



European Union Aviation Safety Agency

SAFETY MATERIAL

RMT.0599

'Evidence-based and competency-based training.'

SPT.012

'Promote the new European provisions on pilot training'

Oversight guidance for the transition to Mixed EBT Implementation

According to:

GM1 ORO.FC.230 (a); (b); (f) Recurrent training and checking GM2 ORO.FC.A.245, ATQP

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Disclaimer: The Agency has prepared this document to provide stakeholders with an easy-to-read publication. This document is part of the safety material documentation published by EASA. The document provides some of the best practices in the industry to implement EBT and **does not** form part of the EASA regulatory system (there is no need to comply with this document). This document is for information only. The Agency accepts no liability for damage of any kind resulting from the risks inherent in the use of this document.

Background: EBT is a worldwide global initiative that was created and developed by many organisations that contributed equally to the development of the project. ICAO, IATA and OEM guidance is available for the support of implementation of EBT programmes worldwide. No single organisation or person can claim the original idea or ownership of EBT and its principles. Stakeholders are recommended to follow the advice and documentation provided by their regulator.



Oversight guidance for transition to EBT

Legislation and references:

Primary legislation and references:

- ED Decision 2015/027/R Implementation of evidence-based training (EBT) within the European regulatory framework <https://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2015027r>. It includes:
 - Annex I to ED decision 2015/027/R: **GM1 ORO.FC.230 (a); (b); (f). Recurrent training and checking** to Part-ORO – Issue 2, Amendment 4; and
 - Explanatory Note to the ED Decision 2015/027/R.
- Regulation (EU) 2020/2036 of 9 December 2020 amending Regulation (EU) 965/2012.
 - o <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020R2036&qid=1607691853186>
- Regulation (EU) 2020/2193 of 16 December 2020 amending Regulation (EU) 1178/2011.
 - o <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R2193>

ED Decisions:

- ED Decision 2021/002/R 'Update of the AMC & GM to Subpart FC of Part-ORO (evidence -based training (EBT))
 - o <https://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2021002r>

Explanatory notes and Safety promotion material (included in the Explanatory note)

- Explanatory note to the ED Decision 2021/002/R and Regulation (EU) 2020/2036 and Regulation (EU) 2020/2193.
 - o https://www.easa.europa.eu/sites/default/files/dfu/explanatory_note_to_ed_decision_2021-002-r.pdf

For info:

- ICAO Doc 9995 AN/497 Manual of Evidence-based Training First Edition – 2013.
- EASA Opinion 08/2019 Evidence-based training <https://www.easa.europa.eu/document-library/opinions/opinion-082019-b>
- [EASA Notice of proposed of Amendment 2018-07\(B\)](#) and 2018-07(A).
- ToR RMT.0696 Implementation of Evidence-Based Training within the European regulatory framework <https://www.easa.europa.eu/document-library/terms-of-reference-and-group-compositions/tor-rmt0696>.
- ToR (+ Concept Paper) RMT.0599 Evidence-based and competency-based training <https://www.easa.europa.eu/document-library/terms-of-reference-and-group-compositions/tor-concept-paper-rmt0599>.
- IATA Data Report for Evidence-Based Training August 2014 1st edition.
- ICAO PANS Training DOC 9868.
- IATA Evidence-Based Training Implementation Guide July 2013.



PROJECT GUIDANCE FOR MIXED EBT IMPLEMENTATION¹

Task	Operator action	Authority action	Reference
1	Contact NAA to arrange a meeting to initiate the “Mixed implementation of EBT” and the intended scope.	Arrange a meeting with appropriately qualified staff.	NAA internal procedures and documentation. Provide guidance if available.
2	Apply for EBT. Prepare a draft implementation plan.	Acknowledge receipt. Formal reply. Start project.	NAA internal procedures.
3	Provide implementation plan to NAA including milestones and timeframes. Evaluate requirements to implement mixed EBT (GAP analysis). Provide documentation where: <ol style="list-style-type: none"> it is described the necessary amendment that will be required in the Operation Manual (link to GAP analysis) include the milestones of those amendments (part of implementation plan). initial hazard identification (link to step 4) Allocate personnel.	Allocate responsible team including FOI. Review implementation plan. Ask for: GAP analysis.	Explanatory note to ED 2015/027/R Annex I to ED 2015/027/R Other references: ICAO Doc 9995* IATA EBT Implementation Guide** Regulation (EU) 965/2012*** An example of a GAP analysis can be found in Appendix 7 to Chapter 5 SMS gap analysis checklist and implementation plan ICAO Doc 9859 AN/474 Safety Management Manual (SMM).
4	Provide implementation risk assessment. Note: the risk assessment is a live document, and may be amended throughout the project.	Evaluate risk assessment in accordance with the safety case policy.	As per company Management System NAA internal documentation *** ORO.GEN.130

1 * means the reference is from ICAO DOC 9995.

** means the reference is from IATA Implementation Guide.

*** means the reference is from Regulation (EU) 965/2012 either at a level of IR, AMC or GM.



5	Develop a set of competencies and observable behaviours. (OM D amendment is not required at this stage, although is advisable)	Review.	*ICAO Doc 9995 Appendix 1 Explanatory Note to ED 2015/027/R.
6	Develop an assessment and grading system or if already in use, adapt it as required. (OM D amendment is not required at this stage, although is advisable)	Review.	*Part 1, ICAO Doc 9995 Paragraph 3.6.3 Explanatory Note to Decision 2015/027/R Paragraph 2.3 ** IATA implementation guide. Note: after this steep is advisable to start providing information to the pilots – Point 1.3 below -.
7	Submit amended OM D Part containing EBT Instructor training course. Recommendation: operator should include <ul style="list-style-type: none"> – recurrent training for instructors and – instructor standardisation (inter-rater reliability –Instructors concordance) 	Review the training documentation. Accept/Reject Amendment to Operation Manual Part D. Conduct inspection of instructor training delivery as appropriate. Inspection report with finding and observations if necessary.	*ICAO Doc 9995 Paragraph 4.1.1 and 6.3 of Part I Explanatory Note to ED 2015/027/R Paragraph 2.4 NAA internal documentation for approving Manual amendments.
8	Submit an EBT training programme according to mixed EBT. This step requires amendments to OM D. Also and if not done before your OMD amendment should also include: <ul style="list-style-type: none"> – set of competencies and OB (point 5) – assessment and grading system (point 6) – remedial training. 	Review training documentation. Accept/Reject Amendment to Operation Manual Part D.	*Appendix 2 ***GM1 ORO.FC.230, ***ORO.FC.145 (c) NAA internal documentation for approving Manual amendments.
9	Implement EBT Mixed implementation programme. Complete and deliver the compliance checklist (chapter 1) to your authority	Conduct inspection of the programme delivery as appropriate. Inspection report with finding and observations if necessary.	NAA internal procedures.

END OF THE PROJECT



1- Guidance for mixed implementation (compliance checklist):

This tool may be used in the initial approval of the EBT programme as well as continues oversight by highlighting the changes to the EBT programme.

Ref:	EU or ICAO Reference	Details of the provision	Operators reference	
1.0	<p>Explanatory Note to ED Decision 2015/027/R</p> <p>Regulation (EU) 2020/2036.and ED Decision 2021/002/R</p> <p>ED Decision 2021/002/R</p>	<p>2.3</p> <p>ORO.FC.231 (e) and AMC1 ORO.FC.231(e)</p> <p>AMC2 to AMC 7 ORO.FC.232</p>	<p>Operators should implement the EBT programme referred to in EASA Air OPS Regulation (Reg (EU) 2020/20236 and ED Decision 2021/002/R) or ICAO Doc 9995.</p> <p>When the EBT programme was developed, it included a notional 48 hours for each crew member over a three-year period in a suitable FSTD. However, to achieve the programme objectives, the duration of FSTD training may be determined according to the type of aircraft and complexity of operations. The introduction of an EBT programme alone should not be used as a rationale to drive a reduction in the duration of the operators existing recurrent FSTD training and checking programme.</p>	<p>In this column, the Operator should write the reference to their OM D or internal documentation (e.g. Instructor handbook, pilot handbook, notice to crew...etc.) which shows compliance with the provision.</p>
1.1	<p>ICAO Doc 9995</p> <p>Explanatory Note to ED Decision 2015/027/R</p> <p>ED Decision 2021/002/R</p>	<p>3.1.2 of Part I</p> <p>2.3</p> <p>AMC1 ORO.FC.232 (b)(3)</p>	<p>Applicability - Aircraft and generation.</p> <p>The EBT training program described in this document refers to recurrent training and checking of flight crew, including the Licence and Operator Proficiency Checks. The training program takes into account the differences between aircraft of different generations and the effect of these differences on training. Aircraft considered are western built only. The table in the Explanatory Note is extracted from ICAO Doc 9995 and outlines the categorisation of aircraft into different generations. The operator as agreed by the Competent Authority will include new models, in generations according to similar characteristics, for example, A330 neo in Generation 4 – Jet</p> <p>The operator should determine which generations of aircraft apply, according to the table.</p>	



Ref:	EU or ICAO Reference	Details of the provision	Operators reference
1.2	ICAO Doc 9995	4.1.1 (c), 6.1.1 & 6.1.2, 7.2.3 of Part I	Availability of information to pilots regarding EBT principles, methodology and the set of competencies to demonstrate, including performance indicators (EBT pilot handbook).
1.3	ICAO Doc 9995 Regulation (EU) 2020/2036 .	4.1.2 of Part I ORO.FC.231 (a)	Definition of an implementation and operations plan. This plan should be agreed with the competent authority. A safety risk assessment should be required by the competent authority for the implementation of EBT. Additionally the plan may include a plan to return to legacy training if the implementation of EBT mixed is cancelled.

