ANZLIC Strategic Plan 2020-24

ANZLIC launched its Strategic Plan 2020-2024 in March 2020, with several progress reports on implementation of the initiatives for 2020 and 2021 published on the ANZLIC website.

To further develop the roadmap for 2022 to 2024, ANZLIC held a strategy workshop with stakeholders on 23 February 2022. A summary report was developed following the workshop which was used to inform the development of the updated roadmap, which was launched in May 2022.

The updated roadmap outlines priority areas (initiatives and enablers) as follows:

- **Priority Initiatives:** Modernising the Foundation Spatial Data Framework (FSDF); Metadata (included as at August 2022); Digital Twins; and Space and Spatial.
- **Priority Enablers:** Skills and capabilities for the future: Effective collaboration and engagement: and Support improved diversity and inclusion.

This report provides an overview of activities to implement ANZLIC's Strategic Plan between May 2022 and May 2023.

ANZLIC responds to devastating flooding

2022-23 saw another year of intense weather systems across Australia and New Zealand which lead to destructive winds, record rainfall, floods and cyclones.

ANZLIC and ICSM collaborated to share spatial data and support emergency response efforts as follows.

South Australia River Murray high–flow flooding event

South Australia's State Emergency Service, with the help of other emergency service and associated flood hazard and infrastructure agencies and Functional Mapping Support teams, provided geospatial analysis and mapping support to on-ground responses to flood inundation and then targeted recovery throughout the River Murray region as a result of the high–flow flooding event within the South Australian River Murray catchment.

South Australia experienced up to 230 GL/day of water throughout the length of the River Murray in South Australia (highest at Renmark and Morgan) peaking late December 2022/early January 2023.

Since those peaks – momentum has changed towards recovery works and planning towards future events of such nature. LIDAR to fill gaps is being captured and will form the basis of new flood modelling along the river at a finer scale than previous models.

Peak inundation extents have been generated utilising SPOT 6/7 imagery over the entire stretch of South Australia's River Murray with 3 distinct captures targeting the peak flow at stages along the river.

Inundation extent for 2022/ 2023 River Murray Floods around the township of Mannum

ANZLIC responds to devastating flooding (continued)

ToitūTe Whenua Land Information New Zealand (LINZ) Cyclone Gabrielle response

Cyclone Gabrielle hit the northern part of the New Zealand North Island on 12 February 2023 and tracked down the east coast, inflicting widespread devastation. To support the response efforts, LINZ Location Information teams delivered new high-resolution satellite imagery showing Cyclone Gabrielle's impact on the North Island.

Part of the New Zealand Government's emergency response, the satellite imagery is available to the public via the Basemaps and LINZ Data Service online platforms.

The imagery covers about one-third of the North Island and provides a detailed, birds-eye view of post-cyclone damage across the Hawke's Bay, Tairāwhiti and Tararua districts.

LINZ worked closely with the Ministry for Primary Industries, Hawke's Bay Regional and Gisborne District councils, and the National Emergency Management Agency to understand which data would be most useful to cyclone recovery efforts. The resulting satellite imagery was valuable to government agencies, farmers, community groups and industry boards. Users were able to view the impact of flooding and landslides on infrastructure and communities which supported analysis and decision making during the emergency.

The new satellite imagery complements an earlier release of aerial photography commissioned by Hawke's Bay Regional Council and captured via aeroplane - also available via the LINZ website.

Before and after satellite views of the devastating impact of Cyclone Gabrielle

MODERNISING THE FSDF: Administrative Boundaries

Objectives for 2020-2024:
- Reinforce the Australian Bureau of Statistics' current Australian Statistical Geography Standard as the national Administrative Boundaries theme that reflects the location of people
- Continue to make Administrative Boundaries data openly available

- Australian Bureau of Statistics published new Australian Statistical Geography Standard (ASGS) Ed 3 Urban Centres and Localities, Significant Urban Areas, and Section of State geographies on 5 October 2022 and new Remoteness Areas in March 2023.

Remoteness Areas viewed on ABS Maps

- The Department of Industry, Science and Resources (DISR) published quarterly updated versions of Geoscape's Administrative Boundaries on data.gov.au in February 2022, May 2022, August 2022, November 2022, and February 2023.

- ICSM Members provide ongoing support and data to the Australian Bureau of Statistics, Geoscience Australia and Geoscape Australia.

Next steps in 2023

- The Australian Bureau of Statistics and Geoscience Australia will continue to collaborate to update the FSDF Link website.
- DISR will continue to publish Geoscape's updated Administrative Boundaries data quarterly in May 2023, August 2023, and November 2023.

MODERNISING THE FSDF: Buildings and Settlements

Objectives for 2020-2024:
- Collaborate with stakeholders to develop a standard for a buildings dataset as a new theme in the FSDF, consistent with the UN-GGIM

- New Zealand delivered the **Property Spine – Proof of Concept**, a collaboration between Toitū Te Whenua Land Information New Zealand and Tatauranga Aotearoa Stats NZ. The Proof of Concept demonstrated that dwellings can be effectively connected to a central property register developed by LINZ. This project will support the New Zealand Administrative Data Census in 2028.

- Victoria launched a new **Vicmap Buildings** 2D and 3D spatial product in December 2022. The collection includes data that is state-owned, as well as data licensed from commercial providers, to achieve state-wide building model coverage at varying levels of detail.
    - LOD0 – showing 2D building outlines (See image)
    - LOD1 – showing building outlines and heights extruded.
    - LOD2 – showing building outlines with heights extruded and roof details.

Vicmap Buildings

- NSW began the first phase of formal user testing of the new **eComply digital compliance tool**. Designers are adapting their 3D house designs to meet the eComply 3D model standard and submit them for digital assessment. The new tool will cut weeks off the approvals process and reduce holding costs so work can start on site sooner. The first public release of the eComply tool, planned for early 2023.

- All jurisdictions are supporting the development of the buildings and settlements FSDF theme as part of their Digital Twins work.

Next steps in 2023

- The Vicmap buildings product team are documenting their approach, along with learnings to share with other jurisdictions, to support the development of an approach for interoperability and exchange of 3D buildings data across jurisdictions. Other jurisdictions will share learnings as they develop their spatial digital twins.

MODERNISING THE FSDF: Elevation and Depth

Objectives for 2020-2024:
- Review existing Earth Observation acquisition approaches and identify opportunities to reduce costs, collaborate on procurement, achieve whole-of-economy licencing, and leverage new capabilities

- Geoscience Australia announced the establishment of the **National Space Mission for Earth Observations (NSMEO)**. Now known as the National Space Program for Earth Observation (NSP-EO), the program will grow the capability of the Australian space industry while delivering Australian Earth observation satellites that address critical data needs and strengthen international partners. It will be a whole-of-government effort led by the Australian Space Agency with key partners including Geoscience Australia, the Bureau of Meteorology, CSIRO and the Department of Defence.

