SIAA Submission
Department of Home Affairs Consultation
Critical Infrastructure Centre

Protecting Critical Infrastructure and Systems of National Significance

September 2020

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INTRODUCTION

The Space Industry Association of Australia (SIAA) welcomes the opportunity to provide input into the Department of Home Affairs (the Department) consultation on protecting critical infrastructure, and acknowledges the Department's specific efforts in reaching out to the Australian Space Industry in order to understand the criticality of space to the national interest.

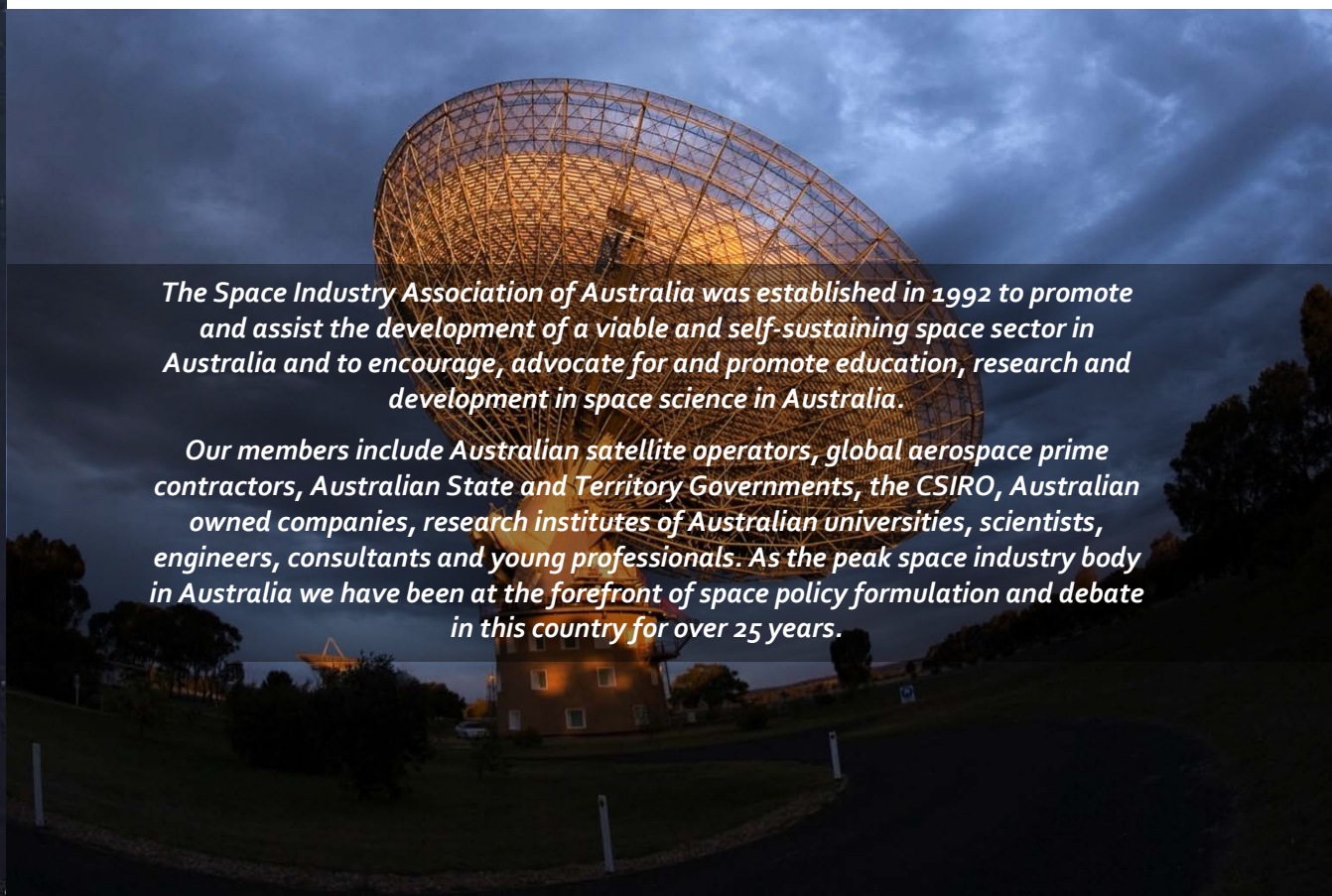
ABOUT US

The SIAA is a national organisation formed to promote the growth of the Australian space industry. We speak with authority and credibility on behalf of our members on policy and commercial issues connected with the Australian space industry. As the peak space industry body in Australia we have been at the forefront of space policy formulation and debate in this country for over 25 years.

