

Submission: 288

General Aviation Advisory Network

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Via email:

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To whom it may concern

The General Aviation Advisory Network (GAAN) welcomes the opportunity to provide a submission to the consultation on the *Potential future expansion of Automatic Dependent Surveillance Broadcast (ADS-B) Mandate in Australia*.

The GAAN was formed in October 2016 to provide advice to the Minister for Infrastructure and Transport on matters affecting the General Aviation (GA) sector. The GAAN membership covers all general aviation sectors potentially affected by the potential future expansion of ADS-B mandates that are the subject of this consultation. These include air transport, charter operations, aerial work (both fixed wing and rotary), aerial application, business aviation, unmanned aerial systems (drones), Advanced Air Mobility (AAM), sport and recreational aviation including gliding. Across the GA sector operations are conducted in all classes of Australian airspace including (uncontrolled) Class G airspace.

ADS-B technology is well known to the Australian aviation industry. The technology has been in use across many sectors for many years of safe and reliable operations. Specifically, the 2012 mandates that required ADS-B fitment for all Instrument Flight Rules (IFR) aircraft have been successfully implemented and delivered for many years.

Significantly the safety and operational benefits of ADS-B fitment for all IFR aircraft are well understood and recognised for the improvements they have provided. These benefits have included an additional layer of safety assurance in addition to systems like Traffic Collision Avoidance Systems (TCAS), improved safety by facilitating accurate aircraft positioning to enable weather diversions, improved operational efficiencies through reduced fuel burn, enhanced safety through search and rescue, and accident investigations.

The Australian aviation industry is continuously evolving, and the Australian aircraft fleet continues to change, and the volumes of air traffic continues to grow. The types and size of aircraft both crewed and uncrewed and the nature of their operations is also changing. Airlines and other airspace users are utilising airspace differently as operators fly new or previously unserved routes often in larger aircraft. All these operations require a continued focus to maintain the safety and efficiency of operations and airspace management across Australian at all flight levels.

The GAAN would like to acknowledge the detailed work already completed by the ADS-B working group established through the ADS-B initiative outlined in the Aviation White Paper.

The GAAN appreciates the recognition by the working group that any proposed ADS-B mandate will need to be considered carefully, noting the complexities of the GA sector and the challenges that exist if they it was to be implemented. Any ADS-B mandate needs to be suitable, affordable, and commensurate with the safety risk that is being managed. It must also provide the greatest opportunity to deliver real and effective safety outcomes for all airspace users and the Australian community.

Specifically, GA will be most likely to be impacted by a wider ADS-B mandate for ADS-B OUT and IN for Visual Flight Rules (VFR) operations as they are not covered under the current requirements for operations under IFR. In addition to VFR the proposed mandates detail an expansion in current requirements to mandate ADS-B IN capability for IFR operations in the short to medium term. This proposal is likely to impact air transport operators and current IFR operators including some GA operations.

The ADS-B Consultation paper poses several questions for consideration. The GAAN provides feedback on those questions as follows.

Do you support an ADS-B mandate? Why or why not?

The majority of the GAAN is supportive of the proposed mandate. Most GAAN member organisations and associations have policy positions in favour of any proposed of future ADS-B mandates. Examples of these are the Regional Aviation Association of Australia (RAAA), Australian Helicopter Industry Association (AHIA), Australian Business Aviation Association (ABAA), Aerial Application Association of Australia (AAAA) and the Australia Association of Uncrewed Systems (AAUS).

Those in support also share the view that the avionics (device) that is required to be used should be suitable and appropriate to the nature of the operations and commensurate with the safety risk that is involved in those operations. As an example air transport and commercial operations should be required to use approved ADS-B equipment whereas for private flying operations in a VH registered or recreational registered aircraft a lower cost approved EC device would be more appropriate.

It must also be noted however that some of the GAAN member associations are not in support of the ADS-B mandate, particularly if they were to be applied across all airspace classification like regional and remote areas of Class G airspace. For example members of the Australian Gliding Federation (AGF) are not in favour of the VFR mandate as they already use alternative technologies like FLARM.

If so, what airspace and/or aircraft types would you include in it?

Those in support of the proposed mandates consider that all airspace and all aircraft types including remote and uncrewed aircraft should be included. In short, if it flies it should at least be ADS-B out capable to ensure 'alerted see and avoid' operations. Over time the use of ADS-B IN for all operations would be desirable.

Can you provide feedback on the potential model (Figure 1 and Figure 2)?

Do you consider the model to be sensible and achievable? Why or why not?

The supportive GAAN members consider that the proposed model is sensible and achievable.