- Geoscience Australia continued to lead the **AusSeabed initiative** to support management of Australia's marine jurisdiction and sustainable growth of the Blue Economy. AusSeabed is a collaborative program across Federal and State Governments, the marine hydrographic industry and the university sector to improve the national co-ordination of seabed mapping. Key partners include the Australian Hydrographic Office, Australian Antarctic Division and CSIRO Marine National Facility.
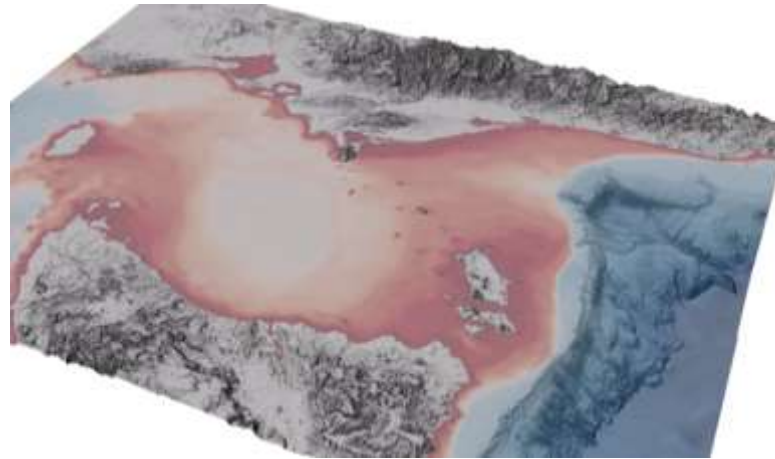
Geoscience Australia's recent seabed map of the Bass Strait shows the area in greater detail than ever before. A video of the seabed mapping can be downloaded from the Geoscience Australia website

- Jurisdictions commenced work to develop a **standardised approach for acquisition and quality assurance of LiDAR and Digital Elevation Models**. QLD is leading a sub-working group of the ICSM Elevation, Depth and Imagery Working Group to undertake this work. In 2022, the sub-working group consulted with industry, commenced the development of LiDAR specifications, undertook an international LiDAR specifications literature review, and submitted a draft structure for EDIWG feedback.

Next steps in 2023

- The EDIWG sub-working group will submit a draft proposal for acquisition and quality assurance of LIDAR and Digital Elevation Models for industry feedback in May 2023 with the final version ready for ICSM endorsement December 2023.

MODERNISING THE FSDF: Geocoded Addressing

Objectives for 2020-2024:
- Develop an updated addressing strategy

- The ICSM Addressing Working Group released the Addressing Strategy 2035 in August 2022. The ICSM Addressing Working Group held a face- to- face workshop in March 2023 to develop an action plan to deliver the Addressing Strategy 2035 and commence the development of a set of guiding principles for a whole-of-government approach for addressing in Australia.

- NSW Spatial Services continues to experience strong support for its **whole of Government address validation, geocoding, and geotagging web services**. These APIs now service over 140 million transactions per annum with NSW Point being used in over 150 online applications across Government. Spatial Services is gearing up for the development and release of its next generation NSW Point API offering.

Next steps in 2023

- The next generation release of the NSW Point caters for new data feeds of customer entered addresses which were unable to be validated. These feeds provide the basis for a new supply chain of addresses directly from NSW government agency customers. The target time frames will see the deployment of some changes commencing in April 2023 with development starting in earnest in July 2023.

- To progress the delivery of the Addressing Strategy 2035, the ICSM Addressing Working Group will deliver communications, a review of the addressing supply chain, governance policy framework, and an addressing standards review by June 2023.

MODERNISING THE FSDF: Geology and Soils

Objectives for 2020-2024:
- Collaborate with stakeholders to develop a standard for a geology and soils as a new theme in the FSDF, consistent with the UN-GGIM
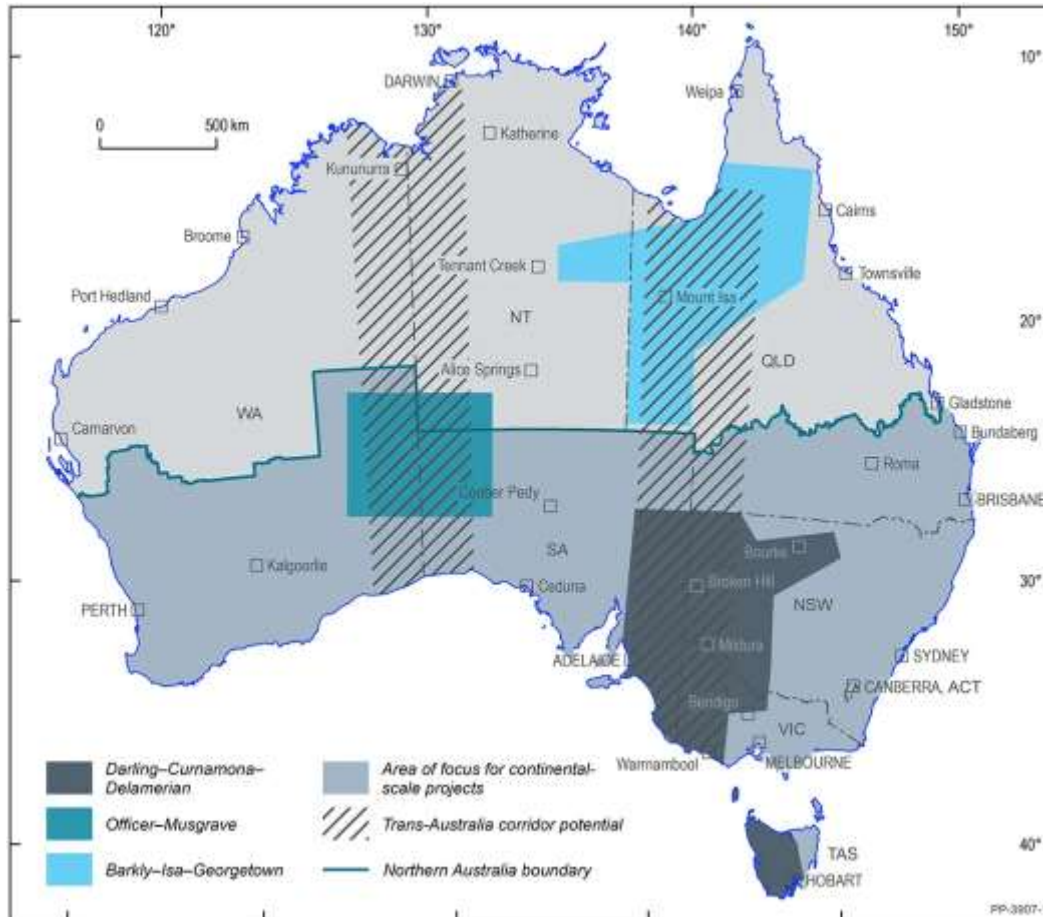
Exploring for the Future Project activities during the current Exploring for the Future program (2020–24)

Exploring for the Future Program
- Geoscience Australia continued to implement the Australian Government's $225 million Exploring for the Future program. This initiative improves our understanding of Australia's mineral, energy and groundwater potential. The program started in 2016 with an initial four year term and due to its success was extended in 2020 until 2024. Geoscience Australia presented on the value of precompetitive geoscience in an inaugural program showcase in August 2022. By gathering and analysing geological and geophysical data and making the results publicly available, the program supports Australian Government priorities including the transition to net zero, regional development and informed decision making across Australia, resulting in jobs and growth.

