ANNEX I

Annex I to draft Commission Regulation (EU) …/… amending Commission Regulation (EU) 2015/640 of 23 April 2015 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council

A. Commission Regulation (EU) 2015/640 is amended as follows[1]:

1) 'ARTICLE 1' is replaced by the following:

Article 1 Scope

1) This Regulation lays down common additional airworthiness specifications in order to support the continuing airworthiness and safety improvements of:

   (a) aircraft registered in a Member State;

   (b) aircraft registered in a third country and used by an operator for which a Member State ensures oversight;

2) This Regulation also lays down additional airworthiness specifications for the design approval holders and applicants for aircraft type designs, changes and repairs approved by EASA or deemed to have been issued in accordance with Commission Regulation (EU) No 748/2012.

2) 'ARTICLE 2 - DEFINITION' the following new definitions are added:

e) 'Airworthiness limitation section (ALS)' is a section in the instructions for continuing airworthiness (or the maintenance manual, for earlier products,) that contains airworthiness limitations that set forth each mandatory replacement time, inspection interval and related inspection procedure.

f) 'Corrosion prevention and control programme (CPCP)' is a systematic approach to prevent and to control corrosion in an aircraft's primary structure, consisting of a basic corrosion inspection task, task areas, defined corrosion levels, and compliance times (implementation thresholds and repeat intervals).

g) 'Damage tolerance data' are damage tolerance evaluation (DTE) documentation and damage tolerance inspections (DTIs).

h) 'Damage tolerance evaluation (DTE)' is a process that leads to the determination of the maintenance actions necessary to detect or preclude fatigue cracking that could contribute to a catastrophic failure. As applied to repairs and modifications, DTE includes the evaluation of the repair or modification and the fatigue-critical structure affected by the repair or modification.

i) 'Damage tolerance inspections (DTIs)' are the inspections developed as a result of a DTE. A DTI includes the areas to be inspected, the inspection method, the inspection

[1] The proposal is based on the latest proposal for changes to Regulation (EU) 2015/640 made by the Agency in its Opinion 08/2016.

procedures (including the sequential inspection steps and, acceptance and rejection criteria), the threshold, and any repetitive intervals associated with those inspections. DTIs may specify a time limit at which a repair or modification needs to be replaced or modified.

j) 'Existing design changes or repairs' are changes and repairs that are approved before the date of entry into force of the amending Regulation introducing 26.300 through 23.380.

k) 'Fatigue-critical structure (FCS)' is a structure that is susceptible to fatigue cracking that could lead to a catastrophic failure of an aircraft.

l) 'Fatigue-critical baseline structure (FCBS)' is the baseline structure of the aircraft that is classified as fatigue-critical structure.

m) 'Fatigue-critical modified structure (FCMS)' is any structure added by a modification that is fatigue-critical and is not already listed as part of the FCBS.

n) 'Future design changes and repairs' are changes and repairs that are approved after the date of entry into force of the amending Regulation introducing 26.300 through 26.380.

o) 'Limit of validity (LOV)' of the engineering data that supports the structural maintenance programme corresponds in this Regulation to the period of time, stated as a number of total accumulated flight cycles or flight hours or both, during which it is demonstrated that widespread fatigue damage will not occur in the aeroplane.

p) 'Published repair data' are instructions for accomplishing repairs that are published for general use in structural repair manuals and service bulletins (or equivalent types of documents).

q) 'Repair evaluation guideline (REG)' provides a process to establish damage tolerance inspections for repairs that affect any fatigue-critical structure to ensure the continued structural integrity of all relevant repairs.

r) 'Widespread fatigue damage (WFD)' in a structure is the simultaneous presence of cracks at multiple structural locations that are of sufficient size and density whereby the structure will no longer meet the applicable residual strength requirements.

3) 'ARTICLE 3 -' is replaced by the following:

Article 3 Additional airworthiness specifications for a given type of operation

1) Operators for which a Member State ensures that oversight shall, when operating the aircraft referred to in Article 1, comply with the provisions of Annex I.