The majority of the GAAN are of the view that the main proposal should be applied in full. The VFR Alternatives also detailed in Figure 1. do provide a graduated implementation pathway if government decided on a phased implementation timeline. Ultimately the mandate should be applied to all aircraft types and not be designed around specific locations, volumes of airspace or specific types of operations.

There is also a potential issue around avionics availability that would need to be explored further before full implementation of a mandate. As it currently stands there are some large aircraft like the Bombardier Q400 and SAAB 340 which, due to their age and existing avionics fitment have no approved ADS-B-IN equipment solution available. It may be that a ADS-B IN solution could be available by the 2033 deadline but this would need to be monitored and timelines adjusted or exemptions explored if required. It is important to note that TCAS does provide a layer of safety for these aircraft.

Consideration also needs to be given to the key technology enablers that will be required to ensure that the full benefit of the mandating of the technology can be realised. As outlined in the consultation paper there are deficiencies in the existing ground-based ADS-B receiver network operated by Airservices Australia. The existing ADS-B ground station network would need to be supplemented with the addition of new ground stations to ensure full ADS-B coverage down to the surface. Importantly there is a real opportunity here for government aviation agencies like CASA and Air Services Australia to approve the use of newer ADS-B technologies like space based systems that will provide full continental coverage across Australia at all flight levels down to the surface.

Noting the relatively long time frame (2028 – 2033) it would also be appropriate for government and the relevant agencies to also look at other new technologies that may emerge that may also bring similar or comparable safety benefits.

What aspects of the model would you retain, alter, or discard? Why or why not?

Other than the issues raised around avionics, network availability and emerging technologies already discussed there are no other matters to alter or discard from what is proposed.

What impact would the model have on your operations, if applicable?

There are many positive safety and operational benefits to be achieved through appropriate and practical ADS-B mandates. One other impact that will need to be considered is time. Any mandate will need to ensure that there is adequate time to fit the Australian aircraft fleet. Central to this will be the availability of the necessary equipment as well as the availability of suitable qualified personnel to undertake the installation work. This may be best managed when aircraft are scheduled for major maintenance.

What are the estimated costs that you might incur in complying with this mandate?

The GAAN is not in a position to provide advice on estimated costs due to the diversity of and size of aircraft and UAS types that are flown. It is important that the government ensure that any mandates are both practical and affordable. One way the government can do this is ensure it continues to incentivise the uptake of ADS-B and encourage fitment through its ADS-B subsidies program. Furthermore the government should also consider the expansion of the rebate program to ensure everyone is able to be fitted in a timely manner.

What are the potential benefits for your operation?

All GA operations would see a variety of operational benefits for their operations depending on the location and nature of their operations. Importantly everyone will see an increase in the safety of their operations. The current system has relied for many years on 'see and avoid' particularly for operations outside controlled airspace. "Alerted see and avoid" is provided through ADS-B OUT in the first instance will be further enhanced through ADS-B IN and OUT.

Were the model adopted as government policy, when should all VFR aircraft in all airspace be fitted with approved ADS-B equipment (currently 'beyond 2033')?

The proposed timeframe of 'beyond 2033' for all VFR aircraft to be fitted with approved ADS-B equipment should be considered further. Whilst a 2033 timeframe is potentially achievable the question needs to be asked if the highest level of conspicuity is required by all VFR aircraft particularly when they may not need to interface with air traffic control (ATC) for the purposes of aircraft separation and air traffic control.

Are the proposed weight and height limits for drones, above which an ADS-B OUT mandate would apply, appropriate?

The GAAN generally agrees with the proposed weight and height limits for drones. That is small drones operating above 400 feet and medium and large drones regardless of altitude.

Are any of the alternate options outlined at Figure 1 a better way forward? Why or why not?

As previously discussed the VFR alternatives do provide a graduated implementation pathway if government decided on a phased implementation timeline, however they may be too hard to apply or administer on an ongoing basis. The mandate should be applied to all aircraft types and not be designed around specific locations, volumes of airspace or types of operations.

Noting the Government's ADS-B rebate program, have you fitted ADS-B to your aircraft? Why or why not?

The GAAN notes that the AWP has facilitated an extension to the undersubscribed ADS-B rebate program which is welcomed. Many GA operators have already taken up the option to fit ADS-B OUT to their aircraft including upgrades to the aircraft Global Positioning System (GPS) at the same time as well.

Thank you once again for the opportunity to provide feedback into the proposed ADS-B mandate consultation. On behalf of the GAAN I am happy to provide additional detail or discuss further as required.

Kind regards

A handwritten signature in black ink, appearing to read 'Rob Walker', with a stylized flourish at the end.

Rob Walker
GAAN Chair