Explanatory Statement

Civil Aviation Act 1988

Civil Aviation Order 20.18 Amendment Instrument 2020 (No. 1)

Purpose
The purpose of *Civil Aviation Order 20.18 Amendment Instrument 2020 (No. 1)* (the ***CAO amendment***) is to legislate appropriate equipment standards that will allow Australian-registered visual flight rules (***VFR***) aircraft, in private, aerial work, charter or regular public transport (***RPT***) operations, to use air-to-air surveillance technology in the form of Automatic Dependent Surveillance – Broadcast (***ADS-B***) in Australian territory. The aim is to reduce the costs of installing air-to-air surveillance technology in VFR aircraft with a view to enhancing the basic VFR safety principle of "see and avoid". Similar rules already apply for instrument flight rules (***IFR***) aircraft and these are also being modified to adopt new overseas standards for the range of acceptable equipment configurations.

Legislation
Section 98 of the *Civil Aviation Act 1988* (the ***Act***) empowers the Governor-General to make regulations for the Act and the safety of air navigation.

Under paragraph 174A (1) (c) of the *Civil Aviation Regulations 1988* (***CAR***), CASA may issue instructions (including in a CAO) specifying the secondary surveillance radar transponder equipment that must be carried on, or installed in, an aircraft before it undertakes a VFR flight.

Relevantly under subregulation 207 (2) of CAR. a person must not use an Australian aircraft in a class of operation if the aircraft is not fitted with the equipment approved and directed by CASA. In approving or directing equipment, CASA may have regard only to the safety of air navigation.

Under subregulation 232A CASA may give directions in relation to the operation of on-board computers. A direction cannot not take effect until the twenty-eighth day after the day on which the direction is given, or if a later day of effect is specified in the direction, that later day.

Relevantly under subregulation 5 (1A) of CAR, where CASA is empowered to issue approvals or directions, it may do so in a Civil Aviation Order (***CAO***).

For subregulation 207 (2) and regulation 232A of CAR, CASA made CAO 20.18 setting out the approval and directions for aircraft equipment to meet basic operational requirements. CAO 20.18 applies, according to its terms, to all Australian registered aircraft in private, aerial work, charter or RPT operations.

Under subsection 33 (3) of the *Acts Interpretation Act 1901*, where an Act confers a power to make, grant or issue any instrument of a legislative or administrative character, the power shall be construed as including a power exercisable in the like manner and subject to the like conditions (if any) to amend or vary any such instrument.

Background

ADS-B is an additional tool for enhancing a pilot's situational awareness. However, because previously ADS-B equipment must be of the same standard as that required for instrument flight rules (***IFR***) aircraft, the fitment rate in VFR aircraft is low due to high cost and the absence of compulsion. CASA wishes to increase the rate of fitment without making it compulsory.

The CAO amendment will allow VFR aircraft in specific circumstances to use ADS-B OUT equipment (including portable equipment) that meets United States (***US***) and United kingdom (***UK***) technical specifications for low cost electronic situational awareness.

The CAO amendment will also allow certain light sport, experimental and other aircraft (***relevant VFR aircraft***) to use ADS-B OUT equipment that is compliant with, but not necessarily authorised under, the strict ADS-B technical standards.

To achieve these outcomes several new equipment configurations are provided.

The first equipment configuration is that required for a Mode S transponder that is connected to a Class B traffic awareness beacon system (***TABS***) position source device. The configuration maintains its basic Mode S functionality and is detectable by air traffic services (***ATS***) secondary surveillance radar (***SSR***) and traffic collision avoidance systems (***TCAS***).

The second equipment configuration is that for an integrated TABS device that combines a GNSS position source and an ADS-B transmitter as a single device. An integrated TABS device is visible to aircraft ABS-B receiving equipment and aircraft fitted with TCAS, but may not be detected or be useable for surveillance separation by ATS.

