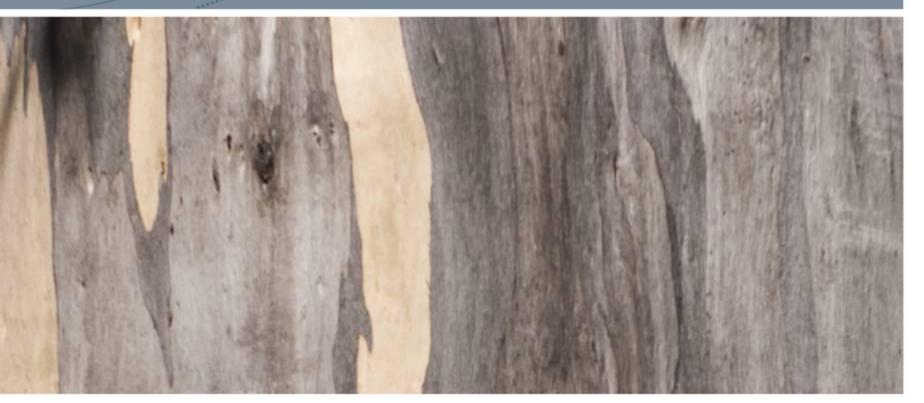
Partnering for SDI implementation: Victoria, Australia

GEOSPATIAL WORLD FORUM

Exchange Forum: Evolving Public-Private Partnership for Spatial Data Infrastructure 26-27 April 2012, Amsterdam



Outline

- ▶ Background: Victoria, and partnering for SDI
 - ▼ Public-private partnerships
 - ▼ Multi-sectoral governance
- ▶ Step change: proposal for the Australia New Zealand Spatial Marketplace
 - ▼ Marketplace partners
 - ▼ Marketplace demonstrator
 - ▼ Platform partners
 - ▼ Platform capabilities and forward development plan
- ▶ Next steps: broadening the collaborative opportunity

Background: Victoria

Australian Transverse Mercator



Background: Victoria

Universal Transverse Mercator





- ▶ 5.5 million people, 24% of Australia's population, but only 3% of Australia by area
- ▶ Relatively wealthy in terms of spatial resources – small area, larger population
- ▶ Traditionally a leader in spatial sector in Australia

Victoria Australia

Public-private partnerships

- Victoria has a long record of partnering for SDI
- Over the last decade a series of partnerships have delivered parts of the picture
 - ▼ Spatial data maintenance
 - ▼ Topographic mapping production
 - ▼ Spatial services
 - ▼ State-wide commercial real-time high precision positioning services
- ▶ An informal partnering model: the Strategic Diamond

Partnering: the Strategic Diamond

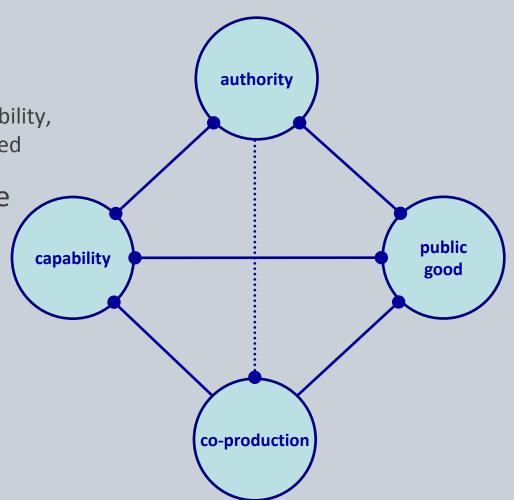
▶ The strategic triangle

 Public good driven by capability, and appropriately authorised

▶ Co-production builds the strategic diamond

 Strengthens capability, improves public good

Authorising environment essential



Partnering: the Strategic Diamond

- ▶ Partnering the basis of service delivery planning
- Should government do this (can 3rd party do it)? if yes:
- ▶ Is there a benefit for 3rd party and if not, can a benefit be created? if yes:
- ▶ Can 3rd party share in the delivery?

