Towards a global statistical geospatial framework

Prepared by Australia Bureau of Statistics

1 This document is being produced without formal editing
Towards a global statistical geospatial framework

SSF – Supporting the integration of socio-economic and spatial data for official statistics

Presentation to UN Statistical-Geospatial Expert Group
October 2013
Increasing demand for location based information about places, people, human activity, business, economic growth, wellbeing, ....

Recognition of the value of linking socio-economic information to location.
The work on global geospatial information management over the past two to three years has confirmed that one of the key challenges is a better integration of geospatial and statistical information as a basis for sound and evidence-based decision-making.‘

Secretary General of the UN Economic and Social Council, 2012.
Continuum of user needs
ANZLIC
One ANZ Foundation Spatial Data Framework
**Statistical Community**

**Socio-economic datasets**
- Core NSO datasets: Census, Demographics, Agriculture, Building, Labour Force, etc.
- Tax: Income and business tax
- Electoral Role
- Health Services: Medicare, Pharmaceuticals, Medical workforce
- Land Valuation and Land Use
- Social Welfare Services: Unemployment, Disability, Family Support
- Others ...

**Spatial Community**

**Spatial Data Frameworks** – Fundamental Elements

**Themes:**
- Admin. & statistical boundaries
- Addressing, Place Names
- Transport, Water
- Land and Property
- Elevation and Depth
- Imagery
- Positioning

**SSF bridge**
How do socio-economic focussed agencies use spatial information?

• Developing policy
• Evaluation of policy
• Administration of Programs with a location factor
  – Contracts based on operations within regions
  – Use of spatial analysis in fraud control
• Reporting
  – By region eg State, Postcode, ABS Statistical Area
  – By electorate
  – Info supplied to ABS for national statistics
Challenges

• How should we geocode socio-economic data?
• What information management practices and infrastructure is required to ensure accessibility and utility, as well as maintaining confidentiality and privacy?
• What is the most appropriate geography for analysis and dissemination of geospatially enabled data?
• How can I convert data between geographies?
• How can we maximise the use of administrative data for national statistics?
## Australian application of SSF

<table>
<thead>
<tr>
<th>Standards &amp; Guidelines</th>
<th>Metadata interoperability</th>
<th>Common geographic boundaries</th>
<th>Data management: geocoded unit record data</th>
<th>Agreed and authoritative geocoding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies, standards and guidelines, covering: confidentiality and privacy, data quality, analysis, dissemination and visualisation.</td>
<td>Developing the interoperability of statistical and spatial metadata.</td>
<td>ASGS – Australian Statistical Geography Standard</td>
<td>Geocode is a NAMF compliant point coordinate and ASGS Mesh Block.</td>
<td>NAMF – National Address Management Framework</td>
</tr>
</tbody>
</table>
Overarching SSF elements

• SSF Steering Committee provides high level guidance and coordination for SSF implementation in the ABS.
• New ABS Geospatial Policy formalises SSF and geospatial requirements for ABS operations.
• New enterprise architecture will be designed to integrate SSF and other geospatial elements.
Agreed and authoritative geocoding

• Australia has a Geocoded National Address File (G-NAF), part of the National Address Management Framework (NAMF).
• However geocoding currently required commercial software and G-NAF licence.
• Also, there are some gaps in coverage and some accuracy issues, so rules and procedures are necessary to code addresses not in the file.
• Sometimes geocoding is necessary when a full address is not available. May only have a suburb or postcode available.
Data management: geocoded unit record data

• ABS is building an address register, initially based on G-NAF, that will be a geospatially enabled frame. Will try to maintain using G-NAF and administrative data sources.

• Policy challenges exist in retaining and storing address and geocode information for households.

• Businesses are now being geocoded.

• Technical work remains to be completed to develop metadata and data management protocols, standards and content.
Common Geographic Boundaries

• ABS has implemented a new statistical geography: the Australian Statistical Geography Standard (ASGS).
• Mesh Blocks are the new stable, small area building block.
• Larger Statistical Area regions are based on population size and functional relationships rather than administrative areas.
• Ongoing task to support the use of ASGS by ABS statistical areas and other agencies.
Metadata interoperability

• Metadata driven processes require full and accurate metadata to a standard.

• ABS will be looking to adopting relevant International Metadata Standard such as ISO 19115 and statistical metadata standards such as SDMX, DDI.

• Work will need to be done to determine how geographic referencing can be correctly represented in the statistical metadata standards. Will involve UNECE - HLG
Standards & Guidelines

- Relevant standards and guidance material is being compiled for reference on the National Statistical Service website. www.nss.gov.au
- ABS will also publish additional guidance material based on internal documentation on this website for reference.
Develop a global framework

UN Economic and Social Council (ECOSOC)

UN Statistical Commission (UNSC)
- ABS Geospatial program review – proposed a global SSF

UN Committee of Experts on Global Geospatial Information Management (UN-GGIM)
- List of nine issues included 'linking of spatial to statistics'

UN Statistical-Geospatial Expert Group (UN SGEG)

UN Statistical-Geospatial Integration Conference
ABS would be happy to meet your agency to discuss or present

For more information
E-mail: geography@abs.gov.au
Visit: www.nss.gov.au