

Australian Government

Department of Infrastructure, Transport Regional Development and Communications

Emerging Aviation Technologies

National Aviation Policy Issues Paper

Response from Skyports

1. About Skyports

Our company

Skyports operates cargo drone deliveries within the medical, e-commerce and logistics sectors overcoming inefficiencies associated with traditional transportation methods. Skyports is also working with the leading electric vertical take-off and landing (eVTOL) passenger and cargo vehicle manufacturers around the world to secure, design, build, own and operate vehicle agnostic vertiports, enabling safe, efficient and affordable passenger and cargo flight operations within urban and suburban environments. Based in London, United Kingdom, Skyports has projects ongoing in multiple continents, including in Asia, the Americas, Australasia and Europe. Skyports investors are Deutsche Bahn Digital Ventures, Groupe ADP, Irelandia Aviation and Levitate Capital. Learn more at www.skyports.net

Our projects and products

In 2019, Skyports built and showcased the first full-scale passenger air taxi 'vertiport' in Singapore with our vehicle partners, German vertical take-off and landing (VTOL) vehicle pioneer Volocopter. Since then, Skyports has developed our commercial vertiport concept that we are in the process of working with our partners to implement in multiple jurisdictions, including Australia. Learn more at www.skyports.net/voloport

In 2020, Skyports has been assisting the UK National Health Service (NHS) with its response to the Coronavirus pandemic by transporting medical equipment, including COVID-19 testing kits, by delivery drone between healthcare facilities poorly served by ground transport connections. We will be expanding this service for the NHS later this year and into 2021. Learn more at www.skyports.net/nhs-trials

Our influence on the UAS and AAM rules framework

We are currently working with government and regulatory authorities in Europe (the European Aviation Safety Agency and the UK Civil Aviation Authority) and North America (the Federal Aviation Administration) to create the regulatory framework for unmanned aircraft systems (UAS) and advanced air mobility (AAM) across these regions. We are also heavily involved in the development

of industry standards for UAS and AAM, playing active roles in multiple international aviation standards development organisations (SDO), including EUROCAE, ASTM and ISO.

Our response to the National Aviation Policy Issues Paper

Our primary focus in our response to this policy issues paper is in relation to large-scale air taxi infrastructure, since we are actively involved with our local partners to deliver AAM in Australia; however, as we have a wealth of knowledge, expertise and experience in the operation of complex UAS operations and ground-breaking drone delivery initiatives, we have also provided our views on policy and regulatory development from the smaller-scale UAS perspective.

Skyports thanks the Australian Government, in particular the Department of Infrastructure, Transport, Regional Development and Communications, for the opportunity to comment on this important policy initiative.

If the Government would has any questions in relation to our response or wishes to discusses its contents, please contact Simon Whalley, Head of Policy and Regulation, simon@skyports.net.

2. Key Points

1. Move quickly to support the introduction of AAM infrastructure. Infrastructure tends of have long-lead times and, if sites are not identified, developed and become operational in the next few years, infrastructure will become an AAM market constraint.
2. Work with relevant asset owners, operators and agencies responsible for existing infrastructure, e.g. railway stations to develop vertiports on their land and buildings, particularly if by doing so would create an enhanced public transport hub for transiting passengers. Use existing corridors, such as railway lines, for routing of air taxi flights in urban and within suburban areas to minimise the ground risk and over-flight of the population.
3. Future-proof infrastructure planning to include an unequivocal approvals process, including relevant national Government guidance for the approval of AAM infrastructure, that can be applied at state and city/local levels.
4. The regulatory regime for AAM should be coordinated and harmonised with efforts being taken internationally in order to reduce regulatory burdens on industry having to meet multiple sets of standards and requirements.

3. Consultations Questions

i. Do you agree with the proposed core principles for the National Emerging Aviation Technologies policy?

- Skyports agrees with the set of core principles that are intended to underpin a National Emerging Aviation Technologies policy.
- A strong set of principles is the bedrock on which to build good decision-making, guide rule-making and operations. The approach should help the Australian Government, its agencies and companies operating in the country, and those considering entering the Australian

market, work with others with shared principles and, vitally, build support among the Australian community.

- For these core principles to stand the test of time, they must be practiced transparently and consistently at all governance levels. The policy should provide a means of assessing whether the core principles are being adequately applied in practice and/or whether additional core principles are required to improve practices.

ii. Will the proposed approach to policy development adequately allow for the future direction, operations, and investments of your business/organisation?

