1 Response to NEAT Policy Issues Discussion Paper

1.1 Overview

Boeing welcomes the proactive step of the Australian Government to initiate policy development for emerging aviation sectors such as remotely piloted aircraft systems (RPAS) and Advanced Air Mobility (AAM). As referenced in the Government's National Emerging Aviation Technology Policy Discussion Paper (the "Policy Paper"), these emerging sectors have the potential to deliver significant benefits to society through their application in a wide range of civil, commercial and defence use cases. Further, the technologies and operational concepts have the potential to drive innovation that can deliver safety, efficiency and sustainability benefits for the entire aviation sector. A comprehensive, sound and consistent policy and legal framework is essential to realising these benefits, and Boeing welcomes the Government's initiative in this regard.

Boeing acknowledges and appreciates the Government's current world leading, early adopter mindset towards emerging aviation technologies. Boeing believes that Australia is uniquely positioned to benefit from the early adoption of emerging aviation technologies.

Boeing supports the Government's "whole-of-government" approach towards the development of a comprehensive and cohesive policy set and legal framework for emerging aviation sectors. This approach has the potential to mitigate risk of regulatory inconsistencies and efficiencies inherent to the range of regulatory concerns and the multiplicity of agencies and jurisdictions that will need to be involved to address them.

Boeing notes that there are inherent tensions between the various policy concerns (e.g., safety, noise, privacy, emissions, security, etc.). In considering the interplay of policy concerns, Boeing emphasises the importance of safety as remaining paramount and the need for safety to remain the single central concern.

Boeing notes a number of considerations in relation to the stated scope of the Policy Paper. The Policy Paper states that it *"…does not apply to the military use of drones and is of limited relevance to larger drones that will have the ability to transit international airspace.*" (p.5).

Boeing believes it important to recognise that many of the challenges and policy concerns addressed in the Paper are not unique to the civil/commercial sector. The majority of these concerns will also need to be addressed by RPAS and AAM deployed in Defence applications and there are potential benefits to fostering coordination and alignment between Civil/Defence domains in this regard. Harmonisation and consistency between civil and defence regulatory approaches enables greater leverage of resources and expertise between civil and defence regulatory authorities, and provides a common framework for the sharing of safety data. It also has the added benefit of helping to reduce the administrative burden on industry pursuing dual civil/military market opportunities. It is noted that outcomes from Defence capability programs, the subsequent wealth of regulatory and operational experience Defence has, and the outcomes from Defence research and development initiatives, will be applicable to the civil/commercial domain.

Secondly, while Australia is unique in the regard that it shares no land borders with other nation states, international operations remain an important and relevant concern in relation to the development of Policy. Many "small" RPAS have the potential to perform international operations

from deployment locations based in Australia. Further, Australian developed, owned, and operated platforms have, and continue to be, routinely operated overseas. Global communications also enables Australian-based operators to safely pilot aircraft situated around the globe. Further, international harmonisation is key to realising export opportunities. While the near term focus of the policy is on smaller "drones", it is important that policy does not exclude larger RPAS, which are already in operation in Australian airspace today.

Boeing also notes significant reference to the potential impacts on, and concerns relating to, operators and end users of RPAS and AAM. For example, "*For the industry to thrive, the approach will need to be as efficient as possible to minimise the costs for operators and their customers*." (p.13). Boeing would like to emphasise the importance of considering stakeholders across the ecosystem – this includes those entities involved in the manufacture, maintenance, and training, supporting infrastructure (e.g., telecommunications, airports, vertiports, power) and services (e.g., insurance, education, consultancy).

The following sub-sections provide comments to specific sections of the Policy Paper.

1.2 Airspace Integration

Boeing identifies a strong alignment between the proposed Government policy position on airspace integration and Boeing's previously released vision and guiding principles for the integration of emerging aviation sectors. This paper was co-developed with Airbus and for ease of reference is attached to this submission.

As noted in the Policy Paper, "*some local and state/territory governments have sought to introduce rules and restrictions on drone use in certain areas to control the social and environmental impact of drones in line with their community's preferences*." (p.18). Boeing would like to emphasise the importance of a nationally consistent approach that ensures consistent safety and efficiency of RPAS and AAM operations across the country.

1.3 Safety

Boeing recognises the forward thinking and risk-based approach that CASA has adopted and the significant role this regulatory approach has played in the early advancement of the sector in Australia. Further, Boeing acknowledges the important role this proactive approach has had in shaping regulatory approaches worldwide. Boeing encourages further efforts towards greater harmonisation of international regulations. CASA is considered an experienced regulatory authority in this regard, and Boeing strongly supports CASA in the continuation of its efforts to share data, experience, and expertise as part of its involvement in regional and international regulation and standards development efforts. Boeing sees significant opportunity for further leadership in this regard.

Boeing supports a risk-based approach to the regulation of the sector and the continued development of an outcome/performance-based regulatory framework. Boeing also supports the use of common tools and approaches between regulatory authorities, such as the JARUS SORA, which help foster consistent and standardised regulatory approaches globally.

Boeing also considers that appropriate and proactive industry-regulatory collaboration can help to advance universal regulatory outcomes for the sector, and this has been noted in the Policy Paper. Boeing would also like to highlight the value of industry-regulatory "pathfinder" programs that have the primary purpose to advance solutions to regulatory challenges. Such collaborative programs have been successfully developed internationally (i.e., United Kingdom CAA Innovation Hub Sandbox Program, FAA Innovation Partnership Program, *etc*.). The benefit of such regulatory focussed collaborations is two-way. Firstly, they are an important mechanism for helping Government agencies to develop an understanding of the requirements and capabilities of new aviation technologies and operational concepts. Secondly, they help industry to understand the Government expectations in relation to the regulation of novel innovations. This is essential to continued industry investment. A key focus of such collaboration programs is ensuring outcomes are universally applicable and disseminated so as to advance regulatory outcomes for the entire sector.