co-production

Partnering: the Strategic Diamond

- ▶ Spatial industry experience partnering:
 - Drives progress (get more done with less)
 - ▼ Reduces tunnel vision
 - ▼ Encourages innovation, efficiencies
 - Strengthened through the involvement of academia
 - ▼ Infinitely variable approaches possible, and necessary
 - ▼ Doesn't always come off

public good

co-production

Example: spatial data maintenance

- Maintenance of framework datasets outsourced to private sector
 - ▼ Property and parcel
 - **▼** Roads
 - ▼ Address
 - Administrative boundaries
- ▶ Efficiencies and contractually enforced service levels

Example: topographic mapping

- ▶ The partnering response:
 - ▼ the Spatial Vision Vicmap book series
- Get people and organisations doing what they do best
- Single, coordinated activity
- Commercial opportunity for private sector (Spatial Vision)

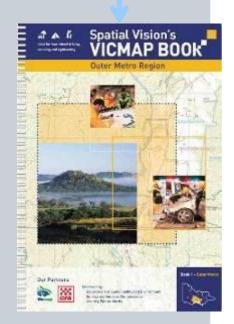
DSE

manages custodians, maintains the data, drives quality improvements

CFA

sets business requirements, defines mapping products to meet those requirements

Spatial Vision map book production, operational control



Example: Victorian Mapping and Address Service

- ▶ Build and operate tender for VMAS foreshadowed partnering, required tenderers to respond by:
 - ▼ Reducing capital and operating costs to government
 - ▼ Improving the address management performance by mining the address validation transactions
- ▶ Successful tenderer response included:
 - ▼ Marketing the VMAS service to the private sector (under a different brand) now returning 45% of operating costs
 - ▼ Closed the loop on address maintenance through notification of address validation failures

Example: Coordinated Imagery Program

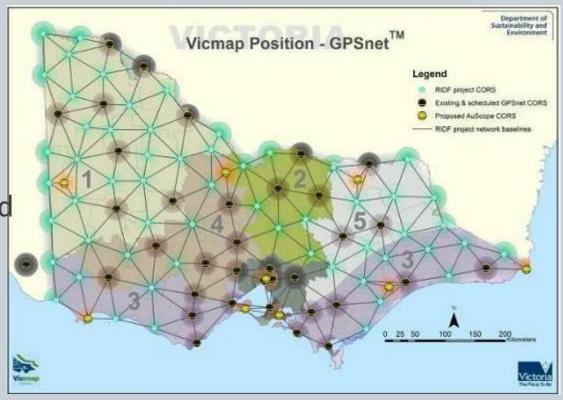
- ▶ Coordinated imagery acquisition for State and local government
- Single set of technical specifications, single set of contract documentation, consolidated procurement process
- Supported by industry and purchase partners
- ▶ Has increased the amount of imagery being procured, while reducing costs to industry
- ▶ Joint governance by industry and government