Next steps in 2023
- Geoscience Australia will hold another online public showcase of the Australian Government's Exploring for the Future program on 15–17 August 2023. The 2023 showcase is a free online event, where Geoscience Australia's senior leaders and geoscientists will share the latest program activity, scientific results and precompetitive geoscience outputs with the minerals, groundwater and energy sectors, state/Northern Territory and Australian Government, collaborators and the public.

MODERNISING THE FSDF: Imagery

Objectives for 2020-2024:
- Develop guidance on approaches for imagery data

- The ICSM Elevation, Depth and Imagery Working Group (EDIWG) finalised the development of an **Imagery Statement of Direction**. The Statement of Direction looks ahead to 2030 as the first milestone for EDIWG's "100-year roadmap for imagery." In this period, EDIWG has prioritised activities to resolve significant challenges in the management of geospatial imagery, informed by a broad network of professionals across industry and academia. The Statement of Direction will be publicly released soon.

- New South Wales completed **13 requests for emergency flood capture across NSW** in Nov/Dec 2022.

- Geoscience Australia entered a **6-month subscription agreement with ICEYE**, to provide flood impact information for the 2022-23 high-risk weather season which was made available to State and Territory Emergency Services to support decision making in response to flood events.

- Queensland released a detailed, **high quality LiDAR survey of the Fraser Coast region** covering an area of 8,161km2. This data is now available to the public for purchase. Formats include LAS, DTM, DSM, 25cm Contours and Canopy Height Model.

- Victoria developed a three year Aerial Photography Acquisition Plan from 2022–2025 to provide refreshed imagery across the state at varying levels of frequency to meet demand.

- The Vicmap Spatial Services team launched a **new satellite tasking service** to help emergency services track and respond to events. This service was used to capture imagery of flooding over townships on the Goulburn and Campaspe Rivers. The satellites were able to be tasked within twelve hours and images were made available for download within four hours of a successful capture.
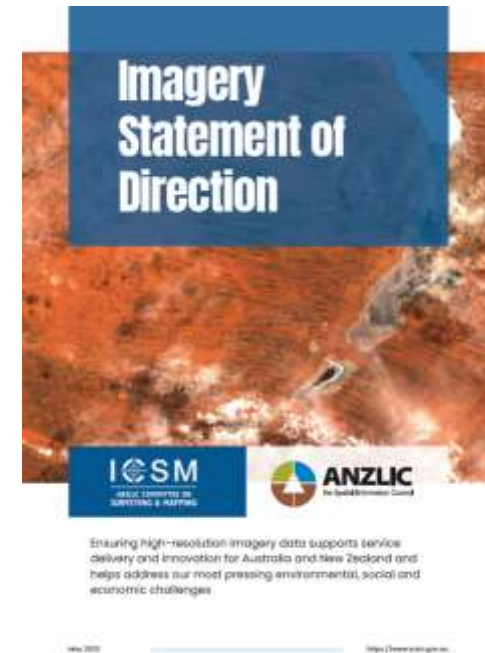
Next steps in 2023
- Following the release of the Imagery Statement of Direction, the ICSM Elevation, Depth and Imagery Working Group will provide a imagery roadmap which will explore opportunities to pool resources across jurisdictions.

MODERNISING THE FSDF: Land Cover and Land Use

Objectives for 2020-2024:
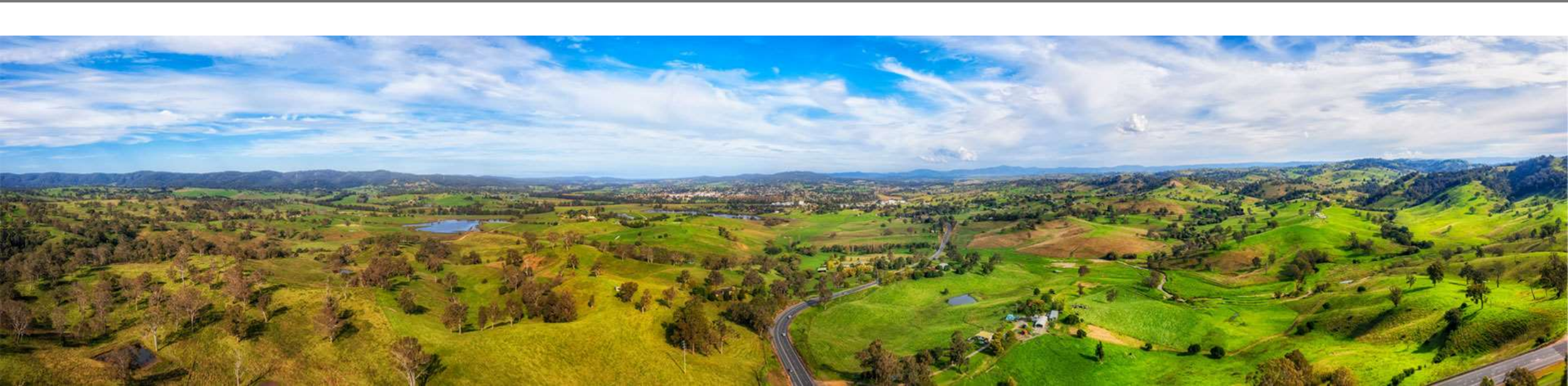- Make access and discoverability of land cover and land use datasets easier for users

Photo: Taras Vyshnya, Shutterstock

- Geoscience Australia has included land cover data from Digital Earth Australia in the **Digital Atlas of Australia**. The Digital Atlas will be an interactive, secure and easy-to-use online platform that brings together a range of trusted national datasets for the first time. It will harness the power of near real-time and historic location-based data to put powerful insights at your fingertips and help build a better Australia. The internal prototype of the Digital Atlas was released for select government users in December 2022.

Next steps in 2023
- Geoscience Australia will release the Digital Atlas as a beta prototype by June 2023.

MODERNISING THE FSDF: Land Parcel and Property

Objectives for 2020-2024:
- Progress digitisation of cadastres nationally and support their evolution towards 3D and 4D based on a new national standard

- The ICSM Cadastre Working Group published a [Standard for the Accuracy of Spatial Cadastres in Australia and New Zealand](#). The Spatial Cadastre establishes targets and a reporting framework for acceptable Positioning Uncertainty for the horizontal position of parcels within Spatial Cadastres.

