



Meeting Brief – Andrew Moore, AMSL Aero Pty Ltd

Document 1

Purpose

- You are meeting with Andrew Moore, Chief Executive Officer, AMSL Aero Pty Ltd (AMSL). Mr Moore has indicated that he wishes to discuss with you the progress of AMSL's advanced air mobility (AAM) development.
- AMSL anticipates that its prototype will be operating commercially in 5 to 10 years, providing aerial hospital and transport services in rural, regional and remote Australia. AMSL also envisages servicing air taxi, cargo transport and defence medevac use cases as well.

Talking Points:

If asked about the cost recovery framework

- The Department is working with CASA to develop a holistic registration framework that would cover both recreational and commercial drones. **This does not include AAM, this will be dealt with separately.**
- CASA consulted on drone registration in September 2020 and June 2021, and various options were canvassed. These have undergone further refinement, but the process has not yet concluded.
- The Department will ensure that any policy development on AAM will include robust industry consultation.

If asked about the Memorandum of Understanding with Victoria

- The Federal and Victorian governments have agreed to create an operating environment which will help develop a safe and sustainable Advanced Aerial Mobility (AAM) industry to increase regional connectivity and deliver high-speed emergency response services and create new jobs.
- The MoU is between the Department of Infrastructure, Transport, Regional Development and Communications, the CASA, Airservices Australia and Victoria.
- The Government is open to agreeing MoUs with other state and territory governments where it will support emerging aviation technologies. The MoU is not publicly available.

If asked about the Emerging Aviation Technologies Partnership Program

- As you know, the Government committed \$32.6 million over two years to establish the Emerging Aviation Technologies Partnership Program. We are very excited by this program and the opportunity we have to work with industry to better understand what is needed to drive the sector forward, and to address community needs in some of our regional and remote communities.
- Round one of the Program is open for applications until 31 March 2022, and program guidelines are available on the Department of Infrastructure's website, along with information on eligibility and merit criteria.
- There will be a second round under the program and we anticipate we'll be in a position to release the Round Two grant guidelines in the latter half of this year.
- We are running the program as an open competitive process so unfortunately are not able to discuss individual applications or provide any additional information that is not contained within the program guidelines. If you do have any procedural questions or questions relating to the guidelines, the team will be happy to help and I can pass on their contact details.



Sensitivities

- In October 2020, AMSL responded to the National Aviation Policy Issues Paper on Emerging Aviation Technologies, raising issues of a lack of large scale testing approvals, burdensome cost recovery, poor coordination with international certification for eVTOLs, and a lack of sophisticated distinction between drones and eVTOLs.
- Registration for commercial drones was introduced in July 2021, along with a phase-in charge of \$40 per drone.
- AMSL may wish to know the contents of the Victorian Memorandum of Understanding (MoU), given their interest in accessing large scale testing capabilities. The MoU is not publicly available at Victoria's request.
- AMSL participated on CASA's Technical Working Group to develop the RPAS and AAM Strategic Regulatory Roadmap.

Questions you may wish to ask

- What infrastructure or spectrum requirements do you think a large scale AAM operation will have? How will you be addressing these challenges?
- What capabilities or applications does the Vertiia have for emergency and disaster relief, such as floods or bushfires? Has AMSL considered exploring use cases in that regard?

Background

AMSL appears to be the sole Australian-based advanced air mobility (AAM) manufacturing company

- AMSL has developed a flagship prototype called "Vertiia" in Sydney, using a locally built components and Slovenian engines. AMSL will test operations in 2022 and has testing facilities in Narromine, NSW.
- The Vertiia may have options for hydrogen fuel cells or battery electric propulsion. AMSL anticipates that the hydrogen option will allow travel up to 1,000 km, and the battery version will allow travel up to 250km. Both versions can travel at speeds up to 300 km/h.
- AMSL anticipates the Vertiia model will be operating commercially within the next five to 10 years, servicing routes between capital cities. AMSL also anticipates that Vertiia will be able to travel closer to 700 km/h by then.

