

# Queensland, Australia

## Your next space supply chain



### Strategically located to support global space activities

- **Perfect for launch** — east coast location with access to the equator
- **Ready to host ground stations** with radio free regions with clear skies, high-speed Internet, an international data cable and the ability to scan both hemispheres
- **Nation-leading** in earth observation
- **World-class robotics and automation** in extreme environments
- **Access to Asian markets** and large supporting industries



### An industry powerhouse

- **A world-class aerospace supply chain** leading Australia in aircraft manufacturing and repair
- **Nation-leading mining and robotics** ready to support off-world asset management
- **Home to globally recognised research institutions** with generous research and development tax offsets
- **Advanced manufacturing and defence supply chains**

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 **\$1.26** billion  
in combined revenue and  
downstream value add



Gilmour Space Technologies

### Strong supporting industry

- **More than half of the world's top 10 aerospace companies** are based in Queensland
- **Queensland's advanced manufacturing industry** contributes **\$20 billion** per year to the state economy



# Queensland's strengths—born from industry and an advantageous geographical location

Queensland is Australia's second largest state, spanning 1.7 million square kilometres. The availability of wide open space with easy access to major industrial hubs and regional support centres can support testing and other space-related activities. These hubs have good road and rail access, and Queensland has five international airports.

## LAUNCH

Queensland is on Australia's east coast in close proximity to the equator.

Queensland 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).

## GROUND SYSTEMS

Queensland has protected radio free regions with clear skies, 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, farming and tourism.

## SPACE SYSTEMS

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

## Queensland space activities



### Launch

- Launch vehicle development
- Location to launch into multiple orbits: Low Earth Orbit (polar & inclined) and Geosynchronous Equatorial Orbit



### Ground-systems

- Ideal conditions and international connectivity to support ground station activity



### Space-enabled services

- Earth observation
- Data analytics
- Communications
- Position, Navigation and Timing



### Space systems

(design and manufacture)

- Launch vehicles and propulsion technology
- Autonomous systems, artificial intelligence, robotics and machine learning

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

<b>The University of Queensland (UQ)</b>	» 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	
<b>Queensland University of Technology (QUT)</b>	» 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 Robotic Vision	
<b>CSIRO</b>	» CSIRO's Brisbane facility includes the Queensland Centre for Advanced Technologies for research into autonomous systems, smart mining advanced astronomical engineering, defence technologies and data			
<b>University of Southern Queensland (USQ)</b>	» 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 and a Shared Skies Partnership with the University of Kentucky, USA, which allows remote access to telescopes around the world	
<b>Griffith University</b>	» Specialises in artificial intelligence, computer image processing and robotics through its Institute for Integrated and Intelligent Systems			



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

### SPACE SYSTEMS (ROBOTICS, AUTOMATION AND ADVANCED MANUFACTURING)

- The Queensland Government has partnered with Boeing to establish the company's largest autonomous systems development program outside the United States.
- Queensland was chosen to house Australia's first Defence Cooperative Research Centre for Trusted Autonomous Systems, a \$101 million initiative.
- The Queensland Government is driving the creation of a dedicated test, trial and evaluation site for autonomous systems.
- The Queensland University of Technology is home to the Australian Centre for Robotic Vision.

### LAUNCH VEHICLE DEVELOPMENT

- Queensland is home to two hypersonic wind tunnels at The University of Queensland and the University of Southern Queensland.
- The University of Southern Queensland is proposing to develop a static rocket engine test site to support launch vehicle development.

### GROUND SYSTEMS

- Thanks to Queensland's advanced resource industry and the Queensland Government's fibre optic network, Queensland has radio free areas with high-speed Internet access.
- From 2020, Queensland's Sunshine Coast will deliver 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 and has access to the Moore Observatory satellites in Kentucky.
- Earth Observation Australia 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 systems development
- » advanced intelligent surveillance
- » data processing
- » advanced manufacturing
- » thermal treatment
- » niche machining
- » composites development.

We also have many companies contracting to national and international defence forces. This means our 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 is planned to connect to the Sunshine Coast by 2020, improving the telecommunications capacity of Australia's east coast.



Boeing Australia



Gilmour Space Technologies

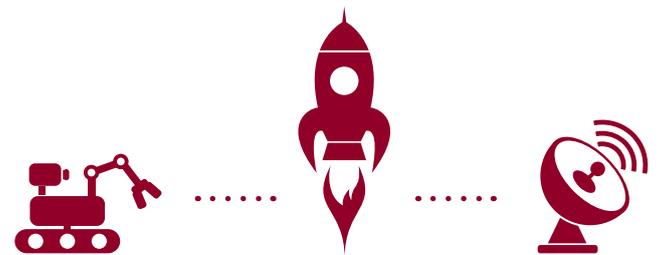
## We're looking ahead to channel space technologies into traditional industries

Queensland has the opportunity to draw on its strengths in sectors like mining and agriculture, and connect them to the space sector. There is significant potential to tap into new markets, such as remote mining operations 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.



University of Southern Queensland

## An industry-focused government

Queensland is a place for industry to collaborate with entrepreneurs, universities, businesses and government to commercialise great ideas. Through our \$755 million Advance Queensland program, we're supporting the creation of high-skilled, tech-focused talent that can feed into Australia's increasingly sophisticated space industry. More information can be found at [advance.qld.gov.au](http://advance.qld.gov.au)

The Queensland Government is also developing a Queensland Space Strategy to strengthen Queensland's space capabilities and open its doors to the world's space economy.



## 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. Queensland cities are vibrant yet relaxed, and have lower population densities than the national average, providing businesses plenty of room for expansion.

Queensland also 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 are working closely with the Australian Space Agency to attract international industry and support Queensland companies.

The Department of State Development, Manufacturing, Infrastructure and Planning is the Queensland Government's lead agency on matters related to the space industry.

## Contact details

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