- The ICSM Cadastre Working Group initiated phase 2 of the **Australia and New Zealand 3D Cadastral Survey Data Model (3D CSDM)** which will include: a new funding agreement with participating jurisdictions; implementation of the model to test ability to extract jurisdictional data into a JSON file and ability to feed back to jurisdictions; and development of a roadmap to extend the JSON standard to encompass 3D.

- New South Wales concentrated efforts to remediate the accuracy of the **Digital Cadastral Database** for flood impacted Local Government Areas (LGAs) across the state. So far, the team has upgraded the accuracy of 16,127 flood impacted and neighbouring land parcels across 17 LGAs.

- New South Wales has updated the **spatial representation of cadastral and administrative boundaries** to align with the agreed spatial representation of the NSW-VIC State border.

- **Victoria's Digital Cadastre Modernisation Project** is well into delivery stage with 30% of land parcels from the State (approximately 1 million) now having been spatially uplifted and delivered back into Vicmap for customers to use.

- Queensland has been working with the Inland Rail owners Australian Rail Track Corporation for the past two years to upgrade the **spatial accuracy of the Inland Rail corridor** to 0.1-1m for over 300km from the QLD/NSW border to Kagaru.

- Landgate WA is undertaking preliminary planning for the **Next Generation Spatial Cadastre** that will provide a contemporary 4D system for managing and maintaining the state's spatial cadastral data and provide the critical enabling dataset for the proposed Spatial Digital Twin.

Next steps in 2023

- The ICSM Cadastre Working Group will launch the Standard for the Accuracy of Spatial Cadastres at the Locate Conference 10-12 May 2023.
- Victoria have now published improved data for 16 LGAs to Vicmap with other 15 LGAs in progress. It is estimated that the integration of all LGAs within the Melbourne Metropolitan Area will be completed by the end July 2023.

MODERNISING THE FSDF: Physical Infrastructure

Objectives for 2020-2024:
- Collaborate with stakeholders to develop a standard for a physical infrastructure dataset as a new theme in the FSDF, consistent with the UN-GGIM
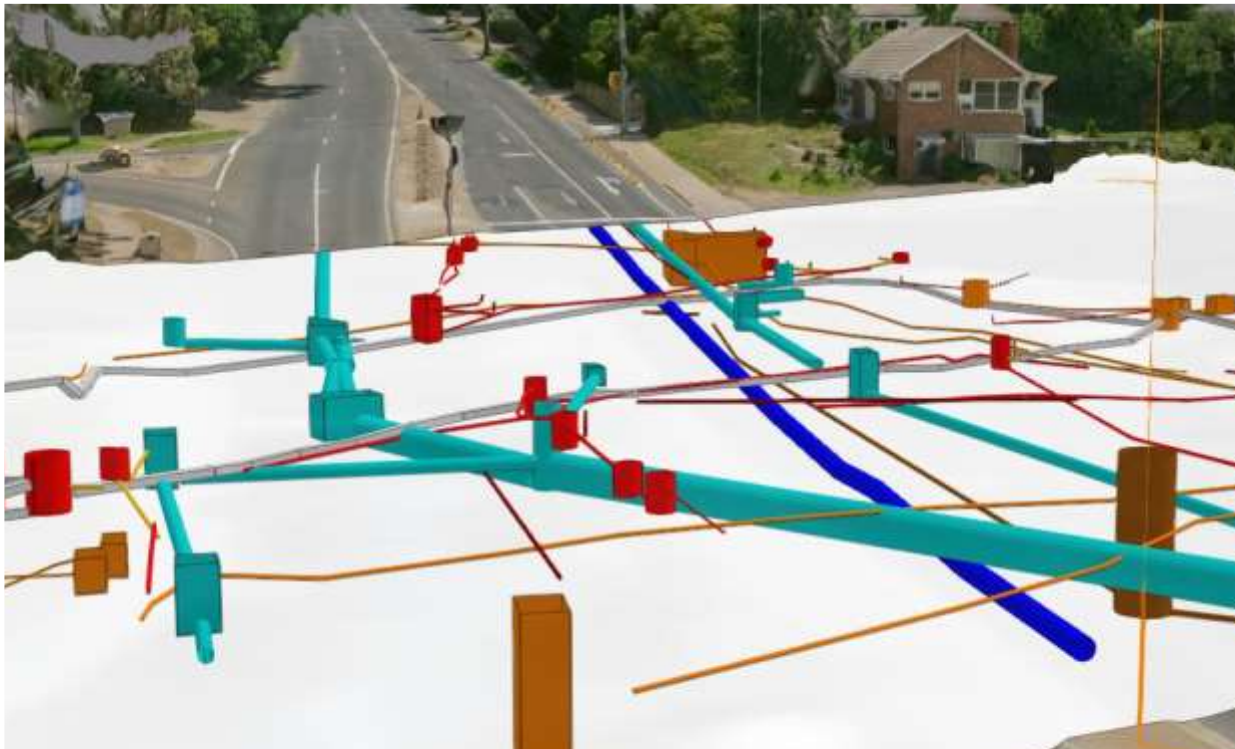
Source: Digital Twin Victoria

- Victoria collaborated with stakeholders to develop the **Digital Twin Victoria (DTV) Utilities Proof of Concept**. DTV Utilities has reduced duplication in data creation and validation, as well as allowed for better decision making and better collaboration. In partnership with Victoria's Big Build and Before You Dig Australia, the project piloted an industry-first, government-led portal that will streamline access to utility information for major infrastructure projects in Victoria. This will ensure the data developed during these projects can be reused.

- Victoria and New South Wales are progressing development of the **Physical Infrastructure FSDF Theme** by leading Australia's spatially enabled digital twin work.

Next steps in 2023

- Victoria is working towards a first production release of DTV Utilities by June 2023.

MODERNISING THE FSDF: Place Names

Objectives for 2020-2024:
- Explore opportunities to improve place names data, including dual place naming

- ICSM Place Names Working Group is developing a **Place Names Strategy.**

- Australian Jurisdictions have increase their updates to the **Composite Gazetteer of Australia** through automated data loads.

- The ICSM Place Names Working Group has reviewed the current content of the **Composite Gazetteer of Australia** to identify areas of improvement. Ongoing maintenance of the feature type catalogue, including technical edits is underway to support publication as a linked data vocabulary

- In October 2022, the ICSM Place Names Working Group held a workshop on collecting and recording **indigenous place names**. The workshop noted expectations and challenges, and opportunities for education and managing expectations.

- Western Australia has worked with the Rottnest Island Authority to progress the **dual naming of Wadjemup / Rottnest Island**.

- In Tasmania, 10 Aboriginal and dual names were approved in the **2022 Aboriginal and dual naming calendar**.

- New South Wales is currently updating the **NSW Place Naming Policy** (due for completion by late 2023), progressing the development of an **Aboriginal Place Naming Policy** for NSW (due for completion in 2024), and creating a **dual names web map** (there are currently 45 dual names assigned in NSW with six under consideration).

