



COMMENT RESPONSE DOCUMENT

EASA PAD No. 17-055

[Published on 27 April 2017 and officially closed for comments on 11 May 2017]

[corrected version of CRD – published 24 May 2017]

Commenter 1: AMAC Aerospace Switzerland AG – Pavol Sikula – 27/04/2017

Comment # 1

A. In reference to PAD 17-055 par (1): Modification / Replacement:

(1) For Group 1 aeroplanes: Within 12 months after the effective date of this AD, update the software of the TPA-100B processor, or replace the P/N 940-0351-001 unit with a TPA-100B processor P/N 940-0351-005, in accordance with the instructions of the applicable Airbus SB.

Note 3: TPA-100B processors P/N 940-351-001 can be modified in-shop to P/N 940-351-005 standard in accordance with the instructions of Section 3.F of Honeywell SB 940-0351-34-0005.

If affected TCAS Computer has been installed per STC and applicable Airbus SB is therefore not including such A/C MSN in SB effectivity, would it be possible to perform on-wing upgrade per Honeywell SB 940-0351-34-0005 ?

B. In Reason and also in NOTE 3 P/N has typo error to be corrected as follows:

“ Consequently, Airbus developed certain modifications (mod 159658 and mod 206608) and published SB A320-34-1656, SB A320-34-1657, SB A330-34-3342, SB A340-34-4304 and SB A340-34-5118, to provide instructions for in-service introduction of the software update (including change to P/N 940-0351-005) on the affected aeroplanes, or to replace the TCAS processor with a P/N 940-0351-005 unit.”

“Note 3: TPA-100B processors P/N 940-0351-001 can be modified in-shop to P/N 940-0351-005 standard in accordance with the instructions of Section 3.F of Honeywell SB 940-0351-34-0005.

EASA response:

A. Comment understood, and partially agreed. This AD applies to Airbus aeroplanes that had the affected processor installed through Airbus instructions, either on the Airbus production line, or by Airbus SB. This AD does not apply to STC-modified aeroplanes, therefore modification or replacement of STC-installed processors is not required by this AD. In that case, the AD would have to identify the STC(s) and the relevant STC approval holder(s).



However, EASA may consider separate AD action for STC-modified Airbus aeroplanes, or other aeroplanes that may have these processors installed, if deemed necessary.

Note 1 of the Final AD has been amended to clarify that the AD does not affect aeroplanes with STC-installed processor.

B. Comment agreed. P/N typographical errors have been corrected in the Final AD.

Commenter 2: Sabena Aerospace – Andy Howard – 28/04/2017

Comment # 2

Regarding the PAD 17-055, are the Airbus SB's referenced in the AD applicable to aircraft which have had the TCAS 7.1 upgrade to P/No 940-0351-001 embodied via a Part 21 modification or should the AD mention that the AD also affects aircraft with the affected P/No installed by Part 21 Mod / STC to avoid any doubt ?? Can the Airbus SB be performed on an aircraft that has had the P/No 940-0351-001 fitted by a Part 21 Mod ??

EASA response:

Comment partially agreed. See EASA answer to Comment #1, Point A.

Commenter 3: Vanilla Air Inc. – Takayuki Hirano – 01/05/2017

Comment # 3

Although PAD 17-055 instructs software update in accordance with Airbus SB A320-34-1656 (Orig), we have confirmed that Airbus SB A320-34-1656 (Orig) involved a serious missing data. Several aircrafts (MSN) to be performed, the SB A320-34-1656 modifications are not shown in the effectivity range in that SB. SB A320 34-34-1656 description issued by Airbus: MSN 5901, 5926, 6257, 6282 and 6320.

Actual status checked by VNL with Airbus: MSN 5901, 5926, 6257, 6282, 6320, 6422, 6447, 7080, 7411, 7426 and 7543 *.

*All of above aircrafts shall be classified as Group 1 airplane because each of them equips Honeywell TPA-100B TCAS processor (PN: 940-0351-001)

Based on our finding, we have contacted Airbus to make the difference clear, and they promised the missing data in the SB would be modified at next revising season. However, the schedule for next revising season has never opened. Because the all affected aircrafts are not contained in SB A320-34-1656 (Orig), we will be unable to complete the modification in accordance with SB A320-340-1656 (Orig) now.



Request: Before issued formal EASA AD based on PAD 17-055, would you ask Airbus for correcting those missing data on the SB A320-34-1656 (Orig)?

EASA response:

Comment understood, but not agreed. EASA received confirmation from Airbus that SB A320-34-1656 is expected to be revised, adding the missing MSN, although it is not known when that SB (R01) will be published. Notwithstanding the missing MSN, however, EASA considers the use of the Airbus SB instructions adequate and acceptable to accomplish the required actions on those MSN. No changes have been made to the Final AD in response to this comment.

