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| <b>EASA</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>AIRWORTHINESS DIRECTIVE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p><b>AD No.: 2015-0124</b></p> <p><b>Date: 26 June 2015</b></p> <p>Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) No 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| This AD is issued in accordance with EU 748/2012, Part 21.A.3B. In accordance with EU 1321/2014 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [EU 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption]. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Design Approval Holder's Name:</b><br>AIRBUS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Type/Model designation(s):</b><br>A330 and A340 aeroplanes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| TCDS Number:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EASA.A.004 and EASA.A.015                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Foreign AD:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Supersedure:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>ATA 27</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Flight Controls – Flight Control Primary Computers – Modification / Replacement</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Manufacturer(s):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Airbus (formerly Airbus Industrie)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Applicability:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p>Airbus A330-201, A330-202, A330-203, A330-223, A330-223F, A330-243, A330-243F, A330-301, A330-302, A330-303, A330-321, A330-322, A330-323, A330-341, A330-342 and A330-343 aeroplanes, all manufacturer serial numbers (MSN), and</p> <p>Airbus A340-211, A340-212, A340-213, A340-311, A340-312 A340-313, A340-541, A340-542, A340-642 and A340-643 aeroplanes, all MSN.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Reason:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>It has been determined that, when there are significant differences between all airspeed sources, the flight controls of an Airbus A330 or A340 aeroplane will revert to alternate law, the autopilot (AP) and the auto-thrust (A/THR) automatically disconnect, and the Flight Directors (FD) bars are automatically removed. Further analyses have shown that, after such an event, if two airspeed sources become similar while still erroneous, the flight guidance computers will display the FD bars again, and enable the re-engagement of AP and A/THR. However, in some cases, the AP orders may be inappropriate, such as possible abrupt pitch command.</p> <p>In order to prevent such events which may, under specific circumstances, constitute an unsafe condition, EASA issued AD 2010-0271 to require an amendment of the Airplane Flight Manual (AFM) to ensure that flight crews apply the appropriate operational procedure.</p> <p>Since EASA AD 2010-0271 was issued, new Flight Control Primary Computer (FCPC) software standards were developed that inhibit autopilot engagement under unreliable airspeed conditions.</p> |

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|                                            | <p>Consequently, EASA issued AD 2011-0199 (later revised) for A330 and A340-200/300, and AD 2013-0107 for A340-500/600 to require software standard upgrade of the three FCPCs by either modification or replacement.</p> <p>Since EASA AD 2011-0199R1 and AD 2013-0107 were issued, new FCPC software standards, as specified in Appendix 1 of this AD, have been developed to correct aeroplane behaviour in case of undetected erroneous RA information and to introduce other improvements. In addition, the new FCPC software standards implement enhanced Angle of Attack (AOA) monitoring in order to better detect cases of AOA blockage, including multiple AOA blockage.</p> <p>For the reasons described above, this AD requires a software standard upgrade of the three FCPCs.</p> <p>Some of the Airbus SBs listed in Appendix 1 of this AD are not available at the issue date of this AD. It is expected that this AD will be revised when all the related SBs have been published.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Effective Date:                            | 01 July 2015                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Required Action(s) and Compliance Time(s): | <p>Required as indicated, unless accomplished previously:</p> <ol style="list-style-type: none"> <li>(1) Within the compliance time defined in Appendix 1 of this AD, as applicable, modify or replace the three FCPCs, as specified in Appendix 1 of this AD, in accordance with the instructions of the applicable Airbus SB, as identified in Appendix 1 of this AD.</li> <li>(2) After modification of an aeroplane as required by paragraph (1) of this AD, the operational procedures as specified below are no longer required and can be removed from the AFM of that aeroplane. <ul style="list-style-type: none"> <li>- A330 AFM Temporary Revisions (TR) 149 and A340 AFM TR 150, as required by EASA AD 2010-0271,</li> <li>- A330 AFM TR 4.02.00/46 Issue 3 and A340 AFM TR 4.02.00/54 Issue 3, as required by EASA AD 2009-0012-E, and</li> <li>- A330 AFM TR 37 Issue 1.0 and A340 AFM TR 38 Issue 1.0, as required by EASA AD 2012-0069.</li> </ul> </li> <li>(3) After modification of an aeroplane as required by paragraph (1) of this AD, the operational procedures (TR to the Master Minimum Equipment List (MMEL) as previously required by EASA AD 2010-0109R1, listed in paragraph (2) of that AD) are no longer required and can be removed from the MMEL of that aeroplane.</li> <li>(4) Installation of an upgraded software standard of the FCPC approved after the effective date of this AD is equal to compliance with the requirements of paragraph (1) of this AD, provided the conditions as specified in paragraphs (4.1) and (4.2) of this AD are met. <ol style="list-style-type: none"> <li>(4.1) The upgraded software standard of the FCPC must be approved by EASA, or approved under Airbus Design Organisation Approval (DOA); and</li> <li>(4.2) The installation must be accomplished in accordance with aeroplane modification instructions approved by EASA, or approved under Airbus DOA.</li> </ol> </li> <li>(5) An aeroplane modified as required by paragraph (1) of this AD, or as specified in paragraph (4) of this AD, as applicable, remains compliant with the modification requirement of paragraph (8) of EASA AD 2010-0081R1 for that aeroplane.</li> <li>(6) An aeroplane modified as required by paragraph (1) of this AD, or as</li> </ol> |

