

# QUEENSLAND, AUSTRALIA

Your next space supply chain

The A\$8 million *Queensland Space Industry Strategy* was launched in 2020. This sets the course for the state's space industry to be recognised as a leading centre in Australasia for launch activities, ground systems, Earth observation, niche manufacturing, robotics and automation for space.

## Queensland is an industry powerhouse with strategic geographical advantages

**Strategically located to support global space activities, Queensland is:**

- › **the perfect place for launch**—world-leading hypersonics research and development (R&D), Australia's most advanced launch vehicle developers, east coast location with access to multiple orbits including equatorial
- › **nation-leading in Earth observation (EO)**—home to largest share of EO enterprises in Australia and deep R&D
- › **ready to host ground stations** with protected radio-free regions with clear skies, high-speed internet, an international broadband submarine cable and the ability to scan Australasia and the Pacific
- › **a world-class developer of robotics and automation** in extreme environments
- › **close to Asian markets** and has large-scale support industries.



**An industry powerhouse, Queensland has:**

- › **a world-class aerospace supply chain**—leading Australia in aircraft manufacturing and repair
- › **more than half of the world's top 10 aerospace companies**
- › **advanced manufacturing industry** contributing A\$20 billion per year to the state's economy
- › **world-leading mining and robotics** ready to support off-world asset management
- › **globally recognised research institutions** with generous R&D tax offsets
- › **advanced manufacturing and defence supply chains** (substantial Australian Defence Force (ADF) footprint, including R&D).

**Queensland is ready to support the world's space needs with a space economy that:**



is growing at

**7 per cent per year**



supports

**2,000 jobs**



generates

**A\$1.26 billion**

A\$760 billion revenue / A\$500 billion value added to Gross State Product

Find out more at  
[qld.gov.au/space](http://qld.gov.au/space)



**Queensland  
Government**

# Queensland's strengths

Queensland is Australia's second largest state at 1.7 million square kilometres (twice the size of France), a population of 3.5 million and an economy of A\$360 billion (comparable to Finland).

Queensland has the most dispersed population of any Australian state with wide-open spaces and direct access to large regional cities to support space industry activities. Queensland has five international airports and numerous large industrial ports with excellent connection to rail and road networks.

## LAUNCH

Queensland is on Australia's east coast near the equator. The state has Australia's highest concentration of aircraft manufacture and repair services, and nation-leading launch vehicle developers (Gilmour Space Technologies, Black Sky Aerospace and Hypersonix). Along with a proposed space launch facility being developed at Bowen in North Queensland (20° south).

## GROUND SYSTEMS

Queensland has protected radio-free regions earmarked for ground station development, high-speed internet and an international data cable.

## EARTH OBSERVATION

Australia's largest share of earth observation enterprises are based in Queensland, developed through industries as varied as mining, agriculture and tourism.

## SPACE SYSTEMS

Through Queensland's mining, advanced manufacturing and aerospace industries, Queensland is a world-leader in robotics, mining remote asset management and advanced composites.

## Queensland space activities

### Launch

- › launch vehicle development
- › location to launch into multiple orbits: Low Earth Orbit (LEO) (inclined and potentially polar) and Geosynchronous Equatorial Orbit (GEO) and Geosynchronous Transfer Orbit (GTO)
- › ideal conditions and international connectivity to support ground station activity.

### Space-enabled services

- › Earth observation data analytics
- › launch vehicles and propulsion technology
- › autonomous systems, artificial intelligence, robotics and machine learning
- › communications
- › Position, Navigation and Timing Space systems (design and manufacture).

## An industry supported by world-class research and development



### The University of Queensland (UQ)

- › Centre for Advanced Materials Processing and Manufacturing
- › Centre for Hypersonics is a world leader in hypersonic technology and reusable rockets
- › Boeing Research and Technology Australia Centre



### Queensland University of Technology (QUT)

- › QUT's Australian Research Centre for Aerospace Automation (now robotics and autonomous systems discipline) played an integral role in building Australia's unmanned aircraft system industry
- › Leading the Asia Pacific with the Australian Centre for Robotics
- › The country's only low-humidity electro-manufacturing dry rooms that support production of commercial-grade lithium-ion batteries



### CSIRO

- › CSIRO's Brisbane facility includes the Queensland Centre for Advanced Technologies for research into autonomous systems, smart mining, advanced aeronautical engineering, defence technologies and data



### University of Southern Queensland (USQ)

- › Institute for Advanced Engineering and Space Sciences has nationally leading applied research and commercial work in composites, hypersonics, robotic vision in uncontrolled environments and astronomy
- › Mount Kent Observatory is part of:
  - › MINERVA-Australis project – exoplanet observation follow-up for the NASA space telescope Transiting Exoplanet Survey Satellite (TESS)
  - › Shared Skies Partnership – collaboration with the University of Louisville, Kentucky, USA, which conducts frontline research into stellar magnetic activity and exoplanet survey
- › Wind tunnel for supersonic and hypersonic testing



### Griffith University

- › Specialises in artificial intelligence, computer image processing and robotics through its Institute for Integrated and Intelligent Systems
- › Advanced Design Prototyping Technologies Institute combining micro and nanoscience and design for additive manufacturing of space systems, including satellites.