The SIAA represents over 750 members, across the entire spectrum of the Australian space community, including satellite operators, global aerospace prime contractors, Australian State and Territory Governments, the CSIRO, Australian owned companies, research institutes of Australian universities, scientists, engineers, consultants and young professionals.

Due to the wide-ranging nature of this consultation, the Department's proposed framework and the potential introduction of far reaching Positive Security Obligations (PSO) SIAA invites the Department to further and ongoing dialogue with industry.

This paper serves as a starting point for more detailed and direct consultations.



The Space Industry Association of Australia was established in 1992 to promote and assist the development of a viable and self-sustaining space sector in Australia and to encourage, advocate for and promote education, research and development in space science in Australia.

Our members include Australian satellite operators, global aerospace prime contractors, Australian State and Territory Governments, the CSIRO, Australian owned companies, research institutes of Australian universities, scientists, engineers, consultants and young professionals. As the peak space industry body in Australia we have been at the forefront of space policy formulation and debate in this country for over 25 years.

COMMENTS ON THE CONSULTATION PAPER

The SIAA acknowledges the Department of Home Affairs taking pro-active steps to safeguard Australian interests. The inclusion of the space sector into considerations is timely and encouraged.

The SIAA concurs with the Department of Home Affairs that SOME of the space industry infrastructure might qualify as 'regulated critical infrastructure' or 'critical infrastructure assets'. However, it is clear to the SIAA that much of the space infrastructure should not fall into these categories. The SIAA notes that space infrastructure is used for very diverse purposes, not all of which are critical in a sovereign security sense. Consequently the SIAA believes that space infrastructure should be examined on a case-by-case basis to determine whether particular space-related infrastructure or assets should qualify as 'regulated' or 'critical' infrastructure assets.

This may also change over time. For example does a satellite asset that only carries commercial traffic and hence is not considered a critical asset suddenly become a critical asset if it begins to carry traffic for the Department of Defence? These issues have significant implications for the satellite operator and others within the space industry and deserve careful consideration. This is not an industry where uniform definitions can be easily applied.

The SIAA recognises the importance of the command and control links for critical infrastructure and believes that the proposed definition for a Space Sector "regulated critical infrastructure asset" as:

"… any ground based critical infrastructure located within Australian jurisdictions related to command and control functions of:

- *Position, Navigation and Timing (PNT)*
- *Space Situational Awareness and Tracking (SSA, Tracking)*
- *Communications Tracking, Telemetry & Control (Comms TT&C)*
- *Remote Sensing Earth Observations from Space (EOS)*
- *Access to Space (including launch services/facilities)*[1]"

may be appropriate. However, the SIAA is very concerned about the sweeping, catch all nature of the proposed definition for "critical infrastructure assets"

"An asset contributing to the production, operation, supply and enablement activities that form the Space value chain."*

** Where Space value chain segments broadly include: Manufacturing and core inputs (Ground and Space segment manufacturing and services); Space operations; Space applications; and enablers (such as essential service delivery, infrastructure and capabilities, research, development and engineering, and specialised support services)*[2]*."*

With such a broad and general definition, the entire Australian space sector would be in scope of the Act. While all those assets not deemed a

[1] *Protecting Critical Infrastructure and Systems of National Significance Consultation Paper, Space Sector Workshop, August 2020* Dept. Home Affairs. (2020), Page 13

[2] *ibid* Page 12

regulated critical infrastructure asset would avoid the impost of Positive Security Obligations, they would however be obligated to accept and facilitate direction from the Commonwealth.

It should be noted that the preparation and ongoing disclosure requirements that come with this assistance is not without considerable cost to the operator.

The SIAA also notes that limiting the classification to purely terrestrial assets may limit the ability of the Department to respond to direct attacks against in space assets. Considering current payloads dedicated to or providing a commercial service to ADF such as the Optus C1 Geostationary Telecommunications satellite or NBN Skymuster (1&2), the SIAA is unsure how the Department's plans capture this segment of the space industry.

These are not straightforward matters and broad definitions can unintentionally encumber space assets that should not be included. Conversely, other key assets may be excluded. The SIAA therefore recommends that the Department of Homeland Security engage with the SIAA to develop a more workable framework to assess critical space infrastructure.

CYBERSECURITY

The Department correctly identifies resilience of the cyber domain as an area of concern to Australian industry; members of the SIAA have noted the recently issued US Memorandum on Space Policy Directive-5 —*Cybersecurity Principles for Space Systems* as worthy of further study specifically for its system of systems view of space in the cyber domain.