The third equipment configuration is that for an electronic conspicuity (***EC***) device that combines a GNSS position source and an ADS-B transmitter (and ADS-B receiving capability, if desired). An EC device is visible to ABS-B receiving equipment (including other EC devices with receiving capability); but unlike an integrated TABS device, is not visible to TCAS and may not be detected or usable for surveillance separation by ATS.

Under the CAO amendment technically capable transponder and ADS-B equipment would be allowed in certain aircraft. It is also necessary to harmonise inconsistency between relevant rules and the current Aeronautical Information Publication (***AIP***) particularly in relation to the long-standing AIP requirement for VFR aircraft to carry a Mode A/C transponder for operations above 10 000 ft in Class G airspace.

The CAO amendment embodies the legislative changes to CAO 20.18 required to implement these key elements of the proposal.

CAO amendment
Because of its technical nature, details of the CAO amendment are set out in Appendix 1.

Incorporations
Various non-legislative international standards documents are incorporated into the CAO amendment to support its standard setting, as follows:

- ***14 CFR 91.225*** being regulation 91.225 of the United States Title 14 Code of Federal Regulations (CFR) titled *Automatic Dependent Surveillance-Broadcast (ADS-B) Out equipment and use,* as in force from time to time.
- ***EASA AMC 20-24*** being Annex II to ED Decision 2008/004/R titled *Certification Considerations for the Enhanced ATS in Non-Radar Areas using ADS-B Surveillance (ADS-B-NRA) Application via 1090 MHz Extended Squitter*, dated 2 May 2008, of EASA, or a later version as in force from time to time.
- ***(E)TSO-C88a***, being the FAA Technical Standard Order (***TSO***) and/or European TSO of that name, as in force from time to time.
- ***(E)TSO-C166B***, being the FAA TSO and/or European TSO of that name, as in force from time to time.
- ***(E)TSO-C199***, being the FAA TSO and/or European TSO of that name, as in force from time to time.
- ***EASA CS-ACNS*** being Annex I to ED Decision 2013/031/R *titled Certification Specifications and Acceptable Means of Compliance for Airborne Communications, Navigation and Surveillance CS-ACNS*, dated 17 December 2013, or a later version as in force from time to time.
- ***RTCA/DO-260B*** being RTCA Inc. document RTCA DO-260B titled *Minimum Operational Performance Standards for 1090 MHz Extended Squitter Automatic Dependent Surveillance – Broadcast (ADS-B) and Traffic Information Services – Broadcast (TIS-B)*, dated 2 December 2009, unless a later version as in force from time to time is expressly referred to.
- ***UK CAP 1391*** being Civil Aviation Authority of the United Kingdom (***CAA***) document number CAP 1391 titled *Electronic conspicuity devices*, 2nd edition, dated April 2018, or a later edition as in force from time to time.

The required currency of incorporated documents is expressed in the definition of each document. Most of the incorporated documents are the "from time to time" versions. This is permissible by virtue of subsection 98 (5D) of the Act under which, despite section 14 of the *Legislation Act 2003*, a legislative instrument made under the Act or the regulations may apply, adopt or incorporate any matter contained in any instrument or other writing as in force from time to time or as in force or existing at a particular time.

Access to incorporated documents
The European Aviation Safety Agency (EASA), a FAA Technical Standard Order and/or European Technical Standard Order ((E)TSO), UK CAA and US Federal Aviation Agency (FAA) documents are available for free, online, from those organisations.

The RTCA/DO-260B document is publicly available but at cost and is subject to copyright that belongs to RTCA. This cost should not have an impact on owners and operators of VFR aircraft because the document is relevant only to the technical design of equipment and not its day to day use. Hence, the document is relevant to manufacturers rather than users. For the user, it will be sufficient to ascertain from the equipment supplier that the equipment meets standards of or is authorised to the relevant (E)TSO or RTCA document. This cost is not considered to be unreasonably onerous for manufacturers. Academic and other researchers may obtain free access through university library subscriptions.