AMSL has partnered with Careflight to launch an air ambulance service in regional Australia

- The partnership forms part of a \$3.3 million Cooperative Research Centres Project grant from the Commonwealth Government, to collaborate with the University of Sydney and Mission Systems – a company specialising in autonomy and sensing technology.
- Mr Moore anticipates that AMSL's operations will enable greater access to medical services for vulnerable remote, rural and regional communities and reduce the complexity and time transporting patients.

AMSL has received around \$10.8 million in funding from the Commonwealth and NSW Government

- AMSL received two grants of \$3.3 million from the Department of Industry, Science, Energy and Resources (DISER) on 13 February 2020 and on 7 October 2021 to assist with the development of the Vertiia.
- AMSL also received a \$950,000 grant from the NSW Government's Regional Investment Attraction Fund in July 2020. This funding enabled AMSL to set up testing facilities in the Narromine Aerodrome precinct.
- In November 2019, the Defence Innovation Hub provided a \$3.2 million grant to AMSL to develop a medevac AAM use case.

NEAT Policy | Advanced Air Mobility

Problem Statement

Advanced Air Mobility (AAM) has the potential to be a significant disruptor in short to medium haul air transport for passengers and cargo. AAM can contribute to connecting people, goods and services in urban, regional and rural Australia. AAM applications can lead to reduced urban congestion by reducing reliance on short car trips and changing population settlement patterns.

Industry in Australia and abroad are making significant investments towards R&D and business development for eVTOL and other AAM technologies. Companies are looking for opportunities to collaborate with governments, including to test feasibility of prototype vehicles and business models. Opportunities are closing for Australia to influence and set direction for this first-mover growth in our local context, risking Australia's innovation, economy and global reputation.

What are we looking to do?

To leverage and support industry investment and growth in Australia, the Australian Government needs to articulate a clear vision and pathway to market for the AAM industry, including through promoting:

- Flexible, incremental and transparent regulation and regulatory processes
- Operational testing and trials, such as regulatory 'sandboxes', and
- Understanding of consumer willingness through demand driven and diverse applications

We are already engaging with the AAM industry through the Emerging Aviation Technology Partnerships (EATP) program which has the potential to support targeted, demand driven and outcomes based applications in regional and rural settings.

We are working closely with CASA on the rollout of the Aviation Safety Regulatory Roadmap. While CASA develop comprehensive and enduring regulatory frameworks for AAM, the Australian Government needs to send clear signals to industry through:

- Showing support for AAM at all levels of government, including with state/territory and local government champions
- Engaging with states and territories on benefits realisation through AAM applications in their jurisdictions
- Encouraging regulatory reciprocity, including mutual recognition of certification standards
- Acknowledging that pathway to market for new technologies is a journey and not a destination. This includes encouraging CASA to develop soft/interim guidance products and increased opportunities for testing and trialling in controlled environments.
- Recognising the nuanced distinction between drones and AAM, providing confidence to industry that challenges unique to AAM are being considered

How and when?

We will consult closely with industry, states and territories, our portfolio agencies and other Cth government agencies on the development of a national AAM policy for Australia.

This will include the development of an issues paper and a portfolio and industry workshop in **Q2 2022**. The consultation process will inform the development of an AAM blueprint by **Q1 2023**.

NEAT Policy | Advanced Air Mobility

What is AAM: Advanced Air Mobility (AAM) is an emerging aviation sector that will utilise new aircraft types to transport people and goods. Many companies globally are developing varied designs of electric Vertical Take-Off and Landing (eVTOL) aircraft that are similar in size to a helicopter. Key advantages of AAM compared to traditional aviation are that they are cheaper, quieter, and do not require as much infrastructure to operate. They are also expected to become increasingly autonomous over time, further reducing costs.

