



Australian Government



Australian Government Response to the Review of Australia's Space Industry Capability

The Australian Government is committed to the development of Australia's space industry to drive investment, create jobs and position Australia as a key participant in the global space economy.

The Government supports a range of space-related activities. From 2016–17 until 2021–22 the Government will have provided:

- \$173 million for *Better GPS for Regional Australians* (previously known as the Satellite-Based Augmentation System (SBAS));
- \$52 million for the development of *World Class Satellite Imagery to Enable Australian Businesses to Grow* (previously known as Digital Earth Australia); and
- \$64.0 million for *Better GPS to Support Australian Business*.

This is in addition to the two space-related Cooperative Research Centres (CRCs)—the CRC for Spatial Information and the Space Environment Research Centre. Through the recently completed review of the *Space Activities Act 1998*, reforms are underway to ensure that the regulatory framework reflects advances in technologies and is conducive to commercial investment in the space sector.

The global space economy is currently worth over US\$340 billion a year and, given the activities already being pursued by industry and government organisations, the Government sees significant opportunities to grow Australia's space sector.

To capitalise on its growth opportunities nationally and internationally there is need for Australia to create a national vision for the space sector that prioritises building on Australia's strengths and competitive advantages; with government and industry working in partnership to support developing new capabilities. A national space agency will be well positioned to create a national strategy addressing Australia's space development needs to see greater Australian participation in the global space economy.

In July 2017, the Government commissioned a review of Australia's space industry capability (the Review) which would lead to a national strategy for the sector that reflects Australia's developing strengths and national interests over the next decade. The Review provides a basis for the Government to make decisions that will ensure Australia can participate more fully in the global space economy and grow the jobs of the future.

The Review was undertaken by an Expert Reference Group (ERG) chaired by Dr Megan Clark AC, a former head of CSIRO. The ERG ensured the Review provided a rigorous and objective examination of the strengths, weaknesses and future opportunities in the Australian space industry. This included comprehensive consultations across industry, government and the wider community across Australia and carefully examined successful international experiences and strategies that have been adopted to grow the space industry sector. The ERG also commissioned analysis work to provide further evidence on Australia's space industry capability, global space industry dynamics and global space strategies and best practice.

The Review report delivered nine key recommendations informed by its core findings that: Australia has billions of dollars' worth of existing space-related infrastructure, a vibrant community of active small and medium-sized space sector businesses, world-leading capability in research, satellite data analysis (for data-enabled services applications), and communications (radio and radar capabilities); that stakeholders expressed a strong need for an Australian space agency with authority to coordinate activity, lift engagement, set and progress strategic national space priorities; and that there is no call for a space agency to subsume the operational and regulatory activities of other existing authorities. The Review also identified a gap in Australia's national framework that could be addressed by establishing a national space agency to act as a coordinator of civil space policy across the government and to act as an interlocutor on the global stage so that the Government can develop the international networks needed to allow Australia's space industry to achieve its full potential.

In consideration of the Review's identified industry development needs and recommendations, and in alignment with Australian government priorities, the Government response, in addition to boosting existing government space activities and commitments, supports or notes all nine of the Review recommendations. The Government response highlights its commitment to establishing a national Australian Space Agency focussed on the need to support growth of Australia's space industry capability; develop national strategy that builds on Australia's strengths and identifies focus areas to realise Australia's ambitions in the civil space sector; coordinate domestic space activities; and act as a single point of contact to lift national and international engagement. The Government response also recognises the need to engage in partnerships with international space agencies through targeted investment in international space programs that will promote Australian industry participation in the global space industry.

In response to the Review the Government will be investing \$41 million over four years to establish an Australian Space Agency, comprising an initial \$26 million for the Agency's operational funding from 2018–19 to 2021–22 and \$15 million for an International Space Investment initiative over three years from 2019–20 to 2021–22.

The Government is establishing the Australian Space Agency from 1 July 2018. The Government will provide the Australian Space Agency with a clear set of outcomes to be achieved in its first year of operation, including the finalisation of a Charter for the Agency and the development of an overarching strategy and investment plan to grow Australia’s space industry. The Agency will commence its international engagement activities in 2018–19 immediately following its establishment; with the complementary International Space Investment initiative commencing in 2019–20.

