

# VALIDATION TEST

<b>Title</b>	One engine inoperative second segment climb		
<b>Id</b>	1 c ii	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.02
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	27/07/21
<b>Result Load</b>	2012.01	<b>Master Load</b>	2012.01

<b>Objective</b>	<b>Expected Results</b>
Demonstrate that the simulation of engine thrust, aerodynamic drag and atmosphere in a steady state one engine inoperative climb conditions are conformed to the class of aeroplanes	Airspeed approx. 85kts VS (Rate of Climb) approx. 260 ft/mn
<b>Reference</b>	<b>Evaluation Criteria</b>
Chapter 12 - Validation data - Performances - Test 1.c.ii	+/-3 Kts Airspeed +/- 5 % or +/- 100ft/mn Rate of Climb

<b>Demonstration procedure</b>	The aeroplane is established in steady one engine inoperative second segment climb phase. Perform the steady climb and check the minimum second-segment climb gradient requirement to satisfy the WAT limiting conditions.
<b>Manual test procedure</b>	The pilot performs a one engine inoperative climb, maintaining constant power setting for at least 1000 ft, using trim as required to maintain airspeed. The left engine propeller is feathered. Test performed at WAT limiting conditions. See the initial parameters next page.
<b>Automatic test procedure</b>	1 c ii

<b>Authority's approval (date, signature and comments)</b>	<b>Operator's approval (date, signature and comments)</b>

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<b>Result Load</b>	2012.01	<b>Master Load</b>	2012.01

<b>Autopilot mode</b>	AUTO_HDG_AND_IAS

<b>Initial parameters</b>	CLIMB N-1
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : 230 (free) IAS (kt) : 85 Heading (°) : 0 Bank (°) : 0 (free) Attitude (°) : 9 Pedal Position (%) : 25 Column Position (%) : 60 Wheel Position (%) : -5	Flaps lever position : 0 Gear lever position : 0 Left Load (%) : 0 Right Load (%) : 92 Left RPM : 0 Right RPM : 2090

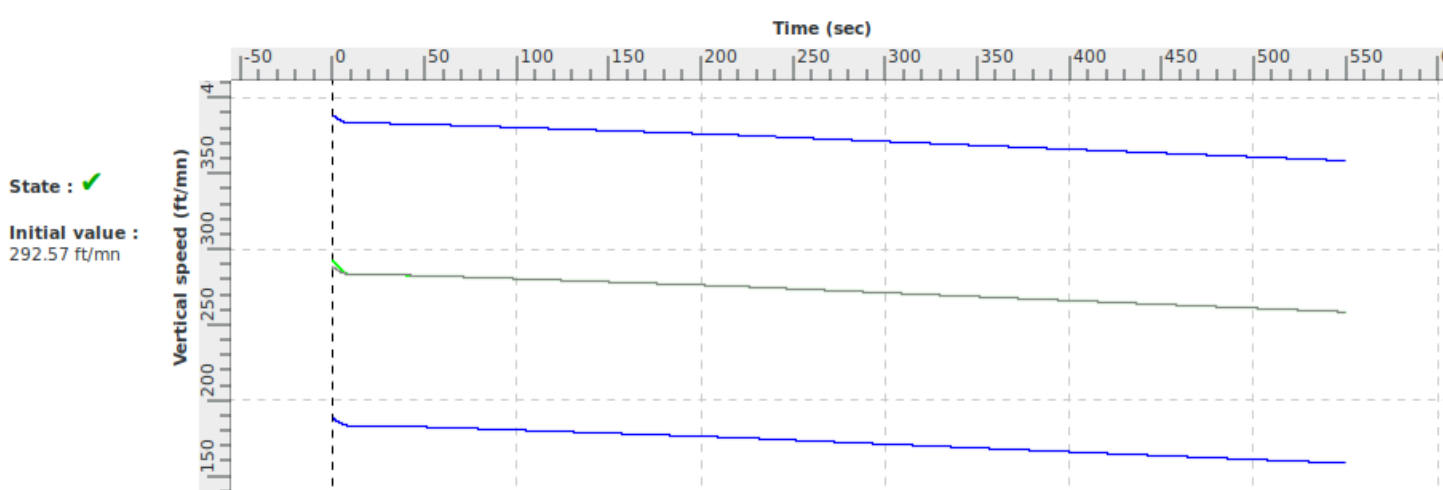
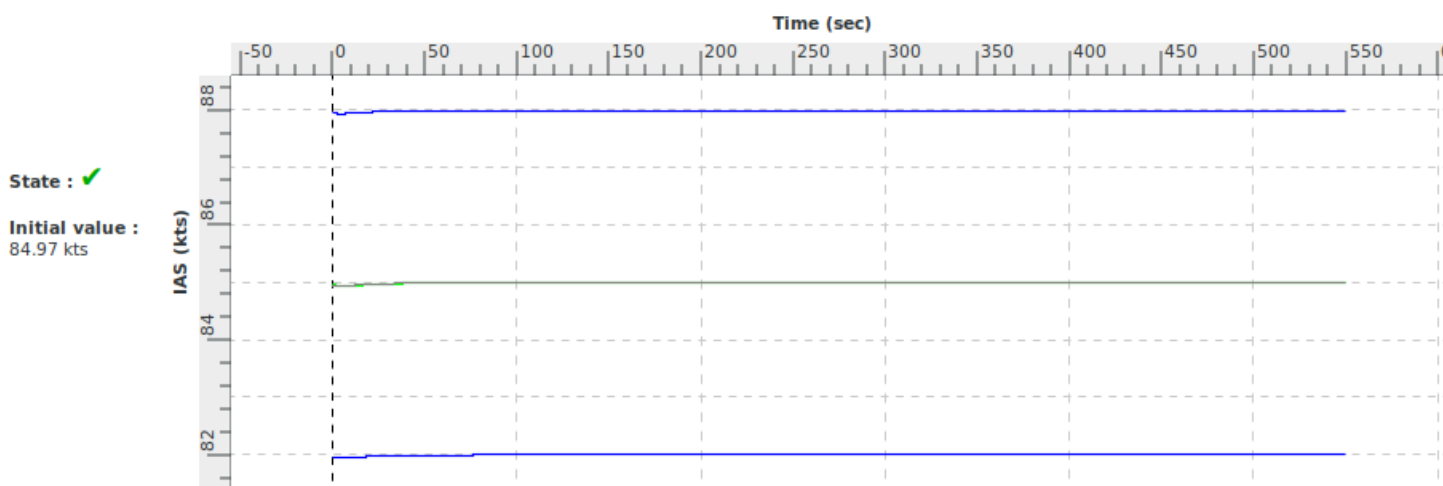
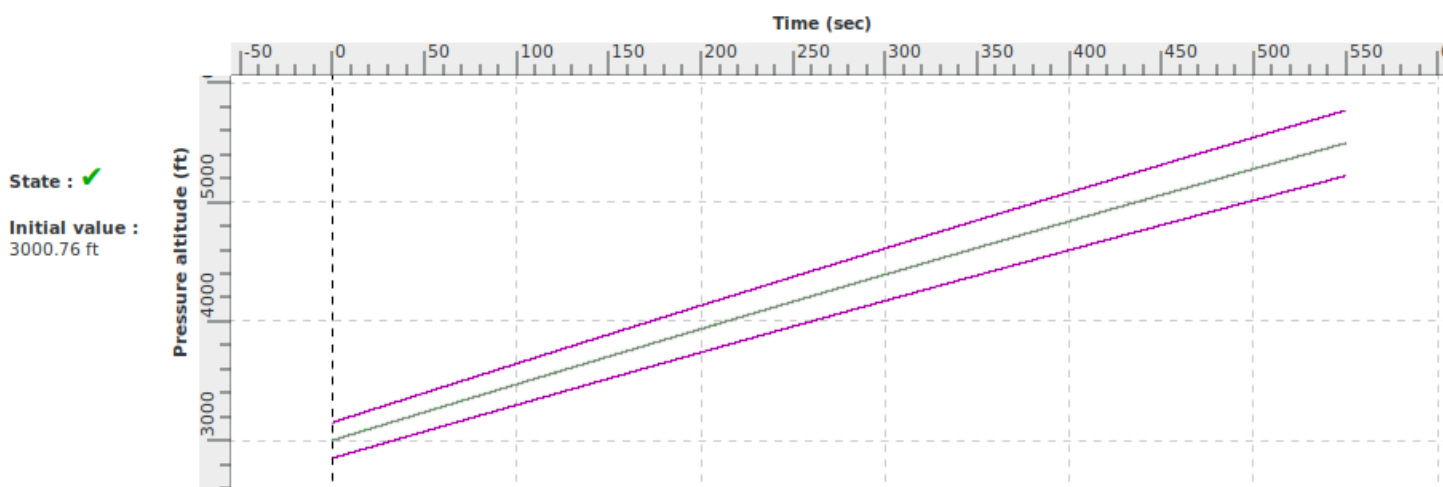
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
550.0	Stop_Test	0.0	Stop the test procedure

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<b>Result Load</b>	2012.01	<b>Master Load</b>	2012.01

Log of Revision		
Rev. Nbr	Date	Reason for revision
1.01	29/03/21	1909 Master. Expected results unchanged.
1.02	27/07/21	2012-R1 Master. Expected results unchanged.

Notes

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Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



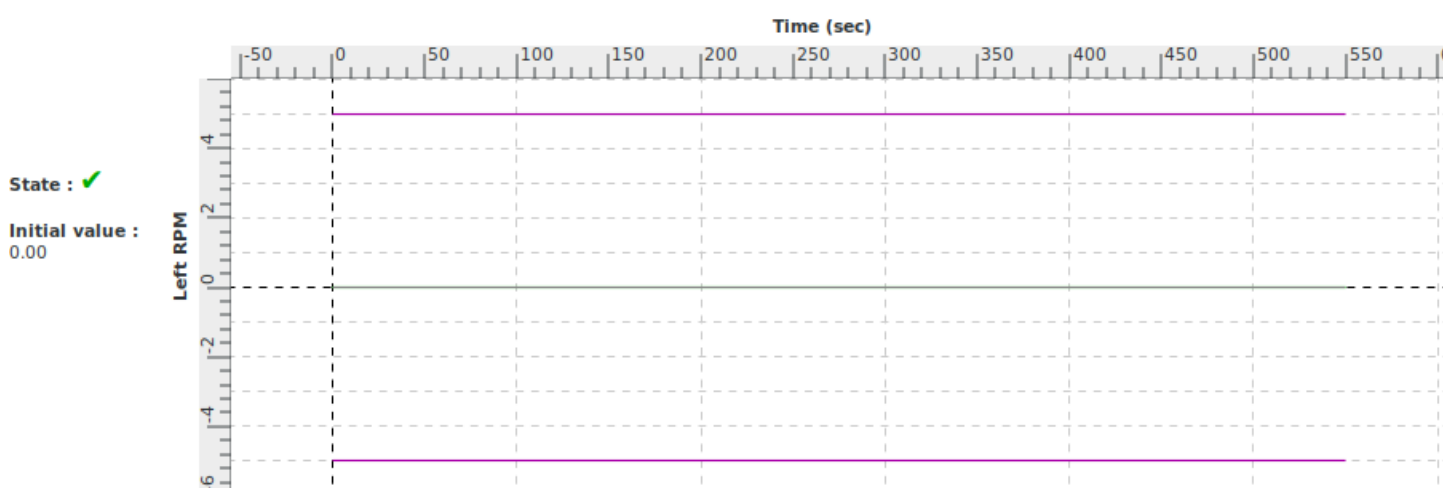
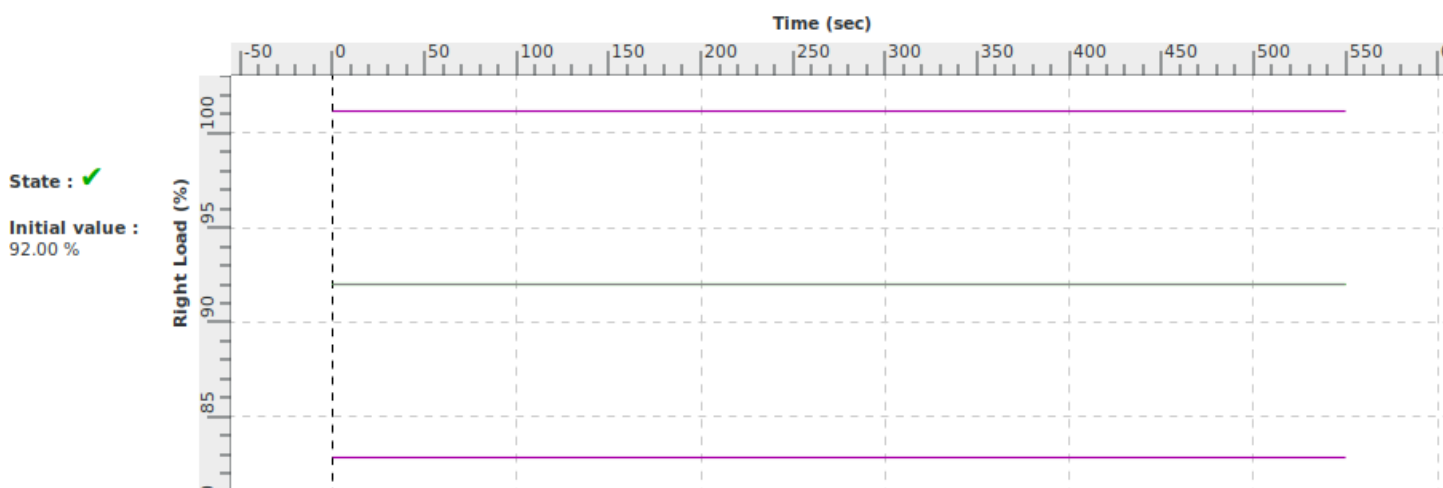
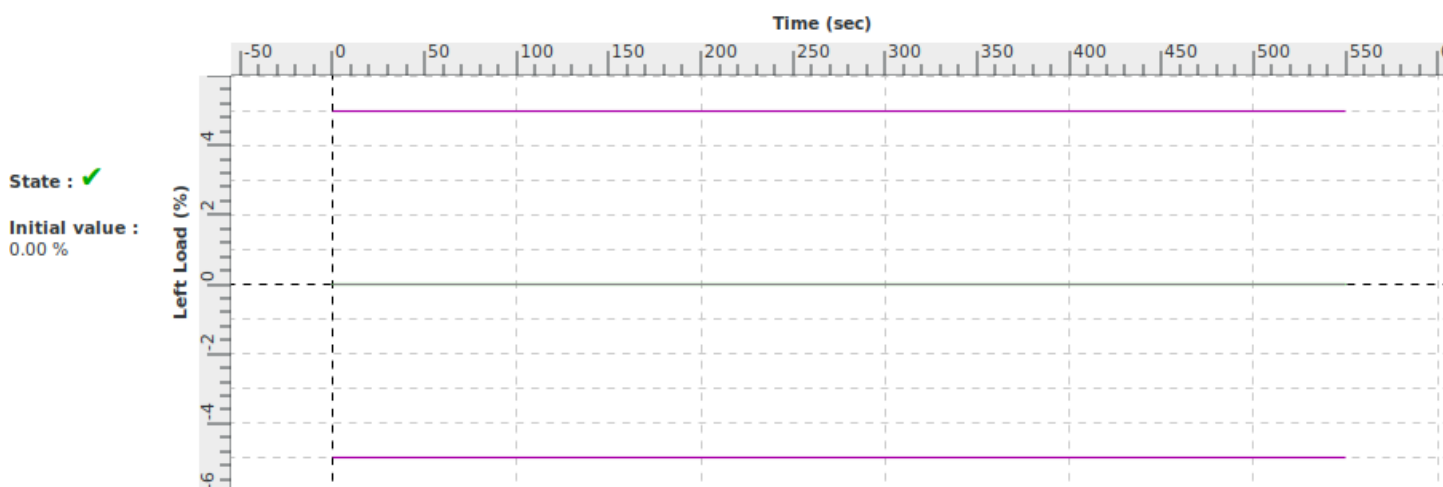
### Legend :

green : results within tolerances  
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Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



