



## Submission – Parliamentary Inquiry into Developing Australia's Space Industry

Saab Australia values the opportunity to offer a submission to the Parliamentary Inquiry into Developing Australia's Space Industry.

### Introduction

Saab Australia is a premier provider of Command & Control, Communication, Computing, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) solutions for the Australian Defence Force and civil security community. Saab Australia has a proven track record in the development and integration of complex systems. Saab Australia is a partner of choice for other industry organisations, both Prime and Small to Medium Enterprise (SME), due to our teaming culture and our active program of collaboration with the academic community.

Saab Australia is headquartered in Adelaide and has a significant presence in Canberra, Perth and Melbourne. Saab Australia is part of the global Saab Group that plans to expand its capability in the space sector including a satellite launch of a research payload.

### Saab Australia's Interests in the Space Domain

Saab Australia has quite specific interests in the space domain, predominately relating to the integration of space systems to improve situational awareness. Therefore, we look to utilise our significant skills and experience developed through our C5ISR programs in the delivery of space related solutions. Saab's current areas of interest include:

- Development of Mission Systems to support space command and control solutions and satellite systems integration;
- Development of Situational Awareness solutions by gathering and fusing sensor data, including the application of Artificial Intelligence, from space based systems;
- The application of cyber and physical security to offer product assurance and space asset protection (ground systems and networks);
- The provision of supporting elements to allow sustainment and maintenance of these complex systems; and
- Support and development of our Australian workforce in the acquisition and improvement of skills related to space domain activities.

### Response against the Terms of Reference

#### Development of space satellites, technology and equipment

The narrative around the space industry is dominated by the establishment of the 'visible' elements of the domain; space vehicles and their launch systems. Saab Australia believes that in order to create a more robust space industry, there needs to be a greater emphasis in the narrative on the broader systems of systems, including the ground based elements, support systems and infrastructure.

To this end, Saab Australia suggests that the Inquiry consider the following points:

- Ground systems and their associated sustainment are a key element of any deployed complex system, including those in space;



- The ground and support elements are likely to offer a higher level of Australian industry involvement (e.g. jobs) in the short term due to lower barriers to entry;
- The support elements offer an opportunity for organisations in adjacent industries to participate in the space domain as this allows for simpler translation of existing skills into this new sector (in that such elements are generally less complex than learning how to build and launch space vehicles);
- To support the unique architectural requirements of developing space vehicles and payloads (which will always have limited space, weight and power), support to sovereign industry to develop suitably 'packaged' solutions will be essential; and
- Australian companies in adjacent industries may not consider that their products and skill sets are suited to space-based programs due to a narrow interpretation of the 'space industry'.

**Recommendation:** *Conduct broader industry engagement with technology and engineering companies (and adjacent industries) to highlight the required capabilities and explore how Australian Industry Capabilities can be applied more broadly across the space domain.*

#### International collaboration, engagement and missions;

The space industry utilises strong international partnerships primarily driven by the platform and launch requirements of the space domain. Australia, having limited space operations experience, will need to learn from our international partners (e.g. USA, Japan, Europe etc.) to grow our capability. These collaborations must involve companies with a strong space pedigree as well as those offering niche or adjacent capabilities.

One of the key opportunities is consideration of incentivising collaboration to facilitate knowledge transfer, rather than simply engaging an international supplier to provide products or solutions directly. An excellent example of this in action is the strategic relationship between the UAE and South Korea which entailed building satellites whilst ensuring upskilling and technology transfer to the UAE.

**Recommendation:** *Ensure Australian industry is supported in the establishment, development and growth of sovereign capability by providing a framework that incentivises the engagement of local companies by international suppliers in the delivery of products and solutions.*

The transition of space domain activity from predominately long-term Government controlled programs to agile, commercially orientated missions has heralded what has been termed 'NewSpace' or 'Space 2.0'. Australian industry needs to adopt a similar disruptive mindset when considering how to develop capability for the space domain, both domestically and on the world stage.

**Recommendation:** *Ensure that Australian industry has the skills and support necessary for working in a dynamic manner in the space industry, whilst ensuring that the necessary degrees of engineering rigour and safety discipline are valued and maintained.*

#### Commercialisation of research and development, including flow on benefits to other industry sectors;

The ability for adjacent industries to enter the space domain, and in particular contribute to research and development within the domain, is currently challenging given the technology and skill base requirements. In addition, the pathway for commercialisation of space technologies is not clear and



there is an opportunity to learn from the experience of Defence which has invested in defining and building these commercialisation pathways.

**Recommendation:** *Use the lessons learnt from the Australian Defence community to better define the technology commercialisation pathways, address barriers to entry, and consider the introduction of appropriate support mechanisms for the Australian space community.*

As has been experienced in other industries, the commercialisation of technology in one can lead to opportunities in other adjacent industries. The ability to determine the breadth of application of commercialised space research to other domains represents a future opportunity.

#### Future research capacity, workforce development and job creation;

There are highly capable technical and engineering communities in Australia, however there is significant competition for these skills and resources from other domains (e.g. Defence and Technology industries). As experienced within the Defence industry, the access to appropriately qualified resources in certain job categories is increasingly challenging and increasing participation in STEM careers will be an essential step in addressing workforce need across multiple domains.

Demonstrating the pathway to real careers within the space industry will be imperative. Defining the space specific education pathways that lead to real jobs should therefore be a focus, along with articulating the broad range of skills and roles within the sector. Importantly, informing students that not all future space sector jobs will involve building, launching or operating satellites must be part of this conversation.

**Recommendation:** *Ensure an ongoing focus within secondary schools for the selection of STEM subjects and ensure these programs and their promotion to students include the breadth of scientific, engineering and technical pathways that support the building and sustainment of the Australian space sector.*

There will be further opportunities for adjacent and supporting industries as the Australian space domain evolves. By acknowledging that not all contributors to the space capability will be traditional space companies, we will see technology companies diversify into the space domain. This diversification will not only benefit the outcomes for the space domain. It will also provide sustainability for the industry during times of reduced space related activity as these multi-dimensional companies will be able to better balance their work load across various domains and demand cycles. There must, therefore, be support for industries to:

- (a) Identify the opportunities that the space sector offers; and,
- (b) Translate their current capability into one suitable for the space segment.

**Recommendation:** *Establish a Research and Development/Capability Development stream that looks for sovereign innovation in adjacent industries with transferability to space related systems and supports the sovereign commercialisation process.*

#### Other related matters

The business case for local industry investment into the space domain will continue to be challenging without certainty around future programs. The Australian Government's commitment to the Australian Space Agency is a positive step, however Australian industry will likely need to see this translate into ongoing, real business opportunities and jobs to fully commit.



## Conclusion

The Australian space industry, while currently modest, is undergoing significant expansion to support the Australian Government's aspirations within the space domain. Saab Australia supports this expansion and is actively seeking opportunities to leverage its current capability into the space domain. Saab believes that to achieve and sustain these sovereign space aspirations, it will be necessary for recognised international space companies, local space SMEs and the array of adjacent technology companies to contribute to the industrial base.

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