

# ANZLIC Strategic Plan 2020-24

Driving spatial excellence and place-based intelligence across Australia and New Zealand



Geocoded  
Addressing



Administrative  
Boundaries



Positioning



Place Names



Land Parcel  
and Property



Imagery



Transport



Water



Elevation  
and Depth



Land Cover  
and Land Use

# National outcomes we support



Sustainable city and regional development



Efficient and effective government service delivery



Reduced natural disaster and climate impacts on people, property and the environment



Safe and secure water resources



Healthy, resilient and biodiverse natural environment



More productive, efficient and safe built infrastructure



Economic growth and digital innovation



Thriving, diverse and inclusive communities

## Who we are

ANZLIC – The Spatial Information Council is the peak intergovernmental group of senior officials providing leadership on all aspects of spatial service delivery and information.

## Our vision

Spatial capabilities and place-based intelligence drive social, economic and environmental benefits across Australia and New Zealand.

## What we do

ANZLIC achieves its vision for Australia and New Zealand by:

1. **Providing strategic leadership and direction** to achieve a standardised approach for foundation spatial data and capabilities, both within jurisdictions and nationally.
2. **Promoting and advocating for spatial priorities of strategic importance** with both spatial and non-spatial stakeholders and decision-makers across Australia and New Zealand.
3. **Leading collaboration and coordination** on common spatial data opportunities and issues across government, industry and the research sector.
4. **Developing strategy and an annual program of activities** to support accessible, innovative and integrated spatial data and capabilities.
5. **Drawing on international best practice**, such as work by the United Nations Global Geospatial Information Management (UN-GGIM) Committee of Experts and the Integrated Geospatial Information Framework (IGIF)<sup>1</sup>, to strengthen national-level spatial information arrangements across Australia and New Zealand.
6. **Working with the Intergovernmental Committee on Surveying and Mapping (ICSM)** as ANZLIC's delivery arm, to implement spatial data initiatives and drive development and adoption of open spatial data standards.

# Key challenges and opportunities

## Benefits

**Better planned cities and towns** could deliver an **A\$29 billion long-term increase in GDP**<sup>2</sup>

**More efficient land use** could deliver benefits of **~A\$10 billion per year**<sup>3</sup>

**Improved digital innovation** could deliver **A\$315 billion in economic value** over the next decade<sup>4</sup>

By 2030, **increased use of automation and new technologies** could **create jobs and boost national productivity and income by up to A\$2.2 trillion**<sup>4</sup>

**Rapidly growing global space industry valued at US\$350 billion**, with a wide range of downstream applications and spill-overs<sup>5</sup>

## Opportunities

**Integrated place-based intelligence** for city and regional planning, development and decision making, and environmental monitoring and management

### **New and emerging technologies:**

- Internet of Things
- 5G communications
- Artificial Intelligence
- Digital twins

### **Modernised space and spatial capabilities:**

- 3D and 4D foundation spatial data
- New earth observation technologies
- Precise positioning

## Challenges

**By 2030, Australia and New Zealand's populations** are projected to reach **29-31 million** and **5-6 million respectively**, posing significant development and liveability challenges for our cities and regions<sup>6,7</sup>

**A\$40 billion and NZ \$13 billion in infrastructure investment is required** per year across Australia and New Zealand over the next decade to keep pace with demand<sup>2,8</sup>

Without action, road and public transport congestion could **double to cost ~A\$40 billion by 2031**<sup>2</sup>

**Currently, Australia and New Zealand respectively emit 21 and 7.7 tonnes of CO<sub>2</sub> per capita.**

Both countries plan to reduce CO<sub>2</sub> emissions significantly by 2030, requiring significant change across transportation, energy generation, land use, agriculture and energy-intensive industries<sup>9</sup>

**Global temperatures have risen by 1°C above pre-industrial levels.**

Rising temperatures will require increased extreme weather and climate change mitigation<sup>10</sup>










## Spatial sector priority areas

ANZLIC's consultation with key stakeholders identified the following spatial-related challenges across Australia and New Zealand.