AAM may have a transformative impact on short to medium range air transport, as reduced costs and environmental impacts significantly expand the potential market for aviation. This includes:

- **Regional Air Mobility** – New passenger services connecting regional and remote Australia. This could significantly improve the accessibility of regional and rural towns, with implications for settlement patterns.
- **Urban Air Mobility** – Passenger services that can reduce travel times and congestion by flying over busy urban environments (e.g. city to airport routes).
- **Drone cargo services** – highly automated, low-cost air cargo services which can drive productivity improvements across a range of industries, particularly those with high value and/or time critical goods.
- **Government applications** – AAM is expected to have a diverse range of applications in the government sector, particularly, defence, aeromedical services and emergency management.

Challenges / Opportunities:

- Industry is looking for clear signals from all levels of government that there will be coordinated support for developing their operations.
- Australia is competing globally with many countries to attract leading AAM companies to launch services here. No major AAM manufacturers currently have definite plans to launch in Australia.
- There is currently only one Australian company seeking to develop an aircraft design locally. A number of Australian companies are developing components that may be relevant to AAM manufacturing. There is no clear policy on government support for AAM related manufacturing.
- Significant regulatory and policy development is required to support AAM operations and integrate them with traditional aviation.

What are we doing to support AAM?

Existing projects under the National Emerging Aviation Technologies Policy Statement include:

1. **Emerging Aviation Technologies Partnerships** – will provide funding and support for pilot projects and key research activities to develop the sector, with a focus on regional Australia. Round 1 applications are currently being assessed.
2. **Infrastructure Planning Framework** – coordinating development of regulations for AAM infrastructure across Commonwealth and State agencies to provide clarity to industry and national consistency in planning requirements.
3. **RPAS and AAM Strategic Regulatory Roadmap** – CASA has developed a draft regulatory roadmap for drones and AAM to identify and progress required changes to safety regulations. Consultation closes on 19 April.
4. **MoUs** – The Department, CASA and Airservices have signed an MoU with Victoria to work together to develop the sector. Other MoUs are expected to follow (potentially NT and NSW).

What is next?

- We will work closely with our partner agencies and industry to develop a blueprint which provides an overview of the government's approach to support AAM operations in Australia by **June 2022**.
- We will encourage, develop and finalise MoUs with other interested state governments.
- We will leverage and align with global standards as they develop through expanded international engagement.



Meeting Brief – Wisk Aero

Document 4

Attendees

- Catherine MacGowan, Asia Pacific Region Director, Wisk Aero
- Hamish Janett, Market Engagement Manager, Wisk Aero

Purpose

- You are meeting with Catherine and Hamish from Wisk Aero. The meeting is a follow up to brief chats between yourself and Wisk Aero at the AAUS RPAS in the Skies Conference in late April and an impromptu attendance by NEAT representatives at a meeting between Wisk Aero and Toowoomba Airport on 01APR22, occurring parallel to the RAAA Roadshow.
- Wisk Aero has significant experience with the regulatory environment in New Zealand and the US, such as certification of their technical platform, and acceptance paths between the NZ CAA, US FAA and other regulators, including CASA.

s45

Talking Points:

If asked about the Department's vision for AAM in Australia? Including policy and regulation evolving to support uncrewed aircraft operating passenger services.

- The Government has dedicated staff responsible for the development of a vision and pathway for AAM in Australia. We are working closely with our portfolio agencies, states and territories, industry and other stakeholders to inform the development of an AAM blueprint for Australia
- We are considering both crewed and uncrewed systems and how government components, including technology and regulatory functions, will enable and support these while managing associated risks
- We are working closely with CASA on the development of the RPAS and AAM Regulatory Roadmap, which was open for public consultation between 8 March and 19 April 2022
- We are working closely with Airservices to provide overall policy direction for the development of the Uncrewed Traffic Management (UTM) system. The UTM ecosystem will be a key component in safely and efficiently managing low level airspace for drones and other uncrewed systems.

If asked about opportunities for Wisk to support the Commonwealth Government?

- The Government is open to opportunities for engagement with industry to inform understanding and policy decision making.
- We will advise industry of formal engagement and consultation opportunities that present as part of the development of AAM policy

If asked about international cooperation and standardisation on new platforms and AAM infrastructure?