Commenter 4: Etihad Airways – Borja Dosal Roiz – 02/05/2017

Comment # 4

Please see below Etihad comments in regards to EASA PAD 17-055:

A. EASA PAD 17-055 seems to contain the following typo errors in the statement of TCAS P/N 940-0351-005:

- Page 2: “Consequently, Airbus developed certain modifications (mod 159658 and mod 206608) and published SB A320-34-1656, SB A320-34-1657, SB A330-34-3342, SB A340-34-4304 and SB A340-34-5118, to provide instructions for in-service introduction of the software update (including change to P/N 940-351-005) on the affected aeroplanes, or to replace the TCAS processor with a P/N 940-351-005 unit.”
- Page 3: “Note 3: TPA-100B processors P/N 940-351-001 can be modified in-shop to P/N 940-351-005 standard in accordance with the instructions of Section 3.F of Honeywell SB 940-0351-34-0005.”

B. In regards to paragraph (1). The sentence can be misleading as both the software update and the unit replacement will lead to a P/N change and this is not clearly stated in the PAD sentence: “For Group 1 aeroplanes: Within 12 months after the effective date of this AD, update the software of the TPA-100B processor, or replace the P/N 940-0351-001 unit with a TPA-100B processor P/N 940-0351-005, in accordance with the instructions of the applicable Airbus SB.”

For this reason, we would recommend a rephrasing like: “For Group 1 aeroplanes: Within 12 months after the effective date of this AD, either upgrade the TPA-100B processor P/N 940-0351-001 to P/N 940-0351-005 by uploading software version 05/01, or replace the P/N 940-0351-001 unit with a TPA-100B processor P/N 940-0351-005, in accordance with the instructions of the applicable Airbus SB.”

C. Across PAD 17-055, EASA correctly makes reference to “Airbus SB A320-34-1656, SB A320-34-1657, SB A330-34-3342, SB A340-34-4304 and SB A340-34-5118”. We would like to remind EASA that Airbus has classified these SBs as Mandatory. So, we would like to recommend to EASA to state the word “Mandatory” when referring to these SBs in the final AD.



EASA response:

- A. Comment agreed. See EASA answer to Comment #1, Point B.**
- B. Comment not agreed. The AD requires these actions “in accordance with the instructions of the applicable Airbus SB” and, since these instructions contain (only in the case of on-aircraft modification) the action to change the P/N, we consider it redundant to explicitly state add the action of P/N change. No changes have been made to the Final AD in response to this comment.**
- C. Comment understood, but not agreed. It is EASA policy to refer to a document number as shown in the document itself (in this case ‘Service Bulletin’ as shown in the RH lower corner of each page), which usually does not include the ‘classification’ as applied by the design approval holder (e.g. optional, recommendation, mandatory, etc.). No changes have been made to the Final AD in response to this comment.**
- For the record, it should be noted that, irrespective of the status applied to an SB by a design approval holder (this is not regulated), an SB is not actually ‘mandatory’ (i.e. legally required to be accomplished) until there is an AD for that SB. See our relevant [AD FAQ](#).**

Commenter 5: PVM Engineering – Eric Sperazza – 03/05/2017**Comment # 5**

- A. There are STCs installing the TPA-100B P/N 940-0351-001, it should be of interest not to limit the AD to Airbus MODs.**
- B. What about Airbus Wide Body aircraft ? We have STC ref. 10053659 rev1 with this P/N.**
- C. There are several other P/N behind the TPA-100B model, 940-0451-001, 940-0351-010 and 940-0451-010, are they also potentially concerned by this AD ?**
- D. What about Boeing airplanes with this (these) PN (s) ? We also have TCAS 7.1 STCs on B737, B747, B757, B767 and B777 including this P/N.**

EASA response:

- A. Comment partially agreed. See EASA answer to Comment #1, Point A.**
- B. Comment partially agreed. See EASA answer to Comment #1, Point A.**
- C. Comment not agreed. The reported occurrences were on P/N 940-0351-0001 only. No changes have been made to the Final AD in response to this comment.**
- D. Comment partially agreed. See EASA answer to Comment #1, Point A.**



Commenter 6: British Airways Engineering – Don Stevenson – 08/05/2017

Comment # 6

A. Proposed text addition: Current text, page 3 - Modification / Replacement:

(1) For Group 1 aeroplanes: Within 12 months after the effective date of this AD, update the software of the TPA-100B processor, or replace the P/N 940-0351-001 unit with a TPA-100B processor P/N 940-0351-005, in accordance with the instructions of the applicable Airbus SB.