# ANZLIC's 2020-24 strategic priorities

	<b>Modernise foundation spatial information and data</b>	<ul style="list-style-type: none"> <li>• Modernise foundation spatial data to 3D and 4D (time) digital formats.</li> <li>• Streamline processes to collect and supply spatial data to users across the full data lifecycle: capture, procure, access, standardise, maintain and value-add.</li> <li>• Enable better data management practices, focusing on governance, privacy and cyber security, discoverability and accessibility.</li> <li>• Drive development and adoption of open spatial data standards that align with and inform international standards.</li> </ul>
	<b>Engagement and collaboration</b>	<ul style="list-style-type: none"> <li>• Partner across jurisdictions and with stakeholders to co-design and implement spatial initiatives.</li> <li>• Collaborate to communicate and advocate for ANZLIC's priorities and the value of spatial information across different sectors and key forums.</li> <li>• Work with the spatial industry to implement the 2026 Spatial Industry Transformation and Growth Agenda.</li> </ul>
	<b>Create insights and influence decision making</b>	<ul style="list-style-type: none"> <li>• Work with industry and research stakeholders to understand end user spatial data needs and opportunities to provide new insights.</li> <li>• Promote the value and importance of spatial data to improve government processes, decision-making and place-based policy with stakeholders and forums.</li> </ul>
	<b>Spatial capabilities for the future</b>	<ul style="list-style-type: none"> <li>• Actively promote diversity and inclusion in the spatial sector.</li> <li>• Work with industry bodies to improve spatial capability.</li> <li>• Work across government and industry to share spatial expertise.</li> </ul>
	<b>Future proofing – R&amp;D and technology</b>	<ul style="list-style-type: none"> <li>• Embrace new approaches and emerging technologies to future-proof spatial information and data.</li> <li>• Support and advocate for spatial research and development activities.</li> </ul>





# How ANZLIC will measure success

	ANZLIC will measure success based on:	What success looks like – Benefits realisation
<b>Modernise foundation spatial information and data</b>	<ul style="list-style-type: none"> <li>Progress to update ANZLIC's FSDF, providing improved discoverability and accessibility for modernised spatial data.</li> <li>Increased development and adoption of open spatial data standards across jurisdictions and within industry.</li> </ul>	<ul style="list-style-type: none"> <li>Foundation spatial data is discoverable, accessible and of the appropriate quality for the broadest possible range of end users.</li> <li>Modernised spatial data is openly available in 3D and 4D formats and complies with open standards.</li> </ul>
<b>Engagement and Collaboration</b>	<ul style="list-style-type: none"> <li>Stakeholder engagement by ANZLIC and its member jurisdictions to share information and collaborate.</li> <li>Increased awareness of the value and potential uses of spatial information.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholders understand ANZLIC's priorities and key initiatives, and vice versa.</li> <li>ANZLIC partners with stakeholders to progress initiatives collaboratively for mutual benefit.</li> </ul>
<b>Create insights and influence decision making</b>	<ul style="list-style-type: none"> <li>Increased use of spatial data to generate insights and inform service delivery.</li> <li>Increased influence by ANZLIC across key decision-making forums.</li> </ul>	<ul style="list-style-type: none"> <li>Improved government service delivery, decision-making and place-based policy via increased use of spatial intelligence.</li> <li>Greater use of spatial data to develop innovative new products and services.</li> </ul>
<b>Spatial capabilities for the future</b>	<ul style="list-style-type: none"> <li>Progress to promote diversity and inclusion and grow and share spatial capability.</li> </ul>	<ul style="list-style-type: none"> <li>A spatial sector that is innovative and collaborative, with a culture of sharing spatial expertise and capability.</li> </ul>
<b>Future proofing – R&amp;D and technology</b>	<ul style="list-style-type: none"> <li>Increased adoption of new and emerging technologies to harness spatial data.</li> <li>Increased progress on spatial data research and development.</li> </ul>	<ul style="list-style-type: none"> <li>Effective collaboration across government, industry and the research sector to deliver new spatial capabilities, R&amp;D and decision-making tools.</li> </ul>

# Major five year initiatives

ANZLIC will progress these initiatives to implement its strategic priorities.

1. **Modernise ANZLIC's Foundation Spatial Data Framework (FSDF)**

Modernise spatial information to increase its accuracy and reliability and adopt 3D and 4D formats (where applicable) to meet emerging user needs. Review the FSDF to ensure it is fit for future purposes.

2. **Digital Twins and Smart Cities**

Support the development of standards based digital twins in accordance with the *Principles for Spatially Enabled Digital Twins of the Built and Natural Environment in Australia*.

3. **Australian Geospatial Reference System (AGRS) modernisation**

Collaborate to implement the Geocentric Datum of Australia 2020 (GDA2020), and introduce new reference frames such as the Australian Terrestrial Reference Frame (ATRF) and Australian Vertical Working Surface (AVWS).

4. **Improved spatial data delivery**

Explore improved, more efficient approaches to deliver spatial information and data across jurisdictions.

5. **Coordinated earth observation data acquisition**

Review existing earth observation acquisition approaches and identify opportunities to reduce costs, collaborate on procurement, achieve whole-of-economy licencing, and leverage new capabilities.

6. **Place names**

Explore opportunities to improve place naming data, including dual place naming.

7. **Space and spatial integration**

Support downstream application of new space and satellite capabilities and data sources to maximise value to information supply chains, particularly for earth observation and positioning.