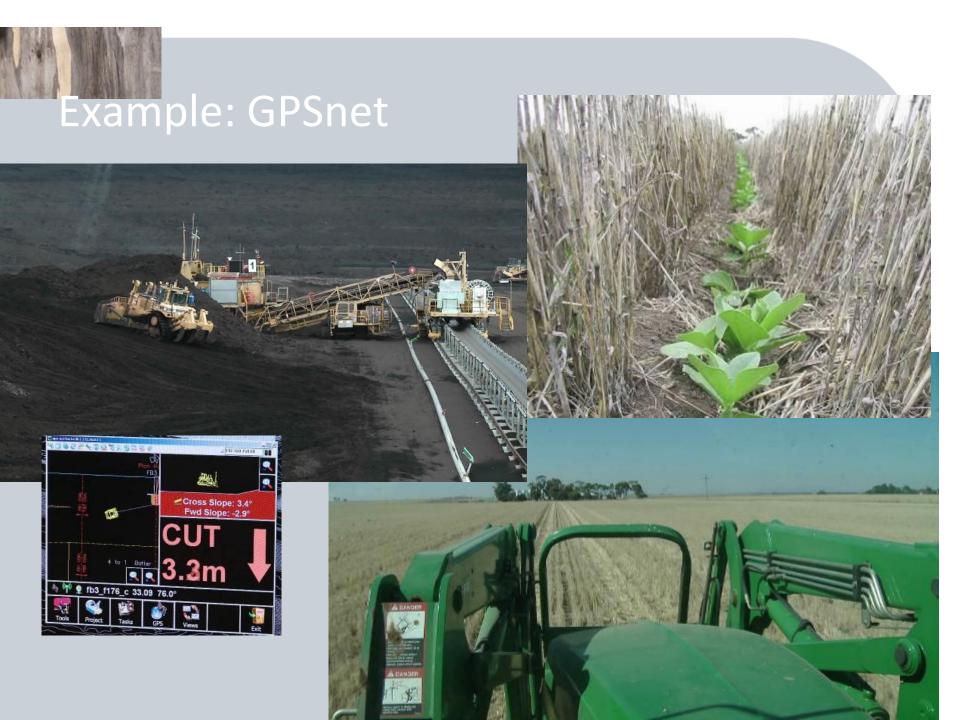
Example: GPSnet

Network of 106
 Continuously
 Operating
 Reference
 Stations (CORS)

34 stations provided by private sector

- Statewide
 - ▼ real-time
 - ▼ high reliability
 - ▼ 2cm accurate
 - audited and recorded





Example: GPSnet

- ▶ Tier 1 and Tier 2 Value Added Resellers complete the market delivery channels
- ▶ Leading edge implementation, world class
 - ▼ provides an R&D test bed for Victorian spatial industry
- Founded on partnerships

Summary

- ▶ Partnering 'business as usual' for Victorian spatial industry
 - provides real benefits, achieves more with less
 - ▼ grows an effective and versatile resource base beyond public sector
- ▶ High level of trust, communication between sectors
 - ▼ long lead time began over a decade ago
 - ▼ formal governance and institutional arrangements after about five years
- ▶ In combination, a concerted capability
 - ▼ healthy industry 'co-opetition'
 - ▼ able to achieve more collectively than in isolation
- Government objectives
 - ▼ do more with less
 - ▼ industry development
- Advanced infrastructure to support strong R&D and innovation capability

Public-private partnerships: governance

- ▶ Governance model for the spatial sector has also been a partnership:
- Multi-sectoral Victorian Spatial Council delivers a 'whole-of-Victoria' spatial strategy
 - http://www.victorianspatialcouncil.org/
 - ▼ Public sector
 - ▼ Private sector
 - ▼ Academic sectors
 - Clearly defined roles and responsibilities
 - ▼ Independent chair
- No separate public sector strategy

Public-private partnerships: Victoria

- ▶ A well established environment for public-private partnerships
- ▶ But... parts of the picture only, not a coherent, overall plan
- ▶ Platform, and opportunity, for a step change

The step change proposal: ANZSM

- ▶ Proposal for the Australia New Zealand Spatial Marketplace (ANZSM)
 - the Spatial Marketplace will be a simple and useable one-stop-shop for finding spatial data, accessing spatial analysis tools and sharing spatial resources
- ▶ Complete publishing, discovery, access, distribution and interoperability services for all spatial information resources in Australia and New Zealand

ANZSM partners

▶ Public sector

- ▼ ANZLIC (Australia New Zealand Land Information Council)
- ▼ PSMA Australia

Academic sector

- ▼ Cooperative Research Centre for Spatial Information
- Private sector
 - ▼ Spatial Industry Business Association New Zealand
 - ▼ Spatial Industry Business Association Australia

ANZSM: key step changes

Key characteristics

ANZSM

content

Data only

Existing SDI

Spatial resources

scope

Predominantly public sector

community

Public, private,

academic sectors, and

jurisdiction

Single jurisdiction

Australia and New Zealand

value chain

Monolithic roles spanning value chain

Discrete roles within value chain

Step change: content

- Existing SDIs focus on datasets, some web services
- ▶ ANZSM covers spatial resources:
 - ▼ Data conventional spatial datasets
 - ▼ Products PDFs, raster images, documents, spreadsheets
 - ▼ Services web services
 - ▼ Processes web processes
- ▶ Beginning with data and products, developing services and processes incrementally

Step change: scope

- ▶ Existing SDIs focus on public sector: supply side thinking for supply side users
- ANZSM covers all sectors:
 - ▼ Public sector
 - ▼ Private sector
 - ▼ Academic sector
 - Community
- Available and accessible to all, with both anonymous users and role based identity management

