
MAXAR
TECHNOLOGIES
Inquiry into job creation opportunities in Queensland arising from the establishment of an Australian Space Industry
October, 2018

# Image Credits and Disclaimer Language

# About Maxar - The Power of 'X'


- A vertically integrated, new space economy company including segments across the value continuum for every moment leading up to and following launch
- We lead in satellite communications (building and operating), ground infrastructure, Earth observation, advanced analytics, insights from machine learning, next-generation propulsion, space robotics, on-orbit servicing, on-orbit assembly, and protection of space assets through cybersecurity, and monitoring of space systems
- By integrating our leading-edge capabilities, we provide innovative, cost-effective solutions, value for customers, and thus unlock the multiplier effect of our combined businesses

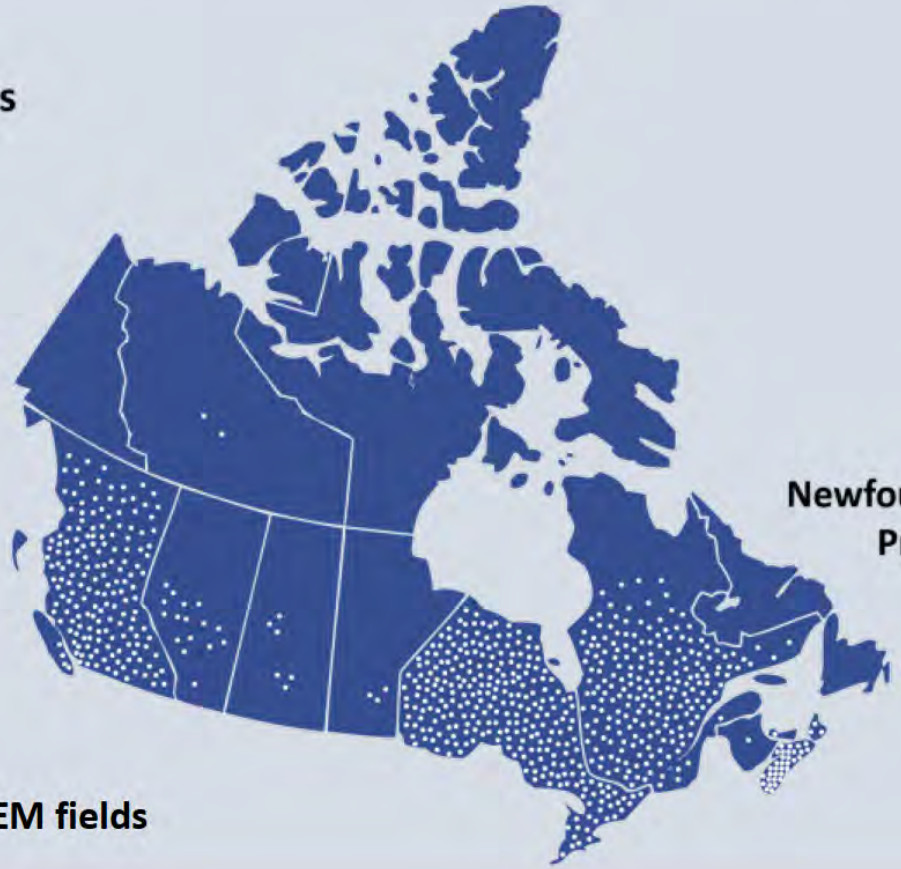
# Case Study: MDA in Canada

# Case Study: Employment Leverage Coast to Coast

**714 Canadian suppliers and subcontractors**

**Yukon**
**Northwest Territories: 2**
**Nunavut**

**British Columbia: 171**
**Alberta: 16**
**Saskatchewan: 6**
**Manitoba: 3**



**Ontario: 269**
**Quebec: 209**
**New Brunswick: 1**
**Newfoundland and Labrador**
**Prince Edward Island: 1**
**Nova Scotia: 36**

**In addition to 1,900 direct jobs in STEM fields**

# Ambition: Replicate the Canadian Success Story

# Growth in New Space Economy recognized internationally as an opportunity for STEM job creation

- Example: United Kingdom
- UK Space Agency Created in 2010
  - Objective to grow its share of global market to 10% by 2030
- Followed similar process to Australia
  - Creation of Space Innovation & Growth Strategy "Space Growth Action Plan"
  - Government response addressing recommendations[1]
- These provide a framework for consideration of the Australian Space Industry Capability assessment and of the Australian Government's response


