

Tabular comparison of the current requirements and proposed changes within Appendix XI of CAO 20.18

Text in black is existing and unchanged wording; text in blue shows new words; struck-through text shows omissions; a blank table cell means no equivalent provision exists or will exist

Existing CAO 2018	Proposed CAO 2018	Explanation/Notes.  NC means 'No change from existing CAO provision'
<p><b>Appendix XI</b></p> <p><b>Part A</b></p> <p>Approved equipment configuration</p> <p>1 An equipment configuration is approved if it complies with the standards specified in Part B or Part C of this Appendix.</p>	<p><b>Appendix XI</b></p> <p><b>Part A — ADS-B transmitting equipment — approval and application</b></p> <p>Approved equipment configuration — IFR and VFR flight</p> <p><u>1 Subject to this Part, an equipment configuration for ADS-B transmitting equipment is approved if it complies with the standards specified in Part B or Part C of this Appendix.</u></p> <p><u>Application</u></p> <p><u>2 ADS-B transmitting equipment carried on an aircraft in an IFR flight has an approved equipment configuration if, and only if, it complies with the standards in Part B or Part C of this Appendix.</u></p> <p><u>Note No other Appendix applies to the equipment in an IFR flight.</u></p> <p><u>3 ADS-B transmitting equipment carried on an aircraft in any operation at or above FL290 has an approved equipment configuration if, and only if, it complies with the standards in Part B or Part C of this Appendix.</u></p> <p><u>Note No other Appendix applies to the equipment in an operation above FL290.</u></p> <p><u>4 ADS-B transmitting equipment carried on an aircraft, in a flight that is not an IFR flight or any flight at or above FL290, has an approved equipment configuration if it complies with the standards in Part B or Part C of this Appendix.</u></p> <p><u>Note For example, ADS-B transmitting equipment carried on an aircraft in a VFR flight below FL290 would have an approved equipment configuration if it complied with the standards in Part B or Part C of this Appendix. However, another Appendix may apply to the equipment in the VFR flight.</u></p>	<p>CAO 20.18 will have three new appendices covering different forms of ADS-B approved equipment configurations useable for VFR aircraft. These new appendices, in addition to technical specifications, will detail when and where a particular equipment configuration may be used.</p> <p>For consistency with these new appendices, a new 'Application' section is added here detailing when and where Appendix XI applies and what equipment is useable.</p> <p>The new wording imposes no new requirements.</p>
<p><b>Part B</b></p> <p>ADS-B transmitting equipment — standard for approval</p> <p>2 ADS-B transmitting equipment must be of a type that:</p> <p>(a) is authorised in accordance with (E)TSO-C166, or a later version as in force from time to time; or</p> <p>(b) meets the following requirements:</p> <p>(i) the type must be accepted by CASA as meeting the specifications in RTCA/DO-260 dated 13 September 2000, or a later version as in force from time to time; and</p> <p>(ii) the type must utilise HPL at all times HPL is available; or</p> <p>(c) is otherwise authorised, in writing, by CASA for the purposes of subsection 9B of this Civil Aviation Order as being equivalent to one of the foregoing types.</p>	<p><b>Part B</b></p> <p>ADS-B transmitting equipment — standard for approval</p> <p>2 ADS-B transmitting equipment must be of a type that:</p> <p>(a) is authorised in accordance with (E)TSO-C166, or a later version as in force from time to time; or</p> <p>(b) meets the following requirements:</p> <p>(i) the type must be accepted by CASA as meeting the specifications in RTCA/DO-260 dated 13 September 2000, or a later version as in force from time to time; and</p> <p>(ii) the type must utilise HPL at all times HPL is available; or</p> <p>(c) is otherwise authorised, in writing, by CASA for the purposes of subsection 9B of this Civil Aviation Order as being equivalent to one of the foregoing types.</p>	NC
<p>GNSS position source equipment — standard for aircraft manufactured on or after 8 December 2016</p>	<p>GNSS position source equipment — standard for aircraft manufactured on or after 8 December 2016</p>	NC