- Ngā Pou Taunaha o Aotearoa New Zealand Geographic Board released its Annual Report 2021/22. The Board considered more than 3,000 place names in 2021/2022 and the annual report is available in both English and te reo Māori.

- The Vicmap team completed a **Natural Language Machine Learning Project** focused on the identification of indigenous place names and gender classification of place names and road names. This project enabled capability building in the use of machine learning, open-source algorithms, and Chat GPT technology. The project's findings demonstrated an 80% cost reduction in language classification tasks using a machine learning approach, and potentially a 99.5%+ reduction of time and cost using GPT4.

MODERNISING THE FSDF: Place Names (continued)

- Victoria released the [Finding Her](#) website - an initiative by Gender Equity Victoria and supported through sponsorship by the Department of Transport and Planning. Finding Her maps the location, and stories behind commemorative naming of women including for roads, localities, and features such as buildings and statues.

Next steps in 2023

- ICSM Place Names Working Group will: finalise the Place Names Strategy; continue to improve the Composite Gazetteer of Australia (through: ongoing improvements in jurisdiction's data supply; holding a focus group to define, report on and coordinate a more active approach to improvements; and develop a national vocabulary that aligns jurisdictional status and currency terms to enable data matching); and will finalise and republish its Australian principles and guidelines of Australian place naming document.

- Australian Capital Territory aims to produce an Open ACT Gazetteer by end May 2023 and will adopt the new Gazetteer categories natively within the database by end of this financial year. Place names staff are working on new renaming and co-commemoration policies.

- The 2023 Toitū Te Whenua LINZ Geospatial Virtual Field Trip for schools is called 'Our place names: The Maniapoto story'. All the field trip material including videos, a Google Earth tour, background material and online quizzes will be available from 15 May 2023. School students will travel online to Maniapoto King Country in Te Ika-a-Māui North Island to discover the stories and reasons behind Ngāti Maniapoto place naming throughout this area with Shane Te Ruki (member of Ngā Pou Taunaha o Aotearoa NZ Geographic Board).

MODERNISING THE FSDF: Population Distribution

Objectives for 2020-2024:
- Promote the availability of the Australian Bureau of Statistics' spatially enabled population data
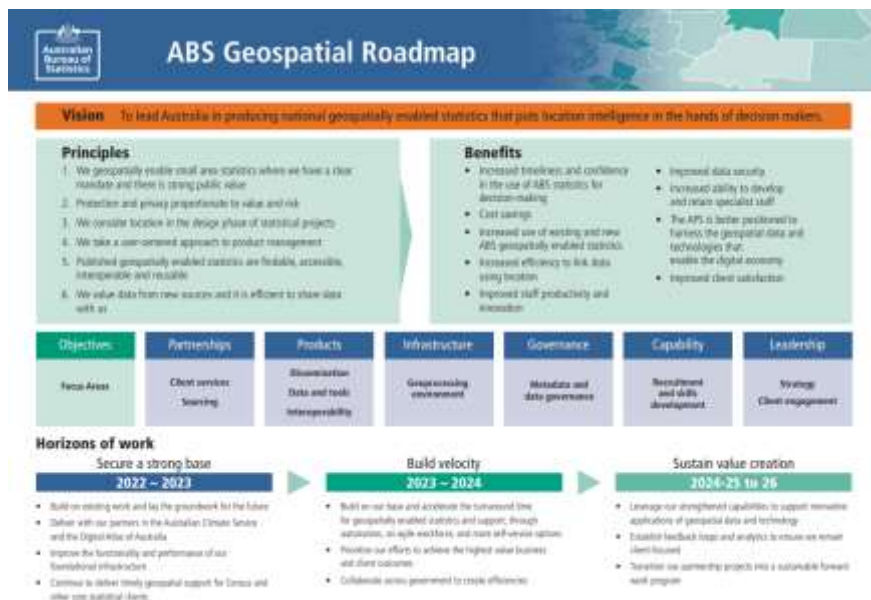
- The Australian Bureau of Statistics (ABS) developed a [Geospatial Roadmap](#) to inform the strategic direction for Australia's future location data, technology and capability for the next five years. Over 100 stakeholders participated in interviews and workshops, and a further 243 survey respondents.

- The ABS are delivering priority **data via web services** that will be available in the Digital Atlas of Australia.

- The ABS released the [2021 Census of Population and Housing](#) data in a staged approach in June 2022, October 2022.
  - Geopackages are now available and link Census data with Australian Statistical Geography Boundaries for spatial analysis.
  - ABS developed Geospatial Web Services of selected 2021 Census data.
  - New updated Estimated Resident Population data has also been released which rebases population statistics from the last Census, updated with quarterly estimates of births, deaths, overseas and interstate migration.
  - New Agriculture Census data is also now available and provides information about agriculture production, land and water use.

Next steps in 2023

- The ABS will release the final stage of the 2021 Census of Population and Housing data in April 2023. The April release will include complex topics that require additional processing such as distance to work and socio-economic indexes for areas.
- ABS will release a Data by Region update in June 2023.
- ABS will release 2021 Census GeoPackages combining ASGS Edition 3 Remoteness Areas with Census data on people, families and dwellings in mid-2023.
- The ABS will consider holding a working group to help define the Population Distribution data theme. Statistical agencies in Australia and New Zealand will be asked to contribute.

MODERNISING THE FSDF: Positioning

Objectives for 2020-2024:

- 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)

Australian Geospatial Reference System (AGRS)

- In August 2022, Geoscience Australia and the ICSM Geodesy Working Group published the AGRS Compendium, an authoritative information source which covers 10 years of work upgrading elements of the Australian Geospatial Reference System to improve the accuracy with which geospatial data can be aligned.

Live NSW - NSW Gravity Model

- New South Wales, as part of the Live NSW project, has captured and delivered a state-wide gravity model which will provide a new level of gravity measurement coverage and accuracy. The NSW Gravity Model will provide consistent high quality, high density 2 (2+ km spacing) gravity data across the entire state, that will deliver critical geoscience information to produce improved outcomes for state infrastructure projects and the management of natural hazards and resources. The Live NSW Gravity Model will be captured in five stages.

Next steps in 2023

- The ICSM Geodesy Working Group will continue to work with Cesium to support the GDA2020 datum in Digital Twin platforms.

- Geoscience Australia will continue to engage with geospatial vendors (including QGIS and ESRI) and standards organisations (ISO, OGC and Standards Australia) to ensure upgrades to the AGRS (e.g. GDA2020, ATRF2014) can be used in software.

- New South Wales will complete the NSW Gravity Model project, including capture and delivery via NSW government online portals by December 2023.

- Geoscience Australia coordinated Victorian geodetic airborne gravity data collection will be finalised in September 2023. Data collection will then commence over Greater Adelaide. Final data products over both regions will be delivered to Geoscience Australia in December 2023.