CASA has no effective control over these costs and it is considered extremely unlikely that RTCA, as the relevant owner of the intellectual property in the document, would sell CASA

the copyright at a price that would be an effective and efficient use of CASA's appropriated funds, or would otherwise permit CASA to make the document freely available.

CASA has incorporated the document in the instrument for the guidance of equipment manufacturers and suppliers to facilitate CASA's ADS-B safety proposal for VFR aircraft because no other similar document that serves the same aviation safety purpose is freely available.

CASA has noted the views of the former Senate Standing Committee on Regulations and Ordinances (now the Senate Standing Committee for the Scrutiny of Delegated Legislation) in its report, Parliamentary scrutiny of delegated legislation, tabled out of session on 3 June 2019) that:

> The incorporation of material by reference (particularly where that material is not publicly available) has been a longstanding concern for the committee. [para 3.65]

and

> The committee appreciates that it may in some cases be costly to provide free, public access to all incorporated Australian and international standards. Nevertheless, the committee reiterates that one of its core functions is to ensure that all persons subject to or interested in the law may readily and freely access its terms. It intends to continue to monitor this issue. Any justification for a failure to provide for public access to incorporated documents, and any action the committee takes in relation to this matter, will be determined on a case-by-case basis. [para 3.75]

CASA appreciates the Committee's concern and to mitigate the situation as far as currently practicable proposes that where an incorporated document is copyright and not otherwise freely available to the general public, but is available to CASA as a licenced subscriber, CASA will, by prior arrangement, and so far as permitted by its subscription licence, make CASA's copy available, for *in-situ* viewing, free of charge, at any office of CASA.

Legislation Act 2003 (LA)

Under subregulation 5 (1A) of CAR, if CAR empowers CASA to issue instruments such as approvals or directions like those under regulations 207 or 232A of CAR, CASA may do so in the form of CAOs. Under subsections 98 (5) and 98 (5AAA) of the Act, where regulations provide for an instrument to be issued in the form of a CAO, the CAO so made is a legislative instrument. The CAO amendment is, therefore, a legislative instrument subject to registration, and tabling and disallowance in the Parliament, under sections 15G, and 38 and 42, of the LA.

Consultation

In accordance with section 17 of the LA, and section 16 of the Act, CASA carried out public consultation as follows. CASA published Consultation Document (CD) 1905 AS — *New standards for Automatic Dependent Surveillance – Broadcast (ADS-B) equipment for VFR aircraft* — on the CASA Consultation Hub from 12 February to 13 March 2020. This consultation invited aircraft owners, pilots, industry stakeholders and other interested parties to comment on the proposed changes to the standards and requirements for ADS-B technology used in aircraft operated under the VFR.

CASA received a total of 113 responses from individuals and organisations which produced clear support for the proposals, agreement ranging from 63% to 86% for individual elements. In addition, many accompanying comments were supportive or very supportive.

A small number of suggestions for changes to the proposals were evaluated by CASA for safety implications and agreed to as not inconsistent with safety goals. For example, CASA decided *not* to exclude from the new equipment configurations (as originally proposed) aircraft in categories of regular public transport (***RPT***) or charter operations with maximum speed greater than 250 knots and maximum take-off weight greater than 5 700 kg. It was also decided *not* to exclude (as originally proposed) charter and aerial work category balloons from the eligibility list to use avionics that complies with the relevant TSO but is not necessarily authorised under that TSO (avionics of this type are termed 'non-TSO').

Office of Best Practice Regulation (*OBPR*)
The Office of Best Practice Regulation has made the assessment that a RIS is not required for the amendments to Civil Aviation Order 20.18 (OBPR id: 26480).

Statement of Compatibility with Human Rights
The Statement in Attachment 2 is prepared in accordance with Part 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011* (the ***HR Act***). The CAO amendment is compatible with the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the HR Act and, to the extent that it engages relevant rights, it does so in a reasonable, necessary and proportionate way to promote relevant rights to life, to work and to safe and healthy working conditions.