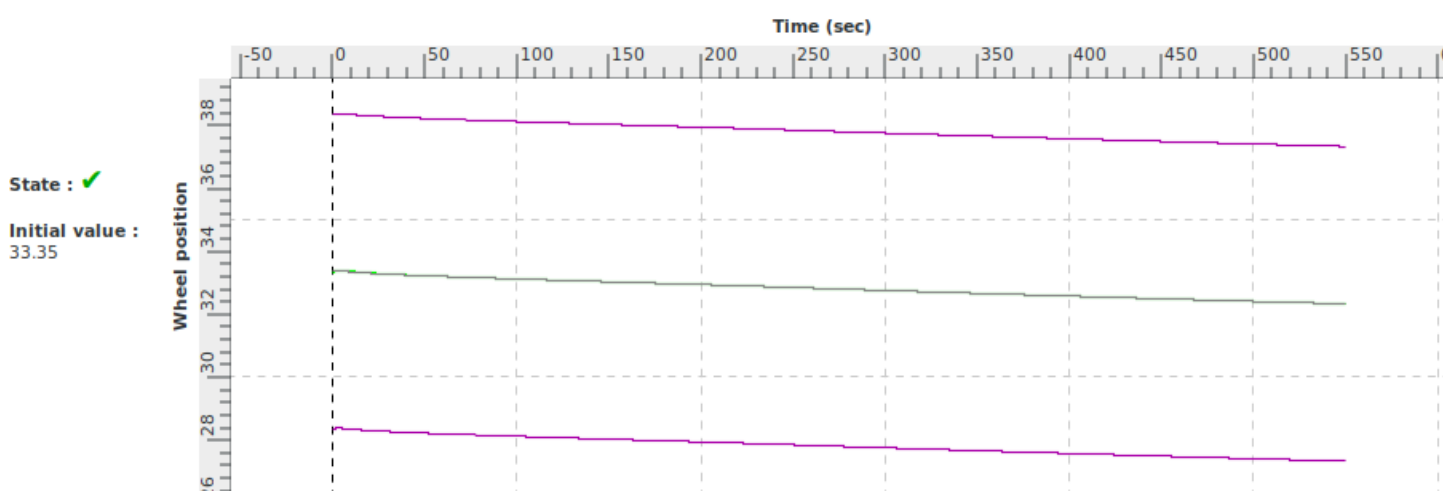
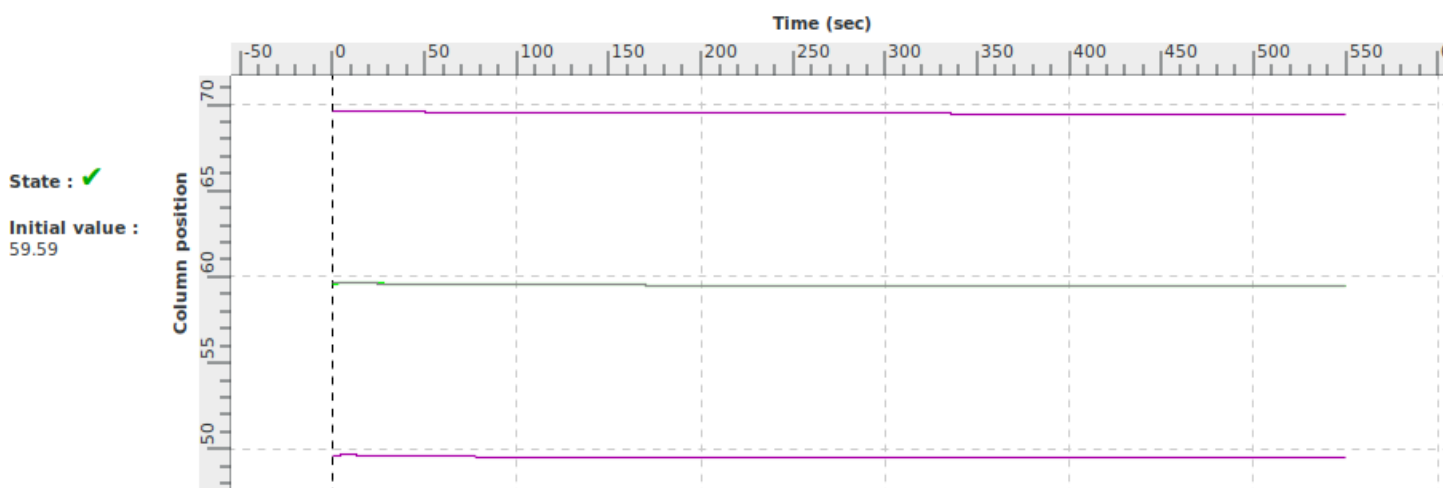
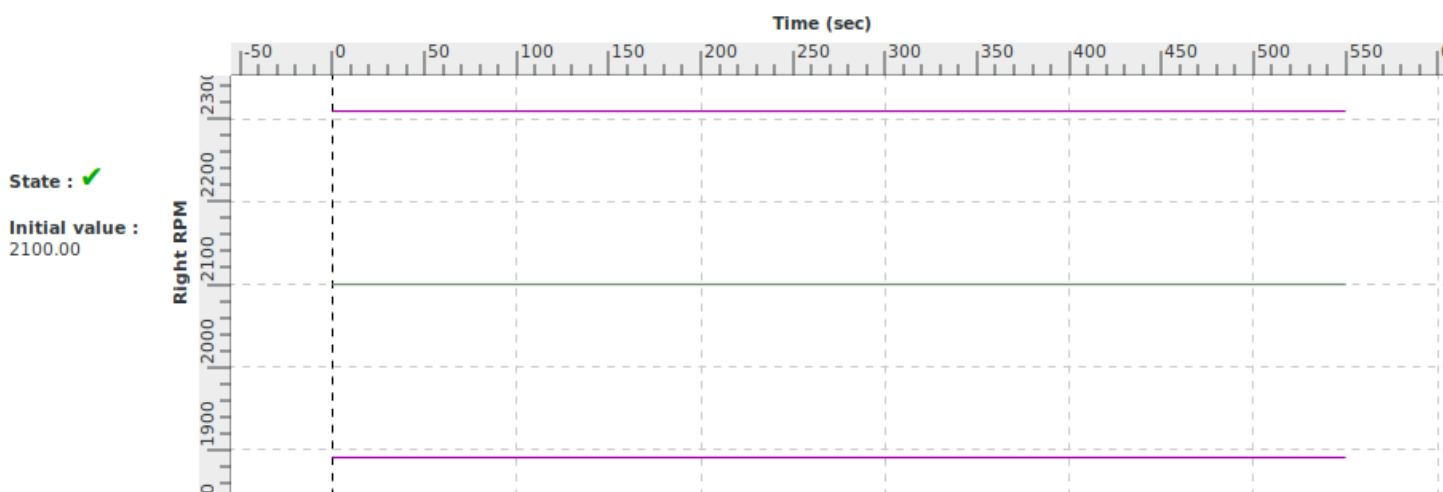
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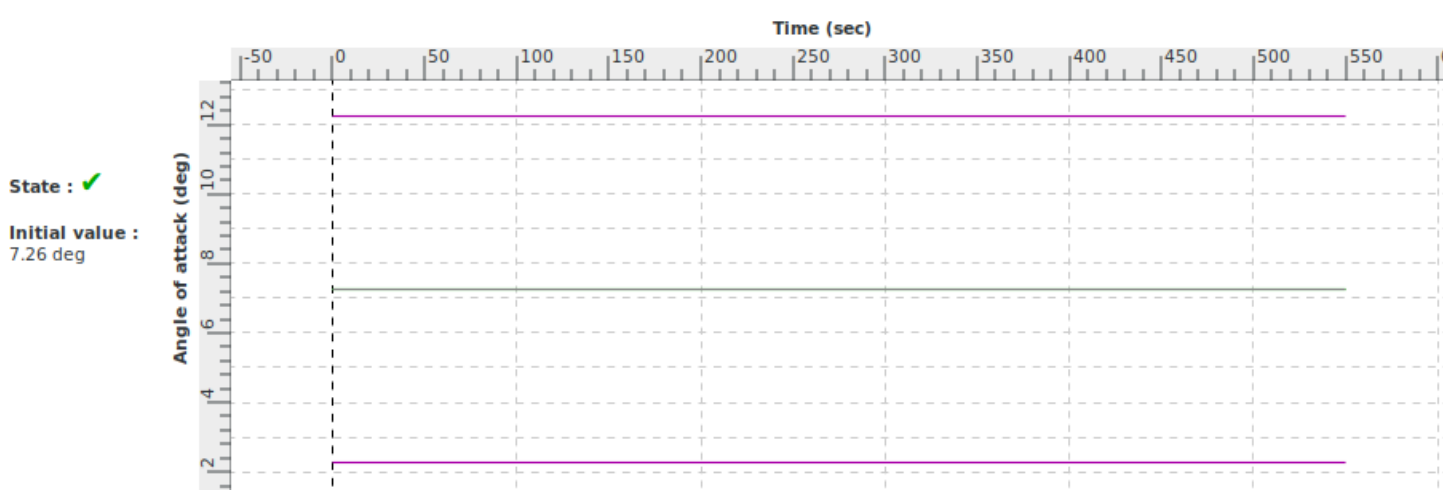
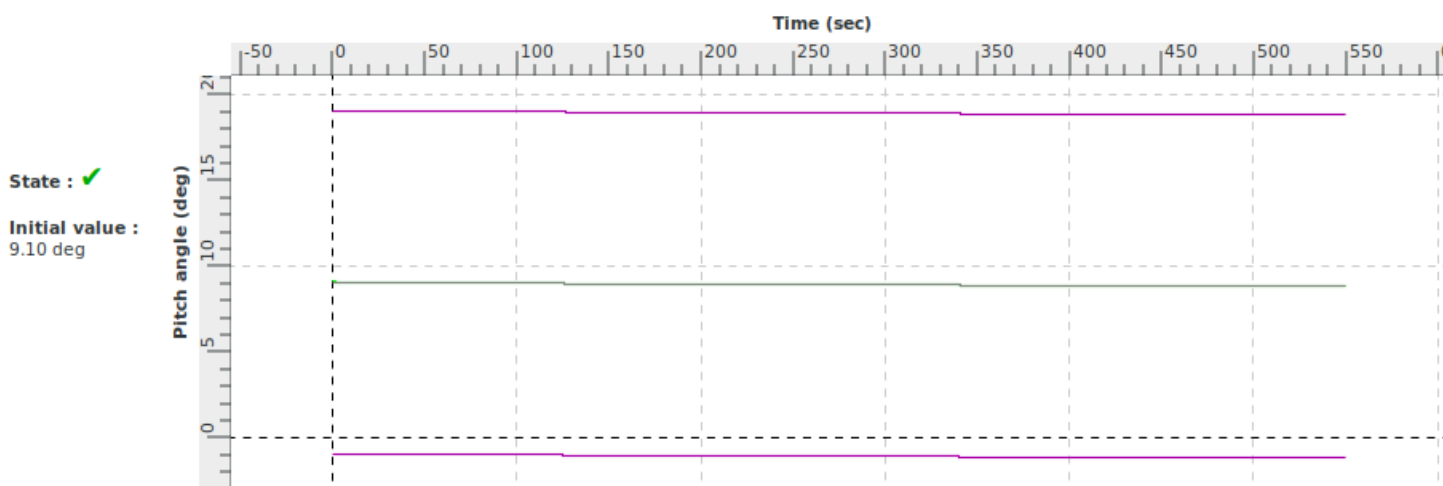
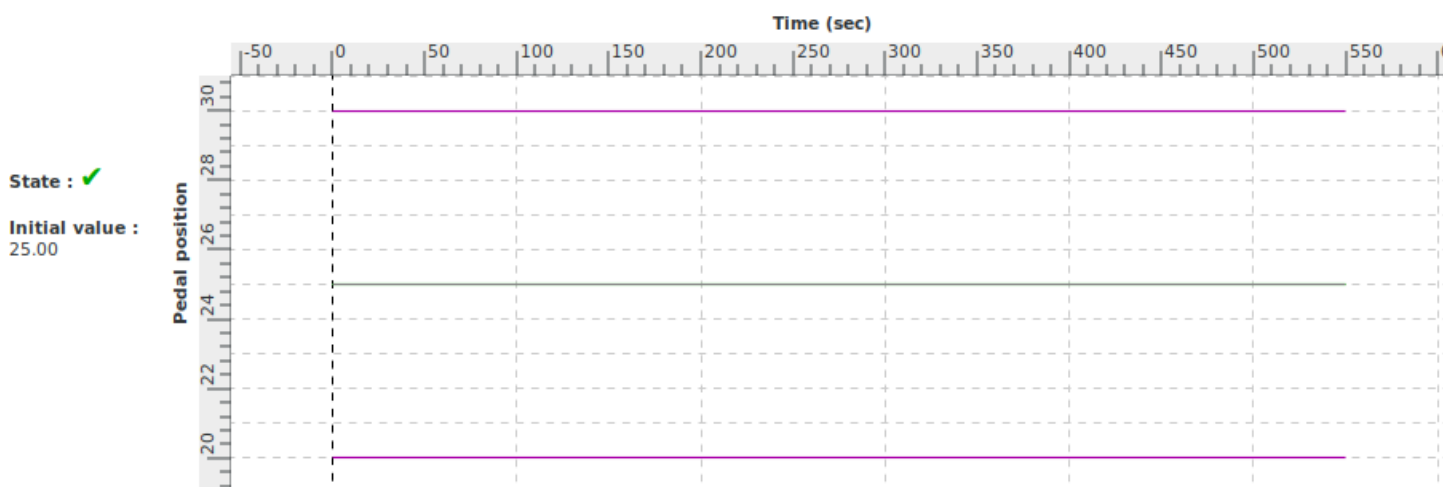
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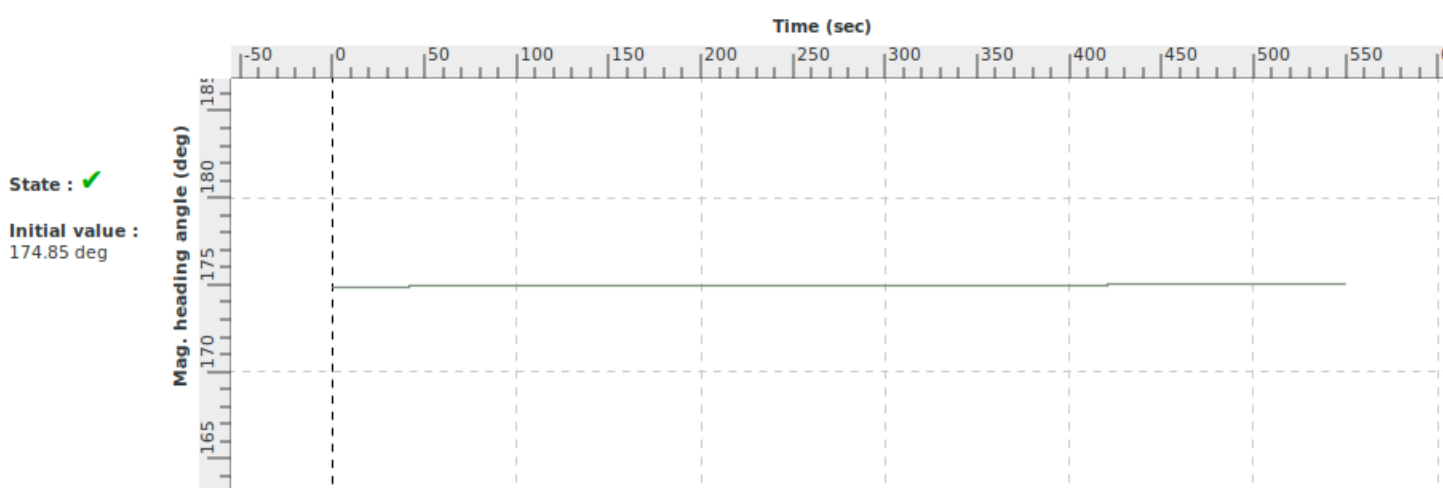
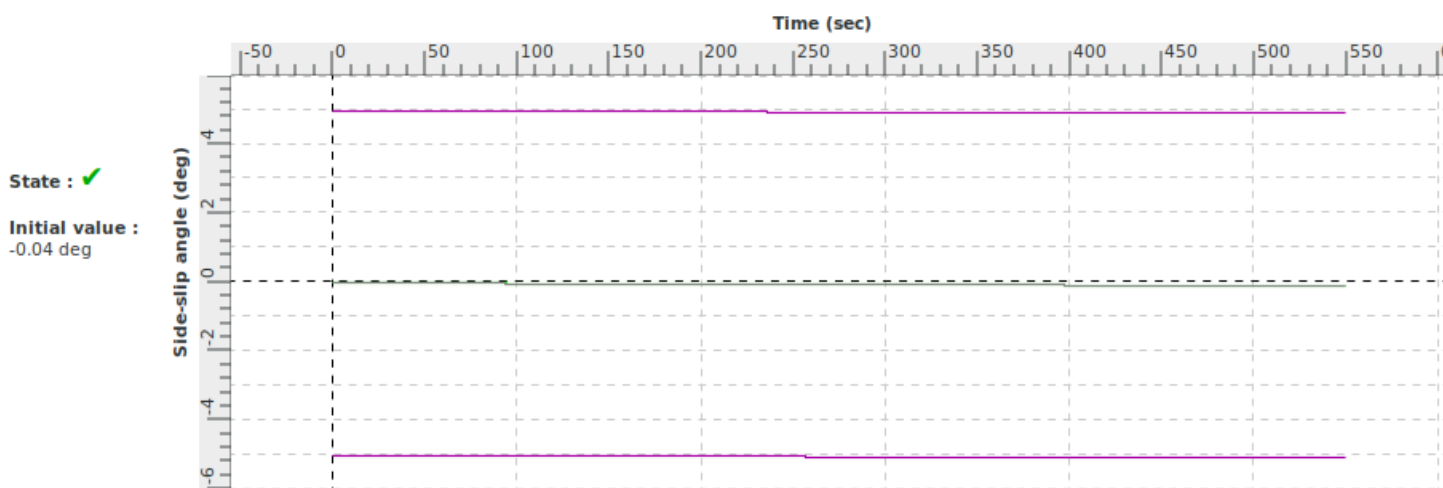
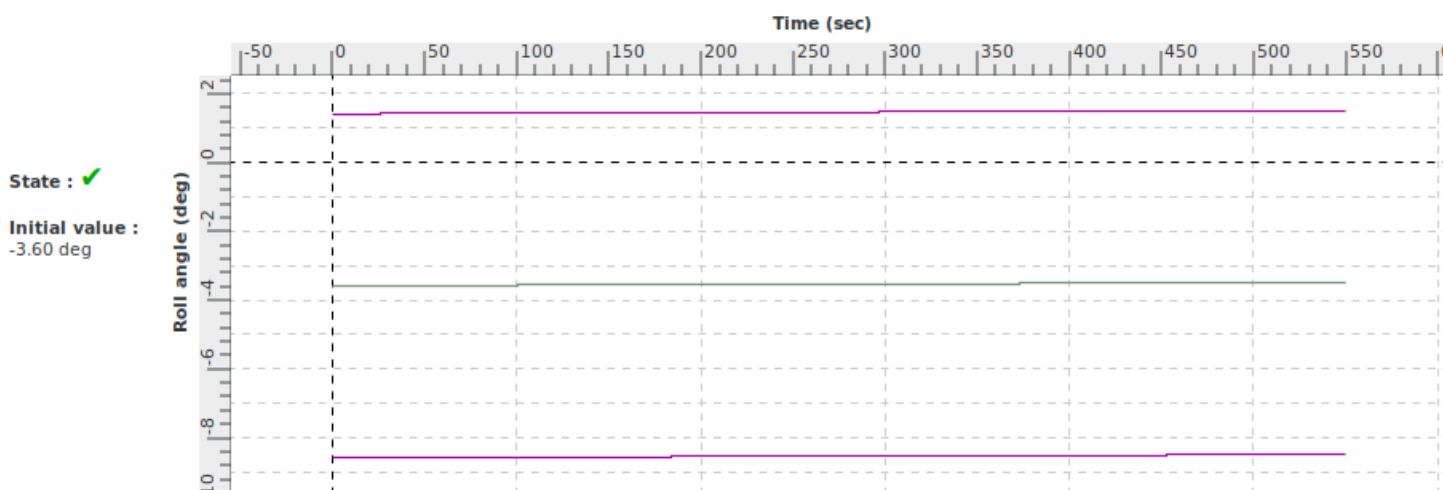
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# VALIDATION TEST

<b>Title</b>	Wheel position vs force during cruise		
<b>Id</b>	2 a ii 2	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

<b>Objective</b>	<b>Expected Results</b>
Demonstrate that the simulator roll controller position vs. roll controller force characteristics conform to the class of aeroplanes	Wheel Position / Force -100% / -87 N -50% / -44 N 0% / 0N 50% / 44 N 100% / 88 N
<b>Reference</b>	<b>Evaluation Criteria</b>
Chapter 12 - Validation data - Handling Qualities - Test 2.a.ii.2	+/- 1.3 daN (3 Lbs) or +/- 10 % force

<b>Demonstration procedure</b>	At the given trimmed flight conditions, the control wheel is moved at slow rate over its full range. Control Force is plotted versus position and then compared to the aircraft reference data.
<b>Manual test procedure</b>	Airplane is trimmed at cruise conditions and put in freeze mode, then the pilot slowly moves wheel over its full travel in both directions using a dynamometer (results to be determined using the Table Sheet AL42_DA42VI_Tables_QTG_VolIII.xls).
<b>Automatic test procedure</b>	2 a ii 2

<b>Authority's approval (date, signature and comments)</b>	<b>Operator's approval (date, signature and comments)</b>

Title	Wheel position vs force during cruise		
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<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

<b>Autopilot mode</b>	AUTO_HEADING
Automatic AUTO_HEADING mode : Heading is maintained constant through roll and yaw trim and Vertical Speed through pitch trim.	