Step change: jurisdiction

- ▶ Each jurisdictions has its own SDI
 - ▼ No single reference point for spatial resources
 - ▼ Inefficiencies and duplication of effort for jurisdictions
 - ▼ Inefficiencies and inconsistency, lack of clarity for users
- ▶ All spatial resources available in a federated model, beginning from a single point of reference
 - ▼ Simplicity
 - ▼ Confidence
 - ▼ Critical mass

Step change: value chain roles

- ▶ Five distinct (but not mutually exclusive) roles
 - ▼ Publisher: makes spatial resources available
 - ▼ Acquirer: acquire spatial resources (data, products, services, processes) from the market place
 - ▼ Value Adder: watches and analyses market activity and transactions for opportunities to create and published new or improved spatial resources (a subset of publisher)
 - ➤ **Notifier**: reviews, corrects or otherwise contributes to the quality of a resource, or the collective understanding of the value or fitness for purpose of a spatial resource a subset of acquirer
 - ➤ Administrator/regulator: manage the market place and facilitate the needs of marketplace

Step change: key differences

- ▶ The marketplace won't need a spatial presentation service, any number of VARs can publish their presentation service, and compete, in the marketplace
- ▶ The marketplace will have business intelligence volumes and types of transactions
- ▶ The marketplace will have simple and effective publishing, discovery and access services for all users, not for spatial specialists
- ▶ The marketplace puts a business model on the bones of an SDI

ANZSM: business model on the bones of an SDI

Scope of SDI

Scope of Spatial Marketplace

Acquisition

Publishing

Discovery

Access

Presentation

Feedback/Notify

Positioning

Products and services

Benefits

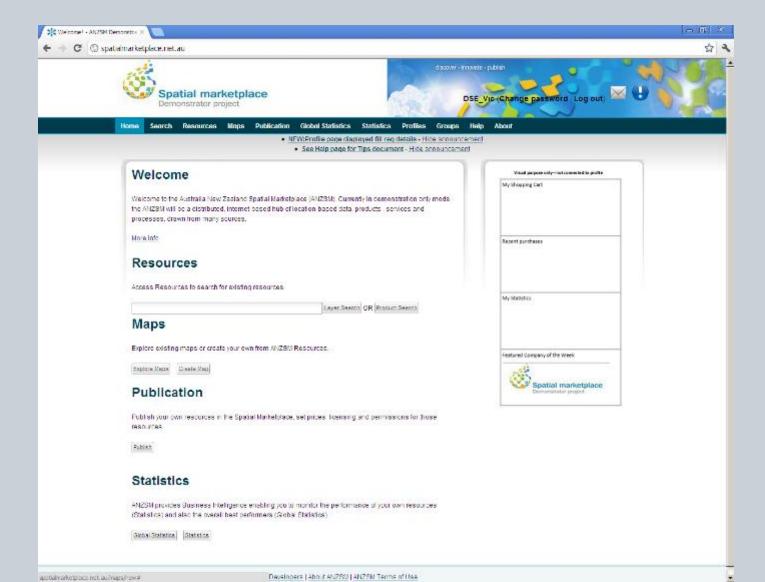
ANZSM: progress to date

- ▶ ANZSM demonstrator complete March 2012
 - ▼ Demonstrate value and benefits
 - ▼ Show how the Marketplace complements, leverages and builds upon existing jurisdictional and private sector infrastructure and spatial resources
 - ▼ Obtain stakeholder support for and participation in the future operational Spatial Marketplace
- Series of roadshows and workshop during rest of 2012 across all Australian and New Zealand jurisdictions
 - ▼ Evaluation and buy-in