The Australian Space Agency, which will be ongoing, will take into consideration the ERG’s recommendations set out in the Review report on the areas where Australia has competitive advantages and in the context of the changing global space economy, where Australia has the ability to become a world leading developer of space based technologies. The Agency will be Australia’s outward facing ‘front door’ to the world on civil space matters and will also be tasked with reaching out to create partnerships with other space agencies and nations for the purposes of cooperating and opening doors for Australian businesses to access international projects. The creation and nurturing of these international partnerships is a key objective for the Agency in its first years of operation. This will be supported through the International Space Investment initiative over three years, which will enable the Agency to partner with international space agencies. This investment will provide Australian businesses opportunities to be involved in established international space programs, with direct benefits to Australia.

Space-related products and services are used in virtually every sector of the Australian economy and are important to the ongoing economic productivity of industry sectors including transport, logistics, mining and agriculture. The Australian Space Agency puts in place a long-term structure that will support Australia’s engagement with the international space economy and address critical space related dependencies to grow the Australian space industry to act as an enabler of productivity, competitiveness and employment growth.

The Government’s specific response to the nine recommendations in the review report are set out below. The Government’s initial consideration of the Charter for the Australian Space Agency is also outlined below.

No.	Recommendation	Australian Government Response
1	<p>The Agency is responsible for the development of a national space industry strategy, and that strategy gives priority to areas that build on Australia’s strengths and utilises national competitive advantage and capabilities, in particular:</p> <ul style="list-style-type: none"> • communication technologies and services, satellite ground stations, and deep space communications network ground stations; • Space Situational Awareness and debris monitoring as part of global networks; • Positioning, Navigation, and Timing infrastructure to enhance the competitiveness of the broader economy including agriculture, transport, fisheries, emergency services, mining and oil and gas, and national security; • the application of advanced integrated Earth observation satellite data for the benefit of all Australians and the broader economy, and to increase Australian exports of these services; • research and development in areas of national strength to support Australian participation in joint space missions, space tourism, and industry applications, for example, space and remote medicine, space physics, planetary science, astronomy, quantum communications and technologies, artificial intelligence, advanced antenna and sensor technology; and • robotics and autonomous systems for remote asset management on Earth and in space across the broader economy. 	<p>Supported. The Australian Government will establish the Australian Space Agency, which will be an ongoing entity, with initial funding of \$26 million over four years. The Agency will prepare a national civil space industry strategy (the Strategy) that is aligned with the Government’s current policy priorities.</p> <p>In developing the Strategy, the Australian Space Agency will take into consideration the priorities identified in this recommendation.</p>

No.	Recommendation	Australian Government Response
2	<p>The national space industry strategy gives importance to emerging frontiers where Australia can leapfrog into areas of future competitive advantage, including the application of artificial intelligence, robotics, and big data analytics to space systems and space-derived information; next-generation communication technologies, including optical, hybrid optical radio, and quantum communications, to enable secure, broadband space-based communications; innovative sensors, antennae, and instrumentation. Australia should also take advantage of the global space technology paradigm shift towards constellations of miniaturised spacecraft for communications and Earth observations, and next-generation rocket and spacecraft propulsion systems.</p>	<p>Supported. The Australian Space Agency will prepare the Strategy, ensuring that it is aligned with the Government’s current policy priorities.</p> <p>In developing the Strategy, the Australian Space Agency will give consideration to the priorities identified in this recommendation.</p>
3	<p>The Government will establish a dedicated, ongoing, and whole-of-government statutory agency (the Agency) to realise Australia’s civil ambitions in space, and that interim arrangements are made to establish the Agency immediately. The Agency will be responsible for civil space strategic policy direction setting, international representation, coordination of national civilian activities, and strategies to facilitate the growth of the Australian space industry sector as set out under the Agency Charter.</p>	<p>Supported. On 1 July 2018, the Australian Government will establish the Australian Space Agency on an ongoing basis. It will perform its functions as set out in the Agency’s Charter, which will be finalised within three months of commencing operations.</p> <p>The Australian Space Agency will be located within the Department of Industry, Innovation and Science. In addition, the Australian Space Agency will develop close linkages with federal departments and agencies as well as state and territory governments and international agencies to ensure a whole of government approach is taken in respect of civil space activities.</p> <p>The establishment of a statutory basis for the Australian Space Agency will be considered after a review of its operations that will commence within four years of the establishment of the Australian Space Agency.</p>