<b>Initial parameters</b>	CRUISE
Gross weight (kg) : 1900	Flaps lever position : 0
Balance (%) : 50	Gear lever position : 0
Altitude (ft) : 6000	Left Load (%) : 70
Vertical speed (ft/min) : 0	Right Load (%) : 70
IAS (kt) : 139 (free)	Left RPM : 2060
Heading (°) : 0	Right RPM : 2060
Bank (°) : 0 (free)	
Attitude (°) : 0	
Pedal Position (%) : 0	
Column Position (%) : 9	
Wheel Position (%) : 0	

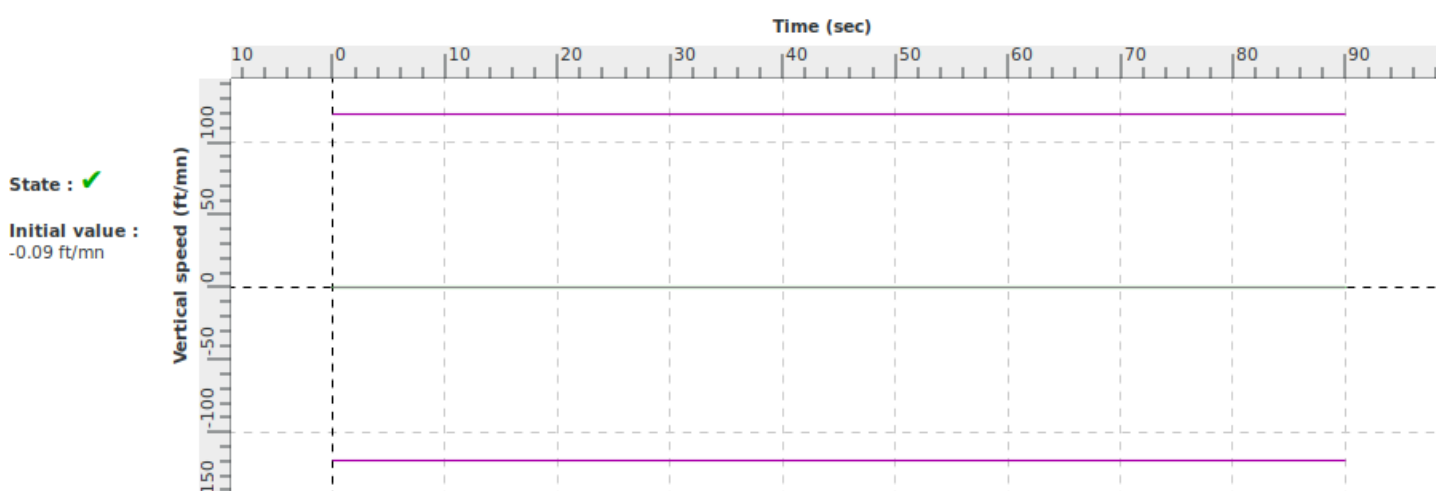
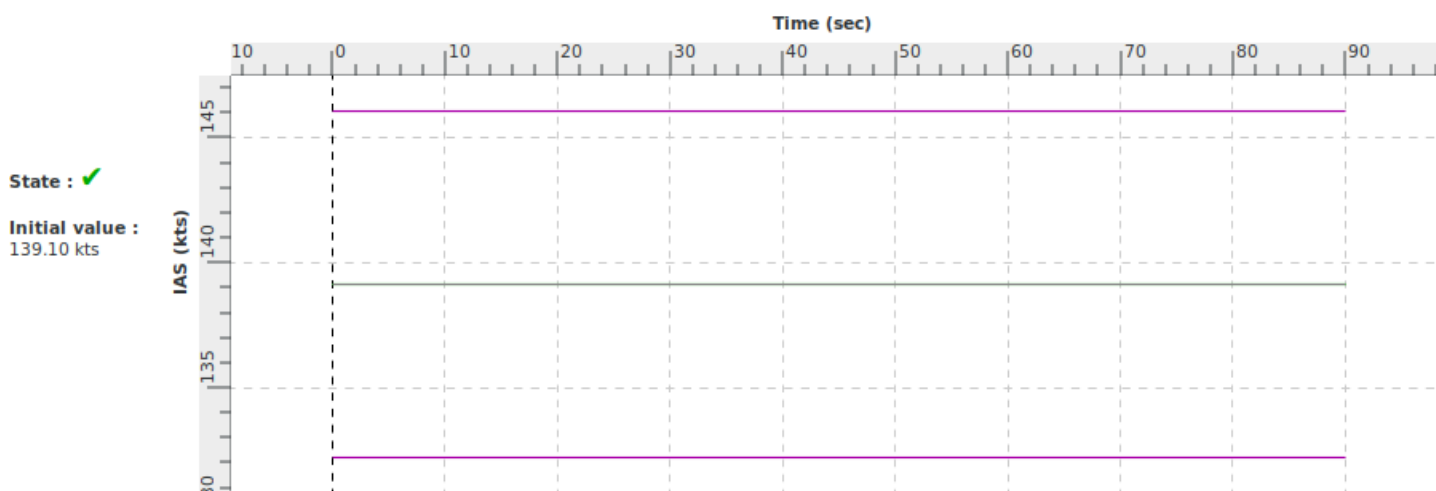
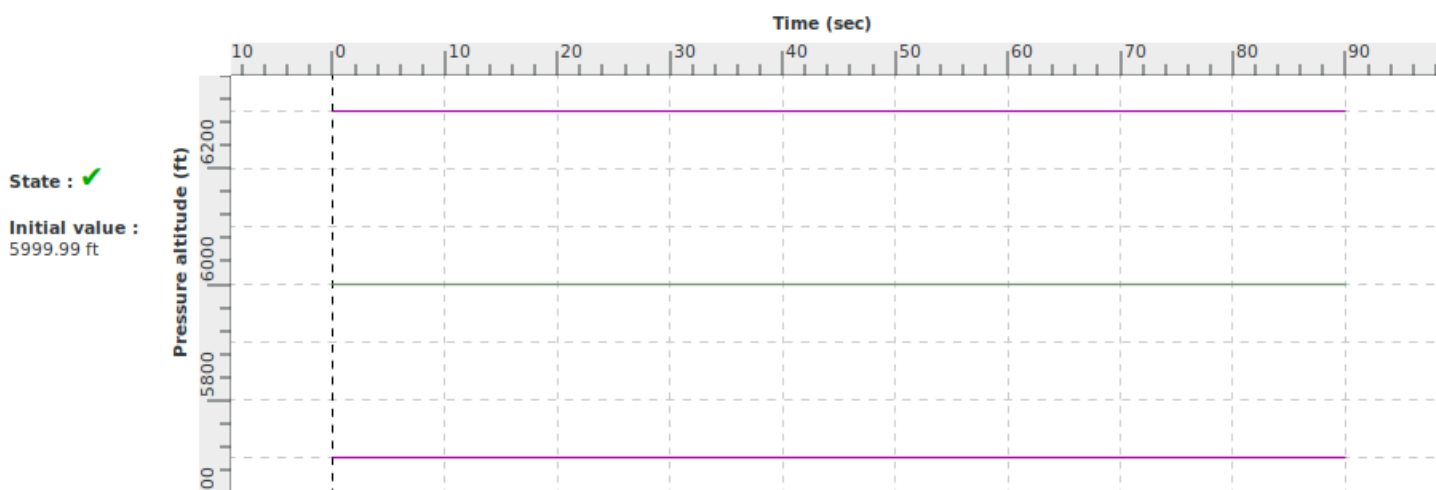
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	mode_stop	1.0	Set the aircraft to STOP or GO mode (0 means GO and 1 means STOP)
3.0	SetRollCmdPalier	103.0	Send a step in the roll govern
24.0	SetRollCmdPalier	-100.0	Send a step in the roll govern
64.3	SetRollCmdPalier	0.0	Send a step in the roll govern
90.0	Stop_Test	0.0	Stop the test procedure

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<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Wheel position vs force during cruise		
Id	2 a ii 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



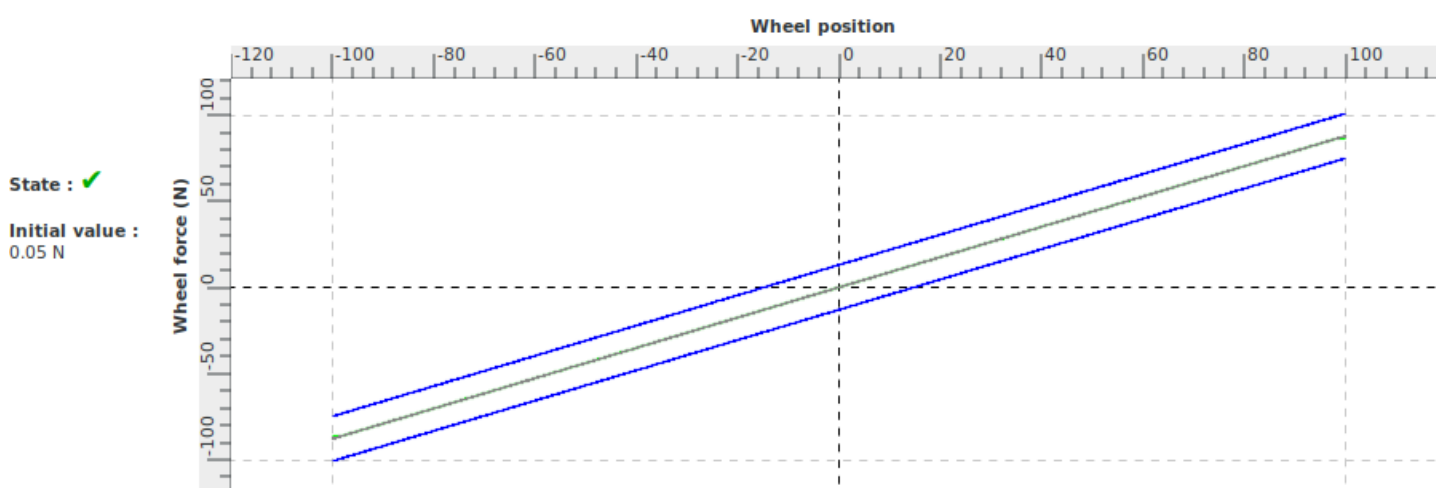
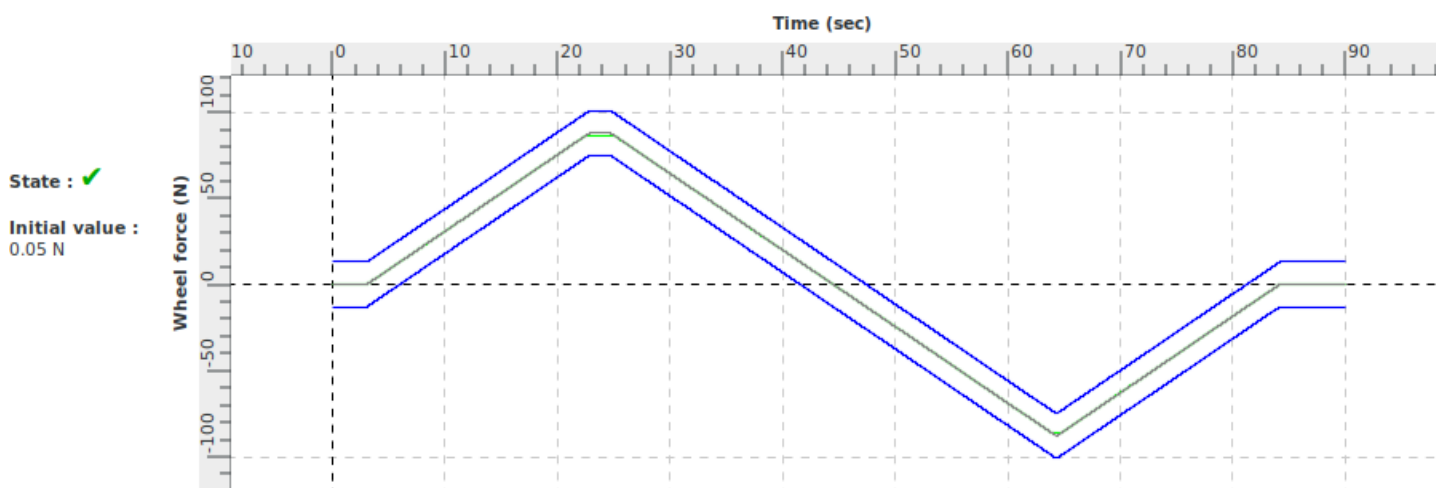
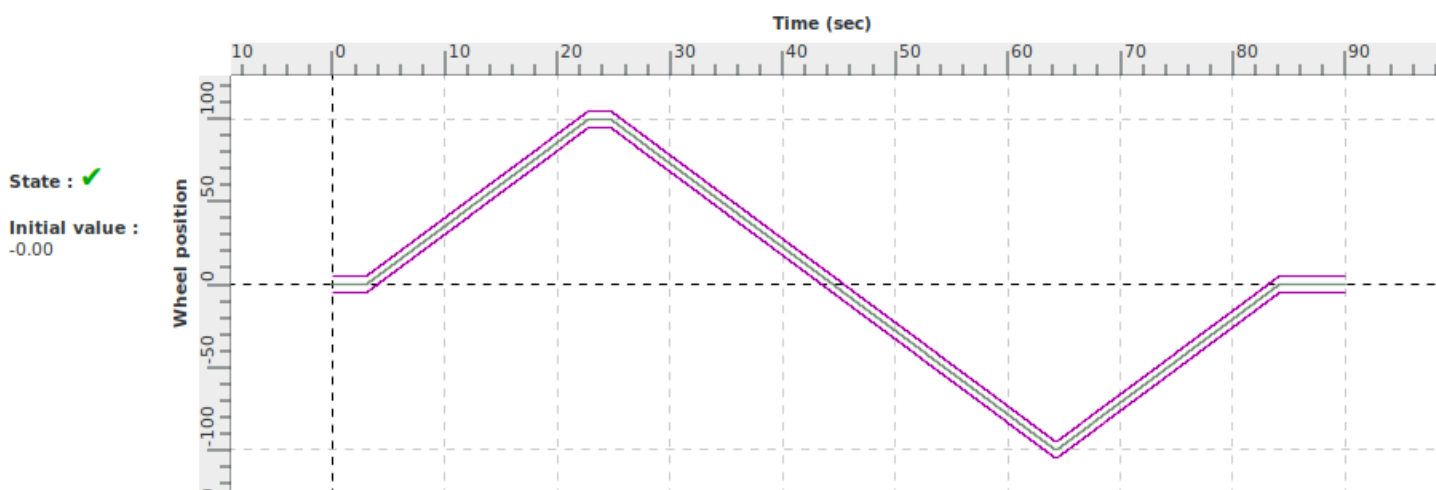
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# VALIDATION TEST

<b>Title</b>	Flaps change dynamics during take-off (retraction)		
<b>Id</b>	2 c ii 1 a	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

<b>Objective</b>	<b>Expected Results</b>
Demonstrate that the simulator response to a flap retraction during take-off conforms to the class of aeroplanes	<p>Increments (from configuration change to 20s after):</p> <p>Airspeed: -1.6 Kts</p> <p>Pitch Angle: +7.5 deg</p> <p>Altitude: 600 ft</p>
<b>Reference</b>	<b>Evaluation Criteria</b>
Chapter 12 - Validation data - Handling Qualities - Test 2.c.ii.1.a	<p>Airspeed +/- 3 kt</p> <p>Altitude +/- 100 ft</p> <p>Pitch +/- 1.5° or 20%</p>

<b>Demonstration procedure</b>	From steady take-off initial conditions, flaps are retracted.
<b>Manual test procedure</b>	The aircraft is trimmed at take-off flight condition. Then, the pilot sets the flaps from position 1 to 0 and allows the airplane to respond freely.
<b>Automatic test procedure</b>	2 c ii 1 a

<b>Authority's approval (date, signature and comments)</b>	<b>Operator's approval (date, signature and comments)</b>

Title	Flaps change dynamics during take-off (retraction)		
Id	2 c ii 1 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Autopilot mode	AUTO_VZ
Automatic IAS (airspeed) and power maintain mode : it changes the attitude through pitch trim value and the power levers to maintain power and IAS. Roll Trim is computed to maintain 0° bank angle.	

Initial parameters	TAKE_OFF
Gross weight (kg) : 1900	Flaps lever position : 1
Balance (%) : 50	Gear lever position : 0
Altitude (ft) : 3000	Left Load (%) : 100
Vertical speed (ft/min) : 1000 (free)	Right Load (%) : 100
IAS (kt) : 85	Left RPM : 2090
Heading (°) : 0 (free)	Right RPM : 2090
Bank (°) : 0	
Attitude (°) : 13	
Pedal Position (%) : 0	
Column Position (%) : 41	
Wheel Position (%) : 0	

Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
0.0	deconnectionPA_roll	0.0	disable QTG Autopilot in roll axis
0.0	deconnectionPA_rudder	0.0	disable QTG Autopilot in yaw axis
5.0	Flaps	0.0	Move the flaps lever to the desired position
30.0	Stop_Test	0.0	Stop the test procedure

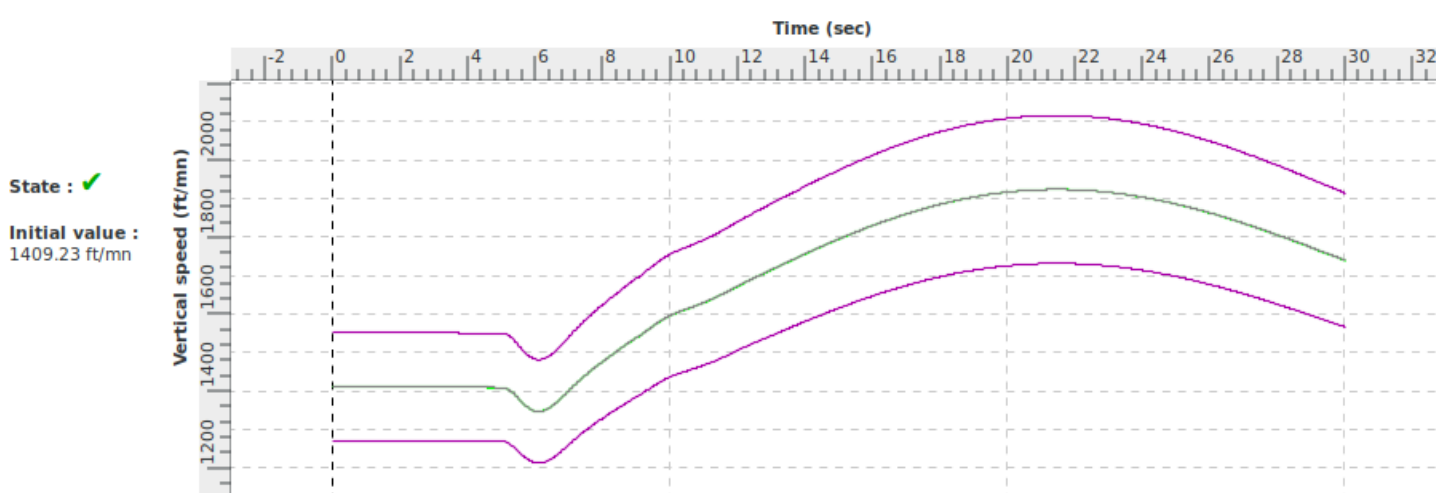
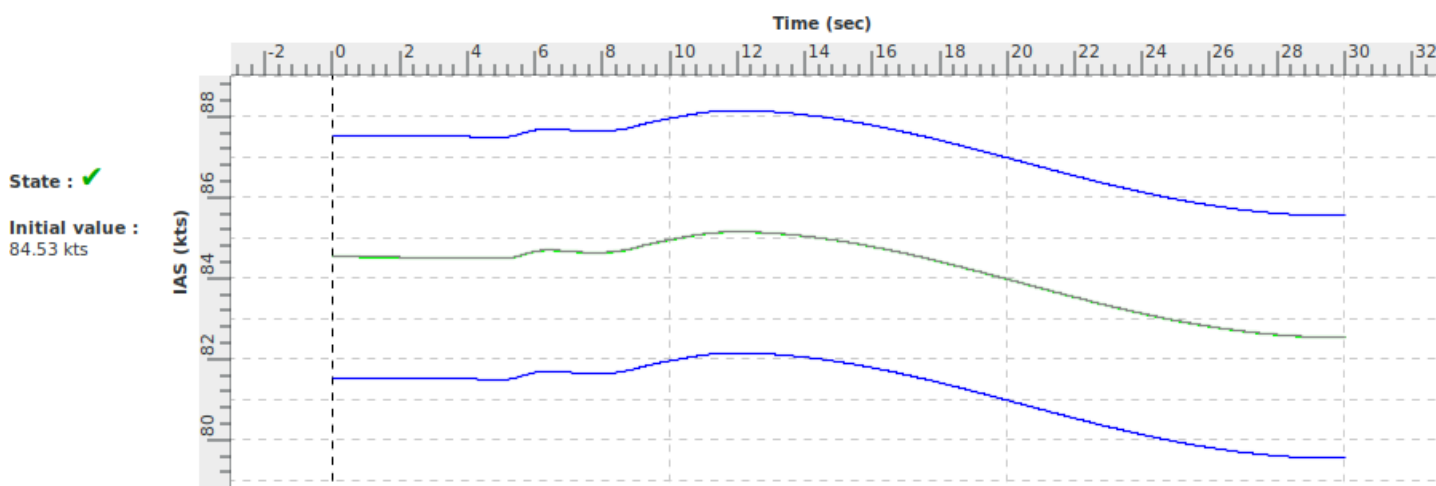
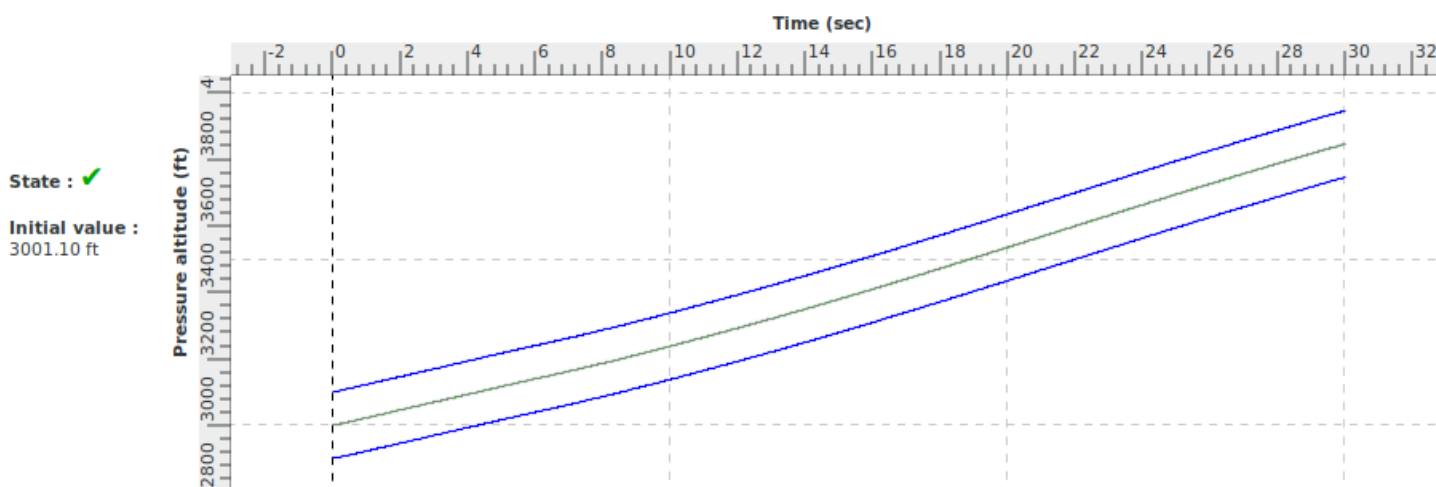
<b>Title</b>	Flaps change dynamics during take-off (retraction)		
<b>Id</b>	2 c ii 1 a	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
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Log of Revision		
Rev. Nbr	Date	Reason for revision