Commencement and making
The CAO amendment *commences* on the day it is registered. However, *it does not take effect* until the beginning of 16 July 2020. This is to coincide with the internationally harmonised amendment cycle for the Aeronautical Information Publication (*AIP*). This will make it possible for information about the new standards to be incorporated into the up-to-date AIP. However, it is also desirable that the instrument be actually made as soon as practicable to allow relevant industry, operators and manufacturers a reasonable period of advance notice and preparation time.

The CAO amendment has been made by the Director of Aviation Safety, on behalf of CASA, in accordance with subsection 73 (2) of the Act.

Attachment 1

Details of CAO amendment

1 Name of instrument

Under this section, the instrument is called the *Civil Aviation Order 20.18 Amendment Instrument 2020 (No. 1)*.

2 Commencement

Under this section, the instrument commences on the day it is registered. However, it does not take effect until the beginning of 16 July 2020.

3 Amendment of Civil Aviation Order 20.18

Under this section, Schedule 1 amends Civil Aviation Order 20.18.

Schedule 1 Amendments

[1] Paragraphs 9.1, 9.1A and 9.1B

These are historical time-limited provisions that are spent.

[2] Paragraph 9B.2, the chapeau

Subsection 9B of CAO 20.18 contains a direction relating to carriage and use of ADS-B. This amendment provides for the subsection 9B carriage and use rules to also apply in relation to the new standards under new Appendices XII, XIII and XIV for VFR flight.

[3] Paragraph 9B.2, definition of *approved equipment configuration,* including the Note

This amendment extends the definition of ***approved equipment configuration*** for ADS-B transmitting equipment to also include the new equipment approval requirements under new Appendices XII, XIII and XIV for VFR flight.

[4] Paragraph 9B.2, definition of *EASA AMC 20-24*

This amendment more accurately defines ***EASA AMC 20-24.*** EASA AMC 20-24 contains standards incorporated for the purposes of approved equipment configurations.

[5] Paragraph 9B.2, definition of *NIC*

This amendment more accurately defines ***NIC***. NIC is a transmission standard.

[6] Paragraph 9B.2, definition of *RTCA/DO-260A*

This amendment removes a redundant definition.

[7] Paragraph 9B.2, definitions

This section adds various additional definitions, including for the incorporated documents mentioned above, and also in particular the following:

certain light sport, experimental and other aircraft which means any of the following:

(a) a light sport aircraft for which a special certificate of airworthiness has been issued and is in force under regulation 21.186 of CASR;

(b) a light sport aircraft for which an experimental certificate has been issued and is in force under paragraph 21.191 (j) or (k) of CASR;

(c) any other aircraft for which an experimental certificate has been issued and is in force under paragraph 21.191 (g) or (h) of CASR;

(d) an aircraft for which an experimental certificate has been issued and is in force under subregulation 21.190 (1) of CASR;

(e) an aircraft to which any of the following Civil Aviation Orders (**CAO**s) applies: CAO 95.4, 95.4.1, 95.8, 95.10, 95.12, 95.12.1, 95.32, 95.53, 95.54 or 95.55;

(f) a Part 103 aircraft within the meaning of regulation 103.005 of CASR.

(A Note explains that Part 103 of CASR commences on 25 March 2021 (see regulation 2 of the *Civil Aviation Legislation Amendment (Parts 103, 105 and 131) Regulations 2019);* and that paragraph (f) is permitted by subsection 98 (5D) of the *Civil Aviation Act 1998*.)

Class A TABS means TABS functionality relating to transponder function, altitude source function, and ADS-B OUT function, in accordance with (E)TSO-C199, as in force from time to time.

Class B TABS means TABS functionality relating to position source function, in accordance with (E)TSO-C199, as in force from time to time.

Class B TABS position source device means a device with a Class B TABS functionality.

integrated TABS device means a device with integrated Class A TABS and Class B TABS functionality.