1) Government Response to the UK Space Innovation and Growth Strategy 2014 – 2030 Space Growth Action Plan APRIL 2014, http://www.ukspace.org/wp-content/uploads/2014/05/Government-Response-Space-Growth-Action-Plan.pdf

# The Australian Opportunity

## - A Thriving Multi-State New Space Economy


### Federal Initiatives

- Agency Creation / Funding
- Research / CRC Funding
- Program Funding

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### State Initiatives

- Cluster Promotion
- Workforce Supply
- Economic Support

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### Industry Investment & Innovation

- Alignment with strategic opportunities
- Technology Development
- Program Capture & Execution
- Startup VC Funding

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**Accelerated STEM Employment**

# The Australian Context

| Summary Assessment[1] | Implications for Queensland |
|---|---|
| No capacity in manufacture of large satellites | Unlikely to become competitive, particularly given weak global demand for commercial geosynchronous communications satellites |
| Manufacture of satellite sub-systems is an emerging capability | Opportunity to become part of global supply chain by focusing on differentiated capability e.g. robotics (elements of on-orbit servicing tool kits), advanced sensor development |
| Expertise in operations, telemetry, tracking and control | Opportunity to apply expertise to commercial earth observation ground station capability enabling economic development of other sectors e.g. mining & agriculture |
| No current launch capability | High capital investment. Multiple established and emerging capabilities, particular for smallsat launches |
| Advanced capabilities in astronomy | Space Situational Awareness is of growing importance. Current operational focus is in Western Australia |
| Strengths in space applications (agriculture, mining, logistics, aviation and communications sectors) | Opportunities for low-capital intensity growth with spin-off benefits to other sectors of the Queensland economy |

1) Australian Space Industry Capability – A Review, Acil Allen Consulting.
https://www.industry.gov.au/sites/g/files/net3906/f/June%202018/document/extra/australian_space_industry_capability_-_a_review.pdf

# Queensland Employment Growth Opportunities

| Summary Assessment | Current Employment | 3-year opportunity |
|---|---|---|
| Manufacture of satellite sub-systems is an emerging capability | The state's (aerospace) aircraft manufacturing and maintenance sector provides over 4,200 jobs across more than 300 enterprises[1]. There is no material satellite sub-system design or manufacturing included in this. | The aerospace skillset provides a strong base to expand into satellite sub-systems and grow employment consistent with the 8% CAGR targeted for the Australian space sector. |
| Expertise in operations, telemetry, tracking and control | Existing Ground Stations that provide command and control of communications satellites are highly automated. Telemetry, tracking and control capability is typically delivered as part of the mission solution. | Creation of a commercial earth observation ground station capability will create a small number of direct employment opportunities but more importantly provide the base capability from which employment growth in Space Applications can be achieved. |
| No current launch capability | No employment at operational capability | TBD depending on ability to gain share of launch market from dominant and emerging players (orbit dependent) |
| Strengths in space applications (agriculture, mining, logistics, aviation and communications sectors) | Minimal current employment. | Significant opportunity of direct employment in space application / analytics fields as well as employment growth from sectors benefiting from efficiency gains. As the primary growth area, will likely drive employment growth in Australian space sector > 8% targeted CAGR. |

1) Queensland Aerospace 10-year Roadmap and Action Plan, Department of State Development, Manufacturing, Infrastructure and Planning.

# Recommendations

1. **Recognize the capability assessment's use of the OECD definition of the "space economy" as the full range of activities and resources that create and provide benefits to human beings in the course of exploring, understanding, managing and utilizing space**
   - **Specifically, significant opportunities are anticipated in techniques for at-scale generation and deployment of actionable insights from space-enabled data collection**

2. **Heed the national space industry strategy of giving importance to emerging frontiers where Australia can leapfrog into future areas of competitive advantage. Conversely be wary all all-encompassing labels of areas of competitive advantage that do not provide sufficient specificity to develop differentiated offerings.**

# Recommendations

3. **Identify and invest in new commercial opportunities for space robotics and/or space sensor capability enabled through leveraging and extensions of capabilities in Queensland's aerospace sector.**
4. **Identify and invest in new commercial opportunities for earth observation enabled applications enabled by Queensland based reception and/or processing capability.**
5. **Identify and invest in new positioning, navigation & timing (PNT) opportunities for earth observation enabled applications enabled by Queensland based reception and/or processing capability.**
6. **Prioritize academic research that require cross-sector collaboration and that promote value in the space and end-use industries.**


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SOLUTIONS
We play at the nexus of the new space economy
Four companies at the intersection of what's new and what's possible. We do what no other single company can by delivering integrated space solutions to solve our customers most complex challenges