8. **Stakeholder engagement**

Proactively engage across government, industry and the research sector to communicate the value of spatial data and drive increased collaboration and R&D.

9. **Diversity and inclusion**

Actively lead progress on diversity and inclusion in the spatial sector and within ANZLIC jurisdictions.

10. **Skills and capability**

Identify opportunities to address spatial skills shortages and actively share and grow spatial capability.

# Roadmap for ANZLIC initiatives

	Initiatives	Short term (2020-2021)	Medium term (2022-2023)	Long term outcomes (2024)
1.	<b>Modernise ANZLIC's Foundation Spatial Data Framework (FSDF)</b>	<ul style="list-style-type: none"> <li>Review the FSDF to scope potential alignment with UN-GGIM's 14 fundamental geospatial themes</li> <li>Coordinate development of a transition plan to move to an updated FSDF across jurisdictions.</li> <li>Progress projects on cadastral digitisation, accuracy, terminology, linked rights, restrictions and responsibilities, and cadastral upgrades.</li> <li>Coordinate recapture of coastlines, land borders and territorial sea baselines.</li> <li>Implement 3D data for elevation and imagery.</li> <li>Review standards for rural and urban addressing, including AS4819.</li> </ul>	<ul style="list-style-type: none"> <li>Implement updated FSDF and communicate to stakeholders.</li> <li>Implement digital workflows and virtual aggregation for national datasets.</li> <li>Enable all foundation spatial datasets for 3D and 4D applications.</li> <li>Coordinate foundation spatial data capture to support national-level use cases.</li> </ul>	<ul style="list-style-type: none"> <li>Foundation spatial data is discoverable, accessible and of the appropriate quality for the broadest possible range of end users.</li> <li>Modernised spatial data is openly available in 3D and 4D formats and complies with open standards.</li> <li>The FSDF supports use of spatial data to develop new products and improve service delivery.</li> <li>Foundation spatial data supports both national and jurisdiction-level use cases.</li> </ul>
2.	<b>Digital Twins and Smart Cities</b>	<ul style="list-style-type: none"> <li>Support development and implementation of Australian and New Zealand 3D and 4D Digital Cadastre Data Model and Roadmap for BIM and GIS integration.</li> <li>Support implementation of 3D/4D cadastral data.</li> <li>Support jurisdictional spatially enabled digital twin proof of concept projects and collaboration.</li> <li>Engage with the Australian Data and Digital Council (ADDC) on digital twins and eplanning.</li> <li>Collaborate with stakeholders to develop frameworks, guidance and implementation tools for spatially enabled digital twins.</li> </ul>	<ul style="list-style-type: none"> <li>Coordinate options to share infrastructure for data management and delivery.</li> <li>Develop and implement relevant standards for spatially enabled digital twins, 3D/4D cadastral data, and BIM and GIS integration.</li> <li>Support collaboration across jurisdictions to implement common 3D cadastral data model, standards and transfer protocols.</li> </ul>	<ul style="list-style-type: none"> <li>Spatial data integrates seamlessly with other built and natural environment data.</li> <li>Key stakeholder groups understand the value of spatial data for digital twins and smart cities.</li> <li>Realise the vision of the Cadastre 2034 Strategy.</li> <li>Foundation spatial data can be used to model changes in the physical and regulatory environment.</li> <li>Spatial extents of law are legally recognisable and defensible.</li> <li>More efficient property transactions, enabled by digital, seamless, end-to-end property processes.</li> </ul>
3.	<b>Australian Geospatial Reference System (AGRS) Modernisation</b>	<ul style="list-style-type: none"> <li>Make Australian Terrestrial Reference Frame (ATRF) and Australian Vertical Working Surface (AVWS) available.</li> <li>Coordinate release of foundation spatial data on GDA2020.</li> <li>Progress Survey Marks Enquiry Service (SMES) Proof of Concept.</li> <li>Coordinate scoping of datum change impacts on legislation.</li> </ul>	<ul style="list-style-type: none"> <li>Coordinate collection of tidal observations.</li> <li>Coordinate collection of geodetic observations.</li> <li>Deliver interim Aushydroid model for the Torres Strait.</li> <li>Lead engagement and education of ATRF and AVWS benefits for stakeholders.</li> </ul>	<ul style="list-style-type: none"> <li>Users across Australia have access to a modernised, reliable and fit-for-purpose AGRS.</li> <li>Users clearly understand the benefits of new, modernised datums and have the skills to use them effectively.</li> </ul>



