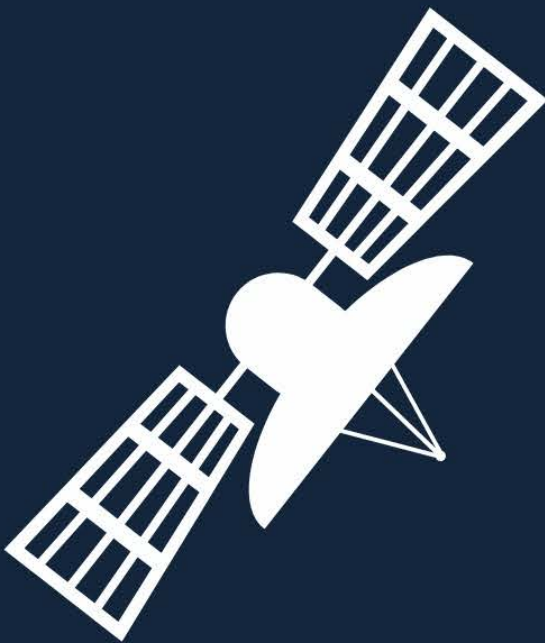


# WRegSAT: Series 1

## Regulatory Challenge

Workshops on the Regulation of Space Activities and Technologies



# WRegSAT I, 2025 Regulatory Challenge

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## Regulating Australian Space Activities – Surveying the Issues

Australia requires a regulatory framework that enables its participation in all space activities consistent with its economic and strategic interests, and the welfare of its people. The regulatory framework should ensure sustainable and safe operations, foster innovation, align with, or exceed, international standards where appropriate and manage risks to all stakeholders, while securing Australia's interests in the global space economy. Its current regulatory framework is nascent and insufficient in breadth and depth to fully cover all aspects of current and anticipated future space activities and technologies.

The Workshops on the Regulation of Space Activities and Technologies (WRegSAT) are an annual series of three workshops involving deep research and analysis of a regulatory problem or challenge selected for each series, in support of the evolution of the regulation of Australian space activities and technologies. Experts are identified to participate in a WRegSAT series based on the relevance of their expertise to a selected challenge. Their research will culminate in the production of a Regulatory Options Paper (ROP) to inform a robust, adaptable, global-exemplar regulatory framework that will foster Australia's growth in the global space industry, while safeguarding national interests and ensuring long-term sustainability. Where government representatives attend as observers in the workshops, their attendance is no indication of endorsement of the WRegSAT or the ROP.

Each series of WRegSAT begins with a Regulatory Challenge. This is a constitutive document that forms the foundational starting point and sets the parameters for deep research and analysis into, and development of regulatory options to address a selected regulatory challenge. It will be used as a constant point of reference to maintain focus and to recall the parameters of the challenge that the experts are seeking to address.

This Regulatory Challenge initiates the first of the WRegSAT series. It is to be read in conjunction with the Objectives of WRegSAT and Supplementary Briefs provided. The regulatory challenges for this and every series, are necessarily bounded. They are focussed on Australian regulation of Australian space activities and technologies. While space activities are inherently international, the international (including transnational) regulation of space activities and technologies is beyond the bounds of WRegSAT. Nevertheless, our challenge is as much about opportunities as it is about problems in regulatory approaches, and there is an opportunity for Australia to influence, and even lead, international regulation, particularly where Australia can draw on unique perspectives.

One such perspective is especially well-adapted to a global approach. We can draw on the perspective of those Australians who have managed a sustainable relationship with the

natural resources in the spaces they have inhabited for over 60,000 years, and who have, longer than any other people, considered the influence on Earth of changes in the observable sky. We therefore undertake to draw on the experience, expertise and perspective of Australia's First Nations Peoples in this and every series of WRegSAT. The Regulatory Options Paper will specify how the proposed regulatory approaches elevate First Nations Peoples' experience, expertise and perspectives.

## Objectives of the Workshops

The WRegSAT series have been established to facilitate Australia's role in a sustainable and responsible global space community by researching, and developing options for, the evolution of an efficient and effective regulatory framework for space activities and technologies conducted in Australia and by Australians. The key objectives of the workshops are to:

1. **Inform a Future-Oriented Regulatory Framework:** Strive for a regulatory framework that is adaptable to future opportunities, challenges and technological advancements.
2. **Promote Sustainable Practices:** Integrate sustainability, ensuring the benefits of the space domain may be enjoyed by the next and all future generations.
3. **Encourage Innovation and Competitiveness:** Support the aspirations of Australian space enterprises to build viable, competitive businesses that apply innovative technologies and techniques to meet the sustainable needs of humanity.
4. **Support National Security and Compliance:** Provide regulatory options that align Australia's space regulations with national security priorities and international agreements and global norms.
5. **Meet or Exceed International Best Practice:** Propose regulatory options that meet, and if necessary, exceed international best practice.
6. **Influence External Regulatory Frameworks:** Develop regulatory exemplars to influence the international and transnational regulatory frameworks applicable to Australian space activities and technologies.
7. **Draw on Unique Australian Perspectives:** Seek out the unique contributions that Australia can make to the regulation of space activities and technologies everywhere, drawing especially on First Nations Peoples' experience, expertise and perspectives in all our work.
8. **Engage a Broad Range of Stakeholders:** Engage a wide range of stakeholders for a comprehensive, inclusive regulatory framework.
9. **Maintain Independence:** Work independently of the agendas of any one individual stakeholder or group of stakeholders.

These objectives guide the efforts of the experts and observers participating in the WRegSAT as they work to develop regulatory options that will assist policymakers to shape the future of space regulation in Australia.

## Current and Foreseeable Needs

The space industry is dynamic, and therefore so is the need for regulation. The global space industry has shown significant growth, reaching an estimated market size of USD\$630 billion in 2023. It is projected to grow rapidly at 9% per annum (significantly above the growth rate of global GDP), potentially reaching USD\$1.8 trillion by 2035, driven by advancements in satellite technology, space tourism, and increased commercial activity in space.<sup>1</sup> When the Australian Space Agency began operations in July 2018, the Australian government accepted the challenge – set in the Review of Australia’s Space Industry Capability<sup>2</sup> – to triple the size of the industry to AUD\$12 billion by 2030 and create 20,000 new jobs.<sup>3</sup> Australia has sought to leverage its favourable strategic and physical geography relative to space activities, skilled workforce, infrastructure, strong economy, stable democracy and relations with other advanced economies to achieve this growth and position itself as a global leader in select areas of the global space industry. In particular, the Australian Civil Space Strategy 2019 – 2028 set seven priority areas for development:

1. position, navigation and timing;
2. Earth observation;
3. communication technologies and services;
4. space situational awareness and debris monitoring;
5. ‘leapfrog’ research and development;
6. robotics and automation on Earth and in space; and
7. access to space.<sup>4</sup>

Meanwhile the Department of Defence’s 2024 Integrated Investment Program sets an ambition for the government to spend around AUD\$1 billion per year over the next decade on ‘enhanced space capabilities’, specifically: “resilient communications, surveillance and reconnaissance, and improved space domain awareness and space control”.<sup>5</sup> Much of that spending is likely to be through commercial contracts, which will be subject to legislative regulation, even if space activity by Defence itself is only internally regulated.<sup>6</sup>

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<sup>1</sup> World Economic Forum, 'Space Technologies Could Revolutionize the Global Economy', World Economic Forum (Web Page, 10 April 2024) <<https://www.weforum.org/agenda/2024/04/space-economy-technology-invest-rocket-opportunity/>>.

<sup>2</sup> Expert Reference Group, *Review of Australia's Space Industry Capability: Report from the Expert Reference Group* (Report, March 2018) <[https://www.space.gov.au/sites/default/files/media-documents/2023-11/review\\_of\\_australias\\_space\\_industry\\_capability\\_-\\_report\\_from\\_the\\_expert\\_reference\\_group.pdf](https://www.space.gov.au/sites/default/files/media-documents/2023-11/review_of_australias_space_industry_capability_-_report_from_the_expert_reference_group.pdf)>.

<sup>3</sup> Australian Space Agency, *Advancing Space: Australian Civil Space Strategy 2019-2028* (Report, April 2019) <<https://www.industry.gov.au/sites/default/files/2024-02/advancing-space-australian-civil-space-strategy-2019-2028.pdf>>.

<sup>4</sup> *Ibid.*

<sup>5</sup> Department of Defence (Cth), '2024 National Defence Strategy and 2024 Integrated Investment Program' (Web Page, 2024) <<https://www.defence.gov.au/about/strategic-planning/2024-national-defence-strategy-2024-integrated-investment-program>>.

<sup>6</sup> *Space (Launches and Returns) Act 2018* (Cth), s 16.

While these numbers may seem impressive at first glance, there are many in the sector who feel these civil and Defence ambitions are underwhelming and could be even stronger.<sup>7</sup>

Whatever the case, the scope of prospective and even current Australian space activities and technologies is significantly broader than the scope of the *Space (Launches and Returns) Act 2018*. Australian current and planned space activities and technologies encompass emerging space capabilities like active debris management, on-orbit servicing, rendezvous and proximity operations, lunar operations and space resource exploitation, human spaceflight and space tourism, air launches and launches from mobile platforms, high cadence launches, large-scale satellite constellations, hypersonic vehicles and reusable launch vehicles.<sup>8</sup> Relative to these emerging space capabilities, the current scope of regulation is insufficient to promote sustainable practices, encourage innovation and competitiveness, ensure national security and compliance with global norms, take into account the interests of all stakeholders and meet or exceed international best practice.

