



Australia as a Space Power: Combining Civil, Defence and Diplomatic Efforts

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Key points

- Space is a critical strategic domain for Australia's civilian and military interests but is increasingly congested, contested and competitive.
- However, major powers are engaged in a destabilising space arms race. China, Russia and the United States have rejected the strategic restraint that kept space a stable political and military domain.
- As a 'middle space power', Australia has the capacity to encourage responsible behaviour in space. In this, its leaders should avoid inadvertently contributing to escalatory rhetoric.

Policy recommendations

- The Department of Defence, Department of Industry, Science, Energy and Resources and Department of Education should invest in space literacy training for APS staff and in university space education.
- The Australian Government should give space its own thematic Ambassador, and increase personnel to support the space diplomacy missions of the Department of Foreign Affairs and Trade and the Australian Space Agency.
- The Department of Defence should designate space an 'operational domain' in line with our Five Eyes partners and the NATO space strategy.

Australia is asserting itself as a serious space player and needs a strategy to match its positioning. In 2018, the creation of the Australian Space Agency (ASA) gained international attention. The ASA's mission is to develop the nation's commercial space industry. The new focus on space in the 2020 Defence Strategic Update (DSU) firmly signalled Australia's intent to advance its sovereign space capabilities.¹

Yet Australian policymakers risk underestimating the safety and security challenges of space. The space sector is increasingly contested and competitive – commercially and militarily. It is

also congested. With already unmanageable levels of space debris, and an expected 10x increase in active satellites over the next 5 years, Australia's space technologies face a daily risk of collision.

Low space literacy echoes the way in which policymakers' understanding of the cyber threat landscape has lagged technological and geopolitical developments. Australia cannot wait ten years for government space literacy to catch up to reality. Strategic missteps in space policy today will have cascading negative consequences for Australia's prosperity and security.

Australia: A serious space player

Space is not just a commercial opportunity or military domain. It underpins nearly every aspect of Australians' economic and social lives. If we were to 'lose space' even for a day the impacts would be catastrophic.

Australians are critically dependent on space including for:

- telecommunications, including internet and TV;
- connecting remote Australians;
- Position, Navigation and Timing (e.g. GPS) for civil and military use;
- weather and climate tracking;
- banking and trade, which rely on accurate timing;
- farming and mining technologies that rely on Earth observation data;
- search and rescue;
- bushfire tracking and mitigation;
- secure military and industrial communications; and
- space-based Earth observation for intelligence and civil disaster response.

Australia is not just an active user of space, it has a history as an important provider of space-based technologies. This includes satellite communications, remote mining and farming technologies, ground-based sensing for 'space situational awareness' – i.e. tracking objects in space – and support of US and Japanese space exploration. Australia now has potential to extend our leadership in these areas.

The 2020 DSU and Force Structure Plan (FSP)² dedicated \$10-15 billion for sovereign-controlled satellite communications and space-based Earth observation, and space domain awareness. The DSU also declared the government's intention to assure access to space and protect sovereign capabilities. Defence is now drafting its first space strategy.

Late in 2020, the Department of Home Affairs recognised the need to protect space systems by designating them 'critical infrastructure' in a new Bill before the Parliament.³ It remains unclear how this may affect their regulation and protection.

Since space is both a security and an economic priority, for Australia and globally, clearly mapping roles and responsibilities between government portfolios will be essential. However divided departmental responsibility may be, ensuring space remains stable, accessible and usable is imperative to the national interest.

Geopolitical jostling in space

There are commercial and security benefits to Australia's expansion of domestic space capabilities – including attracting foreign investment and supporting allies and partners. But there are also military and diplomatic risks.

One of the greatest risks is the move by major powers over the last decade towards an explicit ambition to dominate space militarily. Language in military doctrine and space policies in the US and China shows a concerning rejection of the shared historical position that keeping space stable was in one's own national interest, even if one's adversaries were also active in space.

Geopolitical tensions have played out in space since the 'space race' of the 1960s. During and after the Cold War, strategic restraint emerged as a shared norm, because the greater powers wanted to ensure continued access to space. At times, this norm was under pressure, but it persisted throughout the 20th century.

Today, space security and space diplomacy have become much more complex, due to our global dependence on space, and the diversity of stakeholders. The rules, norms and institutions that help maintain peace and security and guide global cooperation are under strain, in space as elsewhere.

Replacing the shared understanding that keeping space stable was in the interests of all, a classic security dilemma is emerging. China, India, Russia and the US have tested kinetic anti-satellite weapon capabilities, which have created debris and thus risks to other satellites. Many nations are now developing non-kinetic forms of interference, and technologies to counter these, which threatens the stability and security of all space-based systems.