	Initiatives	Short term (2020-2021)	Medium term (2022-2023)	Long term outcomes (2024)
4.	<b>Improved spatial data delivery</b>	<ul style="list-style-type: none"> <li>Support delivery of improved standards and guidance to improve foundation spatial data discoverability.</li> <li>Implement spatial data metadata best practice guide and implementation schemas.</li> <li>Finalise Enhanced Location Value InfrastructureS (ELVIS) Strategy and plan for future improvements and functions.</li> <li>Support initiatives to standardise bushfire and emergency management symbology.</li> </ul>	<ul style="list-style-type: none"> <li>Scope options to improve cross-government shared access to foundation spatial data, particularly for emergency management.</li> <li>Support provision of educational resources on foundation spatial data discoverability standards.</li> </ul>	<ul style="list-style-type: none"> <li>Users can readily discover and access accurate, reliable and standardised foundation spatial data.</li> <li>Users can easily use spatial data and integrate this data with other data to suit their needs.</li> <li>Reduced costs and more efficient spatial data delivery, through more common and joint approaches between jurisdictions.</li> </ul>
5.	<b>Coordinated earth observation (EO) data acquisition</b>	<ul style="list-style-type: none"> <li>Scope options for coordination of national-level imagery.</li> <li>Review current EO data acquisition and licencing arrangements.</li> </ul>	<ul style="list-style-type: none"> <li>Develop options for coordinating EO data acquisition.</li> <li>Publish forward programs for data acquisition.</li> </ul>	<ul style="list-style-type: none"> <li>EO data is accessible, adheres to common standards and is easy to use for downstream applications.</li> <li>Government EO procurement is more cost effective, efficient and collaborative.</li> <li>EO data investment is well justified and costed, maximising value and benefits.</li> </ul>
6.	<b>Place Names</b>	<ul style="list-style-type: none"> <li>Develop policies and approaches for First Nations place naming across Australia.</li> <li>Develop and implement strategy to update the National Gazetteer of Australia.</li> </ul>	<ul style="list-style-type: none"> <li>Implement First Nations place naming policies across all Australian jurisdictions.</li> <li>Progress updates to the National Gazetteer.</li> </ul>	<ul style="list-style-type: none"> <li>Place names in Australia reflect First Nations language and support inclusion.</li> <li>Place name data is useful, accessible and accurate, supporting general use across the Australian and New Zealand economies.</li> </ul>
7.	<b>Space and Spatial Integration</b>	<ul style="list-style-type: none"> <li>Support activities of key entities such as the Australian and New Zealand space agencies.</li> <li>Scope mechanisms to deliver EO and positioning data for end users.</li> <li>Participate in development of Australian Space and Spatial Industry Growth Roadmap 2030, led by SmartSat CRC.</li> </ul>	<ul style="list-style-type: none"> <li>Collaborate with key spatial peak bodies and stakeholders to drive downstream use of space-derived data.</li> <li>Scope necessary standards and mechanisms required to maximise value and use of space-derived data.</li> </ul>	<ul style="list-style-type: none"> <li>Users can easily access and use satellite data and new space capabilities to support activities across government, industry and research.</li> <li>Space-derived data is standardised, reliable and discoverable, maximising value for all users.</li> </ul>



	Initiatives	Short to medium term (2020-2023)	Long term outcomes (2024)
8.	<b>Stakeholder engagement</b>	<ul style="list-style-type: none"> <li>Engage and share information, via ANZLIC and its member jurisdictions, with key stakeholders across industry, the research sector and government.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholders understand ANZLIC's priorities and key initiatives, and vice versa.</li> <li>ANZLIC partners with stakeholders to progress initiatives collaboratively for mutual benefit.</li> </ul>
9.	<b>Diversity and inclusion</b>	<ul style="list-style-type: none"> <li>Advocate for greater diversity and inclusion in ANZLIC jurisdictions and the spatial sector.</li> <li>Assist with measuring changes in diversity and inclusion over time.</li> <li>Share information on diversity and inclusion initiatives and progress in ANZLIC jurisdictions.</li> </ul>	<ul style="list-style-type: none"> <li>Spatial sector capability, innovation and collaboration grows through increased diversity and inclusion.</li> <li>Stakeholders clearly understand diversity and inclusion challenges in the spatial sector and advocate for and achieve change.</li> </ul>
10.	<b>Skills and capability</b>	<ul style="list-style-type: none"> <li>Engage with relevant spatial industry peak bodies to scope spatial skill and capability gaps and potential actions.</li> <li>Advocate for, and share information on, important applications of spatial data, skills and capabilities to build awareness and promote the importance of spatial skills and capability.</li> </ul>	<ul style="list-style-type: none"> <li>Australia and New Zealand spatial capability and expertise continues to grow.</li> <li>Higher productivity, innovation and use of spatial data through improved awareness of the value of spatial data and the spatial sector.</li> </ul>





# References

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## Images

Page 4: NovaSAR Satellite over Australia, Surrey Satellite Technology Ltd

Page 5: Spatial Services, Department of Customer Services, New South Wales

Page 11: National Map, Bing Maps Aerial, Cesium ion

