



Emerging Aviation Technologies National Aviation Policy

NSW Government submission to the Australian
Department of Infrastructure, Transport, Regional
Development and Communications

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INTRODUCTION

The NSW Government welcomes the opportunity to provide comments to the Department of Infrastructure, Transport, Regional Development and Communications (DITRDC) on the *Emerging Aviation Technologies National Aviation Policy Issues Paper* (the Paper).

Emerging aviation technologies such as drones, electric vertical take-off and landing (eVTOL) vehicles have the potential to deliver significant economic and social benefits in both urban, regional and remote parts of NSW. In addition to the delivery of goods, these emerging technologies are already being used in agriculture, construction, mining, emergency and disaster management, medical support and law enforcement.

The NSW Government recognises a new policy and legislative framework is required to effectively regulate this nascent industry. In our view, whilst regulatory responsibility for drones sits with the Commonwealth Civil Aviation Safety Authority (CASA), the development of this new framework should be a collaborative effort between Commonwealth, State and Territory Governments as it has wide implications for NSW.

The policy and legislative framework should be nationally consistent, interoperable with international practices and should make access to airspace available to operators and vehicles on an equitable and competitive basis. Best safety practice must be adopted and appropriately balanced with the Australian community's concerns about noise and privacy.

International passenger and freight air operators will be flying over Australian airspace, and pilots need to have a consistent and harmonised set of rules and systems in place, particularly during low-altitude take-off and landing phases where interactions with Urban Air Mobility (UAM), Regional Air Mobility (RAM), Remote Piloted Aircraft Systems (RPAS) vehicles are likely.

The NSW Government is keen to collaborate and ensure that the new framework provides effective protections against malicious use of drones and eVTOL technologies, and helps prevent misuse of these technologies.

NSW is optimally placed to take advantage of the significant social and economic potential of these emerging technologies. The future national framework needs to give industries the confidence and certainty to make medium and long term investments across Australia.

Current regulatory issues

Despite the deregulation reforms implemented in 2016, the commercial use of drones remains heavily regulated through complex and prescriptive compliance rules. In the agricultural sector, for example, a range of problems are identified from the current one-size-fits-all regulatory approach, which does not recognise the differences between the use of drones in populous metropolitan areas and regional areas.

The 2016 amendments to Part 101 of the *CASA Regulations* introduced a new 'excluded category' that recognises the use of drones by private landlords on their own land without the need for a pilot licence or operator's certificate. The 'excluded category' exemption, however, still requires private landlords to comply with the standard operating conditions, including the restriction to line-of-sight operations. This means that large farms must ensure that drone operators are able to see the drone with their own eyes and without the aid of any device, such as binoculars or remote visual feed.

Current CASA Regulations already contain powers to grant various exemptions. For example, a specific exemption is available under Part 101.029 of the *CASA Regulations* to fly drones beyond the line-of-sight. However, the application process for such specific exemption could be quite complex, time-consuming and costly.

An outcomes-focused regulatory approach for the new framework should be considered to allow greater flexibility and autonomy in operating drones outside standard operating conditions, as long as operators can demonstrate compliance with the necessary safety

outcomes. While certain prescriptive rules may need to be retained, the level of prescription and compliance burden contained in the current regulatory regime may continue to stifle innovation and constrain businesses' ability to explore new opportunities to embrace drone technology in their business practices.

PROPOSED CORE PRINCIPLES

The NSW Government considers the proposed core principles in the Paper as an appropriate starting point for the development of a comprehensive legislative and policy framework for emerging aviation technologies.

The drone and eVTOL industry in Australia is projected to grow significantly with future technological innovation that will enhance battery life and increase the range and speed of such vehicles. With these and possibly other innovations imminent, the legal and policy framework regulating these vehicles needs to be flexible and adaptive to ensure that regulators can keep pace with the changing nature of the industry.

Clarification will however, be required regarding definitions of RPAS technology and any reforms, including for example what 'piloting' extends to, how flying is defined, and to what extent autonomous technology is considered. These definitions may have significant implications for multiple sectors and industries. Work will be necessary to ensure harmonisation of any reforms with state rules/regulations. It remains unclear if NSW will be required to support the implementation of any proposed framework with a role in compliance/enforcement. The NSW Government asks DITRDC to clarify the role of CASA, specifically if there will there be an increase in their regulatory scope and an accompanying increase in enforcement powers? A clear delineation of enforcement responsibilities between CASA, the Australian Federal Police and state police should be deliberated.