In standing up Space Force in 2019, the US made a powerful statement, while China already had an equivalent, and Russia continues to ramp up its space military program.

Canada, India, France, Japan and the UK have created centralised space commands within their militaries, and Australia's Department of Defence has announced it will have its own Space Division in 2022.⁴ This is a prudent move in the current security landscape.

However, Australia needs to be careful that, as it develops sovereign space capabilities, it does not accelerate a global strategic race to the bottom. Rather, Australia should focus on its ability to become an effective diplomatic space power – building on our history as a strong contributor to space technologies and arms control norms.

Space: The next 'cyber'?

A whole-of-government approach

To align security concerns with industry ambitions and diplomatic priorities, space should be given similar importance as cyber across the machinery of government.

The Australian Government has made cyber security a whole-of-government priority. Some steps have been taken to create cross-departmental alignment through the Space Coordination Committee, chaired by the ASA, and including the Attorney General's Department, the ASA, Defence, Department of Foreign

Affairs and Trade (DFAT), Geosciences Australia and Home Affairs. These efforts need to be bolstered with more dedicated personnel, and the development of a harmonised declaratory policy, similar to Australia's International Cyber and Critical Tech Engagement Strategy. It should also include a framework for clear engagement with industry, beyond the single mandate of the ASA to support Australia's space industry.

Despite areas of progress, Australia's space policies remain piecemeal. The ASA's civil space strategy provides a general overview of commercial ambition, but does not consider the security and geopolitical issues. Defence's space strategy will do much to clarify the security perspective, but can provide only part of the picture. The risk assessments informing the Home Affairs Critical Infrastructure Centre are not public.

The multiple equities of various stakeholders could be better accounted for with a more explicit and better resourced whole-of-government architecture.

The UK National Space Policy⁵ and Japan's Basic Plan on Space Policy⁶ provide models for a joined-up policy approach. Both countries have sought to improve coordination between departments and agencies with responsibilities for space, or which are major users of space systems. They have set goals

for participation in the global space sector, and aligned civil and military space strategies and budgets.

Training and workforce

To ensure smart and harmonised policy, there is a need for a concerted effort to increase space literacy within the government. This should be aligned with the national training needed to support the aims of the ASA to create 20,000 jobs in the space sector. Defence has also identified workforce as one of its greatest challenges in building and supporting sovereign space capabilities, and has recognised the need to invest more in training its personnel.

The Department of Industry, Science, Energy and Resources, which is responsible for the ASA, should co-lead on increasing space literacy within government, with the Department of Defence. They should seek input from the university sector on delivering bespoke national training and education for their own employees, and those of other departments. Moreover, the Department of Education, Skills and Employment should invest in the university sector to support new courses and training in space studies. Our competitiveness and global impact in the space sector require a wide range of interdisciplinary skillsets and a sophisticated understanding of how many issues connect.

Australia's role as a space power

Diplomatic space power

More coordination on space issues across government would also enable a publicly available space diplomatic strategy, which could in turn strengthen Australia's global impact as a space player.

In 2020, the UK received more global credit than Australia as a player in space diplomacy for UN General Assembly (UNGA) Resolution 75/36 on 'Reducing space threats through norms, rules and principles of responsible behaviours', even though Australia was a key partner. Australia's frugal staffing of this effort left little scope for public messaging to build Australia's reputation as a leader in space diplomacy.

The ASA's diplomatic mission is also under-resourced, as it is only one of several priorities the ASA deals with as a young agency.

Part of a solution would be for space to warrant its own Ambassador within DFAT, following the successful example of cyber and critical technologies. An appropriately resourced Space Ambassador with a dedicated team would be better positioned to influence the space agenda at multilateral fora, and engage with the global space industry.

Currently space sits under the Ambassador for Arms Control and Counter-Proliferation, where it is severely under-resourced. But Australia's role in space is not only a security issue; it's also a commercial and political one.

A better-resourced space diplomacy capacity would equip Australia to shape international norms and governance systems, both for security and civil space issues. It could also contribute to a space policy network in South East Asia and with key Pacific partners. Australia could thereby better integrate the security, economic and development aspects of the space sector across the region.

Space governance, internationally and domestically, shares many parallels with cyber. Lessons could be drawn from the Australian government experience in cyber policy and diplomacy over the past decade, to ensure a faster learning curve for space.

