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# Growing Regional Geospatial Capabilities: Cultivating Growth and Opportunity

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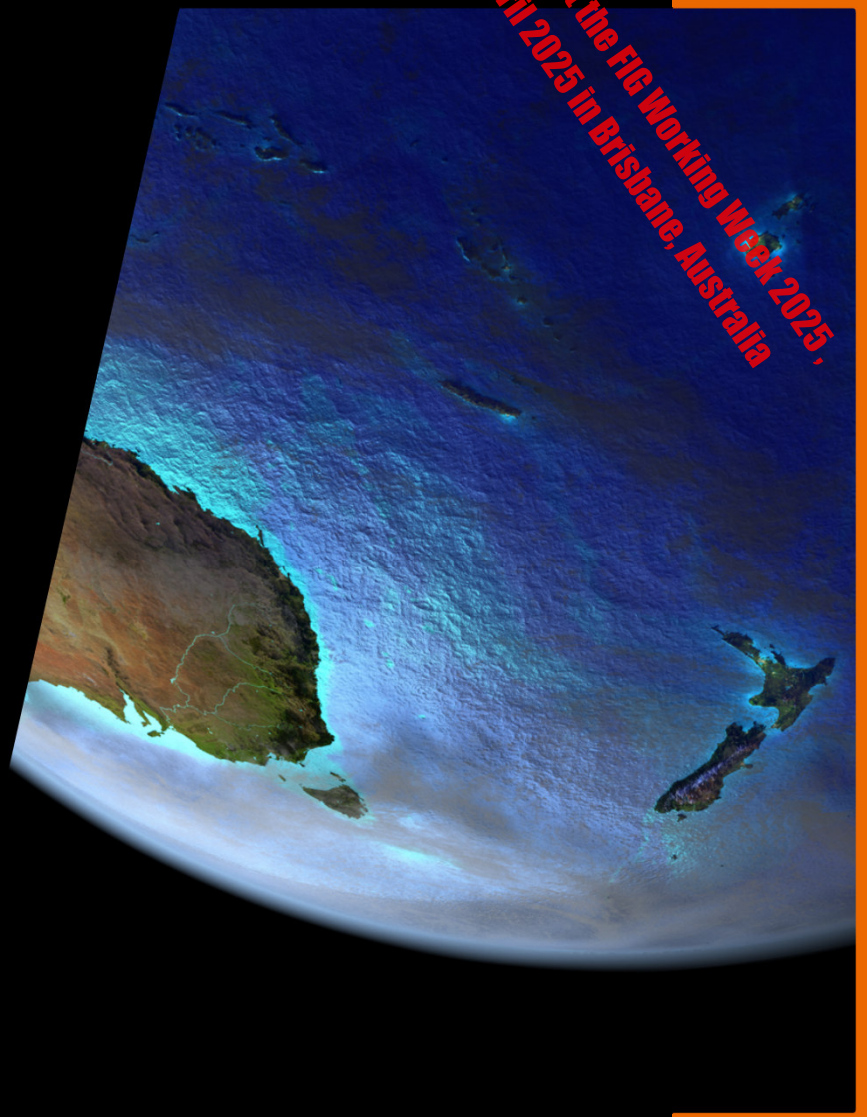
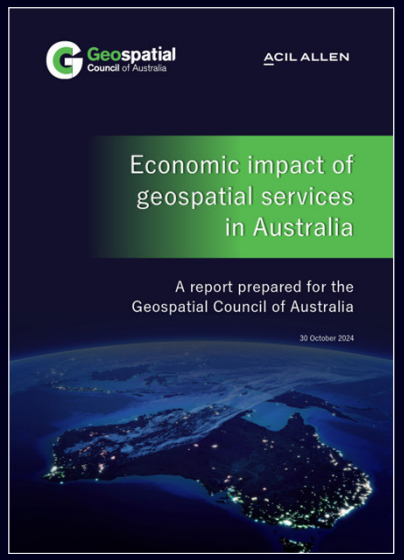
Locate 25 - April 2025