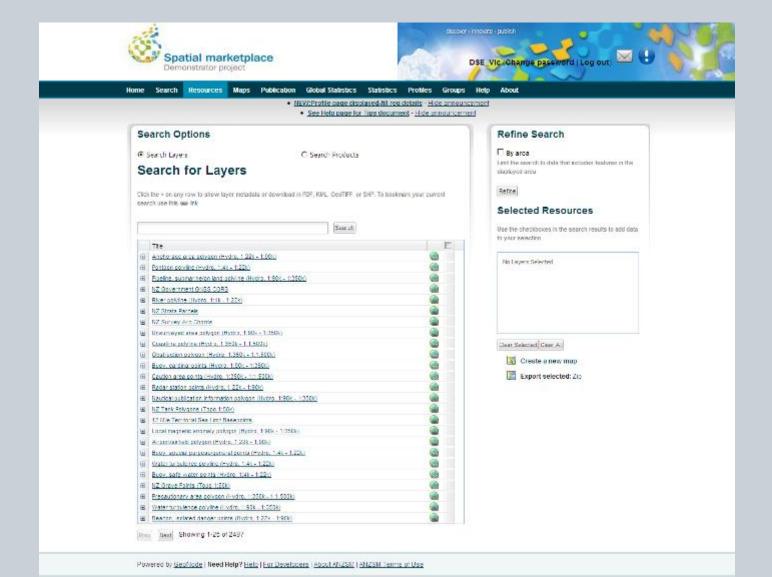
ANZSM: platform

- Demonstrator developed on open source platform
- ▶ Based on GeoNode from OpenGeo
- Developer consortium
 - ▼ OpenGeo: http://opengeo.org/
 - ▼ Dialog Information Technology: http://www.dialog.com.au/

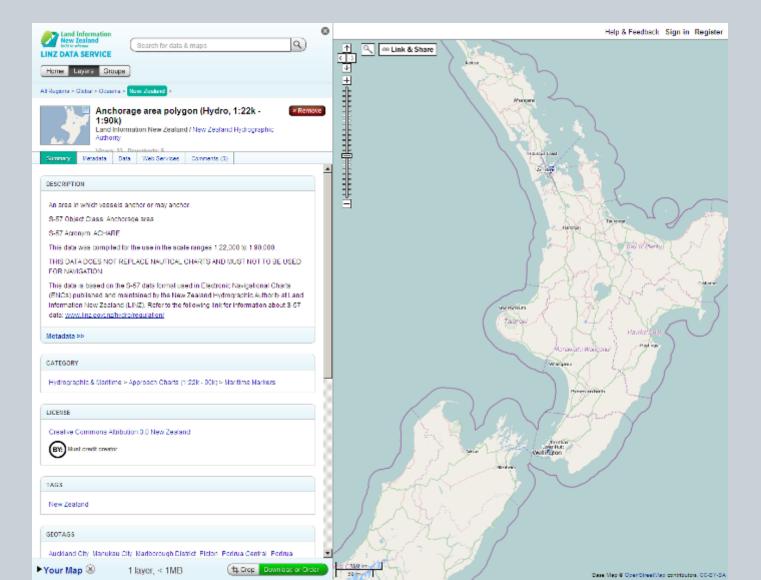
Marketplace home page: basic functions



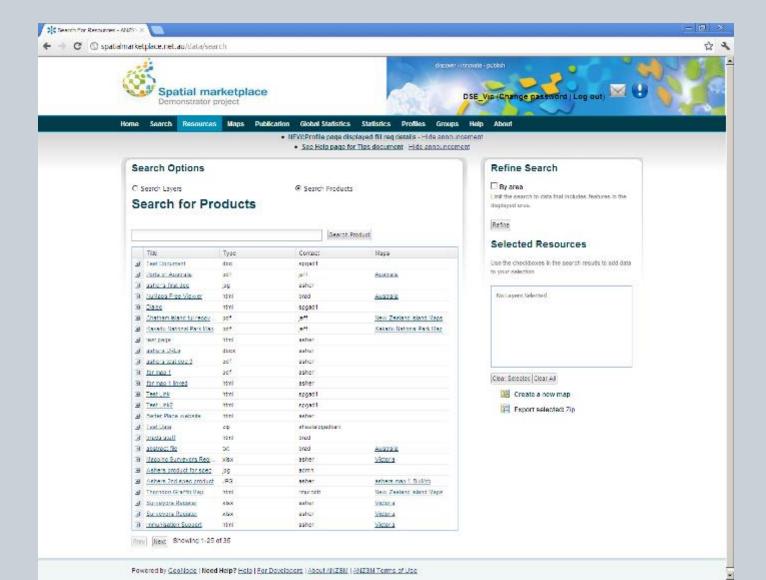
Marketplace: specific search for data layers



