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| **FSTD Directive 2**  Sponsor Notification and Interim Approval | FSTD Sponsors should use this form to notify the NSP of their intent to use an FSTD for any of the 5 Extended Envelope and Weather Event training tasks described in 14 CFR Part 60 FSTD 2016. Supporting documents such as objective test results, statements of compliance, etc. must accompany this form. Sponsors should complete sections 1, 2 & 4 as applicable. **Limit one FSTD per form.** Upon successful desk assessment, the sponsor may be granted interim approval. Final approval to be granted upon successful completion of an NSP evaluation.  **Email to:** [9-avs-aso-sim-engineer@faa.gov](mailto:9-avs-aso-sim-engineer@faa.gov) |
| **Federal Aviation Administration**  **National Simulator Program, AFS-280**  **1701 Columbia Ave**  **College Park, GA 30337 Tel. 404.474.5620** |

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| Section 1. FSTD & Sponsor Information | | | | | **Date Submitted:** Click here to enter a date. | | |
| **Sponsor Name: FSTD Location:** |  | | | **FAA FSTD ID# / Lvl:**  **Aircraft Type:** | | , | |
| **MR Name/Tel:** | , | | | **TPAA Name/Tel:** | | , | |
| **MR Email:** |  | | | **TPAA Email:** | |  | |
| Section 2. Training Tasks | | | | | | | |
| Full Stall  Upset Recovery & Prevention Training (UPRT)  Engine & Airframe Icing  Gusting Crosswind  Bounced Landing | | Request to Train  Request to Train  Request to Train  Request to Train  Request to Train | FSTD Modification Required (60.23)  FSTD Modification Required (60.23)  FSTD Modification Required (60.23)  FSTD Modification Required (60.23)  FSTD Modification Required (60.23) | | | | RFT: Click here to enter a date.  RFT: Click here to enter a date.  RFT: Click here to enter a date.  RFT: Click here to enter a date.  RFT: Click here to enter a date. |

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| Section 3. Interim Approvals: *FAA Use Only* | | | |
| **Full Stall Training Task Interim Approval:** | | | ***(Final approval granted upon successful NSP evaluation)*** |
| **NSP Disposition:**  **Date:** Click here to enter a date. | **Interim Approval**  **NSP Evaluation Req.**  **Not Approved** | **Interim Approval with the following limitations:** | |
| **TPAA Disposition:**  **Date:** Click here to enter a date. | **Concur**  **Do not Concur** |
| **UPRT Training Task Interim Approval:** | | | ***(Final approval granted upon successful NSP evaluation)*** |
| **NSP Disposition:**  **Date:** Click here to enter a date. | **Interim Approval**  **NSP Evaluation Req.**  **Not Approved** | **Interim Approval with the following limitations:** | |
| **TPAA Disposition:**  **Date:** Click here to enter a date. | **Concur**  **Do not Concur** |
| **Engine & Airframe Icing Training Task Interim Approval:** | | | ***(Final approval granted upon successful NSP evaluation)*** |
| **NSP Disposition:**  **Date:** Click here to enter a date. | **Interim Approval**  **NSP Evaluation Req.**  **Not Approved** | **Interim Approval with the following limitations:** | |
| **TPAA Disposition:**  **Date:** Click here to enter a date. | **Concur**  **Do not Concur** |
| **Gusting Crosswind Training Task Interim Approval:** | | | ***(Final approval granted upon successful NSP evaluation)*** |
| **NSP Disposition:**  **Date:** Click here to enter a date. | **Interim Approval**  **NSP Evaluation Req.**  **Not Approved** | **Interim Approval with the following limitations:** | |
| **TPAA Disposition:**  **Date:** Click here to enter a date. | **Concur**  **Do not Concur** |
| **Bounced Landing Training Task Interim Approval:** | | | ***(Final approval granted upon successful NSP evaluation)*** |
| **NSP Disposition:**  **Date:** Click here to enter a date. | **Interim Approval**  **NSP Evaluation Req.**  **Not Approved** | **Interim Approval with the following limitations:** | |
| **TPAA Disposition:**  **Date:** Click here to enter a date. | **Concur**  **Do not Concur** |

**In accordance with §60.23(c), the proposed FSTD Modification will not be placed into training until NSPM and TPAA approval has been granted or the twenty-one day waiting period has lapsed with no response from the NSPM or TPAA.**

