



AUSTRALIAN ASSOCIATION  
FOR UNMANNED SYSTEMS

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February 6, 2015

Committee Secretary  
Senate Foreign Affairs, Defence and Trade References Committee  
PO Box 6100  
Parliament House  
Canberra ACT 2600

Dear Committee

**RE: Use of unmanned platforms by the ADF**

The Australian Association for Unmanned Systems (AAUS) welcomes the opportunity to submit material in relation to the Foreign Affairs, Defence and Trade References Committee inquiry on the use of unmanned platforms by the ADF.

AAUS is a not for profit association representing the unmanned system industry across three domains – air, land and sea. AAUS has a membership including Defence companies (BAE Systems, Northrop Grumman, Cobham, General Atomics, Insitu Pacific, Aerosonde and Flight Data Systems) as well as Small to Medium Enterprises, Academia and individuals. It has compiled input from its members in relation to the inquiry, referencing the following aspects:

**(a) Their role in intelligence, reconnaissance and surveillance operations, including in support of border security, civil emergencies and regional cooperation;**

As we move into the future, AAUS believes that that unmanned systems will play an increasing role in intelligence, surveillance and reconnaissance (ISR) operations, including support of border security, civil emergencies and regional cooperation. We have already seen the power of long endurance ISR platforms (Triton and Predator) being operated by the US military and US Customs and Border Protection Service.

The use of these types of platforms will efficiently and dramatically improve the capability of the ADF and Border Protection to monitor Australia's vast maritime environment. Efficiency gains result from the ability of these platforms to stay airborne for periods up to 30 hours, resulting in significant gains for time on station surveillance in our remote areas.

These systems together with smaller and cheaper systems can also provide long endurance monitoring of civil emergencies. Adopting a 'horses for courses' approach, smaller systems (eg. Aerosonde and Scan Eagle) may also provide cost effective focal point monitoring of bush fires or areas devastated by cyclone or flood.

All these systems would complement existing manned platform options and if used responsibly within CASA regulations, would greatly enhance the flow of timely ISR information.

**(b) Their cost- and combat-effectiveness in relation to conventional military platforms;**

Unmanned platforms will save lives within the ADF where they might be used in the place of a conventional manned military platform. The removal of pilots and aircrew from harm's way whilst still being able to provide support to troops deployed on the ground is a key driver for the use of unmanned platforms.

The effectiveness of these systems (eg Heron and Shadow) has been demonstrated already with recent use of a number of unmanned platforms during recent ADF deployments to Iraq and Afghanistan.

**(c) the Government's force structure review and Defence capability plan;**

The ADF has been able to deploy a number of unmanned platforms through rapid acquisition programs (Scan Eagle, Heron) involving civilian operated service models. Israeli and US systems are the most mature and capable unmanned systems in the World due today as a result of strategic priority given to them by their respective Governments.

Whilst Australia has a significant unmanned platform industry, the ADF does not operate any locally developed or manufactured systems. A possible reason for this is that apart from JP129 and Air7000, the indigenous unmanned platform industry has not been able to obtain a clear strategic view of ADF requirements and have been caught off-guard by these rapid acquisitions.

Unmanned system programs outlined in the current Defence Capability Plan (DCP) are those with typical Defence acquisition timescales. The developmental pace of unmanned systems in the US and Israel has seen relevant technology become available to the ADF in timescales much shorter than White Paper or DCP timescales.

The Australian Government has an opportunity to develop a more agile plan to allow this rapidly evolving technology to be utilised quickly by the ADF, whilst keeping the indigenous industry actively engaged.

**(d) Challenges, opportunities and risks associated with their deployment;**

There are many challenges and risks associated with the deployment of unmanned platforms. These include:

- Safe operation including certification and anti-collision systems

- Cost effective, secure reliable data retrieval systems (including satellite communications)
- Launch and retrieval systems for small ships
- Increased autonomy
- Human factors

An opportunity exists to build a niche Australian industry through research and development (R&D) programs aimed at addressing these challenges and risks.

**(e) Domestic and international legal, ethical and policy considerations;**

Public opinion on the use of unmanned platforms for defence applications (and use of drone terminology) has been negative on occasion. Public conversation has centred on legal and ethical issues including privacy (especially related to civil applications) and rules of engagement (armed conflict).

With respect to rules of engagement for armed conflict, our membership is of the view that the use of unmanned platforms should be in accordance with the international laws of armed conflict.

**(f) Research and development capabilities and Australia's industrial expertise;**

Australian Industry has demonstrated 'runs on the board' with respect to world-leading innovative unmanned systems R&D. Examples are numerous, exemplified by: the Australian Centre for Field Robotics (ACFR) at The University of Sydney in applying field robotics development to areas of stevedoring, cargo handling and logistics, as well as in mining automation, agriculture, and defence capabilities; the Australian Research Centre for Aerospace Automation (ARCAA) in developing enabling technologies and researching various aspects of the integration of UAVs in the national airspace; RMIT University, which is leading research into the design and operation of micro air vehicles, safety, and regulation; DSTO's Automation of the Battle Space Initiative, Aerosonde Pty Ltd in developing, manufacturing and operating a small and highly capable RPA that is now in service with US Defence; Sentient who has successfully developed computer vision technology for international defence and civil projects. With government, defence, and industry support, the rich heritage of indigenous unmanned systems innovations (eg. Jindivik and Nulka) can be extended to a bright future in meeting global demands.

The ADF / DSTO have provided support for a small number of research and development programs through funding programs such as concept technology demonstrators (CTD). We believe that it is in the national interest to increase support for local R&D for reasons of strategic national security and economic prosperity. It is a potential growth sector and one that Australia has proven competence.

**(g) Transport, health and air safety implications;**

Risks associated with the use of unmanned platforms include collision with other aircraft, people and property. From our perspective, the ADF has successfully and safely

integrated unmanned systems into Defence controlled airspace during Iraq and Afghanistan deployments using a sensible risk based approach. We hope that our civil regulator and industry can benefit from lessons learned and processes adopted in order to progress regulations for RPAS operations in Australian civil airspace.

Yours Sincerely,

Greg Tyrrell  
Executive Director, Australian Association form Unmanned Systems (AAUS)  
On behalf of AAUS Board and Members