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<p>3 For an aircraft manufactured on or after 8 December 2016, the geographical position transmitted by the ADS-B transmitting equipment must be determined by:</p> <p>(a) a GNSS receiver of a type that is authorised in accordance with (E)TSO-C145a or (E)TSO-C146a, or a later version as in force from time to time; or</p> <p>(b) a GNSS receiver of a type that is authorised in accordance with (E)TSO-C196a, or a later version as in force from time to time; or</p> <p>(c) a GNSS receiver or system which meets the following requirements:</p> <p>(i) is certified by an NAA for use in flight under the I.F.R.;</p> <p>(ii) has included in its specification and operation the following:</p> <p>(A) FDE, computed in accordance with the definition at paragraph 1.7.3 of RTCA/DO-229D;</p> <p>(B) the output function HPL, computed in accordance with the definition at paragraph 1.7.2 of RTCA/DO-229D;</p> <p>(C) functionality that, for the purpose of HPL computation, accounts for the absence of the SA of the GPS in accordance with paragraph 1.8.1.1 of RTCA/DO-229D; or</p> <p>(d) another equivalent system authorised in writing by CASA.</p> <p><i>Note</i> The following GNSS receivers meet the requirements of clause 3, namely, those certified to (E)TSO-C145a or (E)TSO-C146a, or later versions, or those manufactured to comply with (E)TSO-C196a.</p>	<p>3 For an aircraft manufactured on or after 8 December 2016, the geographical position transmitted by the ADS-B transmitting equipment must be determined by:</p> <p>(a) a GNSS receiver of a type that is authorised in accordance with (E)TSO-C145a or (E)TSO-C146a, or a later version as in force from time to time; or</p> <p>(b) a GNSS receiver of a type that is authorised in accordance with (E)TSO-C196a, or a later version as in force from time to time; or</p> <p>(c) a GNSS receiver or system which meets the following requirements:</p> <p>(i) is certified by an NAA for use in flight under the I.F.R.;</p> <p>(ii) has included in its specification and operation the following:</p> <p>(A) FDE, computed in accordance with the definition at paragraph 1.7.3 of RTCA/DO-229D;</p> <p>(B) the output function HPL, computed in accordance with the definition at paragraph 1.7.2 of RTCA/DO-229D;</p> <p>(C) functionality that, for the purpose of HPL computation, accounts for the absence of the SA of the GPS in accordance with paragraph 1.8.1.1 of RTCA/DO-229D; or</p> <p>(d) another equivalent system authorised in writing by CASA.</p> <p><i>Note</i> The following GNSS receivers meet the requirements of clause 3, namely, those certified to (E)TSO-C145a or (E)TSO-C146a, or later versions, or those manufactured to comply with (E)TSO-C196a.</p>	
<p>GNSS position source equipment — standard for aircraft manufactured before 8 December 2016</p> <p>4 For an aircraft manufactured before 8 December 2016, the geographical position transmitted by the ADS-B transmitting equipment must be determined by:</p> <p>(a) a GNSS receiver or system that complies with the requirements of clause 3, other than sub-subparagraph 3 (c) (ii) (C) which is optional; or</p> <p>(b) an equivalent GNSS receiver or system that has been approved in writing by CASA.</p> <p><i>Note</i> The following GNSS receivers meet the requirements of clause 4, namely, those certified to (E)TSO-C145a or (E)TSO-C146a, or later versions, or those manufactured to comply with (E)TSO-C196a. Some later versions of GNSS receivers certified to (E)TSO-C129 may also meet the requirements, i.e. those having FDE and HPL features incorporated.</p>	<p>GNSS position source equipment — standard for aircraft manufactured before 8 December 2016</p> <p>4 For an aircraft manufactured before 8 December 2016, the geographical position transmitted by the ADS-B transmitting equipment must be determined by:</p> <p>(a) a GNSS receiver or system that complies with the requirements of clause 3, other than sub-subparagraph 3 (c) (ii) (C) which is optional; or</p> <p>(b) an equivalent GNSS receiver or system that has been approved in writing by CASA.</p> <p><i>Note</i> The following GNSS receivers meet the requirements of clause 4, namely, those certified to (E)TSO-C145a or (E)TSO-C146a, or later versions, or those manufactured to comply with (E)TSO-C196a. Some later versions of GNSS receivers certified to (E)TSO-C129 may also meet the requirements, i.e. those having FDE and HPL features incorporated.</p>	NC
<p>Altitude source equipment — standard</p> <p>5 The pressure altitude transmitted by the ADS-B transmitting equipment must be determined by:</p> <p>(a) a barometric encoder of a type that is authorised in accordance with (E)TSO-C88a, or a later version as in force from time to time; or</p> <p>(b) another equivalent system authorised in writing by CASA.</p>	<p>Altitude source equipment — standard</p> <p>5 The pressure altitude transmitted by the ADS-B transmitting equipment must be determined by:</p> <p>(a) a barometric encoder of a type that is authorised in accordance with (E)TSO-C88a, or a later version as in force from time to time; or</p> <p>(b) another equivalent system authorised in writing by CASA.</p>	NC
<p>Aircraft address — standard</p> <p>6 Unless otherwise approved, in writing, by CASA, the ADS-B transmitting equipment must:</p> <p>(a) transmit the current aircraft address; and</p> <p>(b) allow the pilot to activate and deactivate transmission during flight.</p> <p><i>Note</i> The requirement in paragraph 6 (b) is met if the ADS-B transmitting equipment has a cockpit control that enables the pilot to turn the ADS-B transmissions on and off.</p>	<p><del>Aircraft address — standard</del></p> <p><del>6 Unless otherwise approved, in writing, by CASA, the ADS-B transmitting equipment must:</del></p> <p><del>(a) transmit the current aircraft address; and</del></p> <p><del>(b) allow the pilot to activate and deactivate transmission during flight.</del></p> <p><del><i>Note</i> The requirement in paragraph 6 (b) is met if the ADS-B transmitting equipment has a cockpit control that enables the pilot to turn the ADS-B transmissions on and off.</del></p>	<p>Clause 6 is moved to the main body of the CAO; becoming 9B.11. This has been done to set a common requirement for all ADS-B configurations in terms of setting a current aircraft address and having the capability to activate and deactivate transmission during flight.</p>