Ref:	EC or ICAO Reference	Details of the provision	Operators reference
1.4	ICAO Doc 9995 Explanatory Note to ED Decision 2015/027/R ED Decision 2021/002/R .	3.2 4.1.1 Appendix 1 2.3 AMC1 ORO.FC.231(b)	Development or adoption of a system of core competencies. The first component in the development of the EBT concept is a set of competencies contained in Appendix 1 to Part II Doc.9995 or EASA ED Decision 2021/002/R AMC1 ORO.FC.231(b). This is a complete framework of competencies, competency descriptions and related observable behaviours, encompassing the technical and non-technical knowledge, skills and attitudes to operate safely, effectively and efficiently in a commercial air transport environment. The competencies contained in Appendix 1 to Part II were used to develop the baseline EBT programme. However, operators are encouraged to develop their competency system, which should list observable behaviours, meeting their specific needs and including a comprehensive set of technical and non-technical knowledge, skills and attitudes. Note: The core competencies listed in ICAO Doc 9995 are intended as an example. Industry practice and experience indicates that behavioural indicators related to “knowledge” (not defined in Doc 9995) are very useful and may be included as an additional core competency. See Explanatory Note to Decision 2015/027/R Chapter 2.3.



1.5	<p>ICAO Doc 9995</p> <p>Explanatory Note to Decision 2015/027/R</p> <p>Regulation (EU) 2020/2036</p> <p>ED Decision 2021/002/R and Explanatory Note to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg (EU) 2020/2193.</p>	<p>3.6.3 of Part I</p> <p>2.4</p> <p>ORO.FC.231 (d)</p> <p>AMC1 ORO.FC.231 (d)(1) & AMC4 ORO.FC.231 (d)(1)</p>	<p><u>ASSESSMENT AND GRADING SYSTEM.</u></p> <p>Implementation of EBT includes the development and use of a competency-based assessment and grading system. Each competency may be rated on a scale according to defined observable behaviours. The operator should determine which point on the scale indicates minimum acceptable performance.</p> <p>At the end of the module, the operator’s OMD will require to define:</p> <ol style="list-style-type: none"> 1. any competency observed below the minimum acceptable performance; 2. specific training needs (tailored and/or additional); <p>The manoeuvres validation phase should be subject to normal repeat and retest requirements where performance below minimum is observed. The main focus of this phase is to observe the Application of Procedures and Flight Path Management-Automation or Manual, as indicated in EASA AMC2 to AMC6 ORO.FC.232 or ICAO Doc 9995 Appendix 2 to 6.</p> <p>Achievement of the minimum defined competency levels in the Evaluation Phase and Manoeuvres Validation phase should indicate a pass for the Operator or Licence Proficiency Check.</p>	
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Ref:	EC or ICAO Reference	Details of the provision	Operators reference
2.0	<p>ICAO Doc 9995</p> <p>Explanatory Note to ED Decision 2015/027/R</p> <p>Regulation (EU) 2020/2036 and Explanatory Note to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg (EU) 2020/2193.</p>	<p>4.1.1 and 6.3 of Part I</p> <p>2.4 - Personnel providing the training</p> <p>ORO.FC.146 ORO.FC.231</p> <p>Instructor training and standardisation.</p> <p>Instructor EBT programme standardisation, which should be a formalised approach to ensure a consistent and standardised approach to the EBT programme before implementation, including practical training reinforcing application of the assessment and grading system and maximising instructors concordance (inter-rater reliability).</p> <p>A person nominated (ICAO Doc 9995 6.3.4 refers) by the operator for the conduct of competency assessments of EBT examiners and instructors, should be a person who holds a certificate equivalent to that being assessed (e.g. TRE qualifies a TRE or TRI while a TRI qualifies a TRI), provided that he or she has completed the training and assessment indicated in ICAO Doc 9995 Para 6.3.</p> <p>ICAO Doc 9995 refers to the assessment of the instructor during a practical training session. This is a session conducted in an FSTD as part of an EBT programme, or a similar FSTD session involving pilots role-playing to facilitate standardisation of the examiner or instructor.</p> <p>If the practical training session is part of an EBT programme, the session can also be used for revalidation of an examiner or instructor certificate, or fulfil an operator or ATO requirement for competency assessment in the delivery of competency-based training.</p> <p>ICAO Doc 9995 refers only to instructors, for the conduct of EBT. To comply with EC regulation, any items of check completed as part of an EBT programme in compliance with Part-FCL or Part-ORO should be conducted by a TRE or SFE. Any items which do not form part of the equivalent LPC or OPC check may be conducted by the TRI or SFI.</p> <p>To conduct instructor and examiner competency assessments for EBT, it is recognised that the first person nominated by the operator may not have had the opportunity to complete his/her assessment. Under these conditions, the nominated person should receive the training outlined in ICAO Doc 9995 Para 6.3 and have experience in the role of either a senior examiner or TRE undertaking normal assessments of competence for TRI/SFI certification”.</p>	



<p>2.1</p>	<p>ICAO Doc 9995</p> <p>Explanatory Note to ED Decision 2015/027/R</p> <p>Regulation (EU) 2020/2036. and Explanatory Note to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg (EU) 2020/2193.</p>	<p>4.1.1 and 6.3 of Part I</p> <p>2.4 - Personnel providing the training</p> <p>ORO.FC.146 ORO.FC.231</p>	<p>Instructor concordance</p> <p>‘Concordance (inter-rater reliability)’ is the consistency or stability of scores between different EBT instructors. It gives a score (s) of how much homogeneity, or consensus, there is in the ratings given by instructors (raters).</p> <p>A good concordance is based as a minimum:</p> <ol style="list-style-type: none"> 1. Instructor training: which is composed of: <ul style="list-style-type: none"> ○ Initial instructor standardisation ○ Annual instructor standardisation 2. Grading Data analysis: this may help to determine if all the elements of the EBT system are working correctly, e.g. some instructors may not be grading properly, or one competency found difficult to grade...etc. The operator should determine a root cause and provide mitigation measures e.g. instructor training, improve procedures...etc 3. Good grading guidance (ORO.FC.231(d)): the operator should further develop guidance to help the instructor in the duty of grading. A threat and error management model is provided as a reference in the Explanatory Note to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg (EU) 2020/2193. 	<p>For info: this item will be required for EBT baseline. Not required to start EBT Mixed implementation (except instructor training which is required before starting EBT mixed). A functional system should be established during EBT mixed.</p>
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Ref:	EC or ICAO Reference	Details of the provision	Operators reference	
3.0	<p>Annex I to ED Decision 2015/027/R Explanatory Note to Decision 2015/027/R</p> <p>AMC1.ORO.FC.230</p> <p>Regulation (EU) 2020/2036 and Explanatory Note to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg (EU) 2020/2193.</p> <p>ICAO Doc 9995 Chapter</p>	<p>2.4 - Malfunction clustering</p> <p>(a)(4)(i)(A)</p> <p>ORO.FC.231 (f)</p> <p>AMC1</p> <p>ORO.FC.231(f)</p> <p>GM1</p> <p>ORO.FC.231(f)</p> <p>GM2</p> <p>ORO.FC.231(f)</p> <p>GM3</p> <p>ORO.FC.231(f)</p> <p>GM4</p> <p>ORO.FC.231(f)</p> <p>3.8.3 of Part I</p>	<p><u>EQUIVALENCY OF MALFUNCTIONS</u> (Malfunction clustering).</p> <p>This methodology is optional should the operator wish to undertake the analysis.</p> <p>According to the EBT philosophy, failures of aircraft systems and associated procedures are assessed as major according to their impact on crew performance.</p> <p>Demonstrated proficiency in the management of one malfunction is then considered equivalent to demonstrated proficiency for the other malfunctions in the same group. Malfunction characteristics should be considered in isolation from any environmental or operational context.</p> <p><input type="checkbox"/> Development and use of malfunction clusters.</p> <p><input type="checkbox"/> The following is intended to guide operators in the analysis of aircraft malfunctions and their use in the EBT programme.</p> <p><input type="checkbox"/> Gather a list of all aircraft malfunctions.</p> <p><input type="checkbox"/> Retain in the list only malfunctions that place a significant demand on a proficient crew in isolation from any environmental or operational context.</p> <p><input type="checkbox"/> Classify and group malfunctions according to the 5 characteristics:</p> <ul style="list-style-type: none"> • Immediacy • Complexity • Degradation of control* • Loss of instrumentation* • Management of consequences <p><input type="checkbox"/> Develop the EBT FSTD programme to incorporate malfunctions at the frequency specified in the table of assessment and training topics (AMC 2 to AMC6ORO.FC.232 or Appendix 2 to 6 in ICAO Doc.9995).</p> <p>When more than one characteristic is identified, the malfunction may be included in several groups. In this case only one characteristic may be selected for programme development.</p> <p>*Note: In general, the management of aircraft malfunctions is considered as a crew, but where the characteristics degradation of control and loss of instrumentation are considered, each pilot should have an opportunity of performing the role of PF.</p>	<p>This item is not required for EBT mixed. The operator may train and check the same malfunction approved in the traditional training and checking program. Malfunction clustering is fully required in EBT <u>Baseline</u>.</p>