- Skyports broadly supports the Australian Government's proposed approach to policy development. The essential components of a UAS and AAM eco-system have been included and appear to have been built on the set of core principles, in particular infrastructure.
- The proposed approach would benefit from the provision of clarity that the Australian Government will champion national, regional and local socio-economic and environmental benefits from the application of these new aviation technologies.
- The Government must send signals to the market that the application of new aviation technology in Australia is a national priority.
- The policy should provide a means of measuring whether the approach remains fit-for-purpose and, if not, how and when the policy approach will be revised, in consultation with industry and without undermining the upward trajectory of market development. Key Performance Indicators (KPIs) should be identified, and a baseline established from which progress can be tracked.
- When Skyports is looking to enter a market as an infrastructure provider we look for a progressive regulatory framework, the presence of a vehicle manufacturer and demand for new aviation solutions, such as air taxi services. Some states in Australia, such as Victoria, have all three components: indeed, Uber Air selected Melbourne to be a trial city for an air taxi service.
- The current legislative and regulatory framework in Australia, Victoria and Melbourne itself can enable limited commencement of AAM using existing rules. For the technology and industry to flourish efficiently and cost-effectively, policy and regulatory reform remains essential.
- National policy (and strategy) should inform and be coordinated with state and city-level transport and planning strategies, especially in areas where states make their own decisions. A nationwide approach will create policy certainty and provide stronger signals to the market that Australia at all governance levels supports the introduction of emerging aviation technologies.

iii. Are there any other approaches that could benefit the sector?

- Policy and strategy should have some bearing on public investment plans at the national, state and city/local levels. This is particularly relevant to infrastructure investment where

state-owned and run infrastructure assets could be used as a springboard to launch AAM solutions.

iv. What level of service and regulation do you expect from the Government?

- The regulatory framework for UAS and AAM does not yet fully exist. While some existing rules can be applied to initially enable the early growth of the industry, and the initial application of new aviation technologies, for example heliport regulations that can be applied to 'vertiports' (the take-off and landing infrastructure for passenger air taxis and cargo drones), regulations enabling highly automated, and eventually fully autonomous, air vehicles in city centres fully integrated in airspace shared with manned aviation does not yet exist. The Australian Government and the aviation regulator, in partnership with the industry, should develop a regulatory roadmap to set out the regulations need over time, prioritised accordingly and the interdependencies between the vehicle, ground and airspace components of the eco-system understood and captured.
- New regulations must be evidence-, risk- and performance-based to ensure the technology and industry is not over-regulated, and to enable the rules to be adapted over time as the solutions mature and more performance data and evidence is generated; therefore, Skyports would strongly advocate the aviation regulator take a non-prescriptive, iterative and open-minded approach to regulatory development. The Government and industry should work with universities and other research institutes to develop these regulatory models.
- The regulator must have adequate funds to pursue new aviation technology initiatives and air traffic and unmanned traffic management systems with the industry. The Civil Aviation Safety Authority (CASA) is only part funded by the Government and is largely reliant on industry charges. Emerging technology and AAM companies, often pre-revenue, should be charged proportionately for regulatory services to support the emergency of the industry. Where the likes of regulatory 'sandboxes' are made available, these should be funded centrally to enable new solutions to be trialled.

v. What are your expectations of the Government's role and responsibilities in the management of drones and eVTOL vehicles?

The Government should:

- Develop a coherent plan for how emerging aviation technologies like UAS and AAM can contribute to and help achieve national socio-economic and environmental goals. This should become a Government priority and should have a long-term horizon to enable firms to invest in Australia for the long term.
- Create the policy conditions that will enable the emerging aviation technology market to thrive in Australia and companies to invest in the country.
- Minimise the creation of new legislation, especially where existing laws may be sufficient, to enable the industry to grow and solutions applied quickly.

- Provide targeted support, e.g. political, financial, to states and/or cities that could act as test beds for new solutions.
- Ensure that regulatory and approvals bodies are sufficiently resourced with appropriate expertise to meet the demands from companies in this emergency industry. Expertise may not be available wholly within the traditional aviation and aerospace industry or within Australia. The Government regulator should therefore look to hire those with transferable skills in areas such as autonomous systems from inside or outside the country.
- Provide clear guidance to state and local actors that may be involved in the approval of some aspects of UAS and AAM, e.g. planning approvals for take-off and landing infrastructure, and will look for a central government steer on how to approve new concepts.
- Remove complexity, uncertainty and costs associated with planning and regulatory approvals processes.
- Take an evidence-, risk- and performance-based approach to the management of the industry, in particular not making the assumption that the emerging aviation technology industry is the same as traditional manned aviation and should be regulated the same way.
- Take a whole-of-system approach – looking beyond the vehicles to the implications for airspace and infrastructure for example.
- Champion the socio-economic and environmental benefits of this new technology with the general public, especially leading national and supporting local initiatives to educate communities on the emissions benefits from being electric as well as help explain where the trade-offs will be, e.g. eVTOLs are noisier at take-off and landing but quieter in cruise. Nevertheless, the management of noise should be an iterative and evolutionary approach, given the lack of vehicle data, research data on the public perceptions of VTOL noise and whether it can be differentiated from other sources in urban centres, and should be done locally based on local requirements.
- Provide a coordinated approach across central government and down to the state and city/local level. UAS and AAM are impacted and influenced by developments in other areas of government, e.g. economic, planning, privacy, telecommunications, industrial. If necessary, nationalise standards to reduce regulatory burdens traditionally by state lines.
- Align approaches to the regulation of and standards for emerging aviation technology with authorities in other jurisdictions to support an internationally coordinated approach and reduce regulatory burdens on the industry as a consequence.

vi. What are the key opportunities that these new technologies could deliver for Australia?