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| Section 4a. FSTD Modification Description | | | |
| **FD2 - Full Stall Training Task:** | | |  |
| Provide a Complete Description of FSTD Modification to Support the Training Task:  (software changes must include name of a/c system software, aero module, or engine module changed) | | | |
| *FSTD Sponsors must complete* | *FAA Use Only:* | | |
| **Compliance Statements, Subject Matter Expert and IOS:** | Status | Comment | |
| An SOC describing the Aerodynamic model is attached.  Does the SOC:  Identify the sources of data *(e.g. OEM, 3rd party data gather, flight test, wind tunnel, etc.)* used to develop the aerodynamic model?  Include a mapping of test points in the form of alpha/beta envelope plot for a minimum of flaps up and flaps down aircraft configurations?  Declare the range of AOA & sideslip where the model remains valid for training, including at least 10o beyond stall indication AOA? *(please state the stall AOA value for flaps up/down or indicate on alpha/beta map)*  Discuss the applicable stall characteristics for the aircraft type incorporated into the aerodynamic model [see Appendix A, Attachment 7 (A.4.c) for list of these]?  **Either {**  Address limitations in the aerodynamic model for a particular stall maneuver (if applicable)  **Or,**  There are no limitations in the aerodynamic model for the required stall maneuvers.  **}** | Choose an item. |  | |
| **Either {{**  An SOC confirming the SME evaluation is attached.  **Either {**  The SME evaluation has or will be conducted on this training FSTD prior to training  **Or,**  The SME evaluation was conducted on an engineering or development simulator sharing a common aerodynamic & flight control model and the attached SOC has been supplied by the data provider. Additional objective POM testing (attached) as described in Table A2A, 2.c.8.a & 3.f.5 has been provided.  **}**  **Or,**  TheFSTD sponsor has submitted a request (attached) to the Administrator for approval of a deviation from the SME pilot experience requirements because an assessment of pilot availability demonstrates that a suitably qualified pilot meeting the experience requirements of this section cannot be practically located.  **}}** | Choose an item. |  | |
| The SME pilot:  Has held or holds a type rating/qualification in the aircraft being simulated  **And,**  Has direct experience in conducting stall maneuvers in the aircraft being simulated or in an aircraft that shares the same type rating as the make, model, and series of the simulated aircraft. For the latter, differences in the aircraft specific stall recognition cues and handling characteristics are addressed in the SOC and are referenced in available documentation.  **And if the SME is assessing the training FSTD:**  The SME is familiar with the intended stall training maneuvers to be conducted in the FSTD and the cues necessary to accomplish the required training objectives | Choose an item. |  | |
| This FSTD also meets the Instructor Operating System (IOS) requirements for Upset Recovery and Prevention Training (UPRT) tasks as described in Part 60 Appendix A, Table A1A(2n.) and Attachment 7. To be verified below in Section 4b, IOS Feedback Mechanism~~.~~ | Choose an item. |  | |
| For aircraft equipped with a Stick Pusher System:  **Either {**  The attached SOC verifies that the stick pusher system has been modeled, programmed, and validated using the aircraft manufacturer’s design data or other acceptable data source is attached. The SOC addresses, at a minimum, stick pusher activation and cancellation logic as well as system dynamics, control displacement and forces as a result of the stick pusher activation.  **Or,**  The aircraft being simulated is not equipped with a stick pusher system.  **}** | Choose an item. |  | |
| **Objective Testing Requirements** *(for FSTDs qualified PRIOR to Part 60 Change 2 and IAW FSTD Directive 2)****:***  **2.c.8.a.** Stall Characteristics, ***(****Appendix A, Table A2A****)***  **Either {**  Objectivetests, with updated tolerances, have been provided for:  Second Segment Climb-Wings Level (1g)  Approach or Landing- Wings Level (1g)  **Or,**  Existing flight test validation data is missing required parameters or otherwise unsuitable to meet the requirements of FSTD Directive 2. Therefore, the sponsor has provided for one of the following:  Alternate Data (attached)  A subjective validation by a SME with direct experience in stall characteristics of the aircraft being simulated and addressed in the SOC.  **}**  **And {**  Objectivetests have been provided for:  High-altitude, cruise stall  Turning flight stall  Or,  The High-altitude, cruise stall maneuver has been subjectively evaluated by the SME and addressed in the SOC.  The Turning flight stall maneuver has been subjectively evaluated by the SME and addressed in the SOC.  **}**  **Objective Testing Requirements** *(for FSTDs qualified IAW Part 60 Change 2):*  FSTD Directive 2 is not applicable. Objective tests are required for all configurations in Appendix A, Table A2A, Item 2.c.8.a.  FSTD is being qualified IAW 14CFR Part 60 Ch. 2: | Choose an item. |  | |
| **2.a.10.** Stick Pusher Force Calibration.  Test is attached. | Choose an item. |  | |
| **3.f.5.** Characteristic Motion Vibrations -Stall Buffet validation.  For FSTDs qualified IAW Part 60 Change 2, FSTD Directive 2 is not applicable. Objective tests are required for all configurations in Appendix A, Table A2A, Item 3.f.5.  Second Segment Climb:  **Either**  An objective test result is attached  **Or,**  Buffets have been evaluated by the SME pilot    Approach/Landing Config:  **Either**  An objective test result is attached  **Or,**  Buffets have been evaluated by the SME pilot    High Altitude Cruise:  **Either**  An objective test result is attached  **Or,**  Buffets have been evaluated by the SME pilot | Choose an item. |  | |
| *FAA Use Only:* | | | |
| Date Reviewed/ FAA Reviewer/ Other Comment.  Click here to enter a date. Choose an item. | | | |