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		Moving the clause does not change any obligation originally applied to Appendix XI equipment configurations.
<p><b>Part C</b></p> <p>Alternative approved equipment configuration — standard for aircraft manufactured on or after 8 December 2016</p> <p>7 For an aircraft manufactured on or after 8 December 2016, an equipment configuration is approved if:</p> <p>(a) it has been certified by EASA as meeting the standards of EASA AMC 20-24; and</p> <p>(b) the aircraft flight manual attests to the certification; and</p> <p>(c) the GNSS receiver or system complies with the requirements of clause 3 in Part B.</p>	<p><b>Part C</b></p> <p>Alternative approved equipment configuration — standard for aircraft manufactured on or after 8 December 2016</p> <p>7 For an aircraft manufactured on or after 8 December 2016, an equipment configuration is approved if:</p> <p><u>(a) it has been approved or accepted by certified by EASA;</u></p> <p><u>(i) the NAA of a recognised country as meeting the standards of EASA AMC 20-24 or EASA CS-ACNS, as in force from time to time; or</u></p> <p><u>(ii) the FAA, as meeting the standards of 14 CFR 91.225 for 1090 Megahertz (MHz) Extended Squitter ADS-B, as in force from time to time; and</u></p> <p>(b) the aircraft flight manual attests to the certification; and</p> <p>(c) the GNSS receiver or system complies with the requirements of clause 3 in Part B.</p>	Expands the list of alternate approved equipment configurations to include EASA CS-ACNS equipment and equipment meeting the standards of the USA 14 CFR 91.227 standards (FAA 2020 mandate standards) for 1090 Megahertz (MHz) Extended Squitter ADS-B
<p>Alternative approved equipment configuration — standard for aircraft manufactured before 8 December 2016</p> <p>8 For an aircraft manufactured before 8 December 2016, an equipment configuration is approved if:</p> <p>(a) it has been certified by EASA as meeting the standards of EASA AMC 20-24; and</p> <p>(b) the aircraft flight manual attests to the certification; and</p> <p>(c) the GNSS receiver or system complies with the requirements of clause 4 in Part B.</p>	<p>Alternative approved equipment configuration — standard for aircraft manufactured before 8 December 2016</p> <p>8 For an aircraft manufactured before 8 December 2016, an equipment configuration is approved if:</p> <p><u>(a) it has been approved or accepted certified by:</u></p> <p><u>(i) EASA as meeting the standards of EASA AMC 20-24, as in force from time to time; or</u></p> <p><u>(ii) the FAA as meeting the standards of 14 CFR 91.225 for 1090 Megahertz (MHz) Extended Squitter ADS-B, as in force from time to time; and</u></p> <p>(b) the aircraft flight manual attests to the certification; and</p> <p>(c) the GNSS receiver or system complies with the requirements of clause 4 in Part B.</p>	Expands the list of alternate approved equipment configurations to include EASA CS-ACNS equipment and equipment meeting the standards of the USA 14 CFR 91.227 standards (FAA 2020 mandate standards) for 1090 Megahertz (MHz) Extended Squitter ADS-B