2) Design approval holders and applicants for design approvals for aircraft, changes or repairs referred to in Article 1, shall comply with the provisions of Annex I.

B. Annex I (Part-26) to Commission Regulation (EU) 2015/640 is amended as follows

1) 'CONTENTS' is amended as follows:

In 'SUBPART B —LARGE AEROPLANES', the following points are added

26.300 Continuing structural integrity for ageing aircraft structures — general requirements
26.310 WFD evaluation of type design changes
26.320 Damage tolerance data for existing repairs and existing changes to fatigue critical structure
26.330 Damage tolerance data for existing STCs, other existing major changes and existing repairs affecting those changes or STCs
26.350 Extension of an LOV
26.360 Fatigue and damage tolerance evaluation of future repairs and changes
26.370 Continuing airworthiness tasks and aircraft maintenance programme
26.380 Additional limitations

2) '26.10' is replaced by the following:

26.10 Competent Authority

(a) For the purposes of this Part, the competent authority to which compliance with the requirements needs to be demonstrated by operators shall be the authority designated by the Member State in which the operator has its principal place of business.

(b) For the purposes of this Part, the competent authority to which compliance with the requirements needs to be demonstrated by holders of and applicants for type certificates, restricted type certificates, supplemental type certificates, changes and repair design approvals shall be EASA.

3) '26.30' is replaced by the following[2]:

26.30 Demonstration of compliance

(a) EASA shall issue, in accordance with Article 19 of Regulation (EC) No 216/2008, certification specifications as a standard means to show the compliance of products with this Part. The certification specifications shall be sufficiently detailed and specific to indicate to operators, and to holders of and applicants for a type certificate, restricted type certificate, supplemental type certificate and change and repair design approval, the conditions under which compliance with the requirements of this Part may be demonstrated.

(b) Operators, holders of and applicants for a type certificate, restricted type certificate, supplemental type certificate or a change and repair design approval may demonstrate compliance with the requirements of this Part by complying with:

(i) the detailed specifications issued by EASA under (a) or the equivalent specifications issued by EASA under Part 21.B.70; or

(ii) technical standards offering an equivalent level of safety to those included in those specifications.

[2] The proposal is based on the Agency's proposal to amend Part-21 in its Opinion 07/2016, which proposes to move 21.A.16A to Section B as 21.B.70.

(c) Holders of and applicants for a type certificate, restricted type certificate, supplemental type certificate or a change and repair design approval shall make available to each known operator of one or more aeroplanes, the 'Instructions for Continued Airworthiness' ICA required in order for them to demonstrate compliance with this Part. For the purposes of this regulation, the ICA also include damage tolerance inspections (DTIs), repair evaluation guidelines (REGs), a baseline corrosion prevention and control programme (CPCP), and a list of fatigue-critical structures (FCSs) and airworthiness limitation sections (ALSs).

4) <u>New '26.300' – '26.380' are added after '26.250' as follows:</u>

26.300 Continuing structural integrity for ageing aircraft structures — general requirements

The holder of a type certificate (TC) or a restricted type certificate for a turbine-powered large aeroplane certified after 1 January 1958, except as provided for in 26.380, and the applicant for a TC or restricted TC for a turbine-powered large aeroplane, shall comply with the following:

(a) Establish a compliance plan for continuing structural integrity that addresses 26.300(b) to (h) inclusive.

(b) For aeroplanes certified to carry 30 passengers or more, or with a payload capacity of greater than 3 402 kg (7 500 lbs), perform a fatigue and damage tolerance evaluation of the aeroplane structure and establish associated inspections and other procedures that will avoid catastrophic failures due to fatigue throughout the operational life of the aircraft.