Australia has a strong history of international norms entrepreneurship, particularly in arms control. This could inform a new Australian boldness and creativity in space diplomacy.

Space is an operational domain

With this space diplomacy role in mind, the language used across government departments needs to be consistent and carefully considered. Language is as much about guiding national direction as it is about signalling – to audiences domestic and foreign.

The expression that space is a 'warfighting domain' or a battlespace has begun to enter informal military parlance and public messaging.⁷ Undoubtedly space is now part of multi-domain operations. However, it is not – and should not become – a battlefield. Even to declare it as such may be in breach of Article IV and the object and purpose of the 1967 Outer Space Treaty, that space must be used for 'exclusively peaceful purposes'. This treaty is the backbone of international space law, and undermining it would have severe political and security costs.

The US is the only country to have taken the policy position that space is a 'warfighting domain', in its 2020 Defense Space Strategy.⁸ This sends a deliberate signal to peer competitors that any terrestrial conflict can be taken into space, or that conflict can even begin in space. Yet whereas the US has capabilities to counter threats in space, it is unrealistic for Australia to try to match the major powers in this way. It is also unwise to contribute to the current destabilisation of space security by

adopting provocative language, which would signal to China (in particular) that Australia is ready to take a conflict to space.

Rather, Australia should focus on a substantial degree of independence in space through sovereign technologies, framed in non-confrontational terminology. Defence could credibly follow the lead of the 2019 NATO space strategy, which rejected the 'warfighting domain' nomenclature in favour of 'operational domain'.

Moreover, Australia's commitment to UNGA Resolution 75/36 on responsible behaviours in space should counsel responsible and consistent language across government. That resolution is a diplomatic way past the international stalemate on space arms control, by encouraging states to identify principles that may help alleviate the security dilemma in space. Adopting policy language that is neutral rather than provocative could be such a principle.

Neither the DSU nor the FSP refer to space as a warfighting domain, and this responsible approach could usefully be reinforced in Defence's training, behaviours, and strategic messaging.

Allies and partners in space

Australia's role as a space power requires a greater focus on including space on the agenda of traditional and growing alliances and partnerships.

Notes

1. Department of Defence 2020 Defence Strategic Update, sections 3.21 – 3.24, https://www1.defence.gov.au/sites/default/files/2020-11/2020_Defence_Strategic_Update.pdf
2. Department of Defence 2020 Force Structure Plan, Chapter 6, https://www1.defence.gov.au/sites/default/files/2020-11/2020_Force_Structure_Plan.pdf
3. Security Legislation Amendment (Critical Infrastructure) Bill 2020, <https://www.homeaffairs.gov.au/reports-and-pubs/files/exposure-draft-bill/exposure-draft-security-legislation-amendment-critical-Infrastructure-bill-2020.pdf>
4. <https://news.defence.gov.au/media/media-releases/defence-announces-space-division>
5. UK National Space Policy 2015, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/484865/NSP_-_Final.pdf
6. Outline of the Basic Plan on Space Policy (Provisional Translation), National Space Policy Secretariat, Cabinet Office, Government of Japan, 30 June 2020, https://www8.cao.go.jp/space/english/basicplan/2020/abstract_0825.pdf
7. <https://www.abc.net.au/news/2021-03-31/raaf-looks-to-space-as-it-celebrates-100-years/100039914>
8. US Department of Defence, Defence Space Strategy Summary, June 2020 https://media.defense.gov/2020/Jun/17/2002317391/-1/-1/1/2020_DEFENSE_SPACE_STRATEGY_SUMMARY.PDF

Defence's new centralised Space Division is a positive first step, as this will better facilitate coordination with Five Eyes and other partners such as France and Germany, through the Combined Space Operations Centre (CSpOC). It will also aid the harmonisation of the rest of Australia's decisions and policies on space.

Expanding our space partnerships with countries such as Japan and Germany will support the ASA's commercial space ambitions, and provide anchors for space diplomacy and strategic space objectives.

Giving space more dedicated personnel and resources across government can also contribute to cultivating a space policy network in Southeast Asia and with key Pacific partners – integrating security, economic and development aspects. This would align with Australia's Pacific Step-Up.

Australia could also positively influence India through the Quad: if there are sufficient incentives for collaboration in space, India might be encouraged to commit to UNGA Resolution 75/36, and to cooperate on strategic objectives.

Ultimately, building space partnerships is about utilising the multiple paths Australia has into the space sector, to the benefit of our wider national interest objectives. A space power strategy for Australia is as much about exerting our influence as a middle power on Earth as it is in space.

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