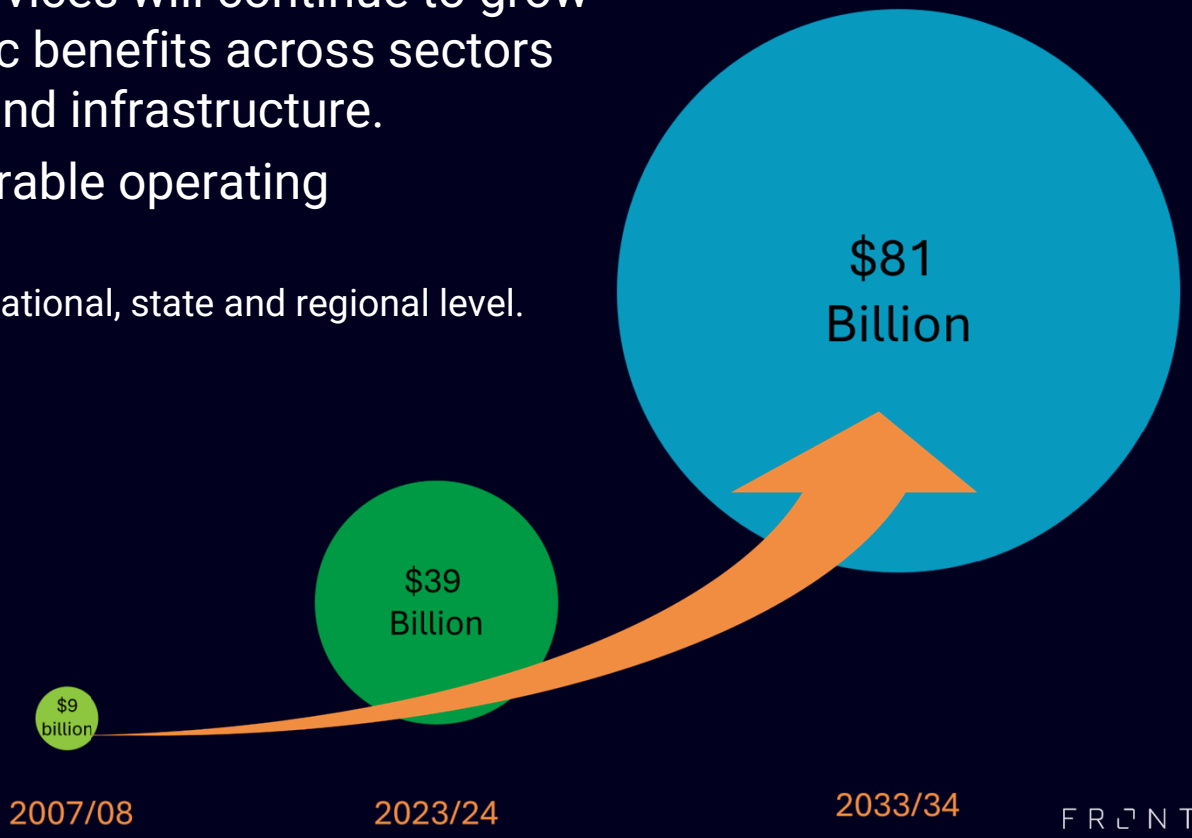


*Everything happens somewhere, solutions happen here.*

# GROWING VALUE OF GEOSPATIAL TECHNOLOGIES

- 2024 Geospatial Council of Australia (GCA) report estimates that geospatial services will continue to grow and offer increased economic benefits across sectors such as mining, agriculture, and infrastructure.
- Growth is subject to a “favourable operating environment”.
  - Policy and program initiatives at a national, state and regional level.

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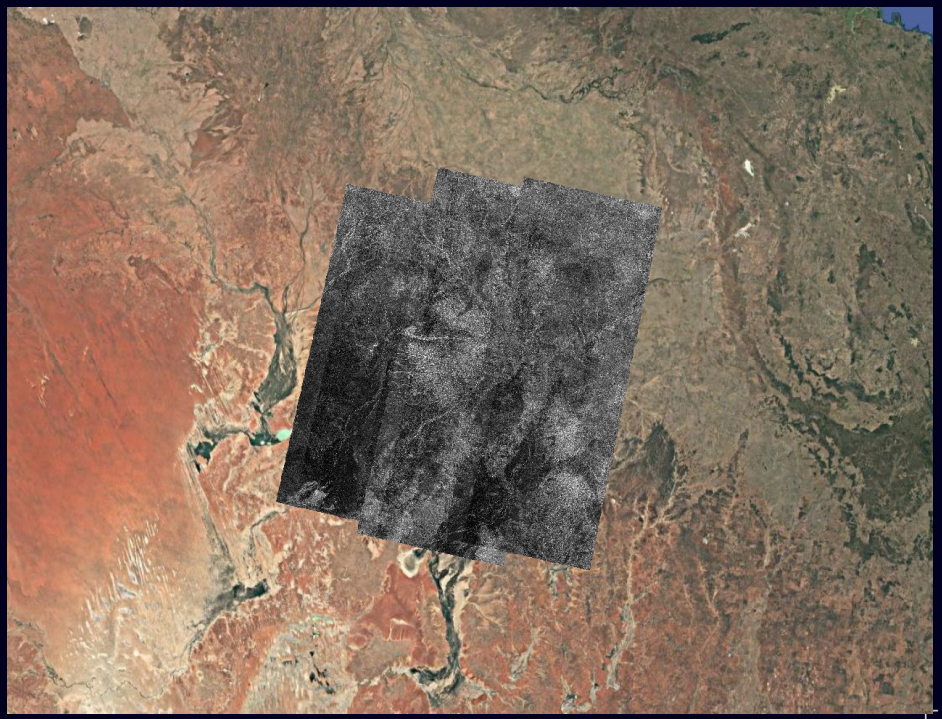
# THE REGIONAL POTENTIAL