			<p>*Note 2: Malfunctions included in the equivalency of malfunctions but not included in the EBT FSTD programme require review and appropriate procedural knowledge training, conducted in suitable alternative environment (classroom, flight procedure training device, computer-based training, etc.).</p> <p>Note 3: it is advisable to verify if the result of the malfunction clustering is valid for the different aircraft variants/models used in the airline.</p> <p>Note 4: Doc 9995 reads “combining characteristics should not reduce the number of malfunctions below 4” EASA recommends a minimum of 7 malfunctions per year (1 immediacy, 1 complexity, 2 degradation of control, 2 loss of instrumentation (1 for each pilot) and 1 management of consequences.</p>	
3.1	<p>ICAO Doc 9995</p> <p>Regulation (EU) 2020/2036 and Explanatory Note to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg (EU) 2020/2193.</p>	<p>3.8.4 of Part I</p> <p>ORO.FC.231 (g)</p> <p>AMC1</p> <p>ORO.FC.231(g)</p> <p>AMC2</p> <p>ORO.FC.231(g)</p> <p>GM1</p> <p>ORO.FC.231(g)</p>	<p>Equivalency of Approaches (approach clustering).</p> <p>This methodology is optional should the operator wish to undertake the analysis</p> <p>Selection of approaches for scenario-based training should be based on the underlying elements of flight crew performance to conduct them. Equivalent groups of approaches can be determined by reference to these elements. Demonstrated proficiency in the conduct of one approach characteristic can be considered equivalent to demonstrated proficiency for the other approach characteristic in the same group. (Note: the approach clustering proposed by EASA in ORO.FC.231 differs notably to the approach clustering proposed in ICAO Doc.9995).</p>	<p>This item is not required in EBT mixed. The operator may train and check the same approaches approved in the traditional program. Approach clustering is fully required in EBT <u>Baseline</u>.</p>



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4.0	<p>ED Decision 2015/027/R GM1 ORO.FC.230(a);(b); (f)</p> <p>Regulation (EU) 2020/2036 and Explanatory Note to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg (EU) 2020/2193.</p>	<p>Conduct of Licence and Operator Proficiency Checks Point (1), (2), (3)</p> <p>ORO.FC.231 (a)</p>	<p>EBT Modules</p> <p>The EBT modules in a mixed implementation of EBT are described as follows:</p> <ol style="list-style-type: none"> 1. Evaluation phase: means one of the phases of an EBT module which is a line-orientated flight scenario, representative of the operator’s environment during which there are one or more occurrences to evaluate key elements of the defined competency framework; The purpose is to identify training needs based on competencies and collect population-based data; To identify the training needs it should be identified the root cause of the deficiency observed rather than the symptoms of the deficiency. 2. Manoeuvres validation phase: The purpose of the manoeuvres validation phase is to check the handling skills necessary to fly critical flight manoeuvres so that they are maintained to a defined level of proficiency. These exercises or events should place a significant demand on a proficient pilot. This replaces the manoeuvres training phase described in ICAO Doc 9995 Chapter 7.5. * LPC and OPC elements may be conducted during the evaluation and manoeuvres validation phases. See more in point (2) ‘Objectives for inclusion of mandatory items specified in Part-FCL Appendix 9 and Part ORO.FC.230.’ 3. Scenario-based training phase: The purpose of the scenario-based training phase is to further develop pilot core competencies in a learning environment. This does not form part of any LPC or OPC requirement. Although the SBT should be done in the form of a LOFT, it is acceptable to use a small part of the SBT to train some isolated manoeuvres following the philosophy of the ICAO manoeuvres training phase. <p>The Operator should describe how the EBT modules and its phases are distributed throughout the simulator program.</p>	
4.1	<p>ICAO Doc 9995</p> <p>ED Decision 2021/002/R and Explanatory Note</p>	<p>4.1.2 of Part I</p> <p>AMC 2 to AM7 ORO.FC.232</p>	<p>Selection and adaptation of the scenarios defined in Appendices 2 to 6 ICAO Doc 9995 or AMC2 to AMC6 ORO.FC.232 in EASA regulation (ED Decision 2021/002/R) according to the generation of aircraft (fleet) and type of operation. As part of the implementation process, the operator should determine the distribution of training topics listed as A, B and C over the 3-year period. The manoeuvres and scenarios examples listed in appendix 2 to Part ORO, (App 2 to 6 in ICAO</p>	



	<p>to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg (EU) 2020/2193.</p>		<p>Doc.9995) are non exhaustive and may be added to as applicable to meet the needs of the operator.</p>	
<p>4.2</p>	<p>ICAO Doc 9995</p> <p>GM1 ORO.FC.230(a);(b); (f)</p> <p>Regulation (EU) 2020/2036</p> <p>AMC1 ORO.FC.115</p>	<p>Attachment to Chapter 1 Step 7A</p> <p>ORO.FC.231</p> <p>(a)(7)</p>	<p>Programme design.</p> <p>The EBT programme should be designed according to the guidance and priorities within ICAO Doc 9995. All modules and lesson plans should be fully tested before use, to ensure that anticipated timings and FSTD fidelity provide for the training outcomes defined.</p> <p>As a minimum the programme design should demonstrate:</p> <ol style="list-style-type: none"> 1. LPC and OPC elements are included in the mixed EBT programme 2. Training topics and frequencies are correctly included 3. There is a reasonable contextualization of the example scenarios based on the real operation performed by the operator and feedback from the SMS (e.g. if the network of the operator is in Europe, the LOFTS may be located in Europe, or if SMS has reported that TCAS alerts occurs in Spain then the contextualisation of TCAS example scenarios may be located in Spanish aerospace, a new route is established in the network then SBT may use the same route..etc). 4. That data provided by the EBT system is used to design the EBT programme (e.g. if deficient is found in one competency across the fleet/pilot rank/airline the future EBT programmes should reinforce this competency) <ul style="list-style-type: none"> • The Authority is invited to verify if the operator has established a system (including procedures) to design the EBT programme which includes how the selection of the example scenarios is done and how the operator contextualizes those example scenarios. The contextualisation should be based on the operational data (Area of operation, SMS data, FDM data, pilots report,...etc.). 	<p>Element 1 and 2 are required to start mixed EBT. Elements 3 and 4 are NOT required at the start of EBT Mixed. However, a functional system (elements 1 to 4) should be established within 2 year of EBT mixed in order to ensure full compliance for EBT baseline.</p>



4.3	Part-FCL Appendix 9 GM1 ORO.FC. 230		<p>The operator should demonstrate compliance with Part-FCL and Part ORO.FC.230 (ORO.FC.A.245 for ATQP), according to the methodology described in the GM. The validity of LPC and OPC remains the same as traditional training and checking. FCL.740 and ORO.FC.230 (ORO.FC.A.245 for ATQP) fully applies.</p> <p>For this purpose compliance checklist ‘FCL-OPS items’ objectives during an LPC-OPC check’ is provided below. This checklist may help the operator to demonstrate compliance for the LPC-OPC part, therefore the remaining parts not covered by the mentioned checklist should be demonstrated.</p>	
4.4	Regulation (EU) 2020/2036 ED Decision 2021/002/R and Explanatory Note to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg (EU) 2020/2193.	<p>ORO.FC.231 (a)(5)</p> <p>AMC1 ORO.FC.231 (a)(5)</p>	<p>Contingency procedures for unforeseen factors which may affect the delivery of the EBT program:</p> <p>The operator should describe in the Operational manual contingency procedures when crews are unable to perform the planned module; this should include:</p> <ul style="list-style-type: none"> • short-term unavailability (e.g. Broken simulator during the execution of a module, or just before starting a module, last minutes sickness of crew ...etc.) • long-term unavailability (e.g. long-term sick of crew, pregnancy...etc.,) and • the procedures to re-instate the crew into the program. <p>Generally, the principles that should drive the development of such contingency procedures are:</p> <ul style="list-style-type: none"> • Maintain the approach that has been approved in traditional training • Contingency situations outside the control of the operator (e.g. Sickness of crew...etc.) <p>Contingency procedures under the control of the operator (e.g. broken simulator (either self-owned or subcontracted, in both cases operator retains the responsibility ORO.GEN.205), inability of the crew member due to delay of the preceding fly duty period, or positioning flight...etc.)</p>	<p>For info: this item will be required for EBT baseline. Not required for EBT Mixed implementation.</p>
4.5	Regulation (EU) 2020/2036 ED Decision 2021/002/R	<p>ORO.FC.231 (d)(1)</p> <p>AMC4 ORO.FC. 231(d)(1)</p>	<p><u>REMEDIAL TRAINING - TAILORED AND ADDITIONAL TRAINING.</u></p> <p>Remedial training should be linked to the grading system and to the training needs analysis performed by the instructors to allow remediation tailored to the pilot.</p>	



			Although in EBT mixed the remedial training is entirely up to the operator. In EBT baseline this matter is regulated, therefore AMC4 ORO.FC.231(d)(1) may form the basis of a proper approach to remedial training.	
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Ref:	EC or ICAO Reference	Details of the provision	Operators reference	
5.0	ICAO Doc 9995 Regulation (EU) 2020/2036 ED Decision 2021/002/R	3.6.6 and 3.6.8 of Part I ORO.FC.231(c) AMC1 ORO.FC.231(c) GM1 ORO.FC.231(c) GM2 ORO.FC.231(d)(2)	<p><u>TRAINING SYSTEM PERFORMANCE</u> - Performance feedback system. The programme should be reviewed periodically based on the data obtained in the EBT programme (e.g. grading of the pilots, feedback from instructors and pilots, deficiencies found in one or more competencies...). It should also take into account the revised internationally available EBT data and any recommendations to training topic prioritisation.</p> <p>Quality management within the training system performance. The training system performance should be measured and evaluated in respect of the organisational objectives. Monitoring should include a feedback system to identify trends and ensure corrective action where necessary. The operator should be able to monitor training system effectiveness and determine adjustments to the EBT program where necessary.</p>	For info: this item will be required for EBT baseline. Not required for EBT Mixed.
5.1	ORO.FC.231	ORO.FC.231(c) AMC2 ORO.FC.231(c) GM2 ORO.FC.231(c)	<p><u>DATA PROTECTION.</u></p> <p>The objective of protecting the EBT data is to avoid inappropriate use of it in order to ensure the continued availability of such data to maintain and improve pilot competencies.</p> <p>The data access and security policy (including the procedure to prevent disclosure of crew identity) should be agreed by all parties involved (airline management and flight crew member representatives nominated either by the union or the flight crew themselves).</p> <p>The operator shall develop procedures governing the protection of EBT data.</p> <p>The operator will define the data access and security policy to information access:</p>	For info: this item will be required for EBT baseline. Not required for EBT Mixed.