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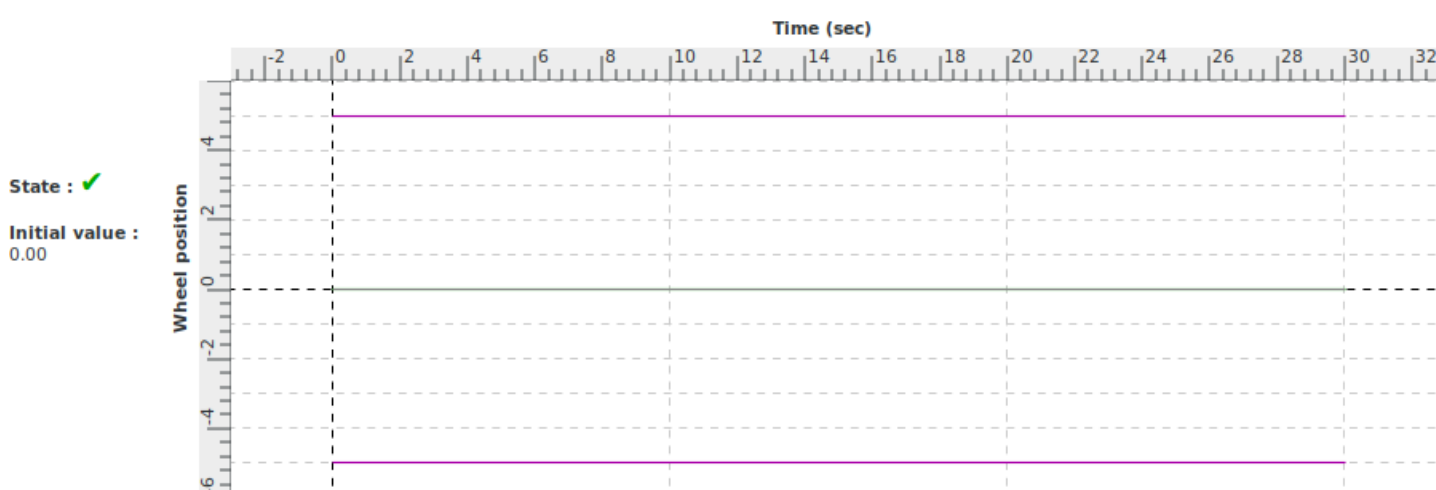
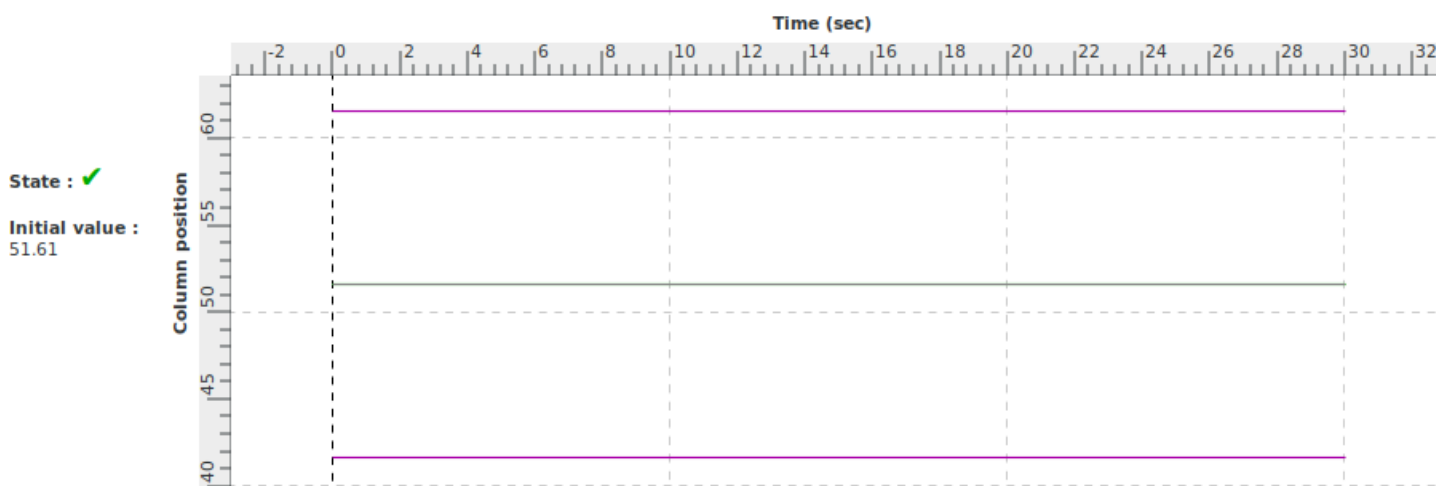
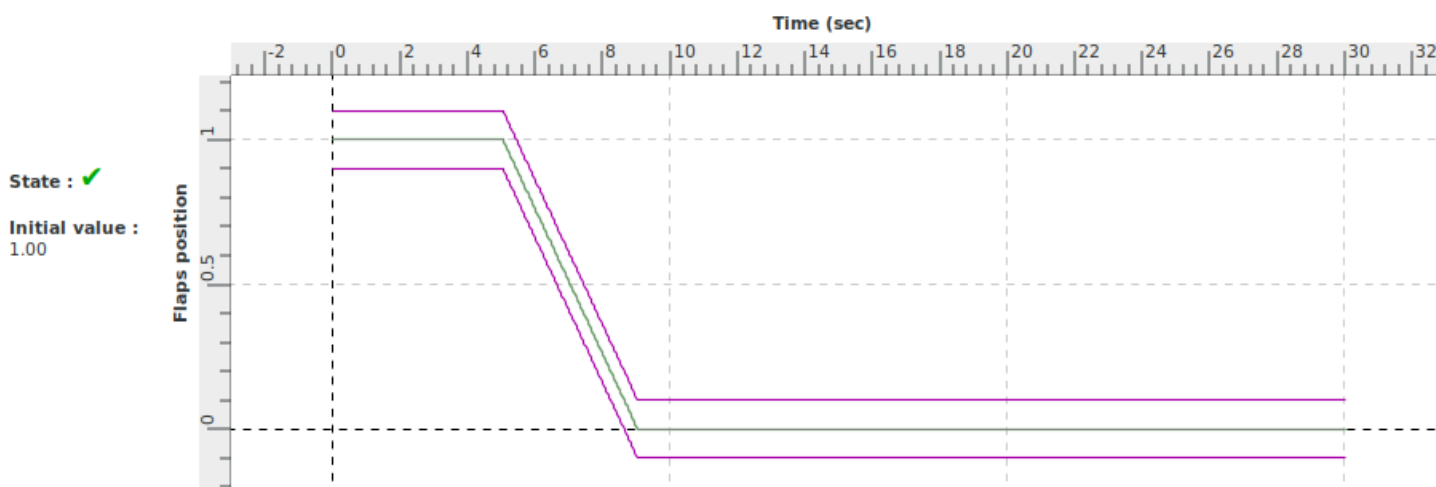
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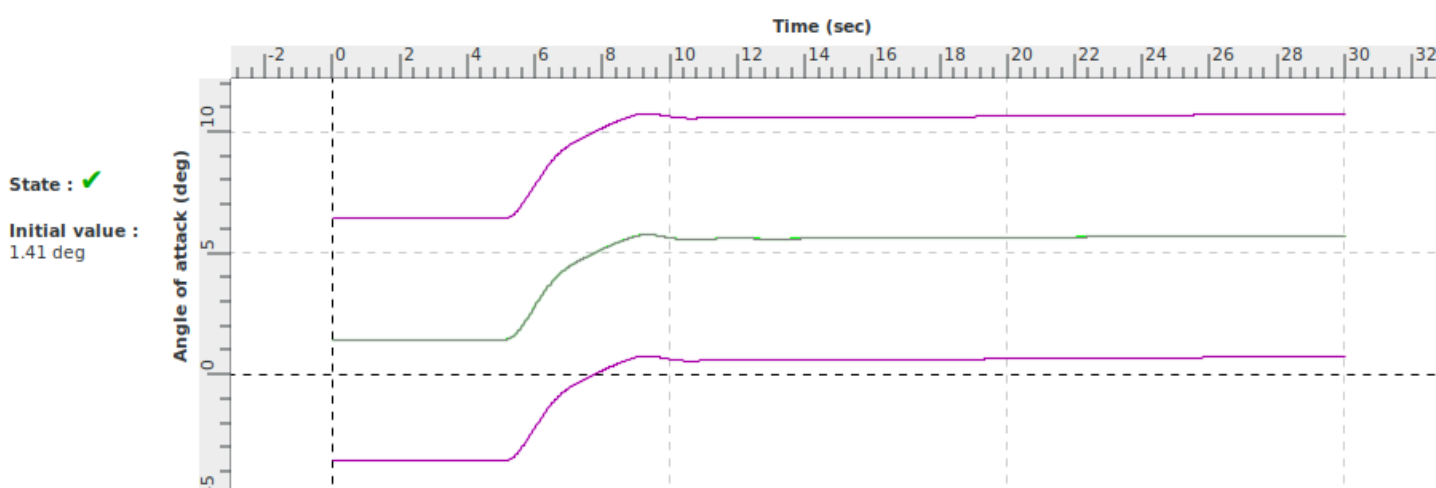
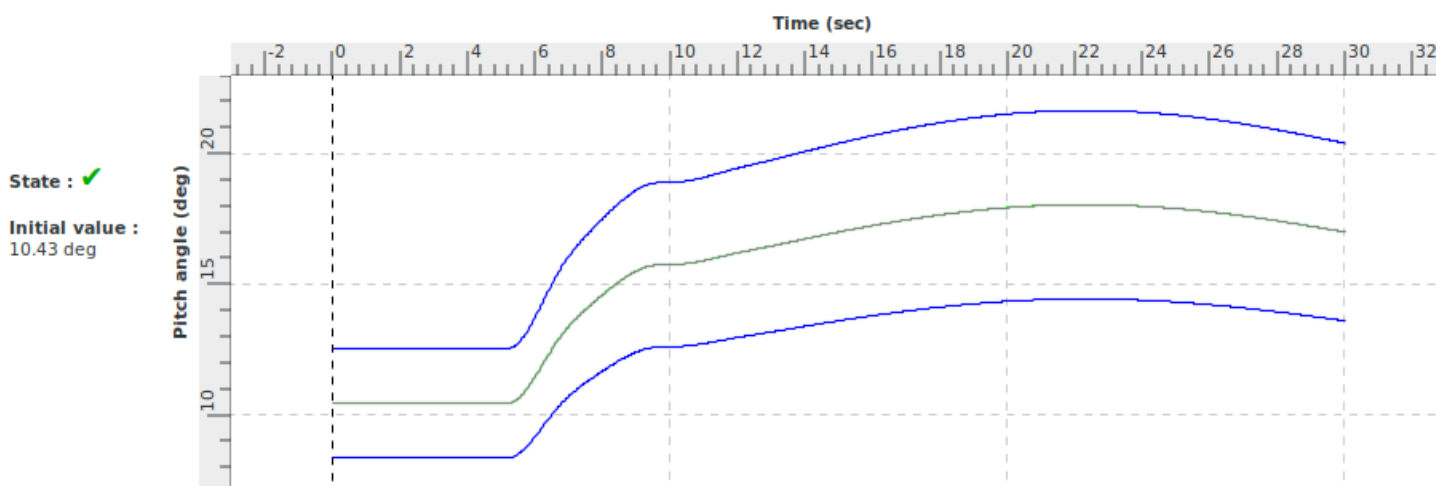
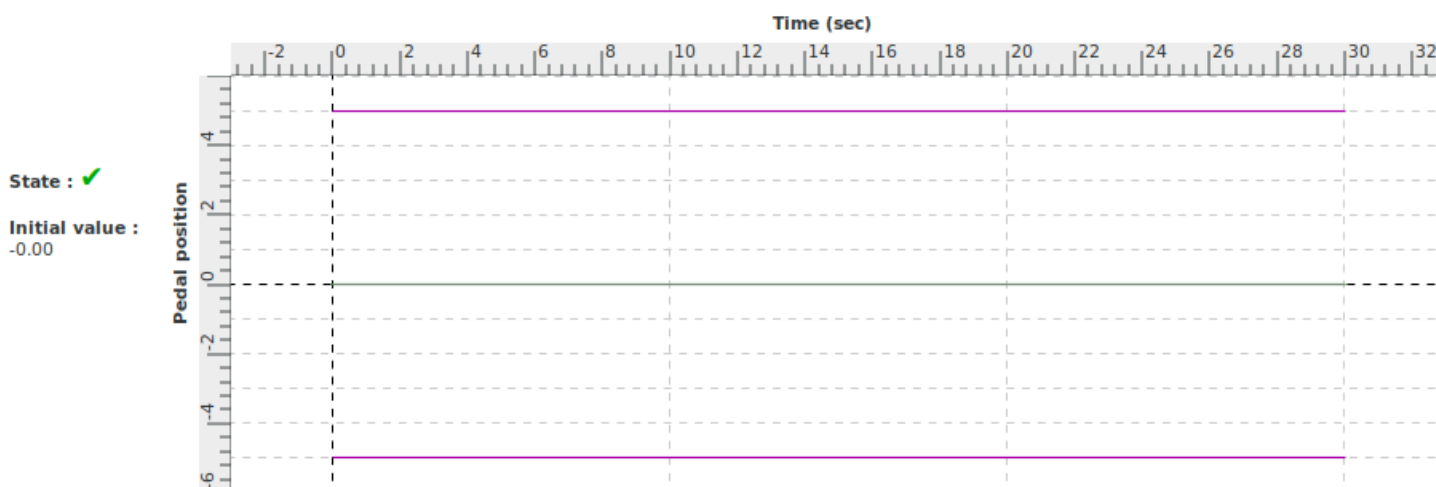
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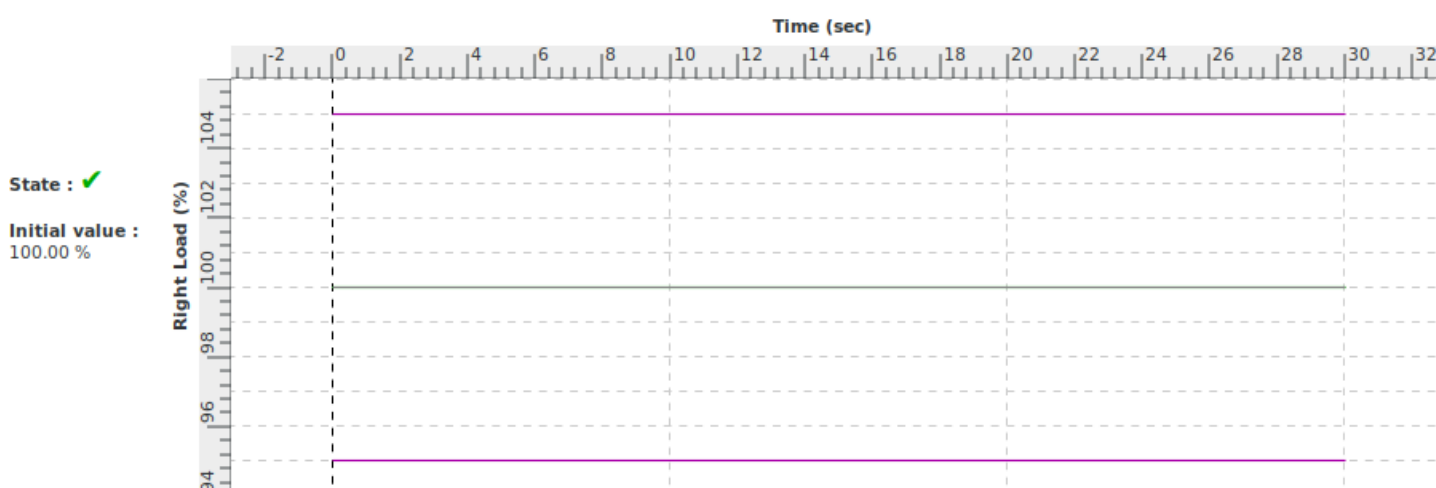
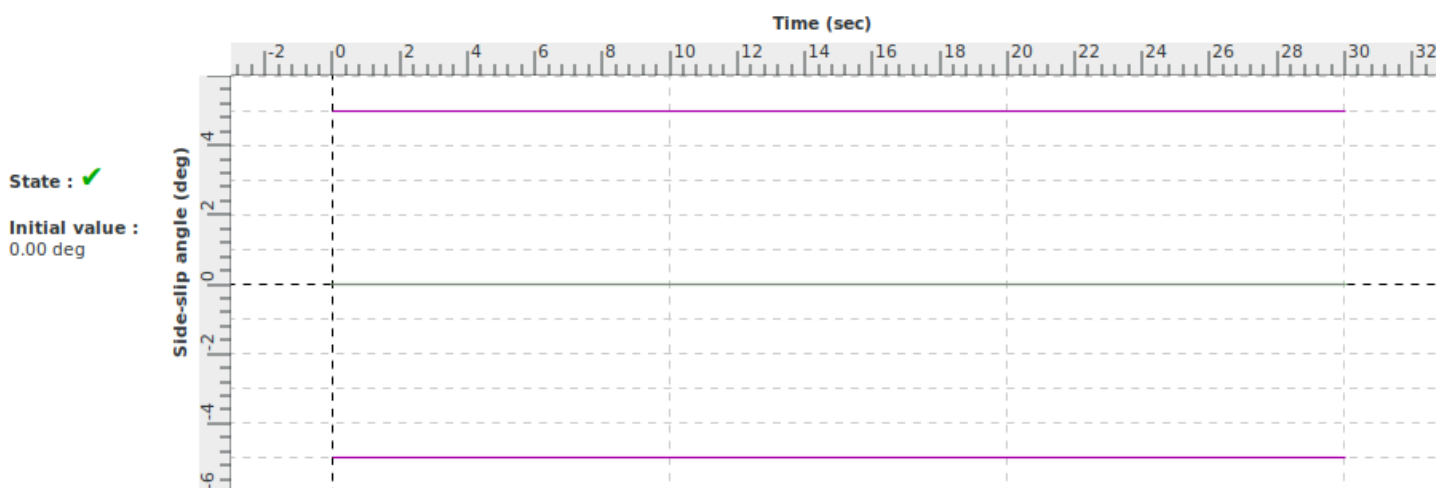
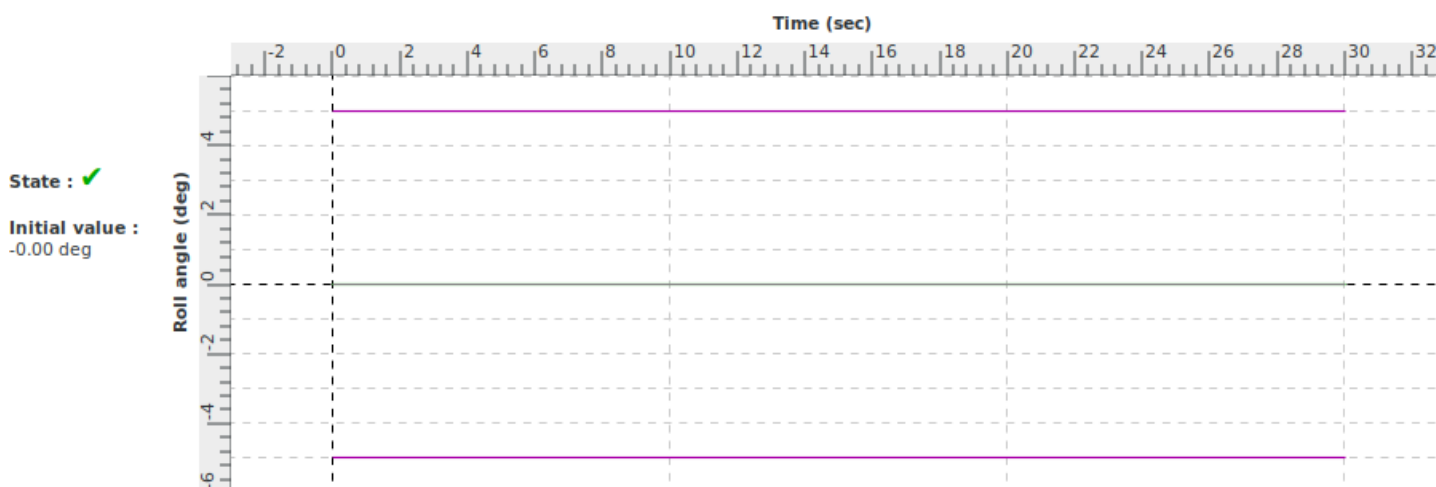
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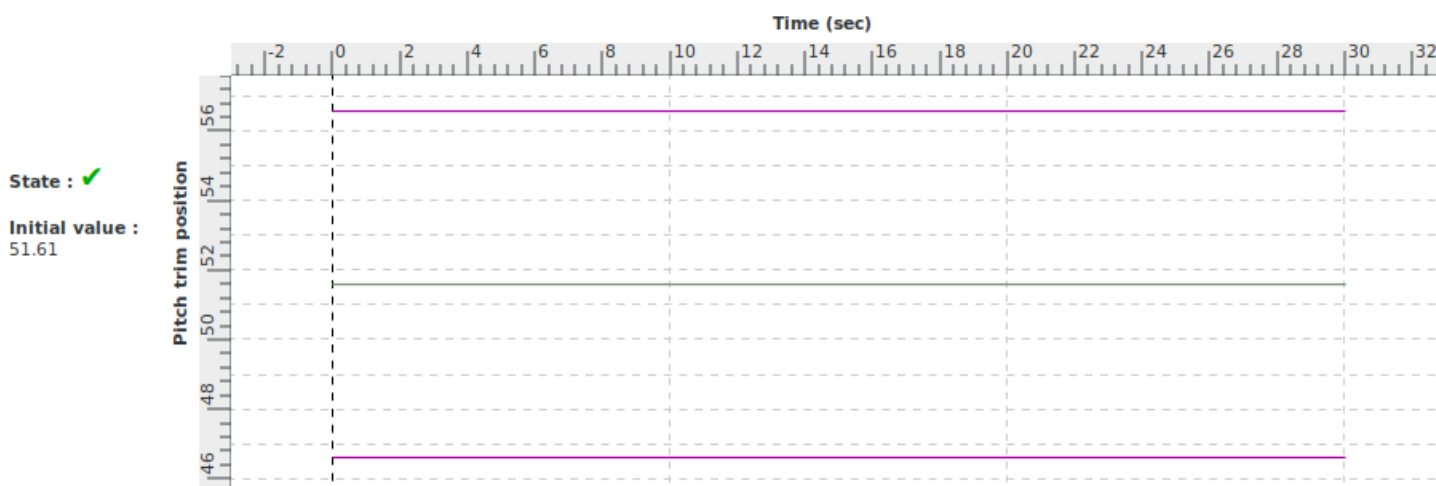
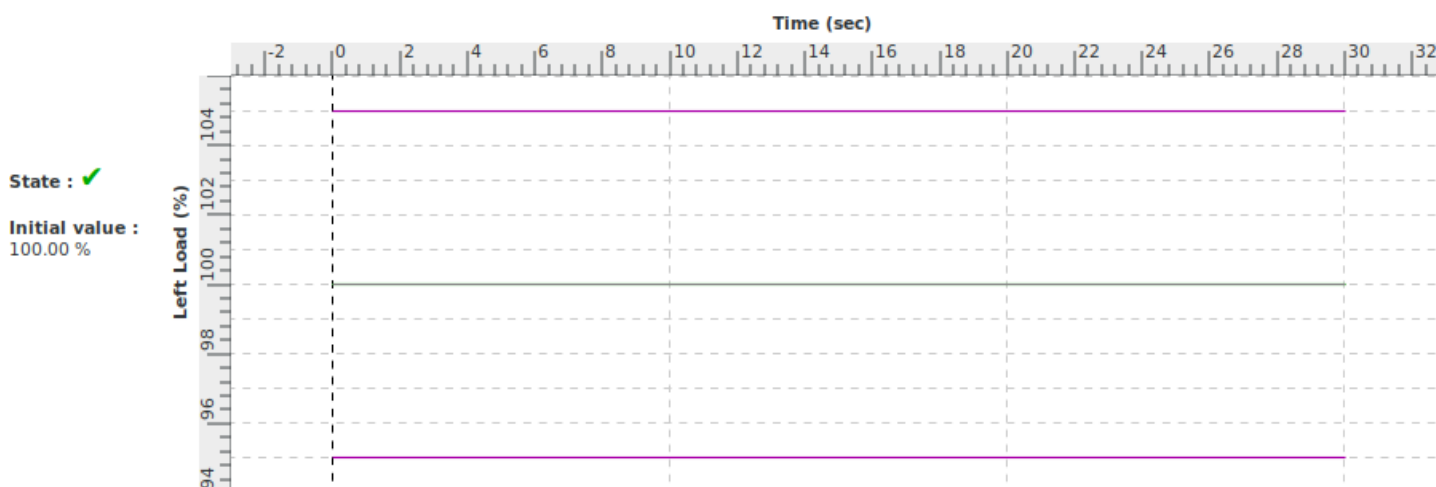
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# VALIDATION TEST