Marketplace: search result



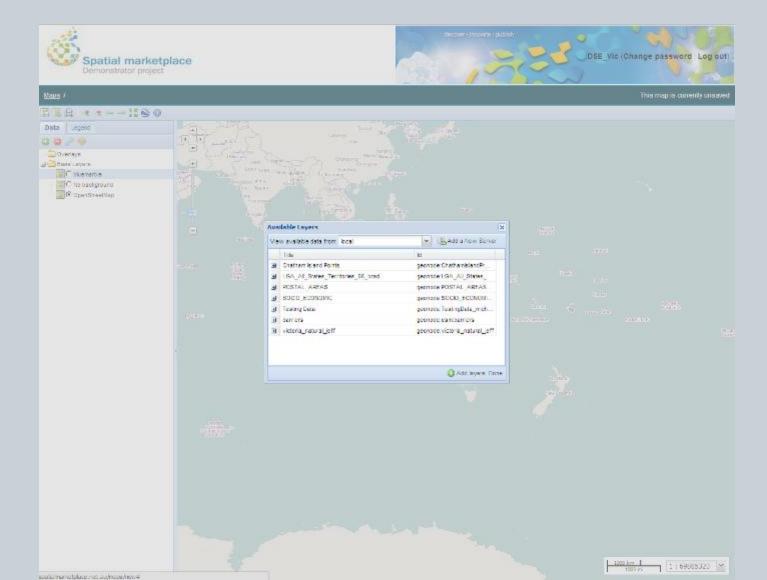
Marketplace: search for products



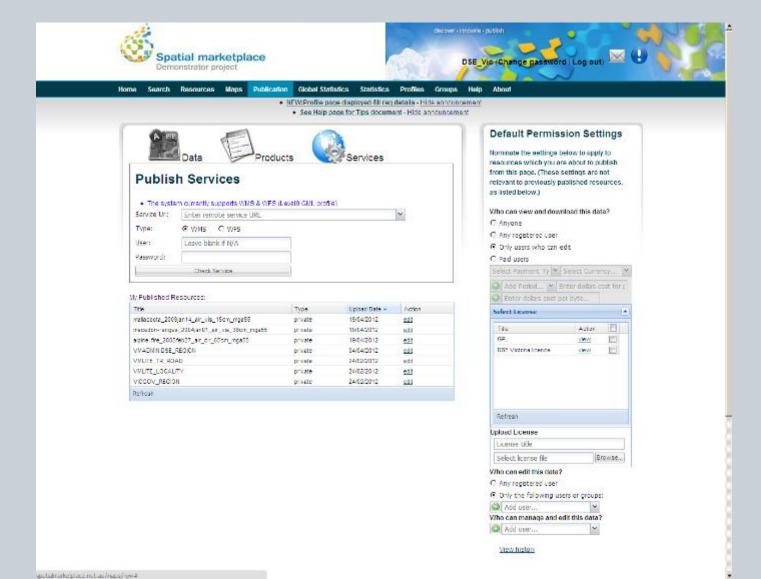
Marketplace: search for, create maps



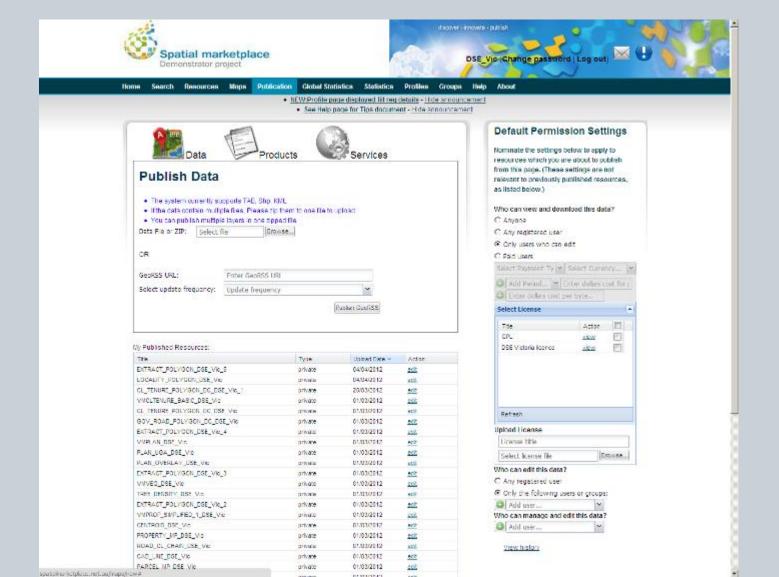