This is not a criticism of those government officials responsible for regulation of Australian space activities and technologies, but rather a reflection of the dynamic nature of the global and Australian space industries and the challenges of evolving a regulatory framework that meets such ambitious objectives. Those participating in the WRegSAT are doing so in recognition of those challenges, in order to support those charged with regulation of Australian space activities in managing those challenges.

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<sup>7</sup> See, for example, Malcolm Davis, 'National Defence Strategy: A Missed Opportunity for Space', The Strategist (Blog Post, 26 March 2024) <<https://www.aspistrategist.org.au/national-defence-strategy-a-missed-opportunity-for-space/>>.

<sup>8</sup> At the Space Regulation Advisory Collective (SRAC) forum on 11 October 2023, the Australian Space Agency asked SRAC participants to describe the scope of their current and anticipated space activities and technologies. Some participants in WRegSAT also participated in SRAC and this list is taken from that participation, as well as from the personal knowledge of WRegSAT participants of Australian space enterprises, their activities and technologies.

## Challenge to the Experts in WRegSAT I

Ordinarily, a Regulatory Challenge would identify a particular problem or opportunity relative to the existing regulatory framework. As the first series of the WRegSAT, this Regulatory Challenge involves a broad survey of foreseeable problems and opportunities, which will inform the selection of specific problems and/or opportunities in future series. The challenge is to understand the Strengths, Weaknesses, Opportunities and Threats (SWOT) inherent in the current regulatory framework, relative to a range of factors:

- the objectives above;
- the historical evolution of the current regulatory framework up to the present (see the ‘Evolution of Australian Space Regulation’ Supplementary Brief);
- current and foreseeable needs (see above);
- the interests of a broad range of stakeholders (see the ‘Stakeholders and Interests’ Supplementary Brief);
- regulatory approaches in other jurisdictions, especially those most typically applicable to transnational Australian space activities and technologies (see the ‘Comparative Jurisdictions’ Supplementary Brief);
- regulatory approaches in intersecting, adjacent and analogous industries (see the ‘Analogous Industries’ Supplementary Brief); and
- regulatory theory and the regulatory approaches best suited to a particular problem or opportunity, in light of the factors above (see the ‘Regulatory Theory’ Supplementary Brief).

The task is not to definitively prescribe regulatory approaches to address problems or pursue opportunities revealed as a result of the SWOT analysis. Rather the ROP will identify what regulatory approaches may be applicable to a specific issue and to provide a foundation, or ‘stepping-off’ point, for the series that will follow, which will each select an issue, or related set of issues from the WRegSAT I ROP. Furthermore, this first series is essential to place regulatory issues in the broader context of the regulation of all space activities, in contrast with the specific focus of subsequent series. The WRegSAT I ROP will also consider whether some regulatory issues are more urgent than others.

This first series is an opportunity to set a strong foundation for the further evolution of Australian space regulation. The insights developed through the WRegSAT I workshops and intersessional work that follow have the potential to not only shape the regulatory landscape for today, but also ensure that Australia remains a competitive, responsible player in the global space industry for decades to come. As the experts rise to the challenge that this Regulatory Challenge sets, we recognise that our work can directly impact Australia’s trajectory in space, by providing informed, research-led perspectives to policymakers and thereby help shape Australia’s role in an increasingly crowded, competitive, and strategically vital domain.

## **About the Australian Centre for Space Governance**

The Australian Centre for Space Governance advocates for Australia's interests in space in the 21st century and advances the agenda for responsible space governance.

We bring together the nation's leading experts in fields such as space law, governance, policy, science and technology studies, security, property, history, ethics, political, and social sciences from across six different universities in Australia.

## **About WRegSAT**

The WRegSAT series consists of a series of three workshops annually that bring together experts to tackle pressing regulatory issues in the space sector. Each series focuses on a specific regulatory challenge, culminating in the production of a Regulatory Options Paper (ROP). This comprehensive document serves as a valuable resource for policymakers, offering insights and recommendations to shape Australia's evolving framework for regulation of space activities.

WRegSAT 2025 is sponsored by leading law firm Gilbert + Tobin and involves academic experts from the University of Adelaide, Flinders University, University of Newcastle, RMIT and the Australian National University.