# Queensland is leading the way with innovative new facilities and partnerships

## ROBOTICS, AUTOMATION AND ADVANCED MANUFACTURING

- › The Queensland Government has partnered with Boeing to establish the company's largest autonomous systems development and manufacturing program outside the United States, including the Loyal Wingman which will team with jet fighters.
- › Queensland was chosen to house Australia's first Defence Cooperative Research Centre for Trusted Autonomous Systems, a \$101 million initiative.
- › The Queensland Government has established a test facility for large-scale autonomous aerial systems (Queensland Flight Test Range) and contributed to the establishment of a facility to test marine technologies, unmanned systems and sensors (Reefworks).
- › The Queensland University of Technology is home to the Centre for Robotics.

## LAUNCH VEHICLE DEVELOPMENT

- › Queensland is home to several hypersonic wind tubes and tunnels at the University of Queensland and the University of Southern Queensland.
- › Rocket Technologies International in partnership with the University of Southern Queensland has developed a static rocket engine testing facility to support launch vehicle development.

## GROUND SYSTEMS

- › Thanks to Queensland's advanced resource industry and the Queensland Government's fibre optic network, Queensland has protected radio free areas with high-speed Internet access.
- › Queensland's Sunshine Coast has established Australia's fastest telecommunications connection to Asia, and the second fastest to the United States, via a new international submarine cable.

## EARTH / SPACE OBSERVATION

- › The University of Southern Queensland is home to the Mount Kent Observatory, which hosts a dedicated exoplanet observation facility and holds collaborative partnerships with global research institutions and space agencies.
- › The University of Southern Queensland has a Shared Skies Partnership with the University of Louisville which conducts frontline research into stellar magnetic activity and exoplanet survey.
- › Earth Observation Australia, Australia's peak entity for the Earth observation sector, is based at the University of Queensland and provides services across the industry, government and research sectors.

## Queensland-based companies have the skills to service the space sector

Queensland has a world-class industry base, with expertise in areas such as:

- › aerospace technologies advancement
- › propulsion systems
- › unmanned and autonomous systems development
- › advanced intelligent surveillance
- › data processing
- › advanced manufacturing
- › thermal treatment
- › niche machining
- › advanced composites development.

Queensland also has many companies contracting to national and international defence forces. This means that industry is accustomed to producing products and services of the highest standard and working in a tightly regulated environment.

**Queensland is home to world-class space primes—including Airbus, Boeing, and Northrop Grumman**





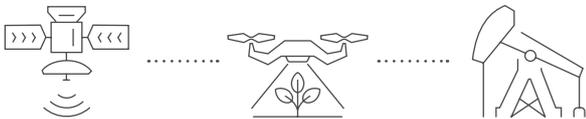
## Our geographical strengths

- › Queensland's position on an eastern seaboard close to the equator, plus its low population density and low radio interference, provides benefit for potential launch activities and ground processing.
- › Queensland is ideally located as a gateway to the Asia Pacific region.
- › An international broadband submarine cable into the Sunshine Coast has boosted the telecommunications speed and capacity of Australia's east coast.



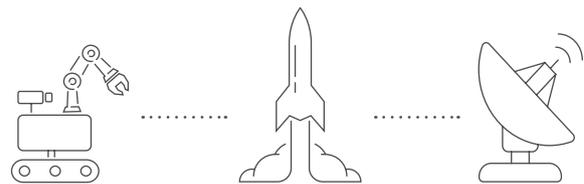
## We're looking ahead to channel space technologies into traditional industries

Queensland has the opportunity to draw on its strengths in sectors like mining, agriculture and tourism and connect them to the space sector. There is significant potential to tap into new markets, such as mining remote asset management and precision agriculture, using our existing knowledge base in conjunction with emerging space research and technologies.



## We're using Queensland's powerhouse industries to drive space activity

Queensland's nation-leading aerospace, defence, remote mining and advanced manufacturing industries are driving new opportunities in the space supply chain.





## Queensland is a place people want to live

The Queensland lifestyle is second to none, with a temperate climate, world-class beaches, heritage listed rainforest, tropical reefs and national parks—the state is the most biodiverse in Australia. Queensland cities are vibrant yet relaxed, and have lower population densities than the national average, providing businesses plenty of room for expansion. Brisbane will also host the Olympics in 2032.

Queensland has some of the lowest payroll taxes in Australia and has affordable housing when compared to other Australian states.

## We support a national vision

The Queensland Government is playing a significant role in the development of Australia's space sector. We have a Memorandum of Understanding to work closely with the Australian Space Agency to attract international industry and support Queensland companies.



For further information, contact the Department of State Development, Infrastructure, Local Government and Planning at [DJQ@dsdilgp.qld.gov.au](mailto:DJQ@dsdilgp.qld.gov.au)