<b>Title</b>	Gear change dynamics during take-off (retraction)		
<b>Id</b>	2 c iv 1 a	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

<b>Objective</b>	<b>Expected Results</b>
Demonstrate that the dynamics response to a landing gear retraction during take-off conforms to the class of aeroplanes	<p>Increments (from configuration change to 20s after):</p> <p>Airspeed: -1 Kts</p> <p>Pitch Angle: +0.9 deg</p> <p>Altitude: +480 ft</p>
<b>Reference</b>	<b>Evaluation Criteria</b>
Chapter 12 - Validation data - Handling Qualities - Test 2.c.iv.1.a	<p>Airspeed +/- 3 kt</p> <p>Altitude +/- 100 ft</p> <p>Pitch +/- 2° or +/- 20%</p>

<b>Demonstration procedure</b>	From steady take-off initial conditions, gear is retracted.
<b>Manual test procedure</b>	The aircraft is trimmed at take-off flight condition. Then, the pilot releases the controls and sets the gear down (1) to up (0), and allows the airplane to respond freely.
<b>Automatic test procedure</b>	2 c iv 1 a

<b>Authority's approval (date, signature and comments)</b>	<b>Operator's approval (date, signature and comments)</b>

<b>Title</b>	Gear change dynamics during take-off (retraction)		
<b>Id</b>	2 c iv 1 a	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

<b>Autopilot mode</b>	AUTO_VZ
<p>Automatic IAS (airspeed) and power maintain mode : it changes the attitude through pitch trim value and the power levers to maintain power and IAS. Roll Trim is computed to maintain 0° bank angle.</p>	

<b>Initial parameters</b>	TAKE_OFF_GEARDWN
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 2000 Vertical speed (ft/min) : 1000 (free) IAS (kt) : 85 Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : 13 Pedal Position (%) : 0 Column Position (%) : 41 Wheel Position (%) : 0	Flaps lever position : 1 Gear lever position : 1 Left Load (%) : 100 Right Load (%) : 100 Left RPM : 2090 Right RPM : 2090

Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
0.0	deconnectionPA_roll	0.0	disable QTG Autopilot in roll axis
0.0	deconnectionPA_rudder	0.0	disable QTG Autopilot in yaw axis
5.0	Gear	0.0	Move the gear lever to the desired position
30.0	Stop_Test	0.0	Stop the test procedure

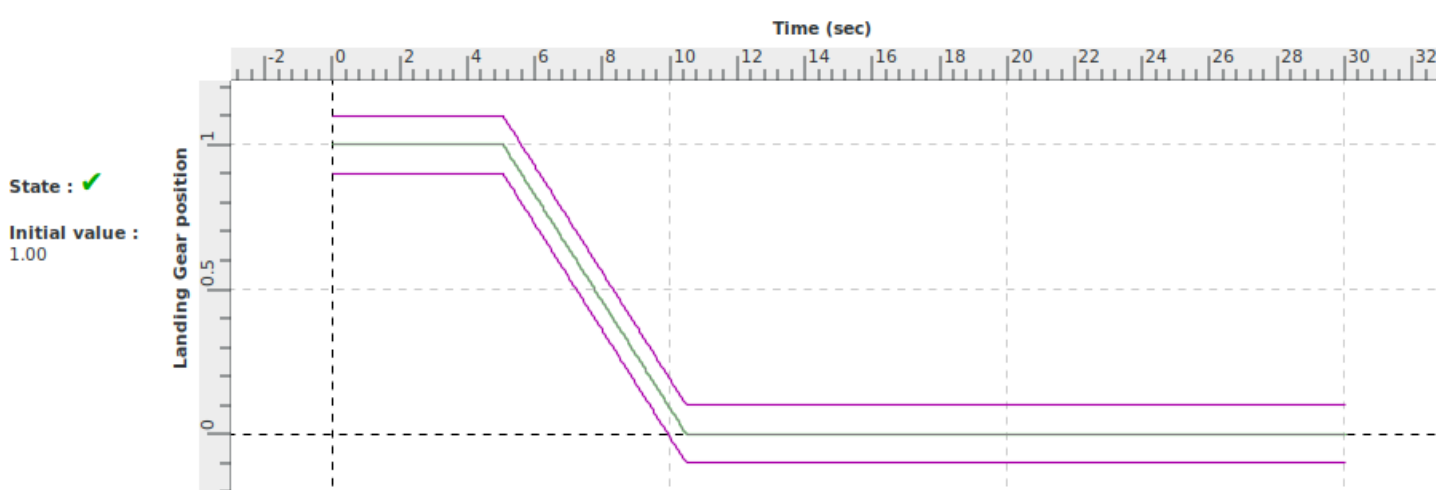
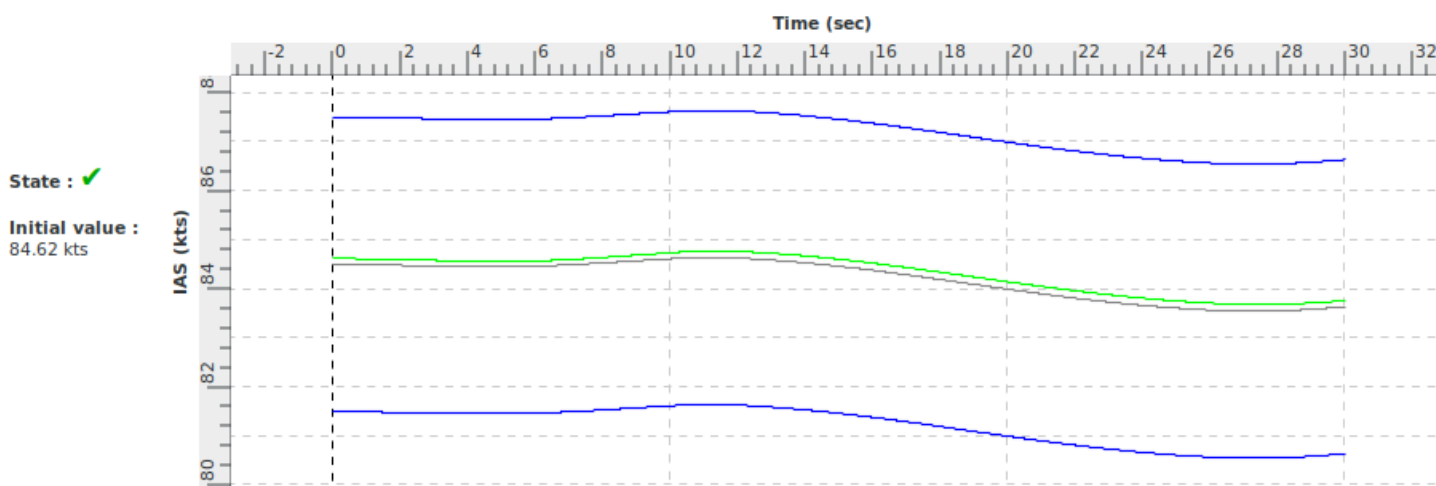
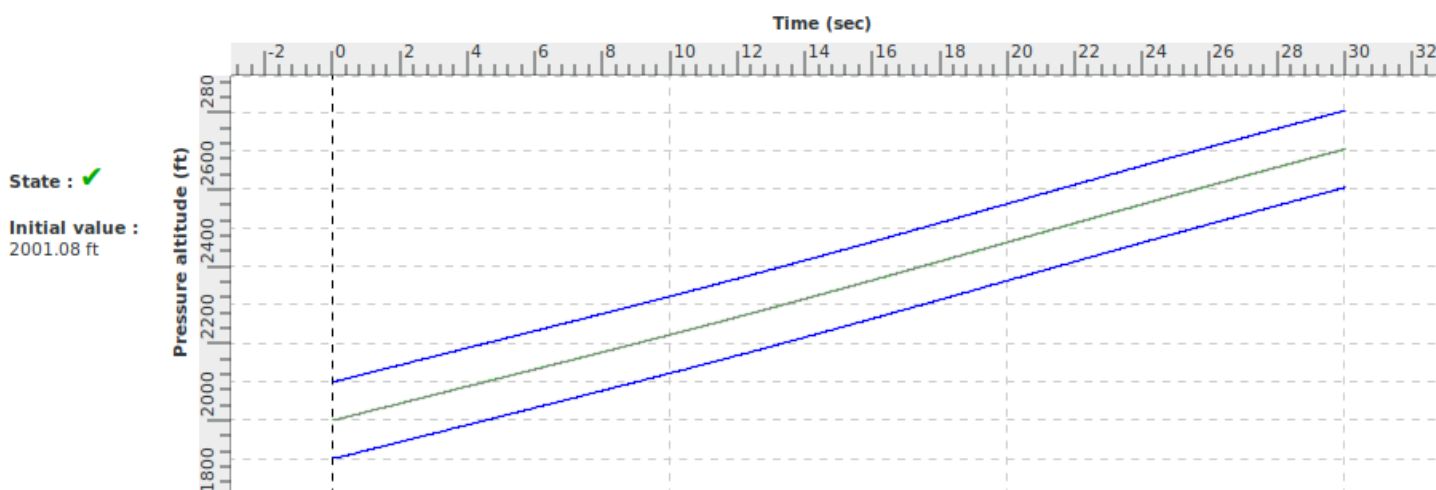
<b>Title</b>	Gear change dynamics during take-off (retraction)		
<b>Id</b>	2 c iv 1 a	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes



Title	Gear change dynamics during take-off (retraction)		
Id	2 c iv 1 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



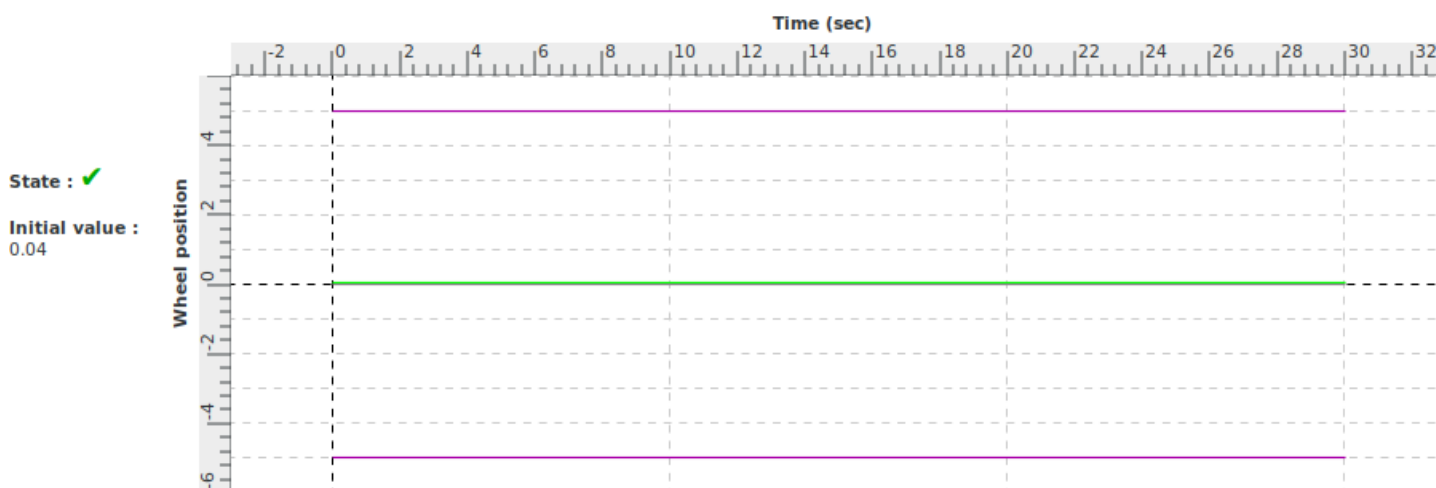
### Legend :

green : results within tolerances  
blue : tolerances

red : results out of tolerances  
violet : tolerances Alsim

grey : master

Title	Gear change dynamics during take-off (retraction)		
Id	2 c iv 1 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