- Value of geospatial in regional Australia is significant, offering increased economic benefits across sectors such as mining, agriculture, and infrastructure.
- Challenges include:
  - Digital divide
  - Skills gap
  - Infrastructure gaps
- But the opportunities include:
  - Economic growth and job creation
  - Advancing priority sectors
  - Building regional capacity and resilience
  - Creating a competitive advantage
- A "**favourable operating environment**" means regional areas need to proactively build capabilities and engage with these technologies.



NovaSAR images and processing contributed by Matt Garthwaite, CSIRO

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# KEY FACTORS FOR SUCCESS

- Focus on high-value and priority industries
  - Agriculture, mining, infrastructure, decarbonisation and tourism are high-value problem domains for geospatial solutions
  - Prioritising the right industries ensures best return on investment
- Leverage Research and Local Expertise
  - Engage with regional research and education institutions, and local business knowledge to help define challenges, opportunities and solutions
- Foster collaboration and Partnerships
  - Creating and sustaining a collaborative ecosystem between businesses, universities and government.

**Farmacist** is a Mackay based company with over 40 professional staff that utilises satellite data and sensor networks to identify changes in crop performance and produce yield maps.

# KEY FACTORS FOR SUCCESS

- Develop a digital workforce
  - Investment in training and education alongside attracting skilled professionals and “digital nomads”.
- Create enabling policies and attract investment
  - Ensuring regional policies will support digital infrastructure, workforce development and business investment into the region.
- Invest in capacity building programs
  - Investing in small scale projects that demonstrate value, build skills and create momentum and stakeholder buy-in

The **Greater Whitsunday Digital Roadmap** is an initiative designed to enhance digital connectivity, skills and innovation in the Greater Whitsunday region of Queensland, Australia

# ENGAGING WITH REGIONAL [SELECT STATE ▾]

- Access to untapped markets and resources
  - New markets with unique resources and customer problems .
- Direct access to local customers and insights
  - On the ground customer interactions for deeper insights.
- Government and regional support
  - Access supportive government and regional initiatives (e.g. grants, incubators, infrastructure access)
- Participating in emerging collaborative ecosystems
  - Fostering partnerships and collaboration across industries, research, and local communities
- Cost effective operations
  - Availability of lower operational costs, including infrastructure and labor, driving business efficiency and scalability.

Phil Tickle, CEO of **CiboLabs**, taking their pasture management services on the road.

# A REGIONAL GEOSPATIAL HUB MODEL

- A regional strategic initiative
- Designed to drive regional growth, innovation, and digital transformation
- Brings together business, local industries, research and education
- Act as a catalyst for regional development, creating immediate and long-term opportunities
- Goal is to build and leverage geospatial capabilities for economic prosperity

The **Sunshine Coast Testing Tech in Paradise** initiative brings together businesses, researchers and industry leaders to drive a digital investment agenda, including a new Geospatial Intelligence Centre of Excellence initiative.

# A PHASED APPROACH

- Phase 1: Community Building & Capacity Development
  - Promote geospatial with industry end users and raise community awareness
  - Provide services for skills uplift across the region (through education partners)
  - Develop support programs for geospatial businesses
  - Run activities that build community and encourage collaborations
  - Connect regions into broader digital infrastructure (e.g. DEA/DAA)


**FunGIS** is a professional network for GIS users Far North Queensland that provides a platform for people working with GIS technologies to connect, collaborate, share knowledge, and develop their skills.


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# THE QUEENSLAND EARTH OBSERVATION HUB

A joint initiative of SmartSat CRC and Queensland Government

- Enable the Queensland Earth Observation community to grow and succeed.
- Build an active community that drives collaboration and capacity building.
- Engage in the promotion and representation of the Queensland EO industry.
- Create sustainable change in the Queensland Earth Observation industry.