(c) For aeroplanes certified with a maximum take-off weight (MTOW) greater than 34 019 kg (75 000 lbs), establish a limit of validity (LOV) of the engineering data that supports the structural maintenance programme and include this LOV in an ALS.
The aircraft structural configurations to be evaluated include:

(1) for TC holders (TCHs), all model variations and derivatives approved under the type certificate as of the date of entry into force of this Regulation;

(2) for TC applicants, all model variations to be approved under the first issue of the type certificate;

(3) all structural changes and replacements to the aircraft structural configurations specified in 26.300(c)(1) that are mandated by airworthiness directives as of the date of entry into force of this Regulation;

(d) Identify existing maintenance actions and develop new maintenance actions upon which the LOV established in accordance with 26.300(c) depends.

(e) Establish a baseline CPCP.

(f) Establish and implement a process that ensures that the continuing structural integrity programme remains valid throughout the operational life of the aircraft, considering service experience and current operations.

(g) For aeroplanes subject to 26.300(b), identify and list the fatigue-critical baseline structure (FCBS) for all aircraft models and derivatives in the type certificate. Upon

approval of the list, make it available to operators and persons required to comply with 26.330, 360 and 370.

(h) Compliance times

(1) Submit the compliance plan required by point (a) to EASA for approval within 90 days of the date of entry into force of this Regulation. For applications for TCs received after the date of entry into force of this Regulation, the compliance plan shall be submitted with the certification programme as required by Annex I (Part-21) to Commission Regulation (EU) No 748/2012.

(2) Unless the inspections and other procedures required by 26.300(b) are already approved in accordance with Annex I (Part-21) to Commission Regulation (EU) No 748/2012, submit them to EASA for approval within 24 months from the date of entry into force of this Regulation, except applicants for TC, who must obtain approval prior to the issuing of the TC.

(3) Develop the LOV and ALS amendments required by 26.300(c) and submit them to EASA for approval as provided in (h)(3)(i), (ii), (iii) or prior to the issuing of the TC whichever occurs later.

(i) 18 months from the date of entry into force of this Regulation, for aircraft structure with a certification basis prior to JAR 25.571 Change 7 or 14 CFR 25.571 Amdt 45;

(ii) The later of 60 months from the date of entry into force of this Regulation or the date specified in the plan approved for completion of the full-scale fatigue testing and demonstrating that widespread fatigue damage will not occur in the aeroplane structure certified in Europe or in the USA according to 14 CFR Part 25.571 Amdt 96 or equivalent, or later amendments;

(iii) 48 months from the date of entry into force of this Regulation for all other aircraft structure.

(4) Submit the actions established according to 26.300(d) to EASA for approval, according to the timescales defined in 26.300(h)(3)(ii) for aircraft structure certified to CS-25 Amdt 19 or later, or according to a schedule agreed with EASA for all other aircraft structure. The schedule must be submitted together with the LOV according to the compliance time specified in 26.300(h)(3).

(5) If the baseline CPCP required by 26.300(e) is not currently approved by EASA and available to operators, submit the baseline CPCP to EASA for approval within 24 months from the date of entry into force of this Regulation or prior to the issuing of the TC, if later.

(6) Submit the process required by 26.300(f) to EASA within 24 months from the date of entry into force of this Regulation or prior to the issuing of the TC, if later. Implement the process within 6 months after its approval by EASA.

(7) Within 6 months from the date of entry into force of this Regulation or prior to the issuing of the TC if later, submit to EASA for approval a list of the structures identified under 26.300(g).

26.310 WFD evaluation of type design changes

The holder of a type certificate or restricted type certificate of a turbine-powered large aeroplane certified after 1 January 1958 with a maximum take-off weight (MTOW) greater than 34 019 kg (75 000 lbs), except as provided for in 26.380, shall comply with the following:

(a) Evaluate each type design change approved after the date of entry into force of this Regulation and identify whether it affects or introduces any structure susceptible to widespread fatigue damage (WFD).