5.2	Regulation (EU) 2020/2036 ED Decision 2021/002/R and Explanatory Note to the ED Decision 2021/002/R, Reg (EU) 2020/2036 and Reg (EU) 2020/2193.	ORO.FC.231 (d)(2) AMC1 ORO.FC.231 (d)(2) & GM1 ORO.FC.231 (d)(2) GM2 ORO.FC.231(d)(2)	<p><u>VERIFICATION OF THE ACCURACY OF THE GRADING SYSTEM.</u></p> <p>EBT mixed implementation offers a valuable opportunity to trim the accuracy of the grading system when pilot is assessed. As data from the EBT grading system and every year's LPC may be compared.</p> <p>As a minimum, the operator should compare the rates of pilots graded 1 or 2 and LPCs failures, or marginal pass are consistent. When a discrepancy is found a route cause is necessary, the mismatch may indicate that instructors are grading to high in EBT (LPCs failure rate or marginal pass is much higher than the rate of 1 or 2 in EBT) or to low in EBT (LPCs failure rate or marginal pass rate is much lower than the rate of 1 or 2 in EBT), however other route causes may be the reason for this mismatch (e.g. the EBT programme has a lower/higher level of difficulty than the regular LPC difficulty).</p> <p>The competent authority is invited to verify if the operator has a system (including procedures) to verify the accuracy of the grading system, this system provides a reasonable route cause</p>	<p>For info: this item will be required for EBT baseline. Not required for EBT Mixed implementation. However, to move from a mixed EBT to EBT baseline, it is required to demonstrate good accuracy of the grading system.</p>
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For info

'evidence-based training (EBT)' means assessment and training based on operational data that is characterised by developing and assessing the overall capability of a pilot across a range of competencies (competency framework) rather than by measuring the performance in individual events or manoeuvres;

'mixed EBT programme' means an operator's recurrent training and checking programme as per ORO.FC.230, a portion of which is dedicated to the application of EBT but which does not replace proficiency checks as per Appendix 9 to Annex I (Part-FCL) to Regulation (EU) No 1178/2011;

'EBT module' means a combination of sessions in a qualified flight simulation training device as part of the 3-year period of recurrent assessment and training;

'equivalency of approaches means all the approaches that place an additional demand on a proficient crew regardless of whether they are used or not in the EBT modules;

'equivalency of malfunctions' means all the malfunctions that put a significant demand on a proficient crew regardless of whether they are used or not in the EBT modules;



2- Objectives for the inclusion of mandatory items specified in Part-FCL Appendix 9 and Part ORO.FC.230 (for FSTD only)

An operator, unless indicated by the authority, should define the start and end point for each manoeuvre.

During every exercise, a combination of several FCL-OPS items is acceptable.

The check should be conducted under IFR and as far as possible be accomplished in a simulated commercial air transport environment. The operator of an EBT mixed program should plan the simulator session with enough time to complete its programme.

The minimum required time for an LPC for one applicant is 2 hours². If the LPCs of 2 applicants are combined during the same simulator and when the session is less than 4 hours, the operator needs to demonstrate to the competent authority that all items required for the revalidation of the two applicant's licences can be completed. The authority shouldn't accept simulator sessions of less than 3 hours when 2 LPCs are combined in one simulator session in EBT mixed.

General guidance for retraining: *"the examiner should only exercise his discretion to repeat an item during the LPC when he considers that the applicant has made a minor error and that error can be corrected by debriefing. If retraining is required it should be done prior to a retest, i.e. a second attempt"*³.

GM1 ORO.FC.230(a);(b);(f) provides the FCL items that should be included in the evaluation phase only.

In the context of EBT repositioning is acceptable: Repositioning to the end of the cruise phase is acceptable for the purpose of the evaluation and scenario-based training phases of EBT, and in compliance with Part-FCL Appendix 9. Time should be provided for descent and approach preparation prior to commencement of descent. This should be illustrated to candidates during the briefing for the session.

Column OPC is referring to the AMC1 ORO.FC.230 paragraph (b)(1)(i)

Column FCL is refereeing to Regulation (EU) 1178/2011 Part FCL Appendix 9 "multi-pilot aeroplanes and single-pilot high-performance complex aeroplanes."

OPC	FCL	Authorities comments	Remarks
	1.4 (M)	Use of checklist prior to starting engines, starting procedures, radio and navigation (...).	Part FCL Appendix 9 item 1.4 may be assessed as crew actions during a single pre-flight cockpit preparation.
	1.6 (M)	Before take-off checks.	Part FCL Appendix 9 item 1.6 may be assessed as crew actions during a single before take-off procedure.

² GM1 FCL.1015 Examiner standardisation. 'When planning the duration of a test, check' (c)(4) '120 minutes for CPL, MPL, ATPL and MP type ratings'.

³ Extracted from GM1 FCL.1015 Examiner standardization paragraph 17.7



(B)	2.5.2 (M)	Take-off with engine failure between V_1 and V_2 (take-off safety speed)	<ul style="list-style-type: none"> The failure should be inserted between V_1 and V_2 to create the need for asymmetric handling. It is possible to include additional failures to comply with 3.6.1, which should be added after the item 2.5.2. During the manoeuvres validation phase, this item should commence from the initiation of the failure until: <ul style="list-style-type: none"> establishment of the final configuration or completion of the abnormal checklist if an item from 3.6.1 or 3.6.3 is combined.
(A)	2.6 (M)	Rejected take-off at a reasonable speed before reaching V_1 .	<p>The rejected take-off is considered as a crew item and may be combined with the rejected take-off for operators LVO.</p> <p>In the manoeuvres validation phase, this item should commence from the initiation of the failure until:</p> <ul style="list-style-type: none"> Full stop and completion of the abnormal checklist initial actions. Full stop and completion of abnormal checklist where items 3.6.1, 3.6.7 or 3.6.8 are combined.
	3.4.0 to 3.4.14 (M)	Normal and abnormal operations of following systems. A mandatory minimum of 3 abnormal shall be selected from 3.4.0 to 3.4.14 inclusive. Minimum of 3 for the flight crew.	<p>An exercise may validate several Part-FCL items</p> <p>In order to facilitate the provision of simple and realistic scenarios in accordance with ICAO doc 9995 chapters 3.8 and 7.4, the evaluation phase is not intended to be a comprehensive assessment of all Part-FCL, Appendix 9.</p> <p>Pre-existing technical deviations and associated operational instructions should not be taken into account as 3.4.0 to 3.4.14 items.</p>
	3.6.1 to 3.6.9 (M)	Abnormal and emergency procedures. A mandatory minimum of 3 items shall be selected from 3.6.1 to 3.6.9 inclusive. Minimum of 3 for the crew.	This item may cover the abnormal operations of system of 3.4
	3.8.1* (M)	Adherence to departure and arrival routes and ATC instructions.	The crew actions would be assessed when required to follow a clearance or comply with a SID or STAR.



(C) May be (E) too	3.8.3.4* (M)	(3.8.3) '3D operations to DH/A of 200 feet (60 m) or to higher minima if required by the approach procedure'(...) Manually, with one engine simulated inoperative during final approach, either until touchdown or through the complete missed approach procedure (as applicable), starting: (i) before passing 1 000 ft above aerodrome level; and ⁴ OR (ii) after passing 1 000 ft above aerodrome level. The go-around shall be initiated when reaching the published obstacle clearance height/altitude (OCH/A); however, not later than reaching an MDH/A of 500 ft above the runway threshold elevation.	In the manoeuvre validation phase, this item starts with the condition of one engine inoperative before intercepting the final segment and may ends when at DH if no go/around or landing follows. Note: iaw ORO.FC.230 (b)(1)(i)(E) it is required to do at least one 3D approach operations as RNP APCH or RNP AR APCH operation or to do a 2D following the indications below. This Part-FCL item 3.9.3.4 may be associated with the 3.9.3.1 item.
(D) May be (E) too	3.8.4* (M)	2 D operations down to MDH/A.	<ul style="list-style-type: none"> This item should be completed under conditions described in the relevant operations manual. RNAV/GNSS approaches validate OPS – (D) item and Part-FCL 3.9.4 item. During the manoeuvres validation phase, this item should commence when intercepting the final approach and end when reaching the prescribed DA (DH). <p>Note: iaw ORO.FC.230 (b)(1)(i)(E) it is required to do at least one 2D approach operations as RNP APCH or to do a 3D following the indications above.</p>
(F)	4.4* (M)	Manual go-around with the critical engine simulated inoperative after an instrument approach on reaching DH MDH or MAPT.	<ul style="list-style-type: none"> During the manoeuvres validation phase, this item may commence approaching DA and end once the aircraft is established in a clean or defined normal manoeuvring configuration.
(G)	5.5 (M)	Landing with critical engine simulated inoperative.	If this item is introduced in the manoeuvres validation phase, it may start passing DA (DH) and end when the aircraft reaches normal taxi speed.