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|                    | <p>specified in paragraph (4) of this AD, as applicable, remains compliant with the requirements of EASA AD 2011-0199R1 and EASA AD 2013-0107 for that aeroplane.</p> <p>(7) An A330 aeroplane modified in service in accordance with the instructions of Airbus SB A330-27-3156 (commercial designation MRTT), modified as required by paragraph (1) of this AD, or as specified in paragraph (4) of this AD, as applicable, remains compliant with the modification requirements of EASA AD 2012-0271 for that aeroplane.</p> <p>(8) An aeroplane with Airbus mod 202680 (installation of FCPC P13M22 2K2) embodied in production is not affected by the requirements of paragraph (1) of this AD, provided it is determined that no FCPC has been replaced on that aeroplane since its date of manufacture with an FCPC having an earlier standard.</p>                                                                         |
| Ref. Publications: | <p>Airbus SB A330-27-3205 original issue dated 09 March 2015.</p> <p>Airbus SB A330-27-3207 [to be issued in July 2015].</p> <p>Airbus SB A330-27-3208 [to be issued in April 2017].</p> <p>Airbus SB A340-27-4195 [to be issued in December 2015].</p> <p>Airbus SB A340-27-4196 [to be issued in December 2015].</p> <p>Airbus SB A340-27-5064 [to be issued in July 2016].</p> <p>The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD.</p>                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Remarks:           | <ol style="list-style-type: none"> <li>1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.</li> <li>2. This AD was posted on 16 April 2015 as PAD 15-044 for consultation until 14 May 2015 and republished as PAD 15-044R1 on 01 June 2015 for consultation until 15 June 2015. The Comment Response Document can be found at <a href="http://ad.easa.europa.eu">http://ad.easa.europa.eu</a>.</li> <li>3. Enquiries regarding this AD should be referred to the Safety Information Section, Certification Directorate, EASA. E-mail: <a href="mailto:ADs@easa.europa.eu">ADs@easa.europa.eu</a>.</li> <li>4. For any question concerning the technical content of the requirements in this AD, please contact: AIRBUS – Airworthiness Office – EIAL, E-mail: <a href="mailto:airworthiness.A330-A340@airbus.com">airworthiness.A330-A340@airbus.com</a>.</li> </ol> |

## Appendix 1 - Software Standard updates and Compliance Time

| <b>Software Standard</b> | <b>Hardware Standard(s)</b> | <b>Airbus SB</b> | <b>Compliance Time</b><br>(after the effective date of this AD) |
|--------------------------|-----------------------------|------------------|-----------------------------------------------------------------|
| P13/M22                  | FCPC 2K2                    | SB A330-27-3205  | Within 9 months                                                 |
| P14/M23                  | FCPC 2K1                    | SB A330-27-3207  |                                                                 |
| M23                      | FCPC 2K0                    | SB A330-27-3207  |                                                                 |
| MRTT 3                   | FCPC 2K2                    | SB A330-27-3208  | Within 24 months                                                |
| L24                      | FCPC 2K1 or 2K0             | SB A340-27-4195  | Within 15 months                                                |
| L23                      | FCPC 2K2                    | SB A340-27-4196  |                                                                 |
| W13                      | FCPC 2K2                    | SB A340-27-5064  |                                                                 |

Revised