(b) Perform a WFD evaluation of these type design changes and assess the impact of each design change on the LOV and existing maintenance actions established in accordance with 26.300.

(c) Develop new and revised maintenance actions necessary to preclude WFD up to the LOV and submit them for approval by EASA no later than:

(1) 60 months from the date of entry into force of this Regulation; or

(2) the design change approval date; or

(3) the date specified in the plan approved for completion of the full-scale fatigue testing and demonstrating that widespread fatigue damage will not occur in the aeroplane structure; or

(4) for aeroplane structure with a certification basis prior to CS-25 Amdt 19, according to a schedule agreed with EASA, which must be submitted to EASA no later than (1), (2) or (3) above.

26.320 Damage tolerance data for existing repairs and existing changes to fatigue-critical structure

The holder of a TC or restricted TC of turbine-powered large aeroplanes certified after 1 January 1958 to carry 30 or more passengers, or that have a payload capacity of 3 402 kg (7 500 lbs) or more, except as provided for in 26.380, shall comply with the following:

(a) Establish a compliance plan that addresses 26.320(b) to (d) inclusive

(b) For existing changes and fatigue-critical modified structure (FCMS):

(1) Review existing design changes (modifications) and identify all changes that affect FCBS identified under 26.300(g);

(2) For the changes identified in 26.320(b)(1), perform a damage tolerance evaluation and develop the associated damage tolerance inspections;

(3) For each change identified under 26.320(b)(1), identify any associated fatigue-critical modified structure; and

(4) Submit to EASA for approval a list of the structure (FCMS) identified under 26.320(b)(3) and, upon approval, make the list available to operators and persons required to comply with 26.330, 26.360, and 26.370.

(c) For existing published repair data

(1) Review the repair data and identify each repair specified in the data that affects the fatigue-critical baseline structure and the fatigue-critical modified structure identified under 26.300(g) and 26.320(b)(3);

(2) Unless previously accomplished, perform a damage tolerance evaluation and develop the damage tolerance inspection (DTI) for each repair identified under (c)(1).

(d) For aircraft with a certification basis that does not include CS 25.571 (Initial issue or later amendments), develop repair evaluation guidelines (REGs) that:

(1) establish a process for conducting surveys of affected aircraft that will enable the identification and documentation of all existing repairs that affect the fatigue-critical structure identified under 26.300(g) and 26.320(b)(3);

(2) establish a process that will enable operators to obtain a DTI for repairs identified under 26.320(d)(1); and

(3) establish an implementation schedule that provides timelines for conducting aircraft surveys, obtaining DTIs and incorporating DTIs into the Operator's maintenance programme.

(e) Compliance times
The following data must be submitted to EASA for review and approval by the specified compliance time, unless otherwise stated:

(1) the list of all fatigue-critical modified structure required by 26.320(b)(3) must be submitted within 12 months from the date of entry into force of this Regulation;

(2) for published repair data that are current as of the date of entry into force of this Regulation, the damage tolerance data required by 26.320(c)(2) must be submitted or approved in accordance with Subpart M of Part-21, within 18 months from the date of entry into force of this Regulation;

(3) the repair evaluation guidelines required by 26.320(d) must be submitted within 24 months from the date of entry into force of this Regulation;

(4) for changes developed and approved before the date of entry into force of this Regulation, the damage tolerance data required by 26.320(b)(2) must be submitted within 18 months from the date of entry into force of this Regulation.

(5) the compliance plan required by 26.320(a) must be submitted for approval within 90 days of the date of entry into force of this Regulation.

26.330 Damage tolerance data for existing STCs, other existing major changes and existing repairs affecting those changes or STCs

The holder of an STC for a major change or the holder of a major design change that has been deemed approved in accordance with Article 4 of Regulation (EU) No 748/2012, for large aeroplanes certified after 1 January 1958 to carry 30 or more passengers or that have a payload capacity of 3 402 kg (7 500 lbs) or more, except as provided for in 26.380, shall comply with the following:

(a) Establish a compliance plan that addresses 26.330(b) to (d) inclusive.