Marketplace: create map



Marketplace: publish services



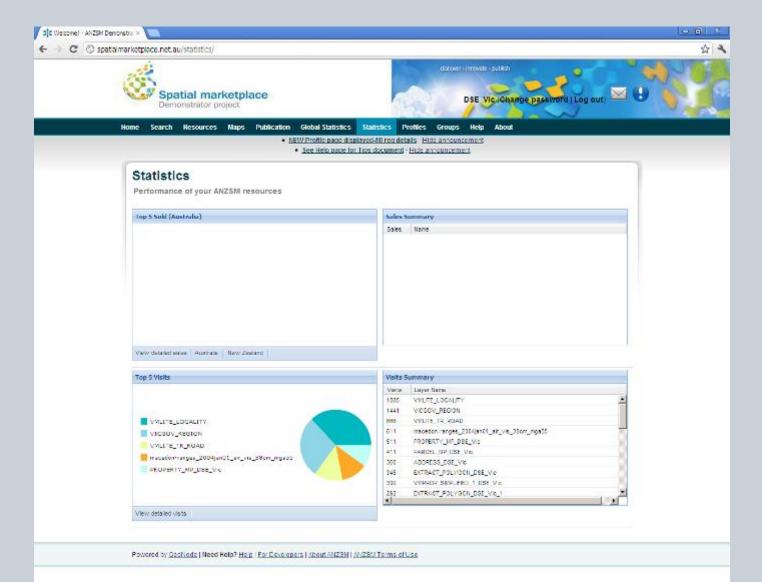
Marketplace: publish spatial dataset



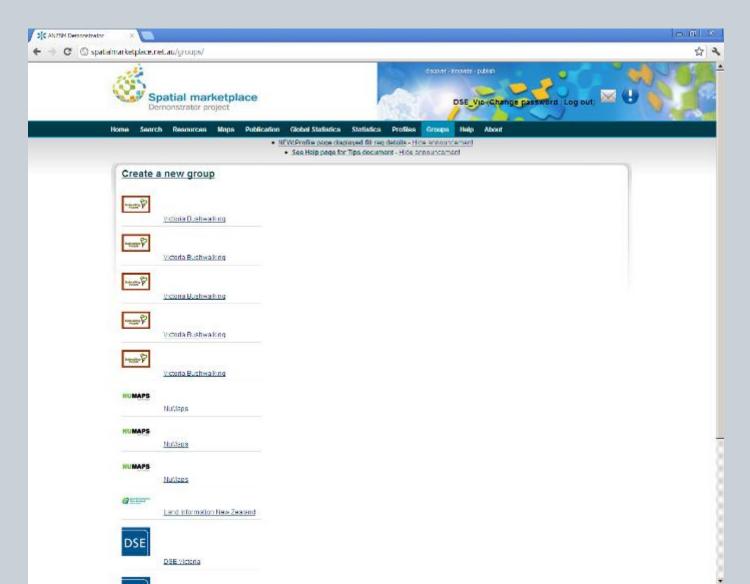
Marketplace: global business intelligence