This statement needs to be expanded to include the following at the end of the sentence:or EASA approved STC

Proposed text:

(1) For Group 1 aeroplanes: Within 12 months after the effective date of this AD, update the software of the TPA-100B processor, or replace the P/N 940-0351-001 unit with a TPA-100B processor P/N 940-0351-005, in accordance with the instructions of the applicable Airbus SB **or EASA approved STC.**

This would reduce the need for an AMOC application if an EASA approved STC is used to fit the new part number.

B. General question: The TPA-100B TCAS 7.1 compliant computer p/n 940-351-001 is also fitted to Boeing aircraft. This PAD does not make any reference to similarly equipped Boeing aircraft. Does EASA require any similar AD activity on Boeing aircraft equipped with a TPA-100B p/n 940-351-001 TCAS 7.1 compliant computer?

EASA response:

A. Comments partially agreed. See EASA answer to Comment #1, Point A.

It should be noted that an STC can be used as an AMOC to an AD, only if an EASA AMOC approval has been obtained, usually by the STC holder. Amending the Final AD in the way suggested is not the appropriate way to avoid any AMOC application(s). The purpose of an AMOC is to establish equivalent safety, which cannot be done without review of the (alternative) modification instructions.

B. The False RA issue has not been observed on Boeing aircraft fitted with the TPA-100B TCAS 7.1 computer P/N 940-351-001. No changes have been made to the Final AD in response to this comment.



Commenter 7: SmartLynx Airlines Ltd. – Romans Zencenko – 10/05/2017**Comment # 7**

We have installed affected TCAS on MSN1823, MSN1896, MSN2233 in our fleet. In total we operated on those aircraft 15307FH. We don't have any Spurious Resolution Advisories reported from our pilots. Could you please advise what RA ratio per FH is currently reported, what's estimated failure probability? We also consider that FOC Retrofit company should be started for TCAS modification in approved repair centers, with the same condition as it was with MLGDA Modification iaw AD 2014-0221R1.

EASA response:

The spurious RA only occur when a specific trajectory, involving at least two Airbus aeroplanes, is flown. Eurocontrol has monitored the occurrences in CORE Europe and determined that the safety margin for spurious RA, which should be no greater than 1×10^{-5} per flight hour (refer to Section 5 of EASA AMC 20-15), was exceeded by 200%. In less congested airspace it is quite possible that an Airbus aeroplane equipped with the TPA-100B processors may not exhibit spurious RA.

No changes have been made to the Final AD in response to this comment.

Commenter 8: Eurocontrol – Eric Potier – 11/05/2017**Comment # 8**

In my role as the Chairman of the Surveillance Avionics Group, a EUROCONTROL working arrangement involving ANSPs and national supervisory authorities, I would like to state concerns regarding the timescale assigned in Proposed AD 17-055. This PAD is being raised to address the serious safety issues that are attributable to incorrect functioning of the Hybrid Surveillance avionics configuration.

As you know several loss of separation events, stemming from this issue, have already occurred. To address this real, significant and evident safety issue it is required that corrective measures be introduced at the earliest possible opportunity. It was understood from discussions in the Surveillance Avionics Group that, given the seriousness of this issue and the potentially catastrophic consequences that could occur, a date of 1st March 2018 would be reflected in the AD and that delays in the publication of the Service Bulletins (SB) by the aircraft manufacturer would not lead to a corresponding delay in the compliance date reflected in the AD. (The constraint being that an AD cannot be published until corrective mechanisms are formally available).



Based on the following three reasons – firstly the severity of the issue, secondly as avionic manufacturers and the airlines most affected by this avionic anomaly have already started work to introduce the corrections and thirdly as the correction is a software update rather than a hardware adaptation, I would recommend an amendment to the ‘Modification / Replacement’ section on page 3 of the PAD to reflect a maximum 9 month duration rather than the 12 months that is currently stated. This is based upon the assumption of a formal publication date in mid-June 2017. If the AD is not published by mid-June the duration should be reduced accordingly.

Please note that the potential of serious safety issues exist whilst aircraft are flown without the AD being implemented and we appreciate the active ongoing and future involvement of your colleagues in EASA in progressing the rectification of this issue.

EASA response:

Comment understood, but not agreed. Taking into account the risk assessment (probably of occurrence), the size of the worldwide fleet of affected aeroplanes, and the logistics involved in providing new or modified units, 12 months is considered an acceptable compliance time.

It should also be noted that, from the moment of availability of the Honeywell SB (January 2017) and the Airbus SBs (April 2017), the risk is already being mitigated, even before the effective date of the AD, though early actions by the most safety conscious operators.

No changes have been made to the Final AD in response to this comment.