(b) For existing STCs, major changes and published repairs to changes:

(1) Review the changes and identify those that affect fatigue-critical baseline structure; and

(2) For each change identified under 26.330(b)(1), identify any associated fatigue-critical modified structure (FCMS); and

(3) Develop and submit to EASA for review and approval a list of the changes and FCMS identified under 26.330(b)(1) and (b)(2) and, upon approval, make these lists available to persons and operators required to comply with 26.360 and 26.370.

(4) Identify the published repairs affecting the changes identified in 26.330(b)(1).

(c) For existing changes and published repairs identified under 26.330(b)(1) and 26.330(b)(4), unless previously accomplished, perform a damage tolerance evaluation and develop the associated damage tolerance inspection.

(d) Compliance times

(1) Except as provided in 26.330(d)(2), compliance with 26.330(b)(1), (b)(2), (b)(3) and (b)(4) is required within 12 months from the date of entry into force of this Regulation.

(2) The list of changes identified in 26.330(b)(1) must be submitted to EASA within 12 months from the date of entry into force of this Regulation and, upon approval, made available to persons and operators required to comply with 26.360 and 26.370. For a major change approved prior to 1 September 2003, installed on an aircraft operated under Part-CAT, compliance with 26.330(b)(2), (b)(3) and (b)(4) must be established when requested by an operator within 12 months of being requested by an operator.
For changes installed on an aircraft currently not operated under Part-CAT, compliance with 26.330(b)(2), (b)(3) and (b)(4) must be established when requested by an operator, prior to that aircraft being operated under Part-CAT or within 12 months of the date of entry into force of this Regulation, whichever occurs later.

(3) Except as provided in 26.330(d)(4) or (d)(5), the damage tolerance data required by 26.330(c) must be submitted to EASA for review and approval within 24 months from the date of entry into force of this Regulation.

(4) For changes installed on an aircraft currently not operated under Part-CAT, approval of the damage tolerance data required by 26.330(c) must be established when requested by an operator, prior to that aircraft being operated under Part-CAT or within 24 months of the date of entry into force of this Regulation, whichever occurs later.

(5) For a major change approved prior to 1 September 2003, installed on an aircraft operated under Part-CAT, the damage tolerance data required by 26.330(c) must be submitted to EASA for review and approval within 24 months after it is requested by an operator.

(6) The compliance plan required by 26.330(a) must be submitted to EASA for approval within 180 days of the date of entry into force of this Regulation.

26.350 Extension of an LOV

For aeroplanes with an LOV established according to 26.300, 26.350 or CS 25.571 Amdt 19 or later, the applicant for an LOV extension shall comply with the relevant provisions of subparts D or E of Part-21 for a major change and 26.350(a),(b) and (c):

(a) A fatigue and damage tolerance evaluation of the following structural configurations must be performed for:
  (1) all model variations, and derivatives approved under the type certificate for which approval for an extension of the LOV is sought; and
  (2) all major structural changes to and replacements of the aeroplane structural configurations specified in 26.350(a)(1), mandated by an airworthiness directive, up to the date of approval of the extended LOV.

(b) The evaluation required by 26.350(a) must include consideration of WFD and at least be supported by test evidence and analysis and, if available, service experience data, or service experience and teardown inspection results, of high-time aeroplanes of similar structural design, accounting for differences in operating conditions and procedures.

(c) Based on the evaluation required by 26.350(a), establish the DTI and any necessary maintenance actions required to preclude catastrophic failures up to the proposed extended LOV. The inspections and other maintenance actions and procedures resulting from this evaluation must be included directly or by reference in the revision to the ALS or the supplement to the ALS that includes the extended LOV, as appropriate.