The starred items (*) shall be flown solely by reference to instruments. The evaluation and/or manoeuvre validation elements, replacing the conventional OPC/LPC, require a FSTD capable of providing “training-to-proficiency”, this normally can only be obtained in a FFS level B (subject to special evaluation), level C and D.

⁴ For the purpose of this checklist point (d) in section 6 appendix 9 applies *Where the letter ‘M’ appears in the skill test or proficiency check column, this will indicate a mandatory exercise or a choice where more than one exercise appears.*



3- Objectives and compliance checklist between CRM Recurrent training ORO.FC.115 and EBT mixed implementation.

Operators implementing mixed EBT in accordance with GM1 ORO.FC.230 or GM2 ORO.FC.A.245 and ICAO document 9995 need to demonstrate compliance with ORO.FC.115 and the associated AMC. However, some elements of the required recurrent CRM training may already be covered with this implementation.

A comparison has been made between the requirements of:

- AMC1 ORO.FC.115 in relation to recurrent CRM training and
- mixed EBT programme as described in ICAO document Doc.9995 and implemented in accordance with GM1 ORO.FC.230(a);(b);(f).

The requirements for annual recurrent CRM training and CRM integration into FSTD training are generally satisfied by such programme (mixed EBT iaw GM1 ORO.FC.230(a);(b);(f)) but operators will need to demonstrate compliance with some aspects of recurrent CRM that are not necessarily addressed by the EBT programme. In particular:

- **Combined CRM** [AMC1 ORO.FC.115(a)(6)]

Operators will need to provide combined classroom CRM training for flight crew and cabin crew. In the context of EBT the minimum periodicity for such training is once in every three years meaning 6 training hours over a period of 3 years, but most operators will provide this training more frequently, especially if it is combined with other training events requiring the participation of both flight crew and cabin crew (e.g. emergency procedures training, safety equipment training...).

- **Training in the non-operational environment**

Operators will need to deliver recurrent CRM training in either the operational or non-operational environment for training topics that are not otherwise covered by the EBT programme. Certain CRM elements may require training in the non-operational environment. Training in the non-operational environment could be by done in the computer-based training or classroom training or both and, where the topic affects the entire aircraft crew, may be delivered during the combined CRM sessions. This training might also be complemented by additional training during EBT modules.

- **Identified safety risks** [AMC1 ORO.FC.115(a)(7)]

Operators need to demonstrate that hazards and risks identified by their safety risk assessment processes are addressed either in the EBT modules or during CRM training in the non-operational environment.

- **Review of training programme** [AMC1 ORO.FC.115(d)(2)]

Operators implementing EBT need to demonstrate that the programme is updated regularly and in any case, at least once in 3 years.



- **CRM training other than recurrent flight crew CRM**

Other CRM training events (initial, operator's conversion, command course) are outside the scope of the EBT programme.

CRM Trainers

Classroom CRM training should be delivered by CRM trainers qualified in accordance with AMC3 ORO.FC.115. CRM training during EBT modules will be provided by a TRI / SFI who has completed the operator's EBT Instructor's course. If needed, directions concerning CRM-related issues arising from computer-based training are provided by either a flight crew CRM trainer or by TRI / SFI.

Substitution of compliance-based CRM [AMC1 ORO.FC.115 (a)(8)]

A competency-based training programme, such as EBT, may be used to substitute the compliance-based approach to CRM training. It is therefore not necessary for an operator to include every element of CRM training listed in AMC1 ORO.FC.115 provided that the operator can demonstrate that the same training objective is delivered by the EBT programme. For this purpose the EBT non-technical competencies (CRM): communication, leadership and teamwork, problem solving and decision making, situational awareness, and workload management are means to demonstrate that the same training objective is delivered.

Compliance Table

Table 1 may be used to describe how an operator implementing EBT will comply with the requirements of AMC1 ORO.FC.115 for recurrent CRM training. The means of compliance may either be a training event in the operational (FSTD) or non-operational environment (classroom, computer-based training) or it may be a description of how the operator's EBT programme will substitute the compliance-based approach to CRM training.

Table 1: CRM training elements

OP: means operational environment / Non Op: means non-operational environment. The operator may choose to cover one item in the operational environment and/or in non-operational environment.

CRM training elements	environment		Means of compliance <i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
	OP	Non OP	
Automation and philosophy on the use of automation			
Case studies			
Human factors in aviation;			
General instructions on CRM principles and objectives;			
Human performance and limitations;			
Personality awareness, human error and reliability, attitudes and behaviours, self-assessment and self-critique;			



CRM training elements	environment		Means of compliance <i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
	OP	Non OP	
Fatigue and vigilance;			
Stress and stress management;			
Cultural differences.			
Operator's safety culture and company culture, standard operating procedures (SOPs), organisational factors, factors linked to the type of operations;			
Threat and error management.			
Assertiveness, situation awareness, information acquisition and processing.			
Specific type-related differences			
Monitoring and intervention			
Shared situation awareness, shared information acquisition and processing;			
Workload management;			
Effective communication and coordination inside and outside the flight crew compartment;			
Leadership, cooperation, synergy, delegation, decision-making, actions;			
Resilience development;			
Surprise and startle effect;			
Effective communication and coordination with other operational personnel and ground services.			



3.1- Explanatory note for the CRM compliance checklist refers in chapter 3.

Operators implementing ‘mixed EBT’ in accordance with the guidance in GM1 ORO.FC.230(a);(b);(f) provide a recurrent training and assessment programme that addresses capability of trainees across a range of core competencies. These competencies, described by a ‘competency framework’ include both the technical and non-technical aspects of flight crew performance. The EBT training programme described in ICAO document 9995 is designed to address topics covered in legacy CRM training.

Table 2 lists all of the CRM training requirements of ORO.FC.115 and describes how the requirements related to recurrent flight crew training may be addressed in an EBT programme. The table intends to provide further explanation. However it may be used for initial approval as an exhaustive checklist.

Table 2: AMC1 ORO.FC.115 - column Ref. means paragraph reference to AMC1 ORO.FC.115.

Ref.	Provision	CRM training requirement	Operator’s ref.
(a)(1)	Training environment CRM training should be conducted in the non-operational environment (classroom and computer-based) and in the operational environment (flight simulation training device (FSTD) and aircraft). Tools such as group discussions, team task analysis, team task simulation and feedback should be used.	EBT modules incorporate all flight crew competencies and therefore address the requirement for training in the operational environment. Classroom and computer-based training will be required in addition to EBT modules (see below).	
		Note	
		Operators implementing mixed EBT may use the table in chapter 3 of the ‘EBT audit checklist for operators’ to demonstrate that CRM training in both the operational and non-operational environments is included in the EBT programme.	
		Note 2	
		Cabin training devices if used should be considered operational environment.	
(a)(2)	Classroom training Whenever possible, classroom training should be conducted in a group session away from the pressures of the usual working environment, so that the opportunity is	Required [see also (d)(1) below].	
		Note	
		Some training in a ‘non-operational environment’ (classroom or computer-based) is required in addition to EBT modules. Classroom may include means of video, group discussion...etc.	



Ref.	Provision	CRM training requirement	Operator's ref.
	provided for flight crew members to interact and communicate in an environment conducive to learning.		
(a)(3)	Computer-based training Computer-based training should not be conducted as a stand-alone training method but may be conducted as a complementary training method.	<p>May be used to complement classroom or FSTD training. GM2 ORO.FC.115 suggests that directions concerning CRM-related issues may be provided by an instructor or a CRM Trainer.</p> <p>Note Some training in a 'non-operational environment (classroom or computer-based) is required in addition to EBT modules.</p>	
(a)(4)	Flight simulation training devices (FSTDs) Whenever practicable, parts of the CRM training should be conducted in FSTDs that reproduce a realistic operational environment and permit interaction. This includes but is not limited to line-oriented flight training (LOFT) scenarios.	<p>The requirement is satisfied by phase 3 of the EBT modules (scenario-based training).</p> <p>Note Provided that the operator's EBT programme includes scenario-based training as phase 3 of the EBT module it will be compliant with this requirement.</p>	
(a)(5)	Integration into flight crew training CRM principles should be integrated into relevant parts of flight crew training and operations including checklists, briefings, abnormal and emergency procedures.	<p>An EBT programme must include training addressing all elements of crew competency and thus integration of CRM principles into FSTD training is intrinsic to EBT.</p> <p>Note Provided that the operators EBT programme is in accordance with ICAO 9995, specifically the use of a competency framework and use of the appropriate training and assessment matrix, it will be compliant with this requirement.</p>	