- Initial State-wide quasigeoid models will be delivered to Victoria, South Australia and New South Wales as data collection progresses. The computation of a new National quasigeoid model is planned to take place between December 2023 and March 2024 for release in June 2024.

- On 1 July 2023, the ACT will officially change over from ACT Grid to GDA2020 MGA z55.

NSW Gravity Model
Areas of Capture
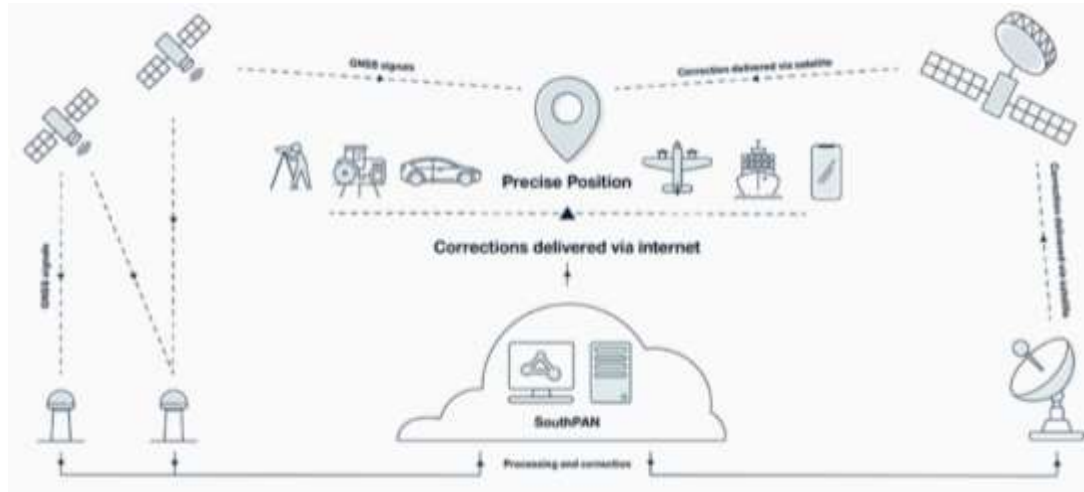
Southern Positioning Augmentation Network (SouthPAN)

- On 26 September 2022, the SouthPAN early Open Services became live.

- The SouthPAN is a joint initiative of the Australian and New Zealand Governments that provides Satellite-Based Augmentation System (SBAS) services for Australia and New Zealand. Geoscience Australia as the Australian Government lead agency, is working in collaboration with Toitū Te Whenua Land Information New Zealand on the development, deployment, and operation of SouthPAN, the first SBAS in the Southern Hemisphere.

- The economic, productivity, social and environmental benefits of improved positioning technology are expected to have a significant effect on agriculture, aviation, construction, consumer, resources, road, maritime, rail, mining and utilities sectors.

- EY has produced an independent economic benefits analysis of the program. This analysis found that accurate and reliable positioning from SouthPAN has an expected value of $7.6 billion over 30 years for Australia and New Zealand.

- SouthPAN early Open Services OS-L1 covers mainland Australia and New Zealand. OS-DFMC and OS-PVS cover both countries' Exclusive Economic Zones.

- On 24 March 2023, the start of SouthPAN infrastructure construction in Aotearoa was marked with an event at the site of SouthPAN's Awarua Uplink Processing Centre near Invercargill in Southland.

Next steps in 2023

- Geoscience Australia and Toitū Te Whenua Land Information New Zealand will integrate additional infrastructure into the SouthPAN (to be completed by early 2024) which will improve accuracy and availability. Full operating capability is expected in late 2028.

MODERNISING THE FSDF: Transport

Objectives for 2020-2024:
- Make national level roads data open available

Source: Geoscape Australia

- Geoscience Australia will include roads data in the **Digital Atlas of Australia**. The internal prototype of the Digital Atlas was released for select government users in December 2022.

Next steps in 2023
- Geoscience Australia will release the Digital Atlas as a beta prototype by June 2023.

MODERNISING THE FSDF: Water

Objectives for 2020-2024:
- Make access and discoverability of surface water datasets easier for users

- Geoscience Australia supported **redevelopment of ISO 19152** as a standard to support the electronic declaration of regulations over geographic areas and to provide a mechanism for the seamless administration of rights, restrictions and responsibilities over areas of land and sea. This builds upon work on the International Hydrographic Organization S-121 standard and both are recognised under the UN-GGIM Integrated Geospatial Information Framework as core standards.

- The Bureau of Meteorology have released a new Surface Water website Australian Water Data Service (bom.gov.au) includes updates to Geofabric and National Catchment Boundaries. Geoscience Australia is in discussions regarding datasets that can be consumed into the Digital Atlas.

- The new **ICSM S-100 National Standards Working Group** has been established and is chaired by the Australian Hydrographic Office, with members drawn from both government and non-government organisations. The Working Group has held initial meetings and established its Terms of Reference. The Working Group will take a leadership role in the creation, implementation and oversight of introduction of S-100 based services in Australia by developing documentation, creating national standards and policies, defining roles and responsibilities and controls that will harmonise the Australian e-Navigation data chain.

- NSW is **updating the hydrolines across priority catchments**. Data validation is being completed by agencies in the NSW Water Working Group.

- On 5 August 2022, Geoscience Australia published a modernised Australian Marine Spatial Information System (AMSIS). AMSIS brings together information required for marine planning and specifically in support of proposed areas for Offshore Renewable Energy recently announced by the Hon Chris Bowen MP, Minister for Climate Change and Energy.
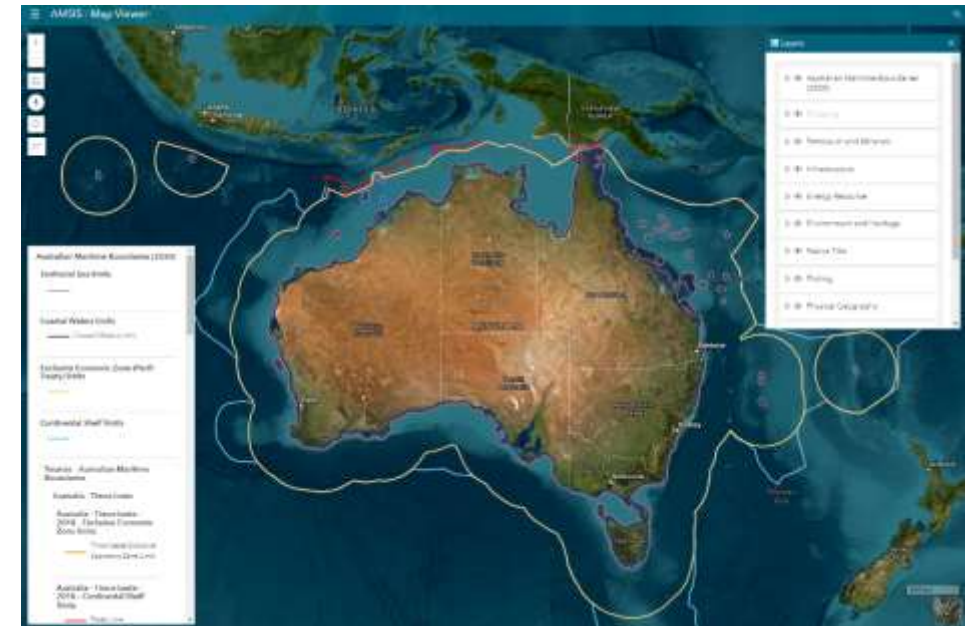
Geoscience Australia's AMSIS map viewer allows users to interactively browse through layers and create a custom map using data curated by AMSIS