[8] Paragraphs 9B.3 to 9B.12, inclusive

For ease of reference, this subsection replaces the whole of the previous version of these paragraphs. Although Appendix XI is also amended by the CAO amendment, Appendix XI essentially contains the existing ADS-B standards while Appendices XII, XIII and XIV contain the new equipment standards for equipment in VFR aircraft.

9B.3 This subsection adds reference to new equipment standards in Appendices XII, XIII and XIV for VFR flight. It is also designed to ensure that any administrative standards (as distinct from a technical standard) included in the Appendix XIV must be complied with.

9B.4 This subsection sets out the content of what serviceable ADS-B transmitting equipment operated in Australian territory must transmit.

9B.5 This subsection sets out when serviceable ADS-B transmitting equipment must be operated as follows:

(a) for equipment that complies with an approved equipment configuration set out in existing Appendix XI (as amended) — continuously during the flight in all

airspace and at all altitudes, unless the pilot is directed or approved otherwise by ATC; and

(b) for equipment that complies with the new approved equipment configuration set out in new Appendices XII, XIII, or XIV — continuously during the flight, within the airspace and within the altitude limits specified for the flight in the applicable Appendix, unless the pilot is directed or approved otherwise by ATC.

9B.6 The subsection deals with when an aircraft carries ADS-B transmitting equipment which does not comply with an approved equipment configuration.

9B.7 Under this subsection, ADS-B transmitting equipment need not be deactivated for certain ADS-B test flights.

9B.8 Under this subsection, an aircraft operated in an IFR operation, or in any operation at or above FL290 must carry serviceable ADS-B transmitting equipment that complies with the approved equipment configuration set out in Appendix XI.

9B.9 Under this subsection, if an aircraft is operated in a VFR operation below FL290 it may carry serviceable ADS-B transmitting equipment that complies with the approved equipment configuration set out in Appendix XI, or in one of the new Appendices XII, XIII or XIV.

9B.10 This section provides some exceptions to the requirement in paragraph 9B.8 to carry ADS-B.

9B.11 Under this subsection, ADS-B transmitting equipment must allow the pilot to activate and deactivate transmission during flight.

9B.12 Under this subsection, a requirement under Appendix XI, XII, or XIII that an approved equipment configuration for ADS-B transmitting equipment be authorised in accordance with a specific TSO or ETSO does not apply to the ADS-B transmitting equipment carried on certain light sport, experimental and other aircraft *provided that:*

(a) the equipment configuration that is carried provides the pilot, other aircraft and ATC with the same transponder and surveillance capability as would be provided if the equipment were expressly authorised in accordance with the specific TSO or ETSO; and

(b) the pilot or the operator has a statement of conformance (however described) from the equipment manufacturer stating the particular standard or standards of the TSO or ETSO with which the equipment conforms.

[9] After subsection 9B

9BA.1 This amendment inserts a new subsection 9BA containing CASA's instructions for Mode A/C SSR transponder equipment that must be carried on certain aircraft before they undertake a VFR flight.

9BA.2 Under this paragraph, an aircraft must carry serviceable SSR transponder equipment in accordance with subsection 9E.

9BA.3 Under this paragraph a serviceable Mode A and Mode C SSR transponder must be carried on certain aircraft manufactured before 6 February 2014.

9BA.4 This requirement does not apply if the aircraft carries serviceable Mode S transponder that meets the standards in subparagraph 9E.2 (c).

9BA.5 Under this paragraph, a serviceable Mode A and Mode C SSR transponder must be carried on certain aircraft manufactured before 6 February 2014.

9BA.6 These requirements do not apply if the aircraft carries:

(a) a serviceable Mode S transponder that meets the standards set out in subparagraph 9E.2 (c); or

(b) a serviceable integrated TABS device that meets the standards set out in Appendix XIII.

9BA.7 This paragraph repeals a redundant instrument (CASA 316/98) that formerly desalt with the carriage of Mode A/C transponders by aircraft operating in controlled airspace.

