

THE PROPOSED DISCUSSION PAPER and RENEWED COST BENEFIT ANALYSIS of ADS-B COMMENTS by ASAC

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SUMMARY

The ASAC organisations expect that any decision on the implementation of GPS based technology – GNSS Nav and ADS-B – will be made on a risk management and cost benefit basis.

The Minister's policy that all airspace management decisions will be made on a risk management and cost benefit basis is well received by all of industry. It would be very unfortunate if the first and arguably most important decision in airspace management since this policy was announced abrogated that policy.

The implementation of GPS based technology involves a number of separate objectives or outcomes – related only by the fact that they depend on GPS. These separate objectives must be considered, costed and subjected to separate risk management and cost benefit justification leading to a separate implementation decision.

Treating these as separate projects is not only essential to a valid justification of these different but related objectives but is essential if timely and optimal implementation of this important technology is to be achieved.

Having spent considerable amounts of public and industry money on this project it is essential that momentum in this overall initiative not be lost by artificial bundling of these separate objectives into a single project with the associated controversy regarding a wide mandate for ADS-B OUT.

The proposed discussion paper and associated cost benefit analysis of these projects must deal with, and report on, these separate projects as separate projects.

BACKGROUND

The ASAC organisations understand that GPS based technology – including GNSS navigation and ADS-B – is important new technology for the provision of ATM services which, if applied appropriately, is capable of significant cost savings and improved services and safety.

Australia has spent significant sums of public and/or industry money developing this technology. Accordingly, the ASAC organisations believe that it is important that appropriate implementation of this technology be expedited so that the expected cost savings can be achieved.

Unfortunately, it appears that appropriate implementation of some aspects of this technology is being delayed by what seems to be an almost ideological push to achieve a very wide ADS-B mandate from the very outset. It appears that this objective is forcing an attempt to implement these changes as a single project making the decision an all or nothing outcome. No other nation is taking this 'big bang' approach. It is our view that this 'big bang' approach is delaying implementation of clearly cost beneficial aspects of this technology while the controversial aspects of a wide ADS-B mandate is debated.

Further to this and equally importantly, debate on these initiatives remains technology driven rather than outcomes based. That is, proposals for the implementation of this technology are based on the existence and success of this technology, not on the need to achieve an identified and justified business objective.

BASIS of IMPLEMENTATION DECISIONS

Implementation of this technology should be progressive. Individual business objectives need to be clearly identified and pursued as separate projects so that those which are ready and/or urgent can be implemented as soon as appropriate – not delayed by other more controversial objectives – so that the momentum in this project is not lost.

The ASAC organisations note that it is government policy that changes to airspace management – which would include these technologies – will be on a risk management and cost benefit basis. ASAC applauds this policy, recently announced by the Minister, and well received by the whole of industry. The ASAC organisations insist that it is clear that the decisions to implement this technology come under this policy and hence that each separate implementation decision must be on a risk management and cost benefit basis.

PROJECT OBJECTIVES

It seems to sport aviation that the development of this technology to date has identified the following separate objectives which are addressed by these technologies.

1. Cost savings and improved outcomes from GNSS Navigation.
2. Implementation of GPS based technology to assist the avoidance of CFIT accidents.
3. Replacement of existing SSR with ADS-B. (Previously known as Option B.)
4. Extension of the ADS-B mandate beyond current radar coverage for air-to-air conflict warning etc. (Previously known as Option C and D.)

There may be others but there are at least these four.

These objectives are not interdependent and the decision to implement must be considered, costed and justified separately.

Some arguments have been advanced that there are economic reasons for simultaneous implementation of some of these objectives. Despite these arguments, the decision to proceed or not in each case is not interconnected as these are independent objectives connected only by the fact that they depend on GPS.

1. GNSS Navigation

A very strong case and plea was made at the most recent meeting of the GIT and ABIT teams, that the delay in implementation of this technology is costing significant sums of money in refurbishing existing aids which would not be required after implementation of GNSS Nav. It is clear that this project can go ahead and it should not be delayed at cost to the nation and the industry because of controversial aspects of other related but not dependant projects.

2. CFIT accidents

This category of accident has actually cost lives. Implementation of the GPS technology to assist the avoidance of these accidents does not depend on ADS-B technology. Any delay in the implementation of this technology threatens to cost lives and should not be tolerated.

3. Replacement of existing SSR with ADS-B

This project – previously referred to as Option B – is clearly cost beneficial and, so far as ASAC understands, is not controversial. An ADS-B OUT mandate for all in Classes A and C and for IFR only in Class E would allow this project to proceed with very significant savings.

4. Extension of the ADS-B Mandate

This project is clearly not cost beneficial nor can it be justified on a risk management basis – not even for the protection of the travelling public.

It is well established that the collision risk in *en route* airspace is negligible being a few to several orders of magnitude less than design standards for major structural failure.

Circuit and radio procedures at untowered airfields combine to make radio alerted see-and-avoid very successful for collision avoidance in the terminal airspace. Provision of a further means of alert at very considerable cost to GA in this airspace in Australia is not justified.

SIMULTANEOUS IMPLEMENTATION

The only rational argument proposed is that simultaneous implementation would allow some cost savings and a cross subsidy of installation of ADS-B in GA.

Firstly, the cost savings are much less than the actual marginal cost so simultaneous implementation is not cost beneficial.

Secondly, any savings which accrue from the other aspects of this project can be applied to a subsidy at any time after initial implementation. A staged implementation will allow the possibility of using this money for R&D projects which may reduce the cost of implementation rather than simply applying this money to a subsidy.

IMPLEMENTATION IN SPORT AIRCRAFT

Some classes of aircraft – sports aircraft and some ultralights – have no need of any of the services provided by any of these projects. The cost and power drain of the necessary avionics makes fitment in these aircraft impractical and draconian.

These aircraft hold a general exemption from the carriage of transponders in Class E airspace.

Attached are two documents providing a brief justification for this exemption both for safety and security reasons.

It is important to note that this exemption is not only justified on the basis of cost and inability to power but also on a risk management basis. The nature of operations by this category of aircraft means that these aircraft do not represent a credible hazard.

When it comes to collision risk it is established that even unaltered see-and-avoid from such aircraft is effective. A paper justifying this conclusion has been previously supplied to DOTARS ASTRA and CASA. This paper supplied separately.

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