DIGITAL TWINS

Objectives for 2020-2024:
- Support program delivery for major digital twin projects
- Facilitate effective collaboration and information sharing
- Support adoption of relevant standards

Bathurst viewed through the Bathurst Digital Twin

- New South Wales is continuing to expand the NSW Spatial Digital Twin (SDT). In October 2022, Bathurst became the first major regional centre in the digital twin. A 4D model for the entire state will be available soon. NSW is also progressing ePlanning through the Property Development Pipeline which implements a seamless, automated supply of proposed subdivision plans between the Planning Portal and Spatial Services, with digitised data returned for use by applicants, referral authorities and certifying authorities.

- The Northern Territory virtual twin was developed in 2022 via a partnership between the NT Government, Secora, Dassault Systèmes and AMC Search. It is a digital planning tool that supports the Australian Defence Force and its allies to plan its requirements for defence infrastructure supply chains, including fuel and logistics, across the Territory. Initially focused on Darwin Harbour, the Virtual Twin has been expanded to multiple locations, including the Gove Peninsula

- The Australian Capital Territory is scoping for a digital twin proof of concept.

DIGITAL TWINS (continued)

- In August 2022, Victoria launched the Digital Twin Victoria (DTV) platform developed as part of the Digital Twin Victoria program. New datasets continue to be added on a bi-monthly basis. In March 2023, the Hon. Sonya Kilkenny, Victoria's Minister for Planning launched the new Vicmap 3D Buildings at a Planning Institute of Australia breakfast for International Women's Day. Delivered through the Digital Twin Victoria program, it brings together high-quality building data, including licenced and open datasets.

- Following the Queensland Spatial Digital Twin Prototype, the Queensland Government is investigating building a spatial digital twin that coves Brisbane, the Gold Coast and the Sunshine Coast. The Department of State Development, Infrastructure, Local Government and Planning and the Department of Resources commissioned KPMG to develop a business case to inform the decision.

- Western Australia is undertaking preliminary planning for a Spatial Digital Twin Platform which will provide a digital, spatially accurate representation of the built and natural environment, with the capability to share, discover, visualise, and analyse data about a specific place, at a specific time.

The Twelve Apostles viewed through DTV

Next steps in 2023

- Tasmania will investigate Digital Twin capability as part of All Hazards Spatial Infrastructure Project that will deliver a rebuilt LISTmap and web services platform. Project timeline is 2023 – 2025.

METADATA

Objectives for 2020-2024:
- Progress the work program that includes data governance, management and metadata and is applicable across all of the FSDF themes

- The **ANZMet Lite v2 metadata tool** is currently in maintenance mode, more users are registering to use the tool. The ICSM Geodesy Working Group is developing a proposal to fund enhancements to the tool.

- The Geodesy Working Group completed the **GNSS metadata profile version 3**. The Working Group reviewed and agreed that the ANZMet Lite v2 metadata tool is suitable to enhance with the GNSS metadata template to enable the GNSS community across Australia and New Zealand to populate consistent metadata.

- Working with the Emergency Management sector on **improving access to Emergency Management data and services** through interoperable metadata.

- The ICSM Metadata Working Group is working with Geodesy Working Group to develop **GNSS metadata profiles and tools**.

Next steps in 2023
- The ICSM Geodesy Working Group plans to table the ANZMet Lite v2 metadata tool funding proposal at the next ICSM meeting.

ICSM
ANZLIC COMMITTEE ON SURVEYING & MAPPING

ANZLIC/ICSM Metadata
Working Group Meeting #10

1-2 June 2022

SPACE AND SPATIAL

Objectives for 2020-2024:
- Support recommendations from the Space and Spatial Industry Growth Roadmap 2023

- ANZLIC participated in the Steering Committee for the development of the Space and Spatial Industry Growth Roadmap 2030 which was launched on 14 March 2023. This roadmap has been developed by Australia's space and geospatial industries. The roadmap outlines nine objectives and associated recommendations aimed at accelerating the growth of these two industries by working together in the national interest.

Next steps in 2023

- A subset of the working group that has overseen the development of the Space and Spatial Industry Growth Roadmap 2030 will transition to become an implementation working group to ensure the ongoing carriage of this important work. The working group will report in to ANZLIC regularly on progress, particularly in relation to the action items that ANZLIC is involved in assisting to implement.

SKILLS AND CAPABILITIES FOR THE FUTURE

Objectives for 2020-2024:
- Support opportunities to address surveying and spatial skills shortages and actively share and grow spatial capability
- Leverage opportunities to advocate for innovative approaches to grow spatial capability
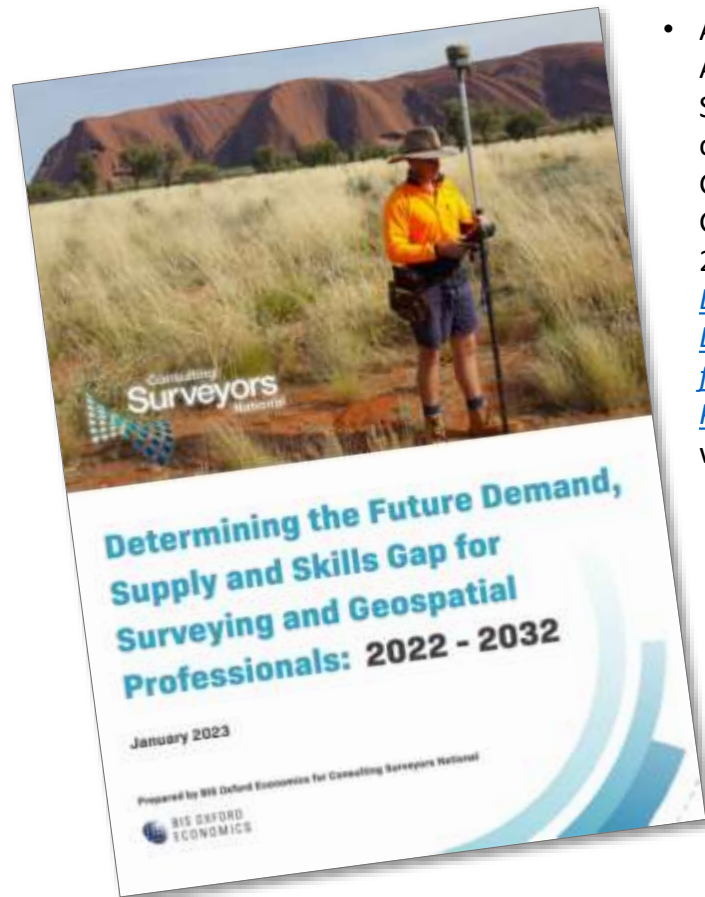
- ANZLIC contributed to the Association of Consulting Surveyors National's research on Demand, Supply and Skills Gap for Surveying and Geospatial Professionals 2023-2033. The report *Determining the Future Demand, Supply and Skills Gap for Surveying and Geospatial Professionals: 2022 – 2032* was released in January 2023.