**Exploration & Construction Mining Land Disturbance Monitoring (Copper & Nickel)** is developing a repeatable and automated process to rapidly map land disturbance across copper and nickel mining deposits in the exploration and construction phases, and categorise the type of disturbed area for rehabilitation and regulatory reporting. Partners: GPOne, Flinders University

**NATURAL RESOURCE MANAGEMENT TOOLS FOR INVASIVE WOODY PLANTS IN SEQ** is applying new satellite-based hyperspectral and LiDAR data analytics to develop innovative NRM management tools for mapping and monitoring targeted invasive plants in SE Qld. Partners: Six SEQ councils led by City of Gold Coast, Griffith University, University of the Sunshine Coast, Geoimage.

**Optimizing Cattle Grazing Management through Earth Observation Data** will enhance commercial management tools for Queensland beef producers by leveraging satellite-based Earth observation data and existing livestock GPS tracking data to analyse cattle grazing behaviour, preferences and responses to environmental conditions Partners: Cibo Labs, UQ

**QUANTIFICATION OF CLIMATE RISK ON THE CROP PRODUCTIVITY OF QUEENSLAND SOIL TYPES** provides a pipeline to evaluate risks to productivity performance of different cropping soils under climate change in Queensland through spatially explicit understanding of climate change impacts on agricultural systems. Partners: NGIS, University of Southern Queensland

**VALIDATION OF SATELLITE-DERIVED IN-LAND WATER TOPOGRAPHY MAPS** using Kurloo mass deployable GNSS precise positioning technology. Kurloo data was collected from CSIRO Googong calibration facility and utilised by the AusCalVal facility to improve reliability and accuracy of location spatial analysis. Partners: Kurloo, CSIRO

Hub Sundowner Feb 24

Critical Minerals Oct 23

Agriculture May 24

PostGrad Futures Aug 24

Aust EO Forum Sep 24

Environment Workshop Dec 24

AUDAX AT FIDELIS
Queensland Government

SMARTSAT
COOPERATIVE RESEARCH CENTRE

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# A PHASED APPROACH

- Phase 2: Data Infrastructure and Innovation
  - Create single point access to regionally significant geospatial data and a service marketplace
  - Provide software services that support delivery to end users (dashboards, visual interfaces)
  - Support development of pre-commercialisation products through sandpit infrastructure services
  - Offer hands-on training facilities
  - Provide an immersive visual and sensory space for business and visitor/tourism interaction

The **AgTech Logistics Hub** in **Toowoomba**, Queensland, is a dedicated facility designed to advance digital agricultural technology and logistics, improving the efficiency and sustainability of the agricultural supply chain in the region.


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# VIRGINIA OPEN DATA CUBE HUB

- Cloud hosted geospatial analytical platform built on top of open data cube technology
- Supports the state of Virginia to manage and organise geospatial data for easier analysis
- Localised implementation of open data cube technology
- Readily supports repeatable analysis within a limited study area
- Allows users to develop their own analysis algorithms and workflows
- Businesses manage data, algorithms and services within the cube.

Virginia Tech's Fire Susceptibility Index models wildfire risks with geospatial data using the power of the Virginia Open Data Cube.