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| *Comment Status Codes:* | | ***OK*** *-- Acceptable* | ***C*** *– Correction Required* | ***NA*** *– Not Applicable* |
|  |  | | ***I*** *– Improvement Recommended* | ***DO*** *– Onsite Evaluation Discrepancy Opened* |

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| Section 4b. FSTD Modification Description | | | |
| **FD2 Upset Recovery & Prevention Training (UPRT)** | | |  |
| Provide a Complete Description of FSTD Modification to Support the Training Task:  (software changes must include name of a/c system software, aero module, or engine module changed) | | | |
| *Sponsors must complete* | *FAA Use Only:* | | |
| **UPRT Scenarios and IOS Feedback Mechanism:** | Status | Comment | |
| The minimum set of required maneuvers has been evaluated to ensure that the combination of angle of attack and sideslip does not exceed the range of flight test validated data or wind tunnel/analytical data while performing the recovery maneuver and is available on the IOS including:   * A nose-high, wings level aircraft upset. * A nose-low, wings level aircraft upset. * A high bank angle aircraft upset.   Optional:  The following additional upset scenarios have been evaluated and are available on the IOS:  Other:  Other:  *Note: “Maneuver” based training focuses on a single event in isolation. “Scenario” based training incorporates maneuvers into a real-world experience to cultivate flying skills in an operational environment.* | Choose an item. |  | |
| At least one of the upset recovery maneuvers requires angles of attack above the stall warning system activation. Therefore, the aerodynamic model meets the requirements for high angle of attack modeling as described in Table A1A (2m.). Qualification for the Full Stall training task is required. | Choose an item. |  | |
| **IOS Feedback Mechanism**  This FSTD meets the Instructor Operating System (IOS) requirements for Upset Recovery and Prevention Training (UPRT) tasks as described in Table A1A(2n.) and Attachment 7. The feedback mechanism includes:   * FSTD validation envelope. This must be in the form of an alpha/beta envelope (or equivalent method) depicting the “confidence level” of the aerodynamic model depending on the degree of flight validation or source of predictive methods The envelopes must provide the instructor real-time feedback on the simulation during a maneuver. There must be a minimum of a flaps up and flaps down envelope available. The validation envelope was derived by the aerodynamic data provider, or by using information from the provider; * Flight control positions. The instructor must be able to assess the pilot’s flight control inputs during the upset recovery maneuver as required. It must include rudder pedal displacement and control forces as well as the primary control channels (including fly-by-wire as appropriate). Required additional parameters and time history (or equivalent) are presented; and * Airplane operational limits. Real-time aircraft operating limits must be displayed during the maneuver as applicable for the configuration of the airplane. Required minimum parameters and time history (or equivalent) are presented.   **\*\*** An exemplar IOS utility is of practical size and format, allows simultaneous viewing of the parameters noted above, and provides the instructor clear indications of FSTD envelope and aircraft load exceedances. Instructors should be well versed in its use and where possible, have input in the design. | Choose an item. |  | |
| **Compliance Statement:**  An SOC is attached that:   * Defines the source data used to construct the FSTD validation envelope. * Verifies that each upset prevention and recovery feature programmed at the instructor station and the associated training maneuver has been evaluated by a suitably qualified pilot using methods described in Table A1A (2n). * Confirms the recovery maneuver can be performed such that the FSTD does not exceed the FSTD validation envelope, or when exceeded, that it is within the realm of confidence in the simulation accuracy. | Choose an item. |  | |
| *FAA Use Only:* | | | |
| Date Reviewed/ FAA Reviewer/ Other Comment.  Click here to enter a date. Choose an item. | | | |

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| *Comment Status Codes:* | | ***OK*** *-- Acceptable* | ***C*** *– Correction Required* | ***NA*** *– Not Applicable* |
|  |  | | ***I*** *– Improvement Recommended* | ***DO*** *– Onsite Evaluation Discrepancy Opened* |