As the take up of drones is encouraged, an accompanying communication, education and awareness package will be required. This should be based upon a risk based compliance model. A question to consider is if a registration and accreditation scheme is introduced, would it be supported by point of sales information or be reliant upon voluntary registration? Regulatory processes should be streamlined to facilitate industry growth and tailored to different contexts (e.g. security, emergency management, rural, national parks, Indigenous areas).

The NSW Government supports a collaborative approach in the development of this new framework and is committed to working with the Australian, State and Territory Governments at any future intergovernmental fora on this matter. NSW recently provided a submission to the Australian Government in relation to regulating in-service Autonomous Driving Systems that may have relevant regulatory approaches for emerging aviation technologies.

1. AIRSPACE INTEGRATION

Airspace integration should be a priority focus for policy development. The NSW Government considers that the fair and competitive access to airspace is critical to ensuring the benefits of emerging aviation technologies can be fully realised. With potentially large increases in the number of operators and vehicles sharing the same airspace, the framework must ensure that all sectors operate safely.

The NSW Government agrees and considers equitable access to airspace will be critical to ensuring emerging industries can reach their potential. The NSW Government agrees that the Australian Government, in partnership with industry, will play a crucial role in coordinating and facilitating the development of a new Unmanned Traffic Management (UTM) system. We also support the longer term goal of a single centralised government flight information management system.

NSW notes that the current administrative burden associated with complex applications significantly restricts government's ability to implement drone programs through industry providers without creating a pseudo monopoly. Funding a costly complex application approval through a commercial arrangement with a provider in the current regulatory environment inevitably results in the provider being positioned with a significant commercial advantage.

A possible solution that could be investigated to promote equity across the industry for the provision of services to government is for approvals to be granted to certain levels of government rather than the service provider. The resourcing for complex operations can then be carried out by providers under the government body's approval, and the government body is responsible for ensuring that all the conditions of approval are implemented.

Abuse of airspace particularly during emergency events by recreational, media and rogue pilots presents a high risk to manned aircraft operations. This has ramifications to emergency service operations legislatively charged with the protection of life and property.

Given that it will take some years to deliver a policy, UTM and to implement supporting legislative and cultural changes, an extended period of continuous change may impose a tangible cost on organisations who will be required to modify and adapt their processes to remain compliant. End users may feel exposed to constantly changing rules, systems and processes. To minimise the negative perception of bureaucratic change, implementation of the solution should quickly establish a firm base from which to build.

Transport network integration

The Australian Government should consider multi-modal mobility integration for any policy framework in order to ensure seamless integration of UAM/RAM into other transport modes (rail, road, bus, ferry, ports) to benefit industry, passengers and freight customers.

Large government organisations would benefit from having more than one Remotely Piloted Aircraft Operator's Certificate (ReOC) to enable RPAS. CASA currently allows for one ReOC per organisation which is a barrier for RPAS implementation due to varying nature of RPAS operations and uses in a government department.

Collaboration with the NSW Government is important to fully consider the risks associated with the safe operation of these technologies, whether used in urban or regional environments, particularly in close proximity to road and rail networks, particularly as the volume of aircraft increases and more operators seek to share and integrate in the same airspace.

Whilst the Paper states that there is more data available to consider air risks associated with emerging technologies, there appears to be minimal data at present to identify trends associated with the ground risks.

Traditional airspace control reliance on RADAR surveillance is likely to be ineffective when dealing with smaller RPAS ("drones as tools") as well as larger passenger/freight UAM/RAM vehicles. A fully integrated real-time digital communications network connecting the flight

control subsystems of multiple UAS/e-VTOL vehicles (essentially flying “Internet of Things” devices) with an air traffic control system is potentially more efficient, faster, safer, reliable, available and secure than human-human communications.

NSW’s participation in any future governmental fora would be beneficial, as well as sandbox trials to enable testing and trialling of new operational concepts on our transport networks. There may be an opportunity to integrate operations and management into existing control centres.

Airspace mechanisms for emergency services

NSW proposes that the Commonwealth Government consider a mechanism for emergency services to apply for quick turn-around airspace restrictions so that RPAS flight operations can proceed unimpeded for pre, during and post-event data collection needs.