[10] Paragraph 9C.3, Note 1 and Note 2

This amendment, in effect, retains Note 1 but removes the now redundant Note 2 about other sections of CAO 20.18 applying when Mode S transponder equipment incorporates ADS-B functionality. (See also subsection 9C.10 below.)

[11] After paragraph 9C.9

Subsection 9C contains the applicable standards for Mode S transponder equipment for an aircraft engaged in private, aerial work charter or RPT operations. The CAO amendment adds 2 new paragraphs.

9C.10 Under this paragraph, if Mode S transponder equipment incorporates ADS-B functionality, the equipment must comply with the applicable approved equipment configuration required under subsection 9B for ADS-B transmitting equipment. This new paragraph, in effect, replaces the redundant Note 2 under paragraph 9C.3.

9C.11 Under this paragraph, certain requirements that the equipment be authorised in accordance with a specific TSO or ETSO does not apply to Mode S transponder equipment carried on certain light sport, experimental and other aircraft provided that:

(a) the equipment configuration that is carried provides the pilot, other aircraft and ATC with the same transponder and surveillance capability as would be provided if the equipment were expressly authorised in accordance with the specific TSO or ETSO; and

(b) the pilot or the operator has a statement of conformance (however described) from the equipment manufacturer stating the particular standard or standards of the TSO or ETSO with which the equipment conforms.

[12] Paragraph 9E.2

Subsection 9E deals with the carriage of Mode S transponder equipment that must be carried by an aircraft engaged in private, aerial work, charter or RPT operations. The amendment relevantly provides that specified aircraft in specified airspace must carry a serviceable Mode S transponder that for ADS-B transmission using an approved equipment configuration set out in Appendix XII, meets the standards in clauses 1 and 4 in Part B of new Appendix XII. Alternatively, an aircraft that is operated under the VFR in Class E airspace, or above 10 000 feet AMSL in Class G airspace must carry a serviceable integrated TABS device that meets the standards in new Appendix XIII.

[13] Paragraph 9E.4, the chapeau

This amendment removes a take effect date that is already past.

[14] Appendix XI, the heading

This amendment gives existing Appendix XI a more informative heading to show that the Appendix sets the approved equipment configuration for ADS-B transmitting

equipment for *both* IFR and VFR flight. In other words, Appendix XI provides equipment standards for VFR flight if so chosen or required, however Appendices XII, XIII and XIV provide VFR aircraft with somewhat less onerous alternatives.

[15] Appendix XI, Part A

This amendment provides for a standing approval of certain equipment for IFR and VFR flight. Thus, an equipment configuration for ADS-B transmitting equipment is approved if it complies with the standards specified in Part B or Part C of Appendix XI.

[16] Appendix XI, clause 6, including the heading and Note

This amendment repeals the duplication of a requirement already provided for.

[17] Appendix XI, paragraphs 7 (a) and (b)

For both IFR and VFR aircraft, this amendment broadens the alternative criteria for an approved equipment configuration for aircraft manufactured *on or after* 8 December 2016 relevantly to include a configuration that has been approved or accepted by:

1 the national aviation authority (***NAA***) of a recognised country, as meeting the standards of EASA AMC 20-24 or EASA CS-ACNS; or

2 the FAA, as meeting the standards of 14 CFR 91.225 for 1090 Megahertz (MHz) Extended Squitter ADS-B.

[18] Appendix XI, paragraph 8 (a) and (b)

For both IFR and VFR aircraft, this amendment broadens the alternative criteria for an approved equipment configuration for aircraft manufactured *before* 8 December 2016 relevantly to include a configuration that has been approved or accepted by:

1 EASA as meeting the standards of EASA AMC 20-24; or

2 the FAA as meeting the standards of 14 CFR 91.225 for 1090 Megahertz (MHz) Extended Squitter ADS-B.