- The Australian Government will look closely at international models and standards, and will carefully consider leveraging these where it is in our national interest and aligned with our operating environment, needs and priorities, and administrative arrangements.
- Australia will continue to pursue efforts supporting and contributing to the development of best practice international harmonisation in equipment design, manufacture, flight operation standards and airworthiness certification of eVTOL aircraft, support systems as well as AAM infrastructure standards.



If asked about the Memorandum of Understanding with Victoria (i.e. why Victoria?)

- The Federal and Victorian governments have agreed to create an operating environment which will help develop a safe and sustainable Advanced Aerial Mobility (AAM) industry to increase urban and regional connectivity, deliver high-speed emergency response services and create new jobs.
- The MoU is between the Department of Infrastructure, Transport, Regional Development and Communications, CASA, Airservices Australia and the state of Victoria.
- The Government is open to agreeing MoUs with other state and territory governments where it will support emerging aviation technologies. **Note:** The Victorian MoU is not publicly available.

If asked whether the Government has plans to make formal arrangements with Queensland

- The Government has established formal engagement forums and informal communication channels with every state and territory jurisdiction and continues to discuss engagement and collaboration with all states and territories, taking into consideration their contexts
- The Government is open to agreeing MoUs with other state and territory governments where it will support emerging aviation technologies

If asked about the Emerging Aviation Technologies Partnership Program

- As you know, the Government committed \$32.6 million over two years to establish the Emerging Aviation Technologies Partnership Program. We are very excited by this program and the opportunity we have to work with industry on demand driven outcomes that address community needs in some of our regional and remote communities.
- There will be a second round under the program that will address any gaps or priority areas that arise during the first round, providing an opportunity for Round One research findings to be applied.
- We anticipate we'll be in a position to release the Round Two grant guidelines later this year or early next year. This timeframe will ensure we can apply lessons learned from the administration of the program.
- We are running the program as an open competitive process so unfortunately are not able to discuss individual applications or provide any additional information that is not contained within the program guidelines. If you do have any procedural questions or questions relating to the guidelines, the team will be happy to help and I can pass on their contact details.

Sensitivities

- Wisk Aero may seek to encourage prioritising policies for autonomous AAM. We should respond by saying that we are considering crewed and uncrewed systems on their merits, focusing on safety, application and use cases and how technologies will integrate into the community.
- Wisk Aero may encourage the Department to establish formal arrangements with the Queensland Government to support the company's history and ambitions in the state. We should respond as per above TPs that we are open to arrangements with all jurisdictions.

Questions you may wish to ask

- What do you see as the key drivers for Wisk Aero in the Australian market and what kind of support would you like to see for the AAM industry as a whole?
- What outcomes would Wisk Aero like to see from potential partnerships with a state or territory?
- Given your (regulatory and otherwise) experience in NZ and the US, what do you see as some of the broader opportunities (and risks) in positioning Australia for a successful national AAM industry?

Background – Wisk Aero

Wisk Aero is an independent Advanced Air Mobility (AAM) company focusing on the development of fully autonomous eVTOL aircraft. Wisk Aero is backed by a recent (Jan 2022) \$450m of funding from The Boeing Company and is also supported by US remotely piloted electric aircraft manufacturer, Kittyhawk.



Wisk Aero began in 2010 as Zee Aero and have developed a new generation of eVTOL aircraft every 1-2 years since then, currently up the 6th generation. With straight-to-autonomy is the company's core first principle, Wisk Aero believes that autonomy is the key to unlocking scale across passenger and cargo AAM applications.

Fast facts

- 385 employees (including 100 Boeing engineers)
- Based in San Francisco, CA; New Zealand and Atlanta, GA
- Over 1'500 full-scale test flights

Wisk Aero has participated in airspace integration trials in Queensland in November 2021. This informed further trials in New Zealand in the first half of 2022, including BVLOS flight tests and interactions with Air Traffic Control in a simulated environment.