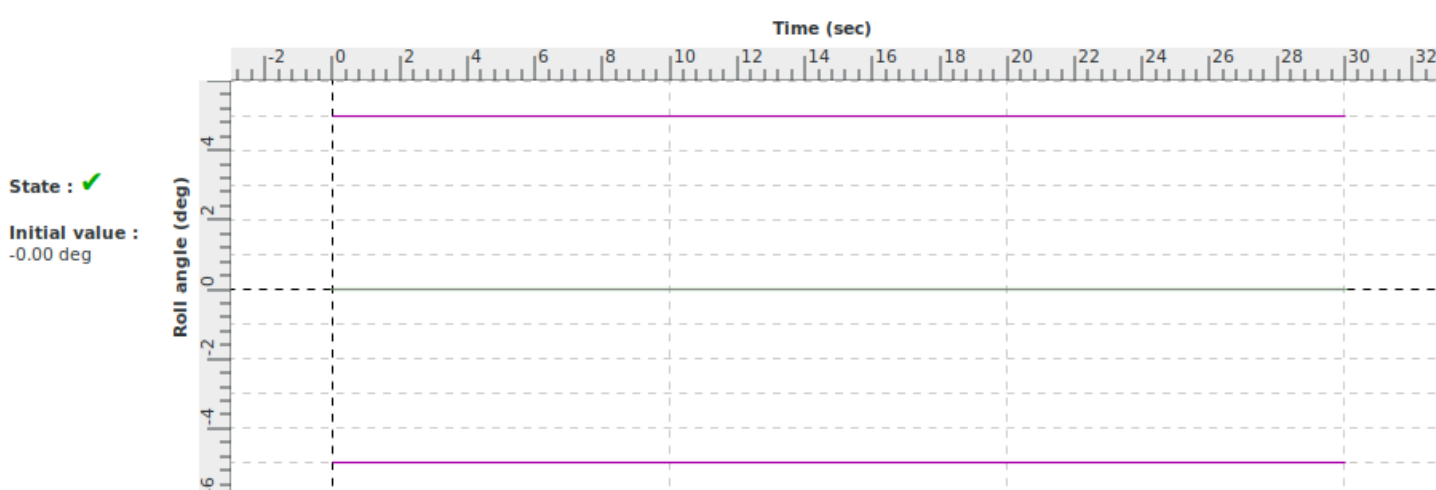
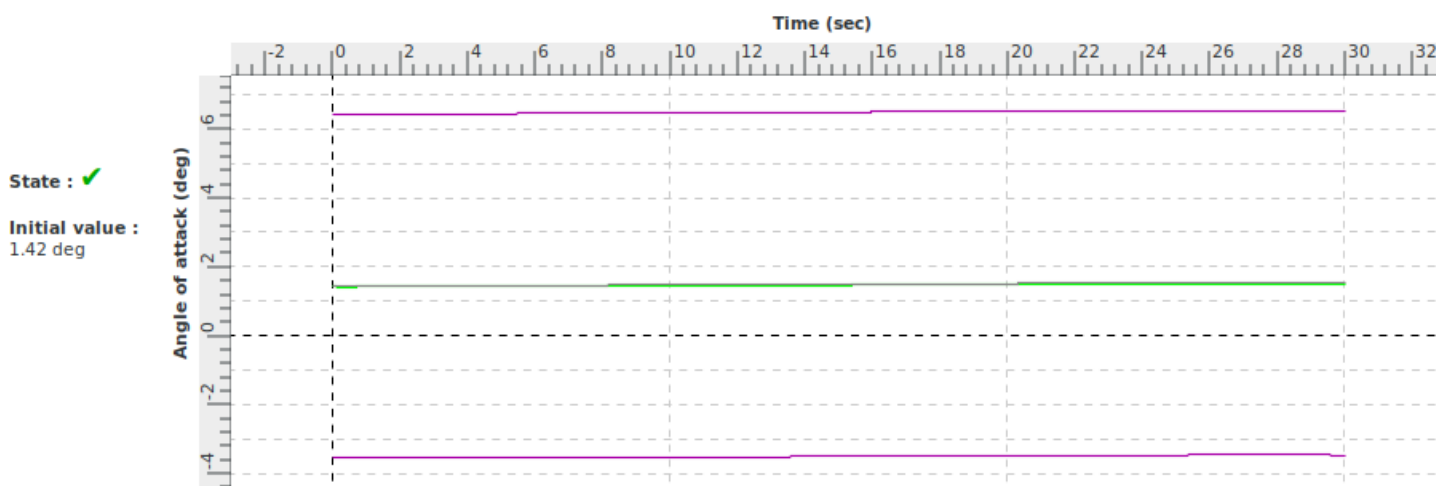
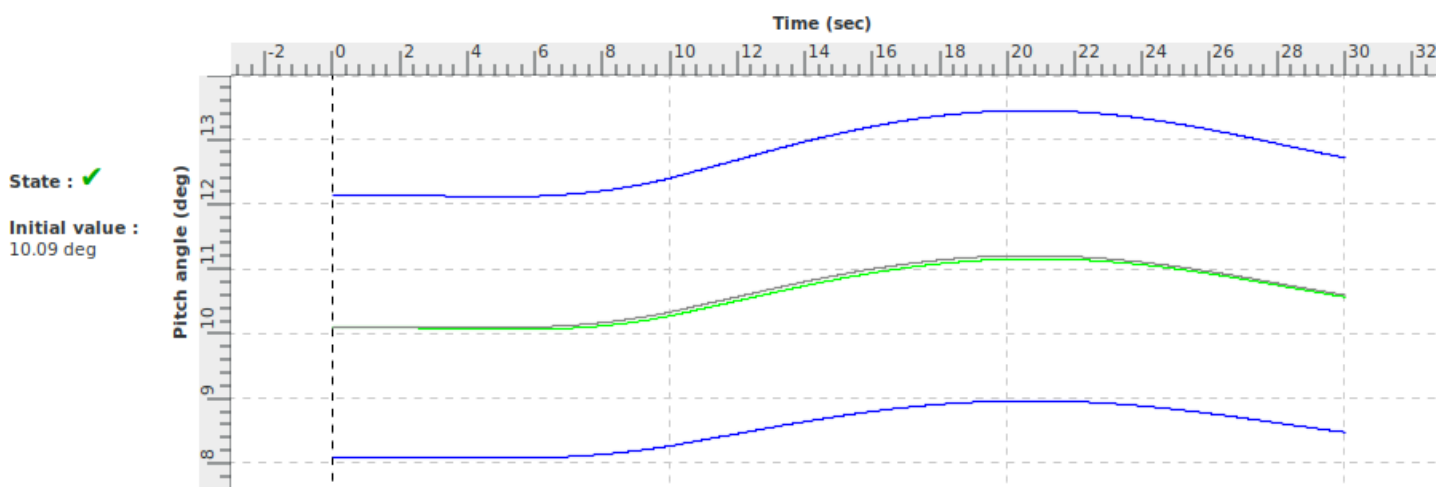
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Title	Gear change dynamics during take-off (retraction)		
Id	2 c iv 1 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



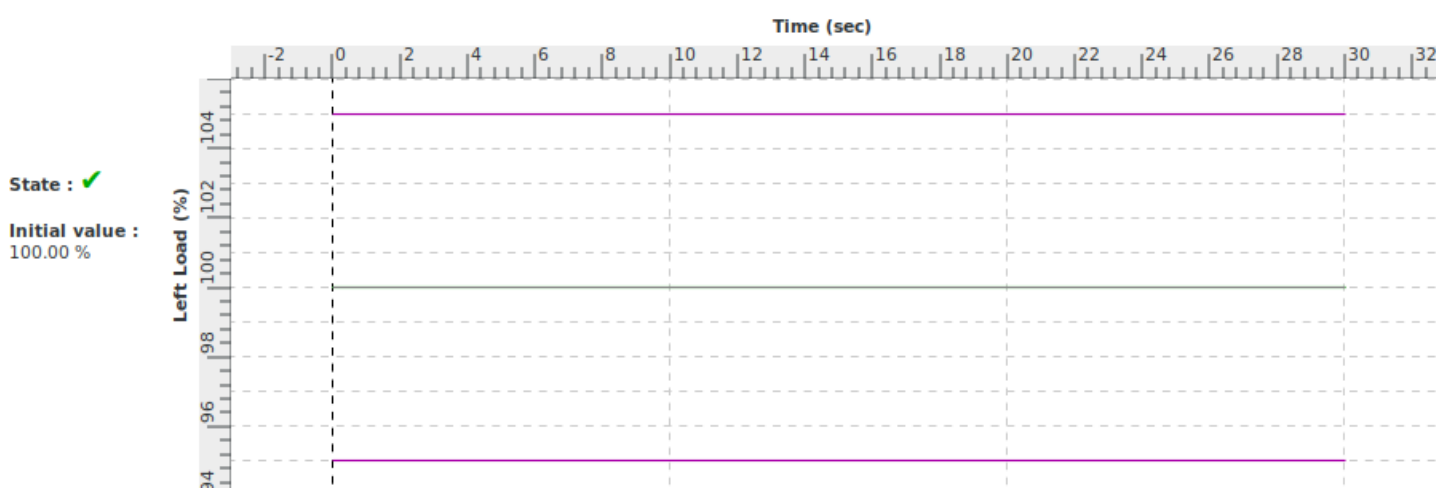
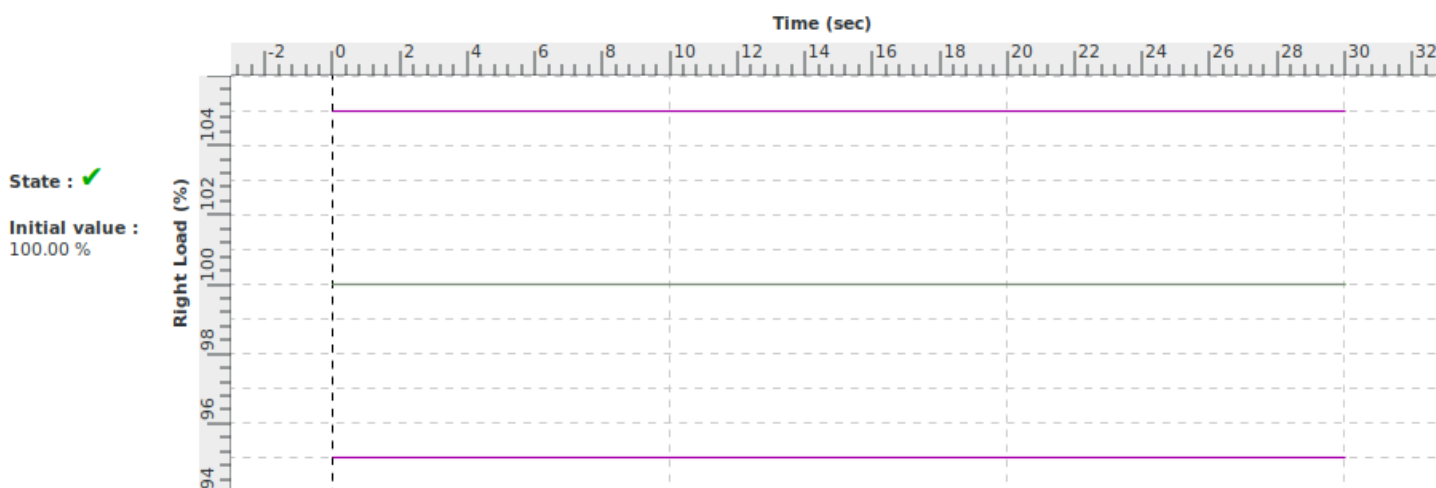
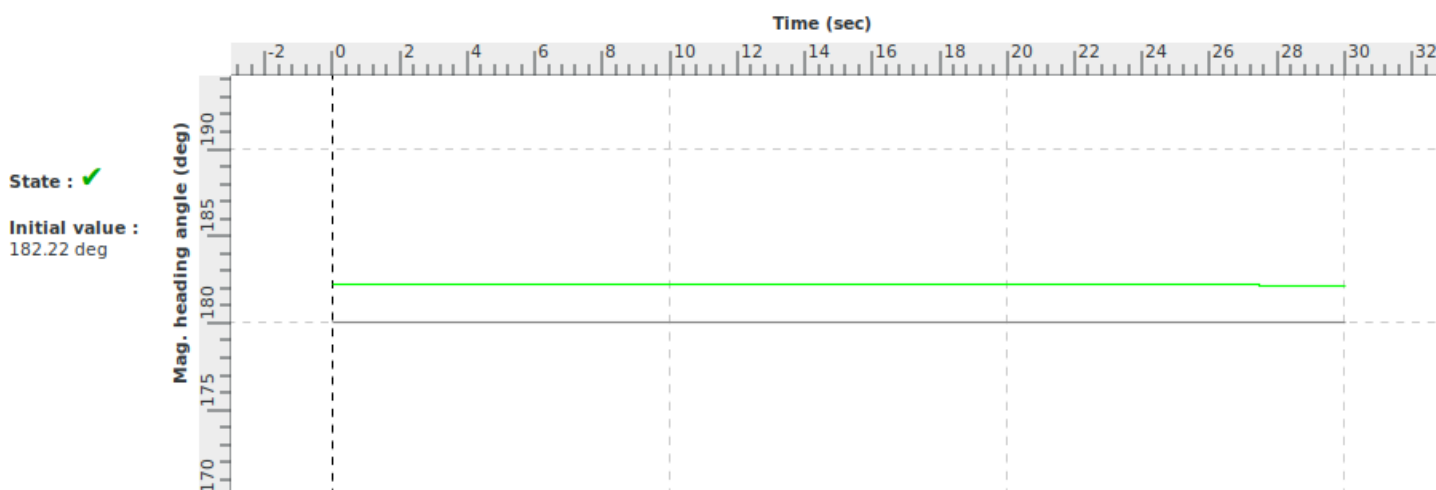
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Title	Gear change dynamics during take-off (retraction)		
Id	2 c iv 1 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



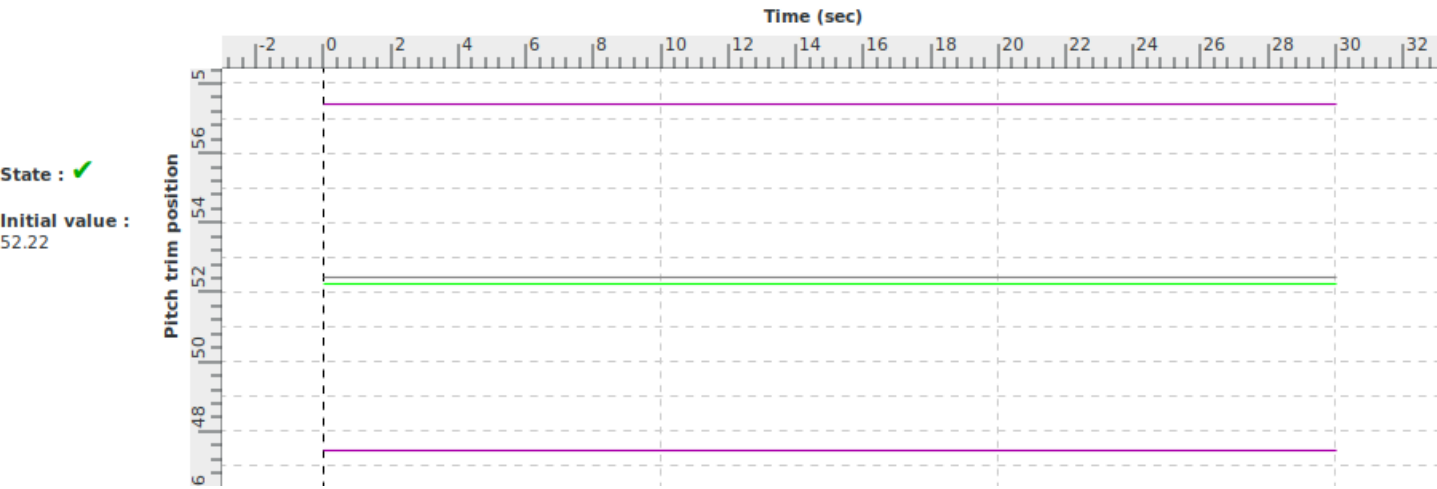
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grey : master

Title	Gear change dynamics during take-off (retraction)		
Id	2 c iv 1 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



Legend :

green : results within tolerances    red : results out of tolerances  
blue : tolerances    violet : tolerances Alsim    grey : master

# VALIDATION TEST

<b>Title</b>	Longitudinal trim during cruise		
<b>Id</b>	2 c v a	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

<b>Objective</b>	<b>Expected Results</b>
Demonstrate that the simulator inter-relationships of lift, drag, thrust and longitudinal trim during cruise conforms to the class of aeroplanes	Pitch control: +9.2 % Pitch angle: 0.4 deg Load: 70 %
<b>Reference</b>	<b>Evaluation Criteria</b>
Chapter 12 - Validation data - Handling Qualities - Test 2.c.v.a	+/- 2° Pitch Control (equivalent 16%) +/- 2° Pitch angle +/- 5% Power

<b>Demonstration procedure</b>	The aeroplane is established in steady cruise.  Tolerance: 30° is representative of the maximum elevator deflection observed on this class of aeroplane i.e 1° of elevator deflection corresponds to 6.7% of column deflection.
<b>Manual test procedure</b>	In ISA and cruise conditions, the pilot trims the airplane for straight and level steady flight, records the pitch control position, pitch angle, airspeed and power.
<b>Automatic test procedure</b>	2 c v a

<b>Authority's approval (date, signature and comments)</b>	<b>Operator's approval (date, signature and comments)</b>

<b>Title</b>	Longitudinal trim during cruise		
<b>Id</b>	2 c v a	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

<b>Autopilot mode</b>	AUTO_SPEED
<p>Automatic Vertical Speed and power maintain mode : it changes the attitude through pitch trim value and the power levers to maintain power and VS. Roll Trim is computed to maintain 0° bank angle.</p>	

<b>Initial parameters</b>	CRUISE
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 6000 Vertical speed (ft/min) : 0 IAS (kt) : 139 (free) Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : 0 Pedal Position (%) : 0 Column Position (%) : 9 Wheel Position (%) : 0	Flaps lever position : 0 Gear lever position : 0 Left Load (%) : 70 Right Load (%) : 70 Left RPM : 2060 Right RPM : 2060

Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
15.0	Stop_Test	0.0	Stop the test procedure