[19] After Appendix XI

This amendment inserts the new Appendices XII, XIII and XIV to set approved equipment configurations for VFR flight.

Appendix XII contains the approved equipment configuration for Mode S transponder using the *Class B TABS position source device (as defined above) but only for VFR flight below FL290 only*.

Appendix XIII contains the standards for an approved equipment configuration using *Integrated TABS device (as defined above) for VFR flight below FL290 only.*

Appendix XIV contains the standards for an approved equipment configuration using an EC device for VFR flight below FL290 only. An EC device must meet the technical specifications in UK CAP 1391 and use a Class B TABS position source that complies with the performance standards specified in (E)TSO-C199.

An EC device must also meet certain administrative standards, for example, it must have a statement of compliance from the manufacturer certifying that the device meets certain requirements. The manufacturer of an EC model may apply in writing to CASA for a statement that CASA considers that the manufacturer has made a valid declaration of capability and conformance for inclusion of the EC device model on the CASA website. CASA may remove an EC device model from the CASA website

if the manufacturer requests its removal in writing; or if CASA is satisfied that removal is required in the interests of aviation safety.

These CASA decisions under the CAO amendment would be subject to administrative review by the Administrative Appeals Tribunal under section 31(1) (a) of the Civil Aviation Act, based on the reasoning of Jane Mathews J, President of the AAT, in *Seaview Lord Howe Pty Limited and ANOR and Civil Aviation Safety Authority* [1995] AATA 565 (a decision taken under a CAO is a decision under the Act or regulations that empower the CAO).

Attachment 2

Statement of Compatibility with Human Rights

Prepared in accordance with Part 3 of the Human Rights (Parliamentary Scrutiny) Act 2011

Civil Aviation Order 20.18 Amendment Instrument 2020 (No. 1)

This legislative instrument is compatible with the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*.

Overview of the legislative instrument
The purpose of *Civil Aviation Order 20.18 Amendment Instrument 2020 (No. 1)* (the ***CAO amendment***) is to legislate appropriate equipment standards that will allow visual flight rules (***VFR***) aircraft voluntarily to use a broader range of air-to-air surveillance technology in the form of Automatic Dependent Surveillance – Broadcast (***ADS-B***) than was previously available. The aim is to reduce the costs of installing air-to-air surveillance technology in VFR aircraft with a view to enhancing the basic VFR safety principle of "see and avoid".

Human rights implications
The CAO amendment may engage the following human rights:

- the right to life under Article 6 and the right to privacy and reputation under Article 17 of the International Covenant on Civil and Political Rights (the ***ICCPR***);
- the right to work under Article 6 (1) and the right to safe and healthy working conditions under Article 7 of the International Covenant on Economic, Social and Cultural Rights (the ***ICESCR***).

Right to life under the ICCPR
Right to safe and healthy working conditions under the ICESCR
The CAO amendment may engage these rights. This engagement is in the context of CASA's statutory purpose. The aim of CASA and its regulatory framework, including in CAO 20.18, is to uphold aviation safety by prescribing appropriate equipment for aircraft.

It is, therefore, a threshold requirement for all CASA legislative instruments that they preserve, promote and enhance aviation safety. The CAO amendment promotes the right to life under Article 6 of the ICCPR by legislating options for safer conditions for certain VFR aircraft. This will minimise the risk of accidents and prevent accidental death. For Article 7 of the ICESCR, the CAO amendment also then promotes the right to safe and healthy working conditions for pilots of VFR aircraft.

Human rights implications
The CAO amendment is compatible with the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the Human Rights (Parliamentary Scrutiny) Act. To the extent that the instrument does engage any of the applicable rights or freedoms it does so positively to promote the right to life under the ICCPR and the right to safe and healthy working conditions under the ICESCR.

Conclusion
This legislative instrument is compatible with human rights, and to the extent that it engages relevant rights, it does so in a reasonable, necessary and proportionate way to promote relevant rights.

Civil Aviation Safety Authority