1.4 Security

It is important to emphasise the distinction between security issues arising from the misuse of RPAS/drones from security issues concerning intentional acts that pose a risk to the safety of RPAS and AAM operations. The latter should be considered as a specific class of safety risk, and addressed accordingly within the scope of the existing safety regulatory framework. In this regard, Boeing encourages an outcome-based and proportionate regulatory approach to addressing security threats that is based on an objective assessment of credible security threats (including physical and cyber-security threats) and their associated impact on the safety of operations. Consideration should also be given to the scope of the existing Aviation Transportation Security Act and its potential application to AAM and RPAS operations, including vertiport design and operation.

1.5 Noise

Boeing acknowledges the importance of managing potential community disruption caused by the introduction of emerging aviation sectors, and in particular, RPAS and AAM operations taking place over populated regions. Consistent with the policy direction described in the Policy Paper, a holistic noise management approach should be considered, which accounts for both operational and technical means available to mitigate noise impact on the community, and differences in the community's tolerance and acceptability of noise associated with different aviation use cases. In addition to consideration of noise associated with the general overflight of populous areas, the scope should extend to include considerations on the siting, design, associated airspace design, and operational use of ground infrastructure (such as RPAS freight distribution hubs or AAM vertiports). Boeing supports the Government's policy direction for a nationally consistent approach to the development of a "Noise Policy Framework" that proactively engages with community groups. It should be noted that technical and operational measures undertaken with the objective to address noise concerns should not impact on the safety operations.

1.6 Environmental

Boeing recognises the importance of addressing community concerns in relation to potential impacts to culturally significant sites and environmentally sensitive areas. Boeing has also made broad commitments to enhance the sustainability of aviation. Advancements in areas such as air vehicle electrification and automated dynamic airspace and air traffic management have potential long term application, and in turn, sustainability benefits, to the wider aviation sector. As noted in the Policy Paper, the uptake of RPAS and AAM in applications such as freight and passenger transportation, and in land and wildlife management can have substantial benefits for the natural environment. Boeing supports the Government's proposed policy direction for a consistent, balanced and proportionate approach to manage the impacts on wildlife and the environment.

1.7 Privacy

Boeing supports the Government's proposed policy direction for a nationally consistent approach for managing privacy concerns that balances the impacts on privacy with the needs of drone and eVTOL operations. It is noted that the scope of policy consideration should also include the privacy of the airspace users, operators, passengers, and other end users of emerging aviation technologies.

1.8 EVTOL

Boeing recognises the significant potential benefits and challenges associated with the introduction of new, primarily electric, vertical take-off and landing aircraft. It is important to note that these aircraft can be conventionally piloted with varying degrees of automation in support of an on-board pilot, through to remotely-piloted. Airspace integration concerns associated with these new aircraft types should be considered holistically and concurrently with other airspace integration concerns for other airspace user types.

1.9 Infrastructure

Infrastructure is a critical ecosystem enabler. As presented in the Policy Paper, the scope of infrastructure concerns extends beyond just the vertiports and launch and recovery points to include essential services such as power, and communications, navigation and surveillance systems required to support safe and efficient air and ground operations. Such concerns must be considered as part of a system of systems inclusive of their interplay with surrounding infrastructure systems.

Spectrum is an essential and critical enabler to continued innovation in aviation, and in turn, the realisation of the many benefits associated with an increasingly digitised and interconnected aviation system. Spectrum is a fundamentally limited and highly valued resource. Long term spectrum provisions must be made to support the aviation system requirements into the future, noting that these requirements extend beyond the needs of the emerging aviation sectors covered in the Policy Paper. Spectrum is a critical enabler and Boeing strongly advocates for a dedicated Government

policy, and in turn strategy, for its management in support of emerging aviation sectors. The revision of the Australian Radiofrequency Spectrum Plan (ARSP) provides a timely opportunity to move forward with identification of spectrum for use by RPAS, UAS Traffic Management concepts, and other emerging aviation sectors.

1.10 Technology Trials

Boeing supports the Government's policy direction to explore avenues for greater industry-government collaboration. The pace of innovation is not slowing, with new aviation technologies and operational use cases continuing to emerge. There are advantages to identifying additional opportunities for industry to engage Government agencies to share capability advancements and emerging requirements. Such information exchanges will be essential to ensuring Government strategies remain up to date with rapidly evolving industry needs and direction. The scope of engagement should include Government agencies that are end users of emerging aviation technologies.

Boeing supports the policy direction to create "Sandboxes". Flight test areas, such as that established by the Queensland Government, are key to enabling safe industry innovation. Sandboxes should include streamlined regulatory approval processes, which account for the technical and operational risk controls already in place at designated test sites.

Boeing also notes the significant capability in Australian Universities to provide research towards addressing identified technical, operational, and regulatory challenges. In turn, there is the opportunity for Government to support research prioritisation in line with the policy direction, and to ensure a coordinated approach to any investment in research.

1.11 Governance and Coordination

Boeing supports the Government approach to provide industry with a single point of coordination for issues concerning emerging aviation technologies. Drawing on the depth of experience and knowledge gained from more than a century of aviation, the emergence of RPAS and AAM presents an immediate opportunity to explore a more contemporary approach to governance and regulatory models that can respond to a rapidly changing technology and social landscape.