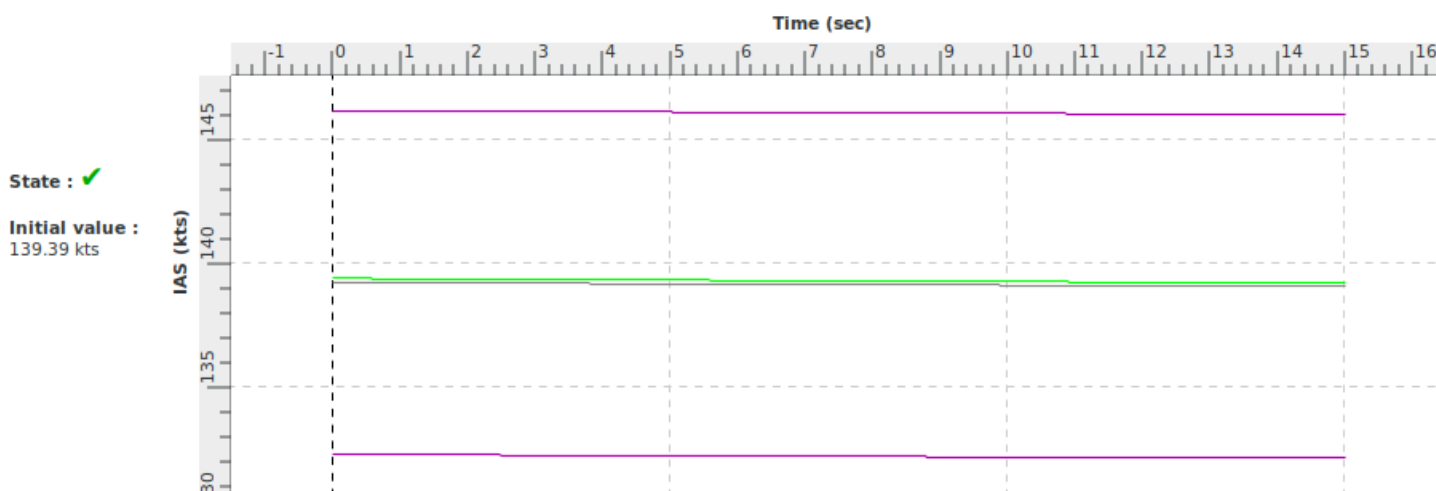
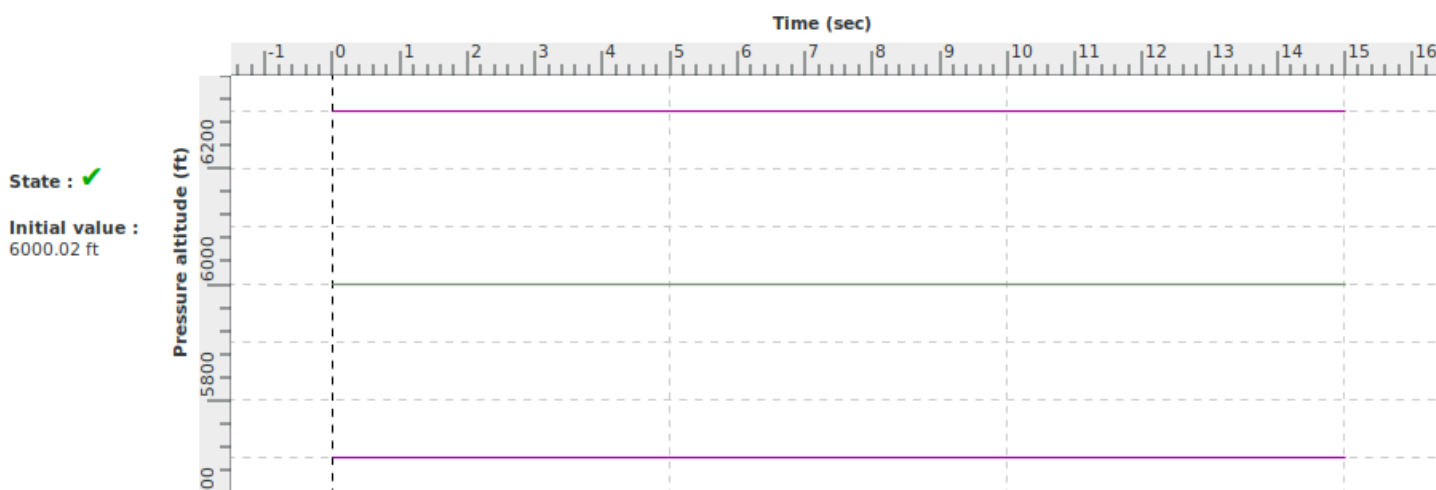
<b>Title</b>	Longitudinal trim during cruise		
<b>Id</b>	2 c v a	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes



Title	Longitudinal trim during cruise		
Id	2 c v a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



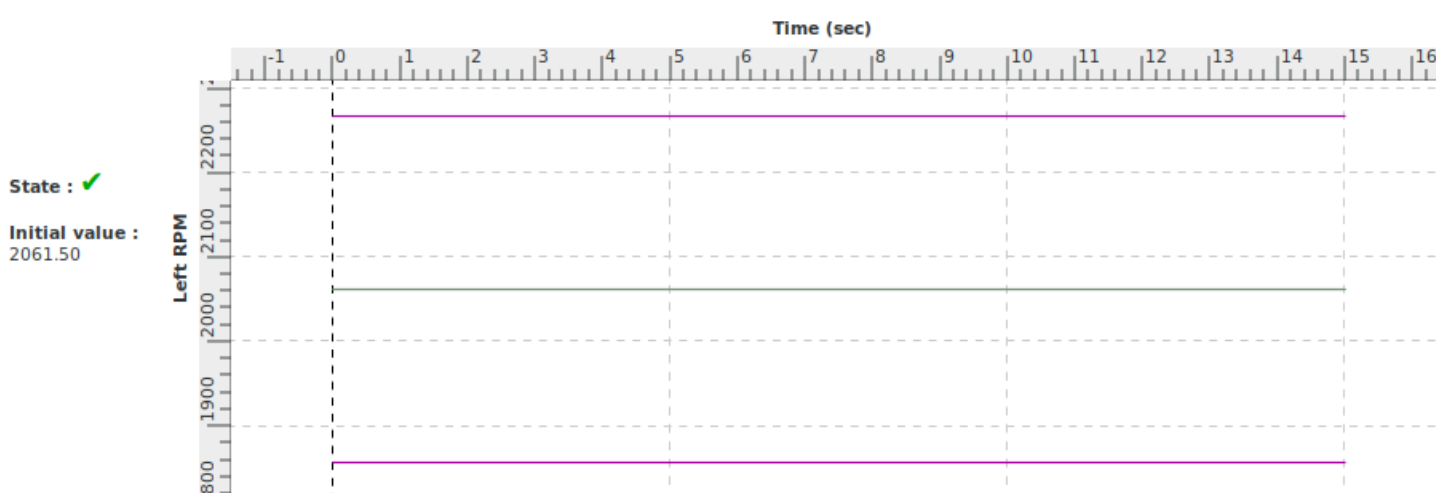
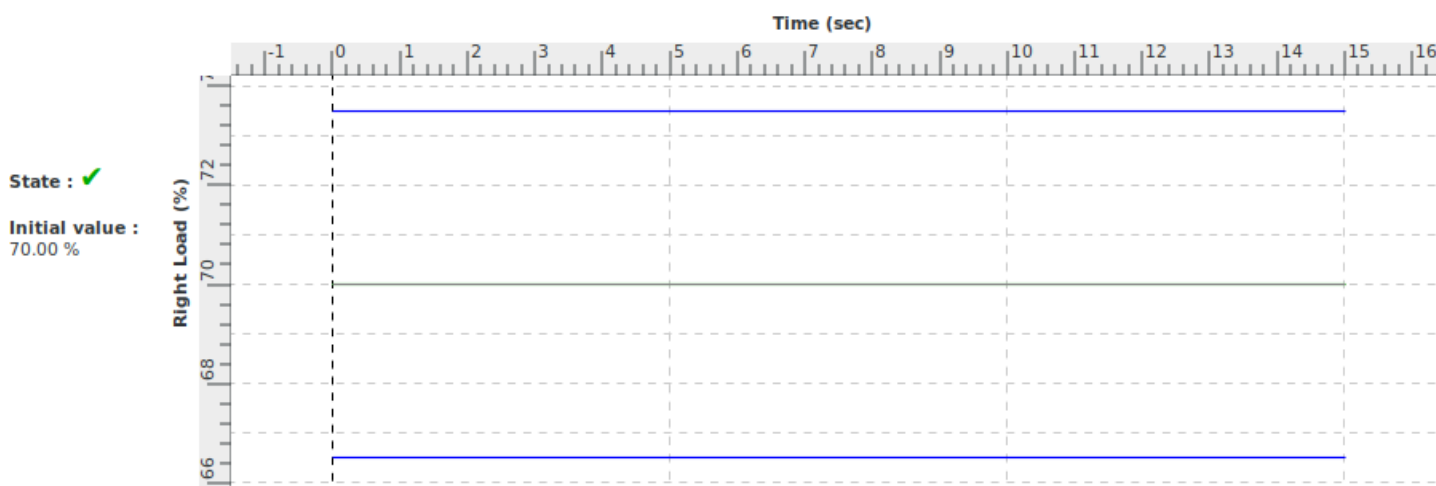
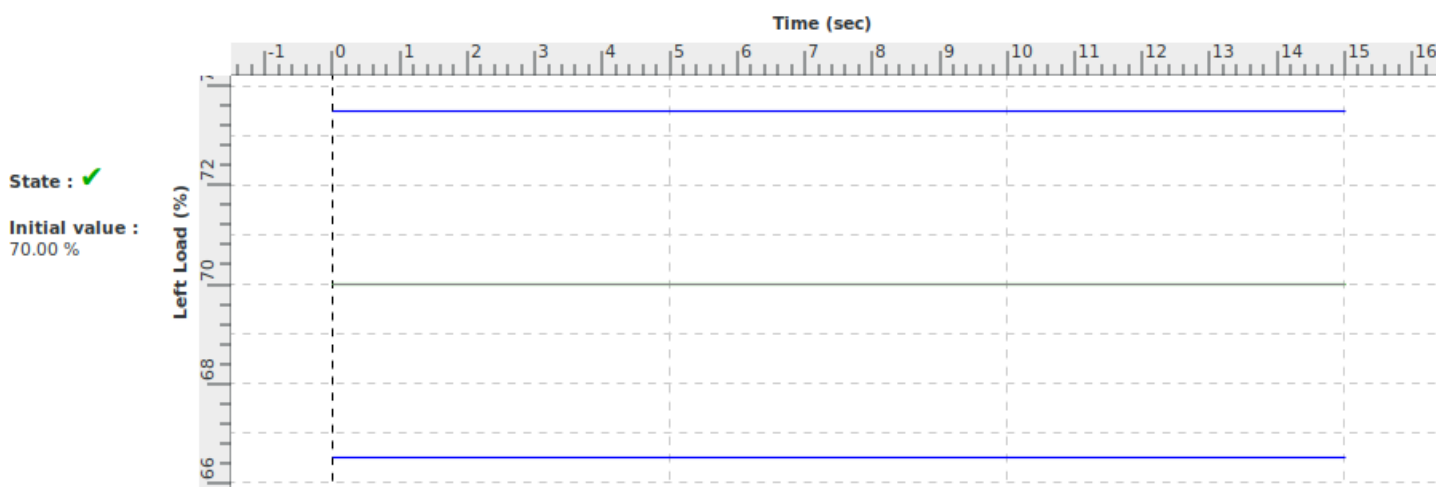
### Legend :

green : results within tolerances  
blue : tolerances

red : results out of tolerances  
violet : tolerances Alsims

grey : master

Title	Longitudinal trim during cruise		
Id	2 c v a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



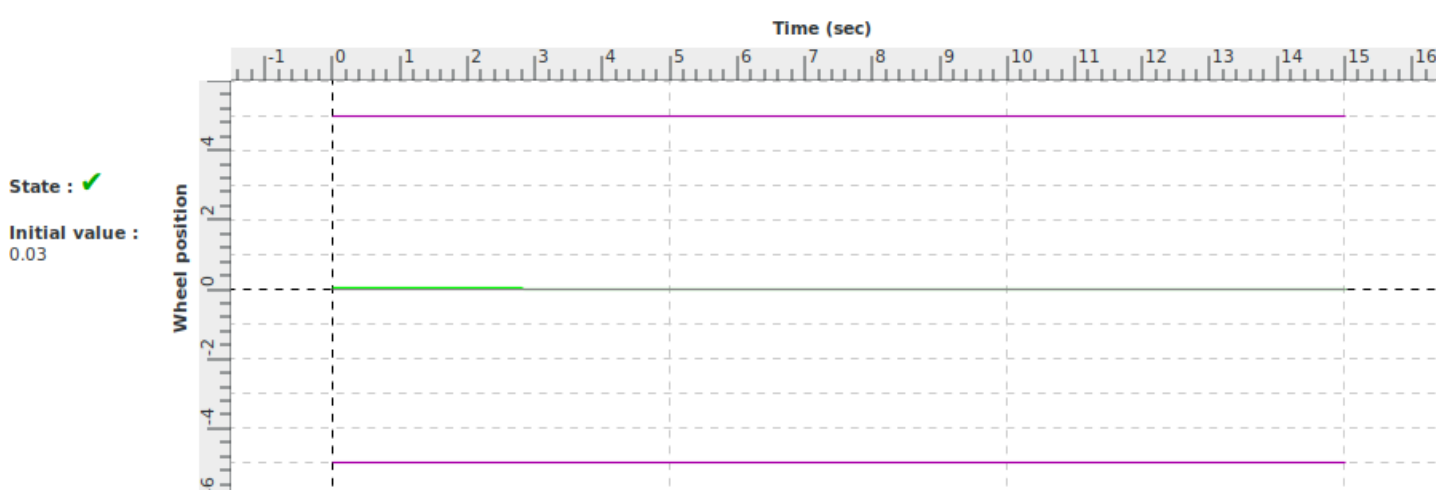
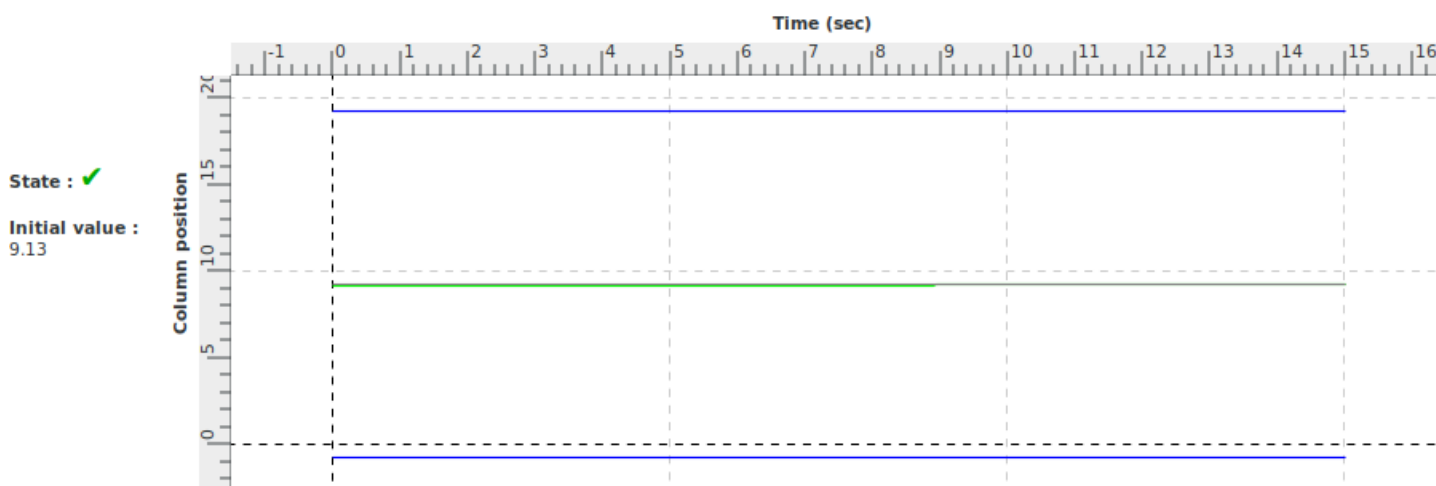
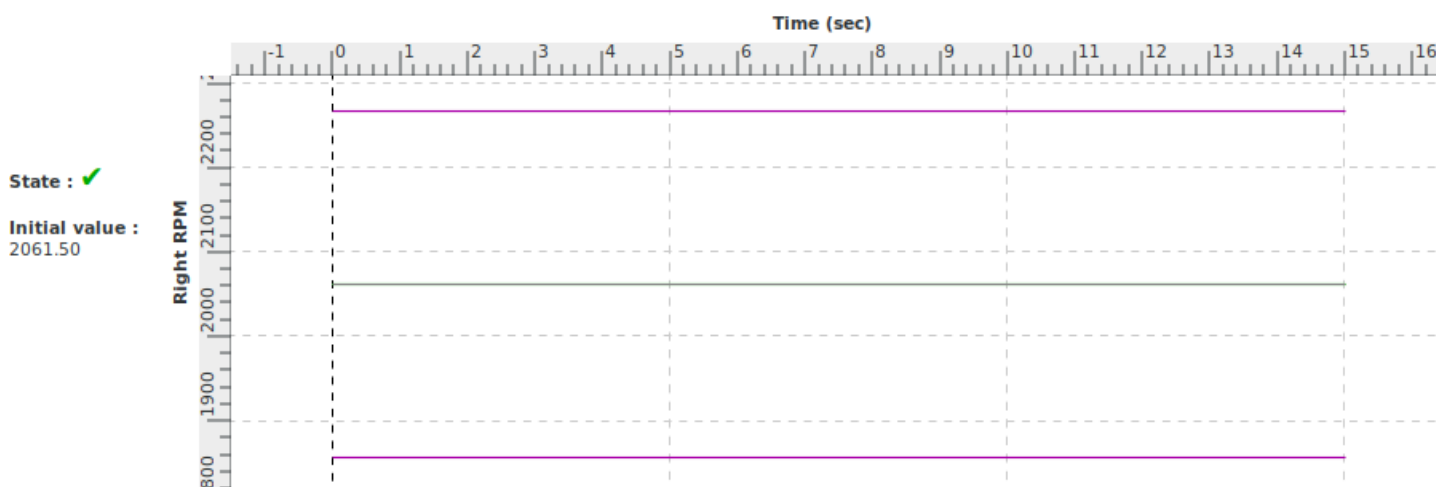
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Title	Longitudinal trim during cruise		
Id	2 c v a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