- New South Wales ANZLIC Member, Narelle Underwood, and Chair of ICSM and Surveyor-General of Victoria, Craig Sandy, have joined the **National Spatial Working Action Group (NSWAG)** representing ANZLIC and ICSM.

- Toitū Te Whenua Land Information New Zealand offered **scholarships of up to NZ$5,000 for students commencing GIS-related tertiary courses** in 2023.

- In February 2023, CRSBANZ has released its **National Competency Standard for Registered Licensed Cadastral Land Surveyors**.

- Victoria conducted a review of their **Registered Licensed Cadastral Land Surveyors licensing process**.

Next steps in 2023

- CRZBANZ will finalise the development of a training curriculum to support the National Competency Standard for Registered Licensed Cadastral Land Surveyors.
- CRZBANZ will build on Victoria's licencing process review to develop a national licensing process.

SUPPORT IMPROVED DIVERSITY AND INCLUSION
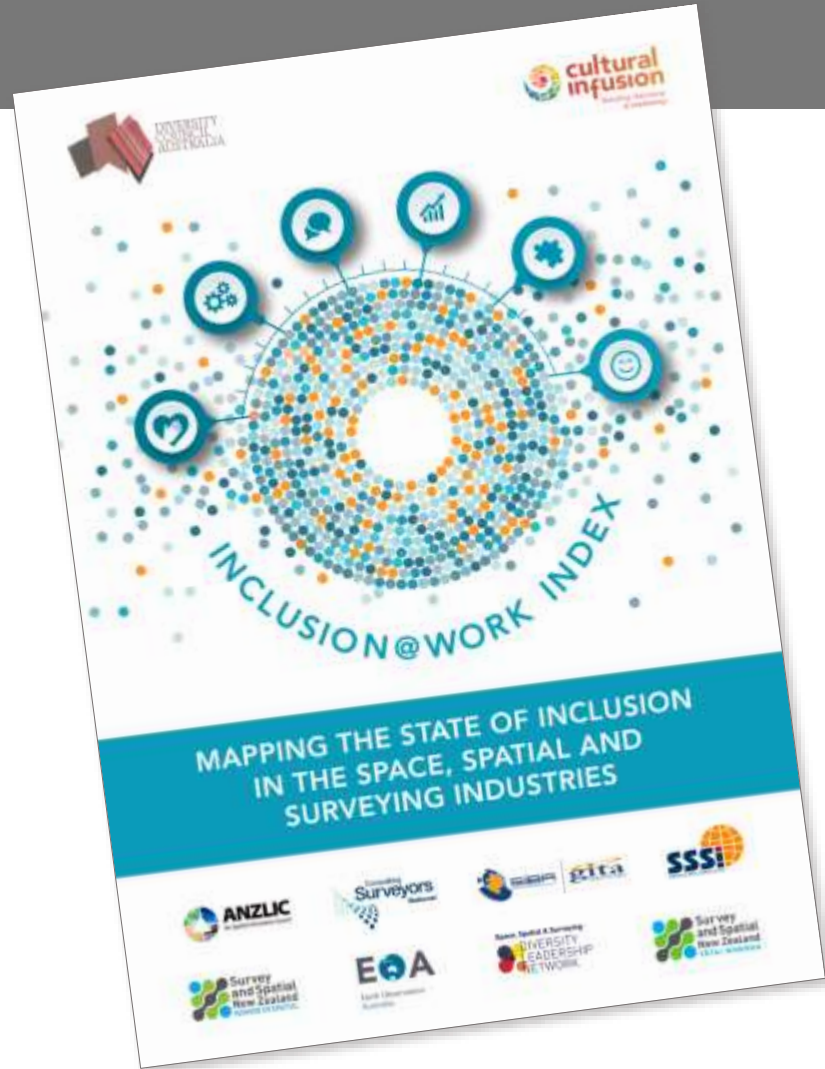
- ANZLIC collaborated with peak industry bodies to develop the Space, Spatial and Surveying Inclusion@Work report published in July 2022.

- ANZLIC encourages members of the spatial community to sign up to the Space, Spatial and Surveying Diversity Leadership Network (SSS-DLN) Diversity and Inclusion Accord.

EFFECTIVE COLLABORATION AND ENGAGEMENT

Objectives for 2020-2024:
- Collaborate with stakeholders across industry, the research sector and government to drive spatial data outcomes
- Advocate to raise awareness of the value of spatial data and for spatial data priorities to be progressed

Notable events that ANZLIC supported between May 2022 – May 2023 are outlined below.

Events	Location	Date	Comment
Locate Conference 2022	ACT	24 - 26 May 2022	ANZLIC and ICSM Members attended the Conference and the meetings and networking events surrounding the. ANZLIC Chair, Melissa Harris, presented at a plenary session on ANZLIC's strategic priorities and update on the national roadmap.
South Australia Spatial Information Day	South Australia	August 2022	ICSM presented.
ANZLIC meeting	Virtual	31 Aug 2022	The ABS presented to ANZLIC at its meeting on 31 August 2022 on the role that the ABS plays in supporting FSDF datasets and themes, and to discuss options for ABS and ANZLIC to strengthen their partnership.
Queensland Digital Twins presentation	Virtual	5 Oct 2022	QLD and FrontierSI presented on the QLD Digital Twin.
Digital Twin Victoria (DTV) platform showcase	Virtual	13 Oct 2022	Over 450 people from around the world attended the DTV platform showcase which included demonstrations of the platform and eComply regtech tool, new data imagery and partnership opportunities.
11th session of UN-GGIM	Hyderabad, India	14 Oct 2022	Representatives from Geoscience Australia attended the 11th session of the United Nations Committee of Experts on Global Geospatial Information Management for Asia and the Pacific.
SSSI conference	Queensland	14 Oct 2022	NSW ANZLIC Member presented.
SSSI conference	Victoria	27 Oct 2022	Victoria included an ANZLIC update in one of their presentations.
New Zealand Property Spine Proof of Concept	Virtual	28 Oct 2022	The New Zealand Toitū Te Whenua (Land Information New Zealand) and Tatauranga Aotearoa (StatsNZ) demonstrated their proof of concept on the New Zealand Property Spine.
SSSI conference	NSW	10 Nov 2022	NSW ANZLIC Member presented.