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| Section 4c. FSTD Modification Description | | | |
| **FD2 - Engine and Airframe Icing Training Task:** | | |  |
| Provide a Complete Description of FSTD Modification to Support the Training Task:  (software changes must include name of a/c system software, aero module, or engine module changed) | | | |
| *Sponsors must complete* | *FAA Use Only:* | | |
| **Compliance Statement:** | Status | Comment | |
| An SOC is attached that describes:   * The expected aircraft specific recognition cues and degradation effects due to a typical in-flight icing encounter. This description is based upon relevant source data identified in the SOC such as aircraft OEM supplied data, accident/incident data, or other acceptable data sources. * The data sources utilized to develop the qualified ice accretion models. Acceptable data sources may be, but are not limited to, flight test data, aircraft certification data, aircraft OEM engineering simulation data, or other analytical methods based upon established engineering principles.   This airframe has demonstrated vulnerabilities to a specific type of ice accretion (due to accident/incident history) which requires specific training (i.e. supercooled large-droplet icing or tailplane icing). Ice accretion models have been developed that address the training requirements.  Identify Specific Icing Type Here | Choose an item. |  | |
| **Objective Testing Requirements:**  Objective demonstration in Appendix A, Table A2A, Item 2.i. is not required for FSTDs initially qualified PRIOR to Part 60 effective May 30, 2016 *(IAW FSTD Directive 2)***.**  An objective demonstration of engine and airframe icing effects **has not** been provided IAW FSTD Directive 2.  The sponsor has elected to provide the attached objective demonstration of engine and airframe icing effects IAW 14 CFR Part 60 Appx. A, Table A2A (2i). | Choose an item. |  | |
| *FAA Use Only:* | | | |
| Date Reviewed/ FAA Reviewer/ Other Comment.  Click here to enter a date. Choose an item. | | | |

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| *Comment Status Codes:* | | ***OK*** *-- Acceptable* | ***C*** *– Correction Required* | ***NA*** *– Not Applicable* |
|  |  | | ***I*** *– Improvement Recommended* | ***DO*** *– Onsite Evaluation Discrepancy Opened* |

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| Section 4d. FSTD Modification Description | | | |
| **FD2 – Gusting Crosswinds Training Task:** | | |  |
| Provide a Complete Description of FSTD Modification to Support the Training Task:  (software changes must include name of a/c system software, aero module, or engine module changed) | | | |
| *Sponsors must complete* | *FAA Use Only:* | | |
| **Compliance Statement:** | Status | Comment | |
| An SOC is attached that describes the source data used to construct gusting crosswind profiles.  Realistic gusting crosswind profiles are available to the instructors that have been tuned in intensity and variation to require pilot intervention to avoid runway departure during takeoff or landing roll.  Aerodynamic and ground reaction modeling is employed to support training in crosswinds and gusting crosswinds up to the aircraft’s maximum demonstrated crosswind component.  The sponsor has ensured that the wind gust models do not exceed the capabilities of the aerodynamic and ground models. | Choose an item. |  | |
| *FAA Use Only:* | | | |
| Date Reviewed/ FAA Reviewer/ Other Comment.  Click here to enter a date. Choose an item. | | | |

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| *Comment Status Codes:* | | ***OK*** *-- Acceptable* | ***C*** *– Correction Required* | ***NA*** *– Not Applicable* |
|  |  | | ***I*** *– Improvement Recommended* | ***DO*** *– Onsite Evaluation Discrepancy Opened* |

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| Section 4e. FSTD Modification Description | | | |
| **FD2 – Bounced Landing Training Task:** | | |  |
| |  |  | | --- | --- | | Provide a Complete Description of FSTD Modification to Support the Training Task:  (software changes must include name of a/c system software, aero module, or engine module changed) | | | *Sponsors must complete* | *FAA Use Only:* | | | | |
| **Compliance Statement:** | Status | Comment | |
| An SOC is attached that describes ground reaction modeling, appropriate effects, and indications during bounced or skipped landings including ground contact (e.g. tail, wing, propeller, or nosewheel strike) due to landing in an abnormal aircraft attitude.  Neither ground nor flight models have been modified for the sole purpose of inducing a bounce. | Choose an item. |  | |
| *FAA Use Only:* | | | |
| Date Reviewed/ FAA Reviewer/ Other Comment.  Click here to enter a date. Choose an item. | | | |

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| *Comment Status Codes:* | | ***OK*** *-- Acceptable* | ***C*** *– Correction Required* | ***NA*** *– Not Applicable* |
|  |  | | ***I*** *– Improvement Recommended* | ***DO*** *– Onsite Evaluation Discrepancy Opened* |