These considerations are consistent with Recommendation 51 of the NSW Bushfire Inquiry Report (Recommendation 51):

That in order to enhance NSW’s ability to improve situational awareness, Government expand Fire and Rescue NSW’s RPAS capability (both capital assets and trained operators) to major regional centres and ensure the NSW Rural Fire Service and other NSW government agencies can access this capability as required.

The most significant barriers to realising these opportunities relates to airspace, which are noted in the NSW Bushfire Inquiry and the Royal Commission to National Natural Disaster Arrangement Reports.

Additionally, the regulatory requirements and costs associated for developing emergency technology is difficult, costly and time consuming. The ability for regulators to quickly adapt and change with the changing landscape of fire related aviation and RPAS is hampering the ability for government and industry to implement new technology in a timely, cost-effective manner.

It is noted that UTM needs to incorporate real-time platform and pilot locators, an interface that provides this information along with pilot license identification, platform ID, purpose for flight summary (e.g. emergency services, recreational, commercial) and mechanisms to record and prosecute serial offenders.

Other approaches that could benefit the RPAS sector include airworthiness checks for platforms of a particular era, through to more structured avenues for introduction of new platforms or payload attachments (along the lines of current road transport vehicle registration checks).

2. SAFETY

The NSW Government supports the collaborative development of a best practice, evidence-based approach to safety regulation that also provides appropriate scope for innovation. It is expected that a flexible and adaptive approach to managing safety will help ensure regulators are best placed to manage risks in a potentially rapidly evolving industry.

The NSW Government suggests that the current regulatory approach does not provide a means for consideration of the social benefits of drone technology and its risk management.

CASA’s operational regulatory approach utilises a Specific Operations Risk Assessment (SORA) tool that allows for a specific set of issues to be considered relative to the proposed operation. However, the risk associated with the proposed operation is viewed in isolation and only considers the hazards associated with the drone operation itself. It does not consider other hazards and risks that the use of drones could be eliminating, and therefore provides no means of determining if the risk being eliminated is more likely to eventuate than any other risks associated with the use of a drone. This leads to situations where SORA would deny a

drone operation, and in doing so, an alternative means of carrying out the work needs to be implemented by means that could have a higher likelihood of causing harm.

Future policy could take a more holistic approach to how risks are assessed. This would include the risks associated with the proposed drone operation itself, but also the risks associated with carrying out the work with an alternative method. This would allow all the potential risks to be assessed on an even plane, so that the balance of the holistic risk equation is able to dictate what will yield the greatest social benefit in a proposed operation.

3. SECURITY

The NSW agrees that the malicious, unlawful, or inadvertent misuse of drones could pose a significant risk to public safety. The NSW Government supports the development of a proportionate and evidence-based approach to managing security risks associated with drones and eVTOL vehicles that is adaptable to changing circumstance while ensuring a secure operating environment.

The NSW Government supports a risk-based assessment of security risks on critical infrastructure and ongoing investment in counter-drone technologies to help ensure risks can be appropriately managed.

NSW supports the introduction of a drone registration and accreditation scheme, enforcement of geo-fencing, and a central system to control 'no fly' areas, as well as specific offences to prohibit the malicious misuse of drones and eVTOL vehicles.

Legislative context

In Australia, the *Civil Aviation Regulations 1998 (CAR)* and *Civil Aviation Safety Regulations 1998 (CASR)* provide for the operation of unmanned aircraft and relevant offences for their misuse. Offences under CASR are summary Commonwealth Offences and administrative offences punishable by fine only, via infringement notice or court action.

Under CASR, the NSW Police Force (NSWPF) is not authorised to commence proceedings against any person found to be committing offences for the misuse of RPAS. The only entity with authority to take such action for offences committed by RPAS is CASA.

The Commonwealth law is primarily related to aviation safety and does not address security or privacy issues in relations to RPAS. To overcome potential constitutional issues, any amendments would have to be based on the security, protection or interference with an area, person or thing rather than the safety of persons associated with aviation.

The majority of existing laws were written before the development of current RPAS technology. While in some cases they are written in technology neutral language, and therefore may still apply to the use of RPAS, widespread RPAS use and their developing capabilities will require ongoing reassessment of laws.