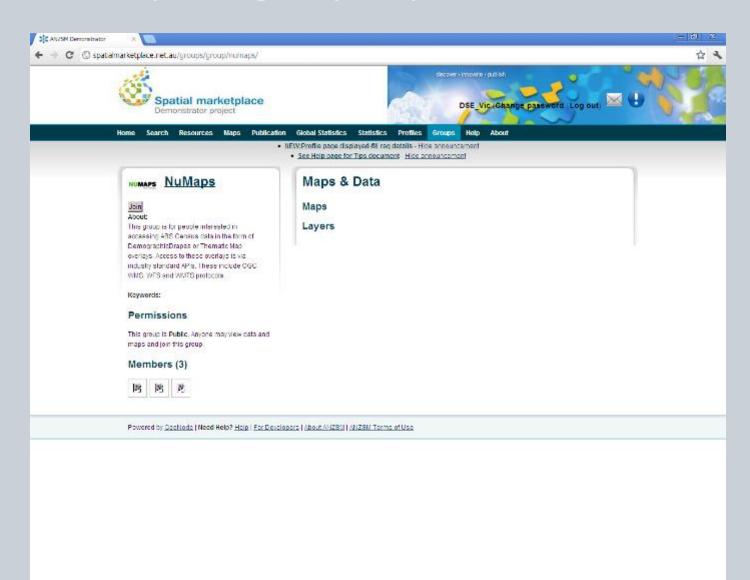
Marketplace: client specific BI



Marketplace: groups, communities



Marketplace groups: specific access and use



ANZSM: platform partners

- ▶ Platform partners not directly involved in ANZSM, but contributing to, and benefiting from the Open Source implementation
 - ▼ World Bank
 - ▼ Harvard WorldMap
 - ▼ MapStory
 - **▼** TsuDAT
 - ▼ OpenDRI

Platform development pipeline: 0 – 4 months

- ▶ Social features for ANZSM committed back in to core
- ▶ GeoNode Community investing in code clean up, testing and integration, and in scalability/availability)
 - ▼ New GeoNode features:
 - pushing the boundaries of theming/styling or resources
 - easily customisable layout & presentation of resources
 - easy to match search criteria matched to Metadata (Complex / multi-part queries)
 - Annotations: ability to mark up maps with additional content
 - ▼ Time enablement. Ability to create animations and display time based data with time sliders.
 - ▼ Improved resource uploading for Publishers including ability to drag and drop files to publish

Platform development pipeline: 4 – 9 months

- ▶ Full user interface review for publishers and acquirers
- ▶ End user ability to customise: overall aesthetic and process/workflow personalisation.
- ▶ WFS Improvements:
 - ▼ GeoNode versioning capabilities via GeoGit project to allow users to upload and edit data, track changes and roll back
- ▶ Offline GeoNodes: perform operations without a connection to internet/server.
- ▶ Federation of data (resources and metadata), to provide a wider access to global resources

Platform development pipeline: 9 – 15 months

- Greater ability for resource markup
- ▶ Improved raster handling, HTML5 raster manipulation
- Quantiles/equal intervals in vectors to permit complex querying
- imagery exploitation tools for data analysis and visualisation
- Scalability improvements for GeoServer
- ▶ Flexible security framework for GeoServer
- Security model to support OpenID
- ▶ Single Sign-On: OpenID and LDAP integration
- Server redundancy for GeoServer scalability and performance

Platform development pipeline: 9 – 15 months

- ▶ Upload of multiple formats: e.g. File Geodatabase, KML and CSV back into GeoNode
- ▶ Advances on mobile toolkits and mobile formats
- ▶ GeoProcessing
- Web Processing Service (WPS) plus integration with GeoScript
- 'WPS Pipes', a javascript GUI interface similar to 'model builder' to create new processes graphically
- ▶ 3D support in GeoServer and PostGIS

Broadening the collaborative opportunities

▶ Collaboration on Spatial Marketplace

▼ What are the opportunities for broader evaluation, cooperation, collaboration or co-investment in the Marketplace model?

Current participants:

- ▼ The eight governments of the Australian States and Territories, and the governments of Australia and New Zealand, through ANZLIC and PSMA Australia
- ▼ The Cooperative research Centre for Spatial Information
- ▼ The Spatial Industry Business Associations of Australia and New Zealand
- ▼ Discussions with World Bank
- ▶ No impediment to broader collaboration or participation

Broadening the collaborative opportunities

- ▶ Collaboration on the platform
 - ▼ What are the opportunities for broader evaluation, cooperation, collaboration or co-investment in the OpenGeo Open Source stack?
- Current participants:
 - **▼** ANZSM
 - ▼ World Bank
 - ▼ Harvard WorldMap
 - MapStory
 - ▼ TsuDAT
 - ▼ OpenDRI
- Clearly, under the Open Source model, no impediment to broader collaboration or participation

Invitation to collaboration

▶ An open invitation to collaboration or participation:

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- +61 3 9637 8395
 - ▶ Contact may also be made through sector partners:
 - ▼ Cooperative Research Centre for Spatial Information
 - ▼ PSMA Australia
 - ▼ Spatial Industry Business Association