- Positive socio-economic and environmental outcomes, particularly in areas that would benefit from UAS and AAM, e.g. congested city centres, areas poorly served by existing transport infrastructure solutions, carbon emissions reduction, noise reduction, jobs creation and competition to name a few.

- Establishment of Australia as a leader in the adoption of new aviation technologies to attract inward investment.
- More efficient and cost-effective public services.
- An additional transport offering available and accessible to all that would complement existing solutions, including taking the strain off existing infrastructure and routes.

vii. What are the most significant barriers to realising these opportunities?

- Over-regulation, disproportionate regulation and overly complex approvals processes. At the lighter end of the unmanned aircraft spectrum, for example, owners and operators do not necessarily have an aviation background and more complicated rules do not necessarily enhance safety. At vertiports, for example, do not prescriptively mandate airport-grade passenger and baggage security and screening systems where this would be disproportionate to the risk posed and the limited space likely to be available.
- Passive regulators: they should be forward-leaning and anticipate market needs by proactively seeking industry requirements. Regulation should not become a drag on industrial progress, rather an enabler.
- Lack of creativity and innovation in new regulations and approvals processes.
- Not making best use of existing regulations, existing infrastructure assets, e.g. railway stations and existing rail corridors as air taxi routes. Skyports has expertise in this area as one of our principal investors is the German railway company, Deutsche Bahn – one of the largest railway company's in the world.
- Government (at all levels) and regulators not taking a long-term view of technology, industrial and market development.
- Deviation from emerging international regulatory and standards framework – unless doing so fills a gap in the framework.
- Not taking a whole-of-eco-system view of the technology and solutions development that would capture the positive and mitigate the negative interdependencies.
- One size does not fit all. UAS and AAM solutions come in a large number of configurations and sizes. The policy approach should take into account of the wide range of technological and industrial variables.

viii. What issues or actions should the government prioritise to facilitate the growth of emerging aviation technologies?

- Move quickly to support the introduction of AAM infrastructure. Infrastructure tends to have long-lead times and, if sites are not identified, developed and become operational in the next few years, infrastructure will become an AAM market constraint.
- Work with relevant asset owners and agencies responsible for existing infrastructure, e.g. railway stations to develop vertiports on their land and buildings, particularly if by doing so would create an enhanced public transport hub for transiting passengers.

- Use existing corridors, such as railway lines, for routing of air taxi flights in urban and within suburban areas to minimise the ground risk. This would enhance the opportunity and maximises the opportunity to develop vertiports on state-owned infrastructure, particularly railway stations.
- Create and support test beds, like ‘sandboxes’, for the industry to work together with the regulator to trial quickly new solutions in a safe environment.
- Identify and champion the need for airspace modernisation to accommodate new UAS and AAM technology.
- Future-proof infrastructure planning to include an unequivocal approvals process, including relevant national Government guidance for the approval of AAM infrastructure, that can be applied at state and city/local levels.

ix. To what extent should Australia’s approach be harmonised with approaches taken in other countries?

- The Australian approach to policymaking and regulation should be harmonised wherever possible with efforts being taken within other countries. Doing so will reduce regulatory burdens on industry, as they will only having to meet one set of standards, and minimise the duplication of effort within regulators simply writing the same rules. Collaboration and information sharing across national boundaries will also facilitate best-practice sharing.
- By way of example, the European Aviation Safety Agency (EASA) is currently producing guidance for European Union (EU) Member State (MS) to enable them to approve the design of vertiports within their jurisdictions. The guidance, based largely on *ICAO’s Annex 14 Aerodromes, Volume II Heliports*, with performance-based and practical deviations for VTOLs, is a fast, pragmatic means of creating an approval for take-off and landing infrastructure. Skyports has introduced CASA to the EASA Aerodromes Team to facilitate a collaborative approach to vertiport design approvals.
- Australian authorities should embed themselves and play active roles in international standards development organisations (SDO), which are already making progress with UAS and AAM industry technical standards as Means of Compliance (MOC).
- CASA should channel efforts and continue to be an active participant in UAS international rule-making bodies like the Joint Authorities for Rule-making on Unmanned Systems (JARUS).

New Zealand

- In July 2019, the New Zealand Government published a similar policy paper on drones, entitled [*‘Taking flight: An aviation system for the automated age – Drone integration paper’*](#). The document presented the Government’s vision for enabling a thriving, innovative safe drone sector. Where possible and relevant, the Australian and New Zealand Governments should coordinate approaches. New Zealand are exploring AAM initiatives, including the ongoing testing activities by the US-based vehicle manufacturer and operator, Wisk. The wider Australasian region has significant potential to be a major hub for AAM.

x. Are there other issues that the Australian Government should consider?

- No comment.

30 October 2020