Police Powers

While police do have powers to investigate complaints involving RPAS, police are not authorised to commence proceedings against any person found to be committing offences for the misuse of RPAS. Any action taken against offenders is at the sole discretion of the CASA.

To this point, no person in NSW has received a penalty issued as a result of court action initiated by CASA. While a small number of infringements have been issued at the request of the NSWPF, the vast majority of offences are dealt with by way of caution only. This is explained by CASA's regulatory approach to regulation of aviation based on education and training to improve operator skills, rather than punitive action for breaches of civil aviation legislation.

RPAS use raises serious privacy issues, a problem that will likely increase as RPAS become cheaper and the cameras and sensors they carry become more sensitive. It will be very difficult to enforce regulatory compliance.

Intoxicated persons operating RPAS

Safe operation of RPAS, like any form of aircraft or vehicle, requires the operator to be alert and coordinated given the high risk to the safety of persons and property.

Currently police do not have any power to conduct alcohol or breath testing in relation to pilots or operators of RPAS. Relevantly, the *Road Transport Act 2013* (NSW) and the *Marine Safety Act 1998* (NSW) do not apply to aviation. In addition, just as police are unauthorised to commence proceedings for RPAS misuse, the Commonwealth aviation legislation also does not empower police to conduct alcohol or drug testing randomly or as a result of an accident or emergency.

Regulation 256 of the *Civil Aviation Regulations 1988* specifically provides offences for intoxicated persons not to act as pilots etc. or be carried on aircraft. However, it is unlikely this legislation would extend to the use of RPAS.

Harassment, trespass and nuisance offences

RPAS use should not compromise the privacy of individuals or businesses. The capacity of RPAS to enter private property, to travel unnoticed, and to record images and sounds which can be streamed live create significant opportunities for breaches of domestic violence legislation (Sections 13 and 14 of the *Crimes (Domestic and Personal Violence) Act 2007*).

A recent example of domestic violence perpetrated with the use of RPAS involved a person hovering a RPAS in the vicinity of the victim's premises recording persons coming and going from the location. The victim subsequently received text messages from the person demanding to know who was at the premises.

RPAS could fall within the scope of the *Surveillance Devices Act 2007* (NSW) under the definitions of 'optical surveillance device'. The Act limits application of prohibited surveillance activities to those that involve a non-consensual entry onto premises or into vehicles, or interference with objects. The Act effectively constrains but does not prevent the use of optical surveillance devices such as RPAS.

In NSW and other Australian jurisdictions, statutes restrict the applicability of harassment, trespass or nuisance. However, the legislation in NSW criminalising such behaviour has been considered unlikely to apply to RPAS (Australian Law Reform Commission, *Serious Invasions of Privacy in the Digital Era* at 3.38).

Protected airspace over correctional centres

It is an offence under ss 253FA and 253FB of the *Crimes (Administration of Sentences) Act 1999* (NSW) to possess a drone in, or fly a drone over, or in the vicinity of, a correctional centre in NSW. Despite these provisions, the use of drones in and over NSW correctional centres continues, as demonstrated by the reported sightings in 2019 and 2020. Additional security measures are therefore needed to strengthen and support enforcement of existing legislation in NSW.

Counter drone measures are required to target drones being used for criminal purposes, including providing an exemption for Corrective Services NSW (CSNSW) to use drone jamming technology for safety and security purposes. In this regard, it is noted that there is a concern about the proposed policy response in the Paper that counter drone measures may be permitted by operators of critical or sensitive infrastructure. The public interest in enabling infrastructure operators to use counter-drone technology may not outweigh adverse consequences of this capability for law enforcement.

Under clause 6(3) of the *Airspace Regulations 2007* (Cth), CASA may make a declaration designating an area to be a restricted area if it is in the interests of public safety, protection of the environment or national security. The contravention of a declaration is a criminal offence.

NSW requests that CASA considers designating our correctional centres as restricted areas to complement existing NSW legislation.

4. ENVIRONMENT

The NSW Government agrees that it is important for the policy and legislative framework for emerging aviation technologies to adequately protect against adverse environmental impacts. This includes noise as well impacts on nature, wildlife and the use and enjoyment of parks, public spaces and cultural sites.