As Australia develops and deploys sovereign in space capabilities the SIAA urges the Department to work with the SIAA membership to create and disseminate guidance with respect to standards and practices for securing in space systems (terrestrial and in space) that are scalable, affordable and interoperable with allied states and that do not introduce any more burden upon operators than is reasonable.

While the SIAA does not offer alternate definitions of "critical infrastructure "at this time it does wish to confirm to the Department the willingness of members to work together to understand the operational implications of all tiers of the proposed framework and propose effective definitions and models for cooperation.

CONCERNS REGARDING POSITIVE SECURITY OBLIGATIONS (PSO)

While the SIAA understands the Department's proposed framework, our membership is concerned that should a member find themselves operating what the Department classifies as "Infrastructure of National Significance", the resultant Positive Security Obligations (PSO) may be so burdensome as to put at risk the very infrastructure it seeks to protect.

An example of this may be an operator of a small satellite constellation that provides services to the Commonwealth. While classification of the satellite network as infrastructure of national significance may be appropriate from a threat perspective, the operator, without significant financial and technical support, may be poorly resourced to comply with resultant PSO potentially risking the commercial viability of the operator and hence the delivery of critical services to the Commonwealth.

Further, without appropriate and proportionate financial, technical, and operational support Australian industry may be incentivised to not provide critical service and infrastructure at all, making the reliance of Australians on non-sovereign systems a perverse outcome.

To avoid this outcome the SIAA recommends that the Department consider some form of financial subsidy to assist space operators in making their space infrastructure resilient.

TAKING A TEMPORAL VIEW

The SIAA takes note of the tactical need to develop systems and practices that may be deployed today for assets existing now, and urges the Department to consider strategic threats that may take time to emerge.

As with aviation facilities such as airports, the ongoing security of land based space systems may also need to be considered with respect to zoning laws, local development and exposure to environmental factors to name a few. The gradual but persistent threat of climate change, be it through coastal inundation, increasing frequency of major bushfires or the growing severity of tropical storms, is likely to play a role in any review of land based space systems into the future.

Using the analogy of planning restrictions with respect to airports, it is perhaps prudent for the Department to consider making recommendation to state and local governments regarding:

- criteria to protect assets such as teleports from encroaching urban development,
- reducing or maintaining low radio frequency noise and interference environments, and
- ensuring maintenance of critical civil infrastructure such as power, data and vehicle access.

Further, with respect to developing a resilience culture within the space sector, the introduction and sponsorship by the Commonwealth of studies within Australia's universities and research facilities, and the exposure to the future workforce of resilient security practices in design, construction and sustainment of space systems will go a long way towards security resilience becoming "the norm" for Australian industry.

CALL TO ACTION – ONGOING CONSULTATION

The SIAA is representative of a wide swath of Australian space industry from space applications, research and development, teleport operations, space craft design and manufacture, launch vehicles and services.

This paper touches on only a few points of relevance to the Department - the SIAA invites the Department of Home Affairs to work with the SIAA to further explore the implications of the Department's proposed policies and practices and work together to design, implement and sustain practices, processes and a culture of resilience in the Australian Space Sector.

> ***"…the SIAA invites the Department of Home Affairs to work with the SIAA to further explore the implications"***

SUMMARY OF RECOMMENDATIONS

1. *The Department of Home Affairs should work with the SIAA to further explore and define the definition of critical infrastructure as it pertains to Space.*
2. *The Department of Home Affairs should work with the SIAA membership to create and disseminate guidance with respect to standards and practices for securing in space systems (both terrestrial and in space) that are scalable, affordable and interoperable.*
3. *The impost of the Positive Security Obligations (PSO) needs to be alleviated for small operators, with consideration to be given to the provision of a financial subsidy.*
4. *Consider how all levels of Government can protect assets such as teleports from encroaching urban development, reducing or maintaining low radio frequency noise and interference environments, and ensuring maintenance of critical civil infrastructure such as power, data and vehicle access.*
5. *Support studies within Australia's universities and research facilities of resilient security practices in design, construction and sustainment of space systems.*
6. *Undertake further consultation with key groups such as the SIAA to further explore implications on industry of proposed policies and practices and how to build a culture of resilience in the Australian Space Sector.*

SPACE INDUSTRY ASSOCIATION OF AUSTRALIA

Submission on Protecting Critical Infrastructure and Systems of National Significance

SEPTEMBER 2020