Ref.	Provision	CRM training requirement	Operator's ref.
(a)(6)	<p>Combined CRM training for flight crew, cabin crew and technical crew</p> <p>(i) Operators should provide combined training for flight crew, cabin crew and technical crew during recurrent CRM training.</p> <p>(ii) The combined training should address at least:</p> <p>(A) effective communication, coordination of tasks and functions of flight crew, cabin crew and technical crew; and</p> <p>(B) mixed multinational and cross-cultural flight crew, cabin crew and technical crew, and their interaction, if applicable.</p> <p>(iii) The combined training should be expanded to include medical passengers, if applicable to the operation.</p> <p>(iv) Combined CRM training should be conducted by flight crew CRM trainer or cabin crew CRM trainer.</p> <p>(v) There should be an effective liaison between flight crew, cabin crew and technical crew training departments. Provision should be made for the transfer of relevant knowledge and skills between flight crew, cabin crew and technical crew CRM trainers.</p>	<p>Separate combined CRM training for flight crew and cabin crew will be required in addition to EBT modules. The minimum frequency for this training should be once in every three years (see (d)(1)).</p> <p>Note</p> <p>Operators implementing EBT will need to demonstrate compliance with this requirement in the same way as non-EBT operators. There must be a classroom training session for both flight crew and cabin crew at least once every three years.</p> <p>Note: Most operators might conduct this training more frequently especially if it can be combined with other training events requiring the participation of flight crew and cabin crew, such as emergency procedures training.</p> <p>Note2: "effective communication, coordination of tasks": the competency Communication includes OBs of this topic. The development of this competency allows the pilot to train all observable behaviours required for (e.g. the ability of being assertive in the communication) an effective communication.</p>	
(a)(7)	<p>Management system</p> <p>CRM training should address hazards and risks identified by the operator's management system described in ORO.GEN.200.</p>	<p>EBT should integrate information from the 'management system' into design of training modules. Full incorporation of this 'operations data' will allow optimisation of the EBT programme for a particular operator and will be intrinsic element of 'enhanced EBT';(see Doc 9995 chapter 5).</p> <p>Note</p>	



Ref.	Provision	CRM training requirement	Operator's ref.
		An operator implementing mixed EBT will additionally need to demonstrate that hazards and risks identified by their safety risk assessment processes are addressed either in the EBT modules or during training in the non-operational environment (e.g. classroom or computer-based CRM training).	
(a)(8)	Competency-based CRM training (i) Whenever practicable, the compliance-based approach concerning CRM training may be substituted by a competency-based approach such as evidence-based training. In this context, CRM training should be characterised by a performance orientation, with emphasis on standards of performance and their measurement, and the development of training to the specified performance standards. (ii) CRM training should be an essential element of the alternative training and qualification programme (ATQP) described in ORO.FC.A.245, when the operator applies ATQP.	<p>The EBT programme can substitute the compliance-based approach to CRM training.</p> <p>To substitute elements of the CRM programme mandated by AMC1 ORO.FC.115 the operator will need to demonstrate that the training objectives can be met by another means. Because this provision is included in the AMC, it is not necessary for the operator to apply an Alternative Means of Compliance i.a.w. ORO.GEN.125</p> <p>Note</p> <p>Operators implementing mixed EBT may use the table in chapter 3 of the 'EBT audit checklist for operators' to demonstrate that the training objectives of AMC1 ORO.FC.115 and, in particular, the training topics listed in table 1, are covered within the EBT programme.</p>	
(a)(9)	Contracted CRM training If the operator chooses not to establish its own CRM training, another operator, a third party or a training organisation may be contracted to provide the training in accordance with ORO.GEN.205. In case of contracted CRM training, the operator should ensure that the content of the course covers the specific culture, the type of operations and the associated procedures of the operator. When crew members from different operators attend the same course, the CRM training should be specific to the relevant flight operations and to the trainees concerned.	No difference	
(b)	Initial operator's CRM training	Initial training is not within the scope of mixed EBT	



Ref.	Provision	CRM training requirement	Operator's ref.
	<p>(1) The flight crew member should complete the initial operator's CRM training once. When the type of operation of a new operator is not different, the new operator should not be required to provide the initial operator's CRM training to this flight crew member a second time.</p> <p>(2) The initial training should cover all elements specified in Table 1 of (g).</p>		
(c)	<p>Operator conversion course — CRM training</p> <p>When the flight crew member undertakes a conversion course with a change of aircraft type or change of operator, elements of CRM training should be integrated into all appropriate phases of the operator's conversion course, as specified in Table 1 of (g).</p>	Operator's conversion course is not within the scope of mixed EBT	
(d)	Annual Recurrent CRM training		
(d)(1)	Annual recurrent CRM training should be provided in such a way that all CRM training elements specified for the annual recurrent training in Table 1 of (g) are covered over a period not exceeding 3 years.	<p>The EBT programme will include a minimum of two modules per year. Each EBT module will include elements of CRM training. The EBT programme must also be designed to cover all training topics over three-years. There is no specific requirement for annual recurrent CRM training in the non-operational environment.</p> <p>Note:</p> <p>Provided that the operator can demonstrate that the training objectives of AMC1 ORO.FC.115 are achieved (using table 1 below) then this requirement will be satisfied.</p>	
(d)(2)	Operators should update their CRM recurrent training programme over a period not exceeding 3 years. The revision of the programme should take into account information from the operator's management system including the results of the CRM assessment.	<p>Operators will need to review and update the EBT programme over a period not exceeding three years. ICAO document 9995 requires the EBT programme to be reviewed periodically (3.6.8). The review needs to include identified risks (see (a)(7)) and the results of competency assessments.</p> <p>Note:</p>	



Ref.	Provision	CRM training requirement	Operator's ref.
		Operators implementing EBT need to demonstrate that programme is updated regularly and, in any case, at least once in 3 years.	
(e)	Command course — CRM training The operator should ensure that elements of CRM training are integrated into the command course, as specified in Table 1 of (g).	Command course is not within the scope of mixed EBT	
(f)	Training elements The CRM training elements to be covered are specified in Table 1 of (g). The operator should ensure that the following aspects are addressed:		
(f)(1)	(1) Automation and philosophy on the use of automation (i) The CRM training should include training in the use and knowledge of automation and in recognition of systems and human limitations associated with the use of automation. The operator should, therefore, ensure that the flight crew member receives training on: (A) the application of the operations policy concerning the use of automation as stated in the operations manual; and (B) system and human limitations associated with the use of automation, giving special attention to issues of mode awareness, automation surprises and over-reliance including false sense of security and complacency. (ii) The objective of this training should be to provide appropriate knowledge, skills and attitudes for managing and operating automated systems. Special attention should be given to how automation increases the need for crews to have a common understanding of the way in which the system performs, and any features of automation that make this understanding difficult.	Flight path management automation is one of the 'competencies' that must be trained and assessed within the EBT programme. 'Automation Management' is a training topic that must be included in every EBT module (frequency 'A') for all aircraft generations for which assessment and training matrices have been published.	
		Note: An EBT programme designed in accordance with ICAO document 9995 will cover automation and philosophy on the use of automation in significantly greater depth than required by (f)(1) (see the 'description' and 'desired outcome' for training topic ' <i>automation management</i> ' in the assessment and training matrices in Appendix II to ICAO do 9995). If the operators EBT programme is found acceptable by the CA then no further evidence will be required to demonstrate compliance with this requirement.	



Ref.	Provision	CRM training requirement	Operator's ref.
	(iii) If conducted in an FSTD, the training should include automation surprises of different origin (system- and pilot-induced).		
(f)(2)	<p>Monitoring and intervention</p> <p>Flight crew should be trained in CRM-related aspects of operation monitoring before, during and after flight, together with any associated priorities. This CRM training should include guidance to the pilot monitoring on when it would be appropriate to intervene, if felt necessary, and how this should be done in a timely manner. Reference should be made to the operator procedures for structured intervention as specified in the operations manual.</p>	<p><i>'Monitoring, cross checking, error management, mismanaged aircraft state'</i> is a training topic that must be addressed in EBT programme by in-seat instruction in every EBT module (frequency 'A'). The description of this training topic includes making appropriate interventions.</p> <p>Note:</p> <p>An EBT programme designed in accordance with ICAO document 9995 will cover Monitoring and intervention in significantly greater depth than required by (f)(2) (see the 'description' and 'desired outcome' for training topic <i>'Monitoring, cross checking, error management, mismanaged aircraft state'</i> in the assessment and training matrices in Appendix II to ICAO do 9995).</p> <p>If the operators EBT programme is found acceptable by the CA then no further evidence will be required to demonstrate compliance with this requirement.</p>	
(f)(3)	<p>Resilience development</p> <p>CRM training should address the main aspects of resilience development. The training should cover:</p> <p>(i) Mental flexibility</p> <p>Flight crew should be trained to:</p> <p>(A) understand that mental flexibility is necessary to recognise critical changes;</p>	<p>Although an FSTD provides the best environment to practice events to improve crew resilience the objectives of (f)(3) cannot be met simply by putting flight crew into 'surprise' situations; they also need to be taught strategies to develop mental flexibility and adapt performance. The EBT modules will need to be complemented by some training in the non-operational environment.</p> <p>Note:</p>	