26.360 Fatigue and damage tolerance evaluation of future repairs and changes

For aircraft subject to 26.300(b), the applicant for a repair or change approval that is approved after the date of entry into force of this Regulation, except as provided for in 26.380, shall comply with the following:

(a) For any repair or change that affects or includes fatigue-critical structure (FCS), perform a fatigue and damage tolerance evaluation and develop the inspections and other procedures as necessary to prevent catastrophic failures due to fatigue throughout the operational life of the aeroplane. Identify any new FCSs introduced or created by the change, and list them in the instructions for continuing airworthiness.

(b) Compliance times
  (1) For applications for changes received after the date of entry into force of this Regulation or an application received prior to the date of entry into force of this Regulation that included DT (damage tolerance) in the certification basis, the data required by 26.360(a) shall be part of the compliance data for the change to be approved in accordance with Part-21 Subparts D or E, as applicable.
  (2) For applications for changes received prior to the date of entry into force of this Regulation, and for which a damage tolerance evaluation is not otherwise required by the applicable certification basis, the data required by 26.360(a) must be submitted to EASA within 12 months from the date of entry into force of this Regulation, or be part of the compliance data for the change to be approved in accordance with Part-21.
  (3) For repairs, a damage tolerance evaluation defining thresholds for maintenance actions that allow continued safe operation must be approved in accordance

with Part-21, Subpart M within 12 months after the initial repair approval, except as provided in 26.360(b)(4).

(4) If, prior to release into service, an evaluation has been performed that supports the approval of a temporary limitation allowing a period of safe operation, the approval of the data required under 26.360(b)(3) must be accomplished prior to the expiry of the temporary limitation.

(5) For repairs, the approval of the inspections and other procedures required by 26.360(a) must be granted before the first approved inspection threshold is reached.

26.370 Continuing airworthiness tasks and aircraft maintenance programme

The operator/owner of turbine-powered large aeroplanes certified after 1 January 1958, except as provided for in 26.380, shall comply with the following:

(a) The aircraft maintenance programme required by Annex I (Part-M) to Commission Regulation (EU) No 1321/2014 M.A.302 shall include:

(1) For aircraft certified to carry 30 passengers or more, or with a payload capacity greater than 3 402 kg (7 500 lbs), an approved damage-tolerance-based inspection programme.

(2) For aircraft operated under Annex IV (Part-CAT) to Commission Regulation (EU) No 965/2012 and certified to carry 30 passengers or more or with a payload greater than 3 402 kg (7 500 lbs), a means for addressing the adverse effects that repairs and modifications may have on fatigue-critical structure and on inspections required by 26.370(a)(1).

(3) Applicable limitations on the use of the maintenance programme in flight hours, flight cycles or both. The limitations shall include the LOV approved under 26.300(c) or 26.350, unless there is a more restrictive applicable limitation on the use of the maintenance programme, which shall then be incorporated.

(4) A CPCP.

(b) Compliance times

(1) Revise the maintenance programme to address the requirements of 26.370(a)(1), (a)(2) and (a)(4), within 36 months from the date of entry into force of this Regulation or prior to operating the aircraft, whichever comes later.

(2) Revise the maintenance programme to address the requirements of 26.370(a)(3) no later than 6 months after the date of entry into force of this Regulation, or 6 months after the publication of the limitation, or prior to operating the aircraft, whichever comes later.

26.380 Additional limitations

(a) EASA shall publish certification specifications containing specific conditions under which 26.300 through 26.370 may not be applicable to products, changes or repairs.

(b) Design approval holders (DAHs) who do not comply with 26.300 through 26.370 on the basis of the specific conditions established in accordance with (a) shall establish a list of aeroplanes, changes and repairs, as necessary to define the applicability of the

corresponding certification specifications established under (a). DAHs shall also submit this list to EASA.

(c) EASA shall publish a list of the products, changes and repairs, provided by DAHs under (b), as necessary to assist DAHs and operators needing to comply with 26.300 through 26.370 or any part thereof.