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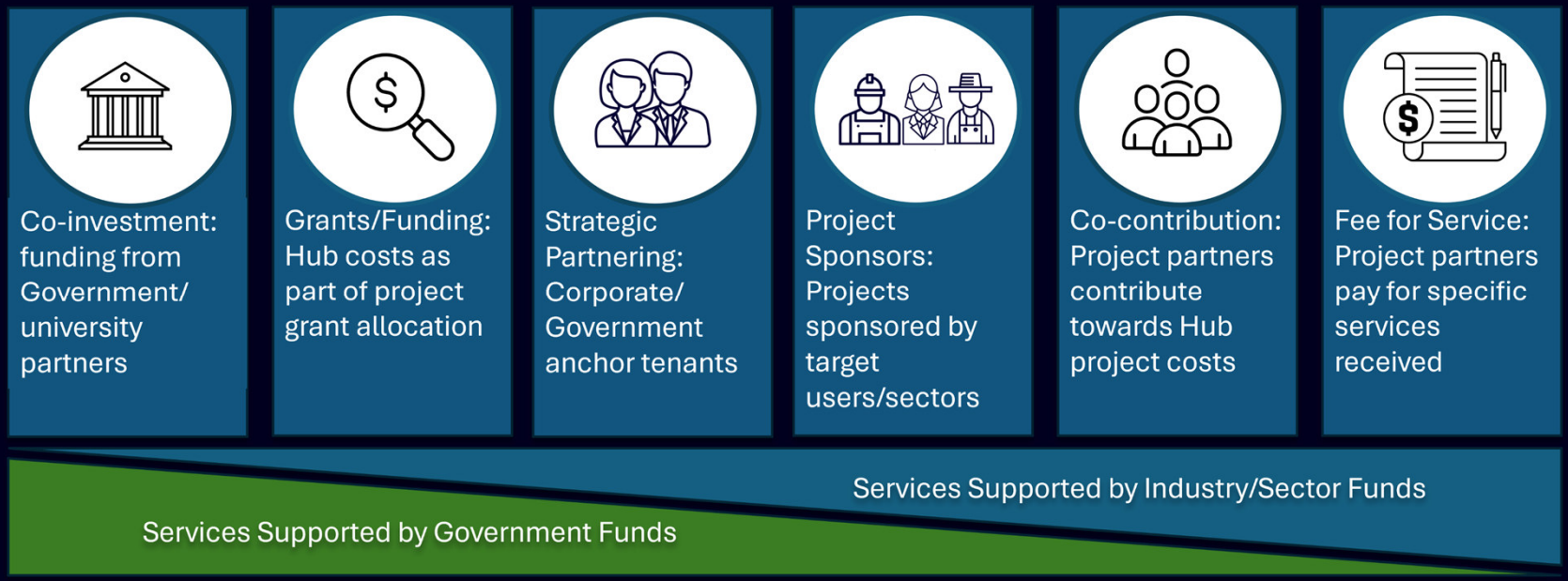
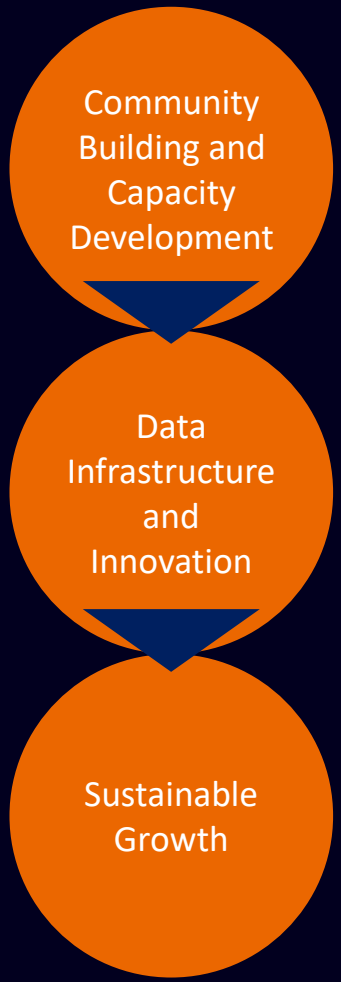
# A PHASED APPROACH

- Phase 3: Sustainable Growth
  - Ensure ongoing development through partnerships, funding, and attracting investment




Identification of funding sources for the future National Earth Observation Hub

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# CONCLUSION

- There is significant value and increased economic benefits for encouraging growth in geospatial capabilities and infrastructure at the regional level.
- Key success factors include focusing on key industries, leveraging local expertise, developing a digital capability, attracting investment and investing in seed programs.
- Implementing a geospatial hub model is one approach for building this capacity and realising the benefit.
- Regional leaders, businesses, and the research/education community need to actively engage in and support the development of regional geospatial capabilities for long-term economic growth and innovation.

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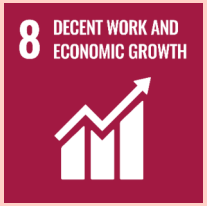
# FOCUS ON THE PROBLEM, NOT THE TECHNOLOGY

Realising the potential of EO lies in the ability to look beyond the type of sensor, the name of the provider, the kind of satellite and look deeper into the problems that can be solved with EO, and the impact that it can have.

- Aravind Ravichandran, Terrawatch Space

# The most relevant SDGs related to the presentation and theme of this session

1st relevant SDG




2nd relevant SDG


3rd relevant SDG


SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals

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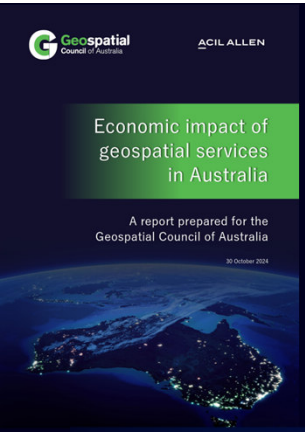
# More Reading







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## Acknowledgements


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## Contact


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