Ref.	Provision	CRM training requirement	Operator's ref.
	<p>(B) reflect on their judgement and adjust it to the unique situation; (C) avoid fixed prejudices and over-reliance on standard solutions; and (D) remain open to changing assumptions and perceptions. (ii) Performance adaptation Flight crew should be trained to: (A) mitigate frozen behaviours, overreactions and inappropriate hesitation; and (B) adjust actions to current conditions.</p>	<p>To demonstrate compliance, an operator could be expected to show that resilience development training is complemented in the non-operational environment by means of classroom or computer-based training. Note: resilience development is a training topic that applies to the entire aircraft crew and is, therefore, also suitable for inclusion in combined CRM training involving both flight and cabin crew.</p>	
(f)(4)	<p>Surprise and startle effect CRM training should address unexpected, unusual and stressful situations. The training should cover: (i) surprises and startle effects; and (ii) management of abnormal and emergency situations, including: (A) the development and maintenance of the capacity to manage crew resources; (B) the acquisition and maintenance of adequate automatic behavioural responses; and (C) recognising the loss and re-building situation awareness and control.</p>	<p>The EBT programme must include 'surprise' as a training topic in at least each alternate training module (frequency 'B'). The intention of this topic for the crew to practice strategies to deal with threats or errors that were unexpected. When combined with resilience development training (see (f)(4)) the objectives of this requirement will be met.</p> <p>Note: If the operators EBT programme is found acceptable by the CA then no further evidence will be required to demonstrate compliance with this requirement.</p>	
(f)(5)	<p>Cultural differences CRM training should cover cultural differences of multinational and cross-cultural crews. This includes recognising that:</p>	<p>Cultural difference training is not specifically addressed in the EBT programme. To meet the objectives of this requirement operators should provide training in the non-operational environment. This training might be complemented by FSTD training during EBT modules where cultural differences are a particular issue for the operator or where a specific risk is identified (see (a)(7)).</p>	



Ref.	Provision	CRM training requirement	Operator's ref.
	<p>(i) different cultures may have different communication specifics, ways of understanding and approaches to the same situation or problem;</p> <p>(ii) difficulties may arise when crew members with different mother tongue communicate in a common language which is not their mother tongue, and</p> <p>(iii) cultural differences may lead to different methods for identifying a situation and solving a problem.</p>	<p>Note:</p> <p>To demonstrate compliance an operator could be expected to show that cultural differences training is provided in the non-operational environment by means of classroom or computer-based training.</p> <p>Note: 'Cultural differences' is a training topic that applies to the entire aircraft crew and is therefore suitable for inclusion in combined CRM training involving both flight and cabin crew.</p>	
(f)(6)	<p>Operator's safety culture and company culture CRM training should cover the operator's safety culture, its company culture, the type of operations and the associated procedures of the operator. This should include areas of operations that may lead to particular difficulties or involve unusual hazards.</p>	<p>Operator's safety culture and company culture training is not specifically addressed in the EBT programme. To meet the objectives of this requirement operators should provide training in the non-operational environment e.g. in the form of a group discussion that could be complemented with the simulator. Where areas of operations lead to particular difficulties or involve unusual hazards these will be included in the EBT programme if a specific risk is identified (see (a)(7)).</p> <p>Note:</p> <p>To demonstrate compliance, an operator could be expected to show that Operator's safety culture and company culture training is provided in the non-operational environment by means of classroom or computer-based training.</p> <p>Note: This is a training topic that applies to the entire aircraft crew and is, therefore, also suitable for inclusion in combined CRM training involving both flight and cabin crew. It may also be addressed during the safety training required by AMC1 ORO.GEN.200(a)(4).</p>	



Ref.	Provision	CRM training requirement	Operator's ref.
(f)(7)	<p>Case studies</p> <p>(i) CRM training should cover aircraft type-specific case studies, based on the information available within the operator's management system, including:</p> <p>(A) accident and serious incident reviews to analyse and identify any associated non-technical causal and contributory factors, and instances or examples of lack of CRM; and</p> <p>(B) analysis of occurrences that were well managed.</p> <p>(ii) If relevant aircraft type-specific or operator-specific case studies are not available, the operator should consider other case studies relevant to the scale and scope of its operations.</p>	<p>Case studies are primarily covered during training in the non-operational environment. Aspects relevant to the whole crew could also be delivered during combined classroom CRM. An incident accident review is also required as part of recurrent ground training i.a.w. AMC1 ORO.FC.230.</p> <p>Case studies may be useful to inform the development of scenario-based training. In this case the training objective should always be for the crew to successfully manage the threats and errors presented in the case study, not to replicate the outcome.</p> <p>Note:</p> <p>To demonstrate compliance, an operator could be expected to show that case studies are used during training in the non-operational environment by means of classroom or computer-based training. This may be combined with the accident / incident review required as part of annual ground training</p>	
(g)	<p>CRM training syllabus</p> <p>Table 1 below specifies which CRM training elements should be covered in each type of training ...</p>	See table 1 of AMC1 ORO.FC.115	
(h)	Assessment of CRM skills		
(h)(1)	Assessment of CRM skills is the process of observing, recording, interpreting and debriefing crews and crew member's performance using an accepted methodology in the context of the overall performance.	<p>The competency framework described in Appendix I to ICAO document 9995 is an 'accepted methodology' for the assessment of pilot competence encompassing both technical and non-technical (CRM skills). Further information on the implementation of an adapted competency model is provided in ICAO 9868.</p> <p>Note:</p> <p>To implement baseline mixed EBT an operator should follow the guidance in ICAO document 9995. Provided the operator has implemented a competency framework in accordance with ICAO guidance this will satisfy the requirement for an accepted methodology for the assessment of CRM skills.</p>	



Ref.	Provision	CRM training requirement	Operator's ref.
(h)(2)	The flight crew member's CRM skills should be assessed in the operational environment, but not during CRM training in the non-operational environment. Nevertheless, during training in the non-operational environment, feedback from the flight crew CRM trainer or from trainees on individual and crew performance may be given to the crew members concerned.	<p>Assessment of pilot competencies is required during the evaluation phase of EBT modules. This requirement is therefore satisfied by the EBT programme. Operators should not conduct CRM assessments in the non-operational environment.</p> <p>Note:</p> <p>If the operators EBT programme is found acceptable by the CA then no further evidence will be required to demonstrate compliance with this requirement.</p>	
(h)(3)	The assessment of CRM skills should: <ul style="list-style-type: none"> (i) include debriefing the crew and the individual crew member; (ii) serve to identify additional training, where needed, for the crew or the individual crew member; and (iii) be used to improve the CRM training system by evaluating de-identified summaries of all CRM assessments. 	<p>Facilitated debriefing of crew members is required by the EBT programme, especially following the scenario-based training phase of EBT modules. ICAO document 9995 requires that the results of assessment be used to <i>"determine training system effectiveness and indicate individual training needs"</i> (7.7.1). Operators should include processes for future development of the EBT programme based on feedback (3.6.8)</p> <p>Note:</p> <p>If the operators EBT programme is found acceptable by the CA then no further evidence will be required to demonstrate compliance with this requirement.</p>	
(h)(4)	Prior to the introduction of CRM skills assessment, a detailed description of the CRM methodology, including the required CRM standards and the terminology used for the assessment, should be published in the operations manual.	<p>The competency framework required for the EBT programme will be the basis of CRM skills assessment (see (h)(1))</p> <p>Note:</p> <p>The competency framework must be described in detail in the operations manual.</p>	
(h)(5)	Methodology of CRM skills assessment The assessment should be based on the following principles: <ul style="list-style-type: none"> (i) only observable behaviours are assessed; (ii) the assessment should positively reflect any CRM skills that result in enhanced safety; and 	<p>EBT provides a methodology of the non-tech, by providing 5 non-technical competencies and an assessment methodology based on VENN (see ORO.FC.231(d) and associated AMC and GM)</p> <p>The competency framework relies on the use of observable behaviours to assess flight crew competency. The application of a competency framework is described in more detail in ICAO document 9868.</p>	



Ref.	Provision	CRM training requirement	Operator's ref.
	(iii) assessments should include behaviour that results in an unacceptable reduction in safety margin.	<p>ICAO document 9995 also requires that “Any area of competence assessed not to meet the required standard shall also be associated with an observable behaviour that could lead to an unacceptable reduction in safety margin” (7.7.1).</p> <p>The operator may use the EBT competencies and assessment as the unique system for EBT and CRM.</p> <p>Note:</p> <p>Provided that the operator has implemented an adapted competency model and assessment system in accordance with ORO.FC.231 or ICAO document 9995 and Doc.9868 this requirement will be satisfied.</p> <p>This should include the line check to comply with AMC1 ORO.FC.230 (b)(3)(ii).</p>	
(h)(6)	(6) Operators should establish procedures, including additional training, to be applied in the event that flight crew members do not achieve or maintain the required CRM standards.	<p>ICAO document 9995 requires that at the conclusion of the evaluation phase “any areas that do not meet the minimum competency standard will become the focus of subsequent training” (7.7.1).</p> <p>Note:</p> <p>Provided that the operator’s EBT programme includes a requirement for training the pilot to competence before releasing the pilot to line operations then no further evidence will be required to demonstrate compliance with this requirement.</p>	

Table 3 illustrates a real and summarized example on how an operator demonstrated compliance with some required elements of CRM training. This example may not reflect the position of EASA.



Table 3: Example of an Operator's demonstration of compliance

- "CBT" includes, virtual reality, tablets, mobile devices, and legacy CBTs.
- "Booklet": document used by the operator to provide written material within the context of a training programme. The booklet should not be considered as a 'training' mean to address a CRM element, but as a reading material that expands or refreshes the knowledge in an element/s already trained, and/or as preparatory reading that complements the training that will be received of an element.