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4	<p>The Government provides ongoing, core operational funding to the Agency to enable its establishment and effective operation ...</p> <p>... with additional funding for an ongoing Space Industry Development Fund once the Agency is fully operational.</p> <p>This Fund will invest in: international partnerships to enable increased industry participation; industry-led collaborative research and development in the areas of strategic priority and leapfrog technologies; and support for national nodes in partnership with State and Territory governments and their industries. It will also provide early stimulus to national infrastructure such as enabling commercial ground stations and shared test facilities for satellite manufacture and equipment verification.</p> <p>The Government provides scope for the Agency to bring forward for dedicated funding every three to four years, major national space projects such as satellite projects, to meet national and international terrestrial and marine needs, and to participate in discovery science missions as part of international consortia and national space competition missions.</p>	<p>Supported. The Australian Government will establish the Australian Space Agency as an ongoing entity, with initial funding of \$26 million over four years.</p> <p>Noted. The Australian Space Agency will prepare a detailed investment plan for consideration by the Government as part of its Strategy for the development of the space industry within the first six months after it commences operation.</p> <p>This will include principles and models for space industry development, including providing the Government with its analysis of the costs and benefits of creating a Space Industry Development Fund.</p> <p>Supported in Principle. The Australian Space Agency has the capacity to seek to bring forward requests for funding, including to support major space-related projects.</p>
5	<p>The Government extends existing partnership and treaty-level agreements, and establishes new partnerships to increase the participation of Australian industry and research, particularly by:</p> <ul style="list-style-type: none"> • strengthening partnerships in space to allow greater technology transfer and technology development in Australia; • extending existing partnerships and treaty-level agreements, as well as promoting commercial arrangements to allow increased participation of Australian industry on missions; • securing existing and establishing new ground stations and deep space communications centres in Australia; • securing new partnership agreements with key space agencies and commercial partners in the global space sector, including in Asia and Oceania; and • securing cooperation agreements for access to critical national Earth observation data, including for weather, land and oceans, and emergency and disaster management. 	<p>Supported. The Australian Government will be proactive in its international engagement to build and develop its international partnerships relevant to the space industry, consistent with the Foreign Policy White Paper, in consultation with the Department of Foreign Affairs and Trade and other affected commonwealth agencies, and supported by the Australian Space Agency.</p> <p>The Australian Government is investing \$15 million over three years from 2019–20 to enable the Australian Space Agency to partner with international space agencies on strategic projects. This investment will provide Australian businesses opportunities to be involved in established international space programs.</p>

No.	Recommendation	Australian Government Response
6	<p>The Agency works with other Government departments across a range of portfolio areas, such as agriculture, environment, and communications, to emulate the Australian Defence Innovation Hub Investment program and the US' SBIR and STTR programs to link both large and small business to the purchasing needs for civil Government projects and investments, including the space-related investments.</p>	<p>Supported in Principle. The Australian Space Agency will examine opportunities to link the Australian space industry to the purchasing needs of government but the procurement requirements of individual portfolios will remain the priority.</p> <p>The Government has introduced a number of cutting-edge programs that facilitate government engagement with innovative businesses such as the Business Research and Innovation Initiative that can lead to greater opportunities for such businesses in government procurement processes and improved outcomes for government.</p>
7	<p>In order for commercial entities and other participants to move quickly, that the Agency facilitates regulatory approval processes for small satellite launch facilities in Australia and the launch of Australian satellites overseas, and investigates opportunities to partner with appropriate international launch providers.</p>	<p>Supported in principle. The Australian Government has undertaken a review of the <i>Space Activities Act 1998</i> and is implementing amendments to streamline the Act, including removing barriers for undertaking space activities. The revised Act is expected to be introduced into the Parliament in 2018.</p> <p>The Australian Government will ensure it continues to meet its commitments, including those under international instruments relating to space and arms control.</p>
8	<p>The Government gives priority to strategies that enable active engagement with Australian schools and the broader community on global space activities; space-related training and education to improve capability; space-inspired STEM outreach; and industry-led research collaboration to underpin the space industry.</p>	<p>Supported in principle. The Australian Space Agency will consider appropriate strategies to address this recommendation.</p>
9	<p>In conjunction with the Government acting on these recommendations, we call on industry to play an important role in achieving the national goals and strategies for the Australian space industry by investing in innovation to remain globally competitive; engaging with the Agency in setting strategic priorities; exploring partnerships with small- and medium-sized companies to participate in global supply chains; collaborating with research institutions; and supporting competitions for development of innovative technology, applications, and skills.</p>	<p>Supported. The Australian Space Agency will actively engage with industry to support industry in achieving the aspirational goal to grow Australia's space sector.</p>
	<p>Agency Charter (appendix 6 of report)</p>	<p>Noted. The Australian Government will draw on the advice provided in the report for the Charter of the Australian Space Agency to develop a high-level document to guide the activity of the Australian Space Agency. The Australian Space Agency is to finalise the Charter within three months of commencing operations.</p>