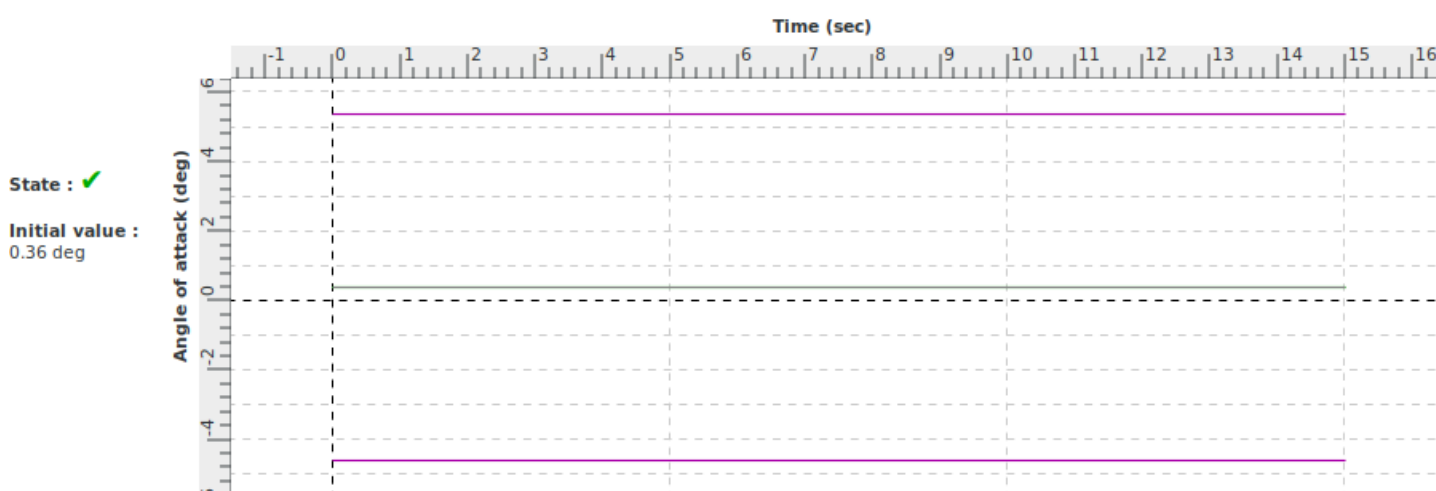
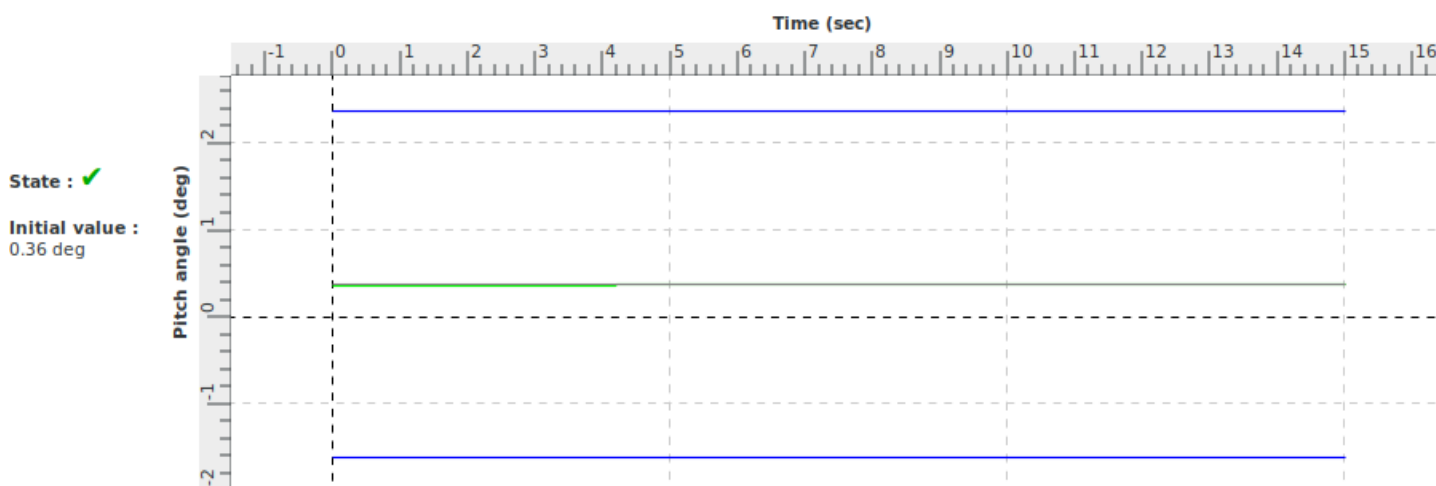
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violet : tolerances Alsim

grey : master

Title	Longitudinal trim during cruise		
Id	2 c v a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



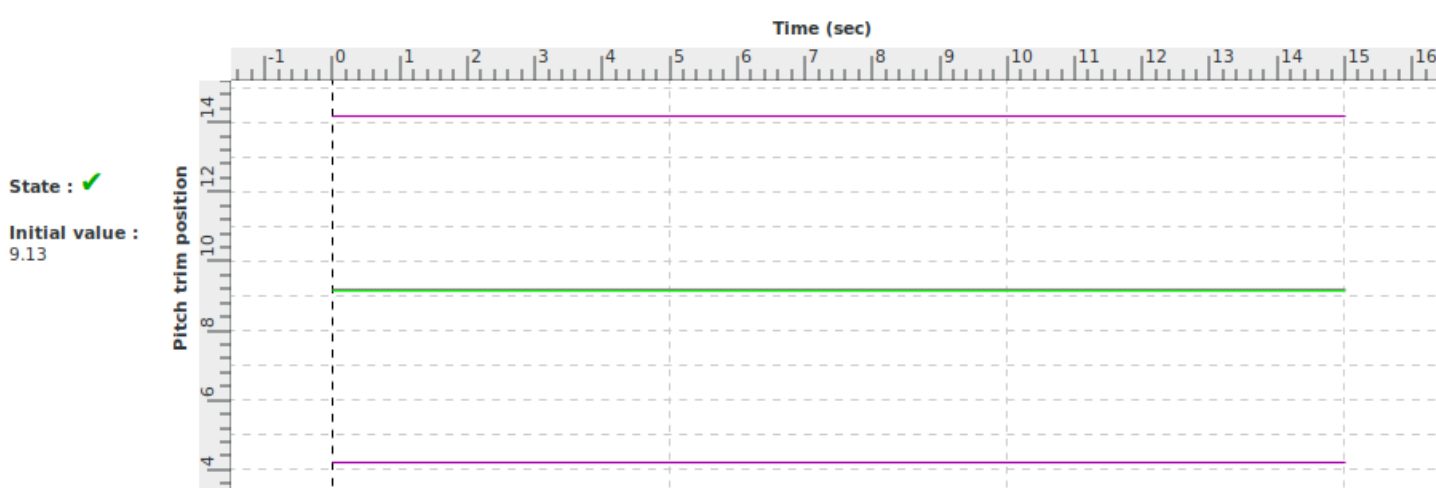
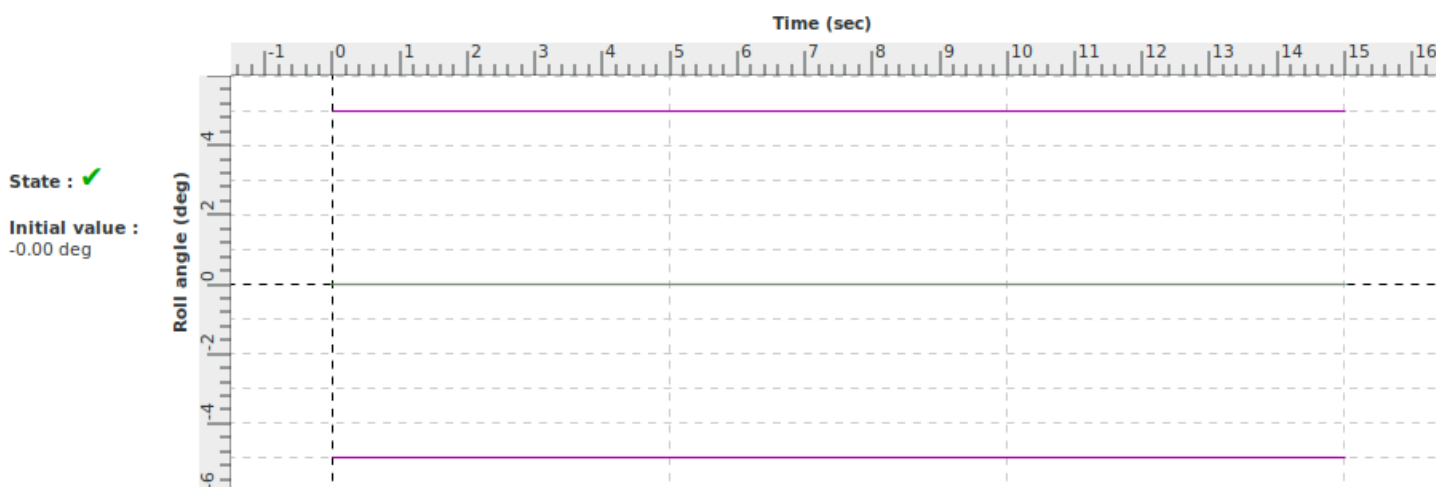
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red : results out of tolerances  
violet : tolerances Alsim

grey : master

Title	Longitudinal trim during cruise		
Id	2 c v a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



### Legend :

green : results within tolerances  
blue : tolerances

red : results out of tolerances  
violet : tolerances Alsिम

grey : master

# VALIDATION TEST

<b>Title</b>	Longitudinal static stability during approach		
<b>Id</b>	2 c v ii	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.01
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	27/07/21
<b>Result Load</b>	2012.01	<b>Master Load</b>	2012.01

<b>Objective</b>	<b>Expected Results</b>
Demonstrate that the simulator static longitudinal stability characteristics conforms to the class of aeroplanes	At 110 kts: Column force -1.9 N At 100 kts: Column force +3.5 N At 120 kts: Column force -6.7 N At 105 kts: Column force +1.4 N
<b>Reference</b>	<b>Evaluation Criteria</b>
Chapter 12 - Validation data - Handling Qualities - Test 2.c.vii	+/- 2.2 daN (5Lbs) or +/- 10% Force

<b>Demonstration procedure</b>	From steady approach initial conditions, a longitudinal control step is applied to achieve a deviation from the trimmed airspeed whilst maintaining wings level. Longitudinal control force is used to maintain a steady state condition at two speeds above and two speeds below the initial trim airspeed.
<b>Manual test procedure</b>	In ISA conditions and approach configuration, the pilot trims the aircraft. Then, the pilot decreases and increases the IAS (until the new IAS value is stable) through pitch angle to maintain the desired IAS.
<b>Automatic test procedure</b>	2 c v ii

<b>Authority's approval (date, signature and comments)</b>	<b>Operator's approval (date, signature and comments)</b>

Title	Longitudinal static stability during approach		
Id	2 c v ii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.01
Qualification Level	FNPT2	Operator	AFTA
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Autopilot mode	AUTO_VZ
Automatic IAS (airspeed) and power maintain mode : it changes the attitude through pitch trim value and the power levers to maintain power and IAS. Roll Trim is computed to maintain 0° bank angle.	

Initial parameters	HOLD_FLAPS_APP_GEAR
Gross weight (kg) : 1900	Flaps lever position : 1
Balance (%) : 50	Gear lever position : 1
Altitude (ft) : 3000	Left Load (%) : 70
Vertical speed (ft/min) : 0 (free)	Right Load (%) : 70
IAS (kt) : 106	Left RPM : 2060
Heading (°) : 0 (free)	Right RPM : 2060
Bank (°) : 0	
Attitude (°) : -1	
Pedal Position (%) : 0	
Column Position (%) : 32	
Wheel Position (%) : 0	

Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	mode_freeze	1.0	Set the aircraft to freeze mode
5.0	SetSpeed	110.0	Ask the QTG Autopilot to maintain the desired speed
40.0	SetSpeed	100.0	Ask the QTG Autopilot to maintain the desired speed
75.0	SetSpeed	120.0	Ask the QTG Autopilot to maintain the desired speed
110.0	SetSpeed	105.0	Ask the QTG Autopilot to maintain the desired speed
145.0	Stop_Test	0.0	Stop the test procedure

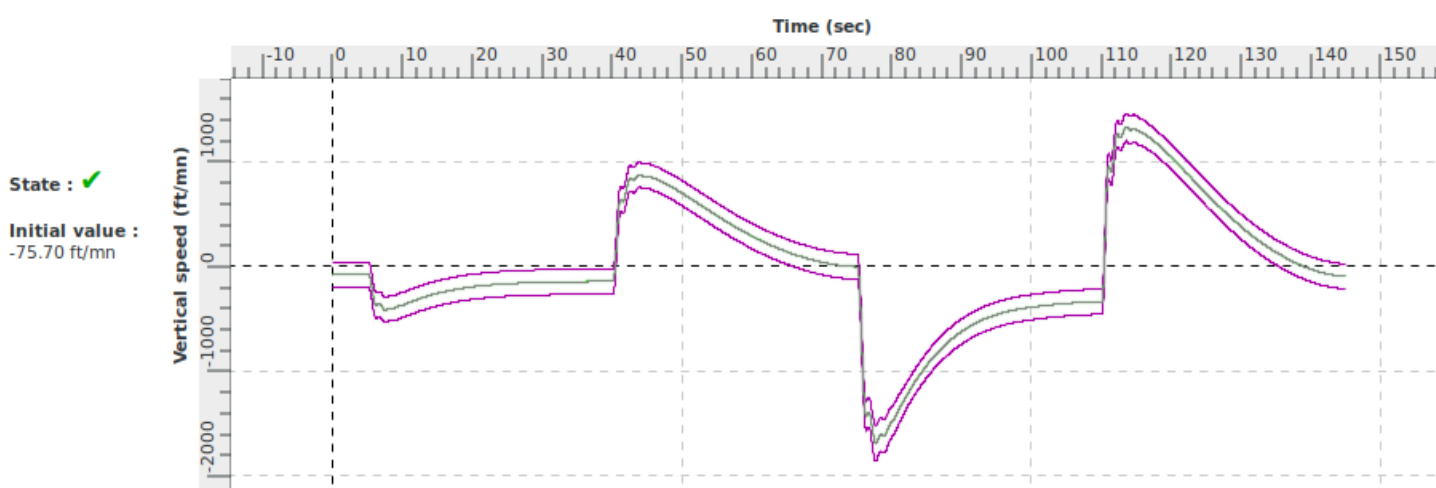
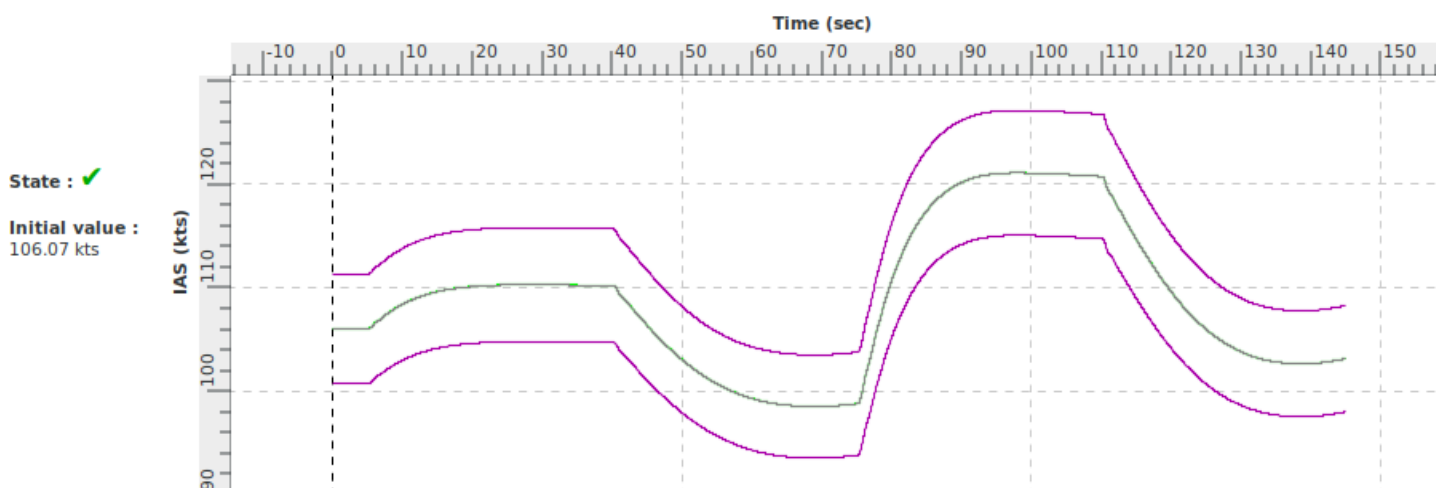
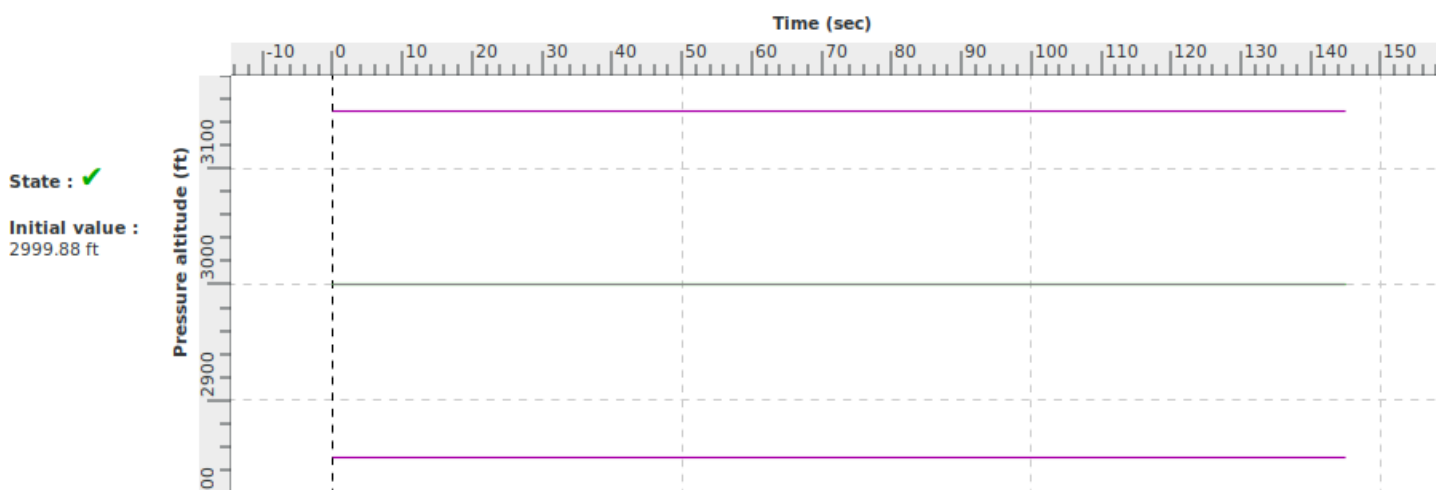
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<b>Id</b>	2 c v ii	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.01
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	27/07/21
<b>Result Load</b>	2012.01	<b>Master Load</b>	2012.01

Log of Revision		
Rev. Nbr	Date	Reason for revision
1.01	27/07/21	2012-R1 Master. Expected results unchanged.

Notes



Title	Longitudinal static stability during approach		
Id	2 c v ii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.01
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



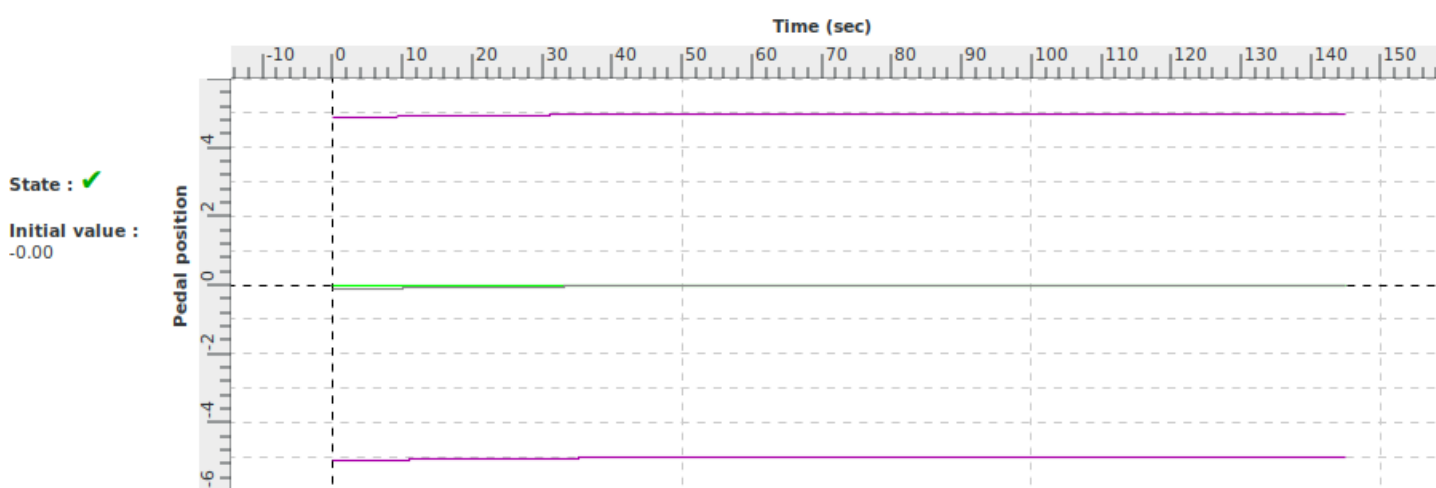