CRM training elements	environment		Means of compliance
	OP	None OP	<i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
Automation and philosophy on the use of automation	X	X	<p>Covered by the 'automation management' training topic mandated at frequency 'A' by the assessment and training topic. Additionally, one module in every 3-year programme is dedicated to automation (together with other competencies or alone).</p> <p>In the non-operational environment, the pilot will additionally review by means of Booklet or CBT: the philosophy on the use of automation (e.g. the concept of automation, charts/ statistics of the different generation of automation, case studies, technical knowledge...etc.)</p> <p>Note: This training element must be trained in-depth.</p>
Case studies	X	X	<p>The requirement will be covered:</p> <ul style="list-style-type: none"> - in the non-operational environment, within the combined CRM training for flight crew and cabin crew where an accident/incident is reviewed and - in the simulator's briefing and when appropriate in the actual simulator. Throughout the 3 years programme, the operator has different cases studies (accident or incident) where all the competencies are covered. The pilot learns the importance of a competency or group of competencies in each case study. For example by studying an incident/accident where a competency was missing and or by studying cases where the competency was exercised to the right level, and this allows the crew to 'save the day'. <p>Some of the case studies may be provided by the SMS flight safety</p>



CRM training elements	environment		Means of compliance
	OP	None OP	<i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
			department.
Human factors in aviation;	X	X	EBT training topic A "competencies non-technical (CRM)" In the non-operational environment it is included in the combined CRM training for flight crew and cabin crew or CBT, at least once in the 3 years cycle. Interaction human-machine with the focus on the HUMAN element in the model (e.g. SHELL).
General instructions on CRM principles and objectives;	X	X	EBT training topic A "competencies non-technical (CRM)" Facilitation technique is used as a means of debriefing in every simulator session. In the non-operational environment it is included in the combined CRM training for flight crew and cabin crew or CBT at least once in the 3 years cycle.
Human performance and limitations;	X	X	EBT training topic A "competencies non-technical (CRM)" In the non-operational environment it is included in the combined CRM training for flight crew and cabin crew or CBT at least once in the 3 years cycle. Interaction human-machine with the focus on the HUMAN element in the model (e.g. SHELL).
Personality awareness, human error and reliability, attitudes and behaviours, self-assessment and self-critique;	X	X	<ul style="list-style-type: none"> - Personality awareness: it is trained in the combined CRM training for flight crew and cabin crew. This element is trained in a non-operational environment. This could be additionally complemented by a CBT. - Human error and reliability, attitudes and behaviours, self-assessment and self-critique: EBT fully endorses the facilitated de-briefing because it provides opportunities to the pilots for self-assessment and self-critique exercise. The grading system also provides observable behaviours that will foster this CRM training element. This element is, therefore trained in the operational environment.



CRM training elements	environment		Means of compliance <i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
	OP	None OP	
Fatigue and vigilance;		X	This requirement is trained by CBT and in the FRMS training.
Stress and stress management;	X	X	<p>Training topic (workload distraction pressure) frequency B. The Competency WLM is assessed every 6 months. Additionally, at least, one module in every 3-year programme is dedicated to WLM (together with other competencies or alone). The briefing and de-briefing script of this module is planned in such a way that instructors have opportunities to further develop this CRM element. Note: stress and stress management is not always related to Workload; that is why the non-operational environment training is additionally proposed.</p> <p>In the non-operational environment it is included in:</p> <ul style="list-style-type: none"> - The combined CRM training for flight crew and cabin crew. - Case study/s that includes "stress and stress management". This element maybe delivered by advance CBT (e.g. Virtual reality). - The CBT explaining the theory of this element. Once every 3 years
Cultural differences.		X	combined CRM training for flight crew and cabin crew.
Operator's safety culture and company culture, standard operating procedures (SOPs), organisational factors, factors linked to the type of operations;	X	X	<p>Operator's safety culture and company culture training are not specifically addressed in the EBT programme. To meet the objectives of this requirement operators should provide training in the non-operational environment e.g. in the form of a group discussion.</p> <p>Operator's safety culture, company culture, organisational factors and factors linked to the type of operations are included in the non-operational environment in the combined CRM training for flight crew and cabin crew.</p> <p>Standard operating procedures (SOPs) and factors linked to the type of operations are trained in the EBT simulator programme. Specifically during the SBT. Furthermore the competency "Applications of procedures" is</p>



CRM training elements	environment		Means of compliance
	OP	None OP	<i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
			graded every simulator session. Additionally, the 3 years EBT programme has one specific module dedicated to the development of this competency.
Threat and error management.	X	X	Annual CBT or classroom training once every 3 years. Additionally, the briefing and de-briefing in the simulator session may be guided through the TEM model (e.g. during the briefing when the instructor is explaining a malfunction he/she should identify with the pilots the hazards and possible errors; this helps a facilitated briefing).
Assertiveness, situation awareness, information acquisition and processing.	X		The competency Situation awareness and management of information (SAW) is assessed in every simulator session. Additionally, one module in every 3-year programme is dedicated to situational awareness (together with other competencies or alone). Assertiveness is partially covered through the competency 'communication' (COM) through OB2.1 and OB.2.4. This competency is assessed in every simulator session. Additionally, one module in every 3-year programme is dedicated to 'communication' (together with other competencies or alone). 'Information acquisition and processing' is additionally trained as follows: <ul style="list-style-type: none"> - briefly discussed during the briefing/de-briefing by means of a presentation delivered by the instructor and - In CBT (or advance CBT such VR, chat boot, interactive scenario trainer). - Note: when possible the training actions above may be done together with 'human performance and limitation'
Specific type-related differences	X	X	Mandated at frequency 'C' by the training and assessment matrix. Additionally, the operator of this example includes when appropriate: <ul style="list-style-type: none"> - a reminder during the simulator briefing sessions by means of a presentation delivered by the instructor, or



CRM training elements	environment		Means of compliance
	OP	None OP	<i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
			- in the non-operational environment, the pilot will additionally review by means of Booklet or CBT
Monitoring and intervention	X		Mandated at frequency 'A' by the 'table of assessment and training topics'
Shared situation awareness, shared information acquisition and processing;	X		The competency Situation awareness and management of information (SAW) is assessed in every simulator. Additionally, one module in every 3-year programme is dedicated to SAW (together with other competencies or alone). SAW is additionally discussed during the briefing/de-briefing by means of a presentation delivered by the instructor
Workload management;	X		Workload Management is one of the core competencies that must be trained throughout the EBT programme. Workload is also a specific training topic mandated at frequency 'B' in the 'table of assessment and training topics'.
Effective communication and coordination inside and outside the flight crew compartment;	X	X	'Communication' (COM) is one of the core competencies that must be trained throughout the EBT programme. In the non-operational environment in the combined CRM training involving both flight and cabin crew. Note: this element may be credited during the emergency and safety equipment training referred in AMC1 ORO.FC.230 paragraph (a)(2)(iv) and (vi).
Leadership, cooperation, synergy, delegation, decision-making, actions;	X	X	Leadership and teamwork are one of the core competencies that must be trained throughout the EBT programme. Additionally leadership, cooperation, synergy, delegation is complemented in the combined CRM training for flight crew and cabin crew. Cooperation, synergy and delegation are additionally covered in the non-operational environment by means of CBT once in a 3 year period. Decision-making:



CRM training elements	environment		Means of compliance
	OP	None OP	<i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
			<ul style="list-style-type: none"> - When the EBT programme is designed in such a way that crews are exposed to a dilemma. This means crews are presented with situations where more than one possible less than ideal solutions exist, with some unfavourable conditions attached, then this element is covered in the simulator session. This training action also relates to the competency PSD. - Alternatively, the operator may develop an advance CBT where the pilot faces a scenario/s where the pilot must take a decision/s.
Resilience development;	X	X	<p>This element is fulfilled in the simulator session by:</p> <ul style="list-style-type: none"> - Training topic 'surprise' (see the table of assessment and training topics). - Scenario-based training phase, as per definition, the SBT should develop resilience. <p>Additional it will be trained in the non-operational environment during:</p> <ul style="list-style-type: none"> - CBT that explains the theory of this element. Once every 3 years. - Advance EBT (e.g. VR) for the element of surprise and startle effect that relates to resilience.
Surprise and startle effect;	X	X	<p>This element is fulfilled in the simulator session by:</p> <ul style="list-style-type: none"> - Training topic 'surprise and startle effect' at frequency 'B' (see the table of assessment and training topics). <p>Additional it will be trained in the non-operational environment during:</p> <ul style="list-style-type: none"> - The combined CRM training for flight crew and cabin crew once in the 3 years, or the legacy CBT explaining the theory of this element. Once every 3 years. <p>or</p> <ul style="list-style-type: none"> - Advance CBT (e.g. Virtual reality) where the pilot faces a scenario/s where the pilot experience this element.



CRM training elements	environment		Means of compliance <i>Operator's reference to the training event where the CRM element is covered or how the EBT programme substitutes the applicable requirement</i>
	OP	None OP	
Effective communication and coordination with other operational personnel and ground services.	X	X	<p>'Communication' (COM) is one of the core competencies that must be trained throughout the EBT programme. Additionally, there are 2 training topics (ATC and Loss of Communication) frequency C and 1 training topic (Competency Non-Technical CRM) frequency A.</p> <p>In the non-operational environment in the combined CRM training involving both flight and cabin crew, or the operator may develop an advance CBT (e.g. chatbot) where the pilot faces a scenario/s where the pilot experience this element</p>

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