by easily integrating with existing business systems as well as with a wide range of third party address management, validation, and geocoding services, spatial look-ups and mapping in a NAMF compliant framework.

Web services are programming standards used to make different types of software talk to each other over the internet and to undertake automated business processes.

Web Feature Services (WFS) and the **Web Map Services (WMS)** are two basic web service sets that have been defined by the Open Geospatial Consortium (OGC).

OGC® Standards empower technology developers to make complex spatial information and services accessible and useful with all kinds of applications.

The WFS provides direct access to data – reading, writing, and updating geographic features and information. The WMS concerns the transformation of data into a map as an image. These web services provide access to features – either directly or as images (maps) – in a standardised way independent of who created the server or the actual format the data is stored in.

The OpenGIS® **Web Processing Service (WPS)** Interface Standard provides rules for standardising inputs and outputs (requests and responses) for geospatial processing services, such as polygon overlay.

For more information, visit www.opengeospatial.org

FUNCTIONS

Type	Function
Spatial Directories Look-Up Web Feature Service (WFS) Web Processing Services (WPS)	Find Containing <ul style="list-style-type: none"> Given a location (latitude/longitude) as input this function returns geographical features that the location falls within, for example, statistical area or electorate. Find Nearest <ul style="list-style-type: none"> Given a location, and type of feature as input Find Nearest returns the nearest feature (of that type). Find By Attribute <ul style="list-style-type: none"> Given some search criteria, Find by Attribute returns address or geographical features that match the search criteria.
Map Images Web Mapping Service (WMS)	Map Snapshot <ul style="list-style-type: none"> Given a location, zoom level and a bounding box size, a map snapshot returns a static map of the bounded location.
Address Verification NAMF Web Service (NWS)	Address verification <ul style="list-style-type: none"> Confirm that an address is in the authoritative dataset. Suggest alternative authoritative addresses if a full match cannot be found for a candidate address (partial matching). Provide geocode details for an address. Parse Address <ul style="list-style-type: none"> Convert an unstructured address into a parsed address. Reverse Geocode <ul style="list-style-type: none"> Find the address at the location. Find Address by Attribute <ul style="list-style-type: none"> Search for addresses using non-address attributes. The search could be a combination of address and non-address attributes. Batch Address Validation <ul style="list-style-type: none"> This function runs Address Verification functions against a batch of addresses and returns the results. The NAMF Web Services (NWS) is used to execute the process, and retrieve the status of processing.

CAPABILITIES

Benefits	Details
Expand data options	Provides simple access to authoritative, commercial and client-specific sources of WFS and WMS services.
Simple to add additional services	Standards based service integration reduces the costs and technical issues associated with implementing additional services.
Authoritative address validation	Integration of Address Verification services through the framework. This includes the ability to manage both interactive/individual and batch verification and geocoding services using NWS compliant services.
Maximise use of data holdings	Enables attribute or characteristics searches across an organisation’s own data holdings, reducing data replication costs and improving data currency.
Powerful visualisation and representation of issues	Providing map snapshot capabilities that use configurable web mapping capabilities. These include the ability to set the size and zoom level of the map returned and the ability to provide a URL with or instead of the map.
Straightforward user management	Multiple user management levels, providing administrators, users and service providers greater access to manage their accounts, services and workflows.
Tailored client management	Service providers can manage their own clients through PSMA Systems, with easy management of aspects such as user access, reporting and branding.
Minimal administration requirements	Integrated user manual accessible in the service, providing users the ability to refer to help sections, reducing administrative burdens and minimising delays for users.
Control testing and deployment	Capability to test workflows and function settings in a pre-production environment, with the additional capability to export and import workflows between environments.