Commonwealth regulations should consider mechanisms to minimise the impacts on land use and options for state-based regulation of airspace in specific circumstances, in addition to any proposed voluntary code of practice.

Natural resource regulation should be considered as a new use category. The Natural Resources Access Regulator is a NSW agency that has legislated responsibility for rural water regulation. RPAS are used to collect evidence from anywhere with little or no warning, and can be used in compliance actions.

Currently there are some 15 NSW acts or statutory instruments that prohibit the possession or use of drones in particular areas. For example, the *Biodiversity Conservation Regulation 2017* (NSW) currently prohibits the use of unmanned aircraft within 100m of a marine mammal. The *Sydney Olympic Park Regulation 2018* (NSW) prohibits the use of drones in the Sydney Olympic Park area. Similarly, some local governments in NSW require that drones used above public land do so under the authority of a permit.

The promotion of regulations and policy relating to drone usage in national parks by CASA is supported. NSW National Parks and Wildlife Service's ability to manage drone use is currently limited to seeking approval to launch/land drones in parks.

The NSW Government will continue to work with the Australian Government to ensure that the use of these technologies can be appropriately managed to protect wildlife and the public's enjoyment in socially and culturally significant areas.

5. PRIVACY

The NSW Government recognises that the increased use of drones and eVTOL vehicles will also likely increase community concerns about privacy. NSW supports the proposal for the development of a nationally consistent approach for managing privacy concerns that balances the impact on privacy with the needs of drone and eVTOL operations.

A 2018 NSW Parliamentary Inquiry into "Landowner Protection from Unauthorised Filming or Surveillance" found that the CASA Regulations do not specifically deal with privacy issues, including the use of surveillance devices on drones, such as cameras and audio recording. In the absence of CASA Regulations dealing with privacy issues, the surveillance devices and related privacy risks are regulated under state legislation.

In NSW, section 8 of the *Surveillance Devices Act 2007* (NSW) prohibits the installation, use or maintenance of a surveillance device by way of entry onto or into the premises. The NSW Act, however, does not deal with unauthorised filming or surveillance conducted by drones without entering the premises (e.g. filming from the adjoining land or from the fence). As a result, there is currently a gap in the regulation of filming and surveillance devices on drones.

The Paper recognises there is no statutory right to sue for serious invasion of privacy in Australia and refers to the Australian Law Reform Commission report on 'A statutory cause of action for serious invasion of privacy' in 2013. However, there is some relevant information on privacy which is not referenced in the Paper and should be considered and recognised by the Australian Government. This includes the Digital Platforms Inquiry Report of the Australian

Competition and Consumer Commission (ACCC) in 2019, as well as the Australian Government response to the ACCC inquiry where it committed to review the *Privacy Act 1988* (Cth). This review will mainly focus on improvements to consumer privacy protection but will also consider the issue of a statutory cause of action.

Strong collaboration between the Commonwealth, State and Territory Governments will be required to identify and develop solutions to address various policy gaps arising from drones and other emerging technologies. The Information and Privacy Commission NSW should be involved in early consultation processes.

6. TECHNOLOGY TRIALS

The NSW Government notes the commitment of the Australian Government to develop an approach that fosters partnerships between government and industry to promote “shared outcomes and learning with the goal to support the commencement of future commercial operations.”

The NSW Government supports the sharing of information that can enable the development of commercial drone and eVTOL industries in Australia, and intends to continue working with industry partners to bring technology trials to NSW.

In its Green Paper published in August 2020, the NSW Productivity Commission proposed to work with the Commonwealth to support greater take-up of drones in industry, beginning with the agricultural sector (Recommendation 4.16).

It is noted however, that in the current regulatory environment, all levels of government are facing the same entry barriers as the industry itself in relation to approvals for trials and complex operations. This slows down the uptake of the technology in government and is detrimental to the development of the industry.

The NSW Government welcomes the proposed concept of ‘Sandboxes’ to enable all levels of government to carry out trials and operations in controlled spaces without compromising public safety.

The NSW Government is in planning to develop a site at Cudal to deliver testing and assurance for a range of future mobility technologies, including aerial drones. NSW would be open to explore this further with industry and other Commonwealth and State agencies.

A new policy framework for drones could introduce a more streamlined and coordinated process for industry to seek exemptions to trial the use of drones. Consideration should be given to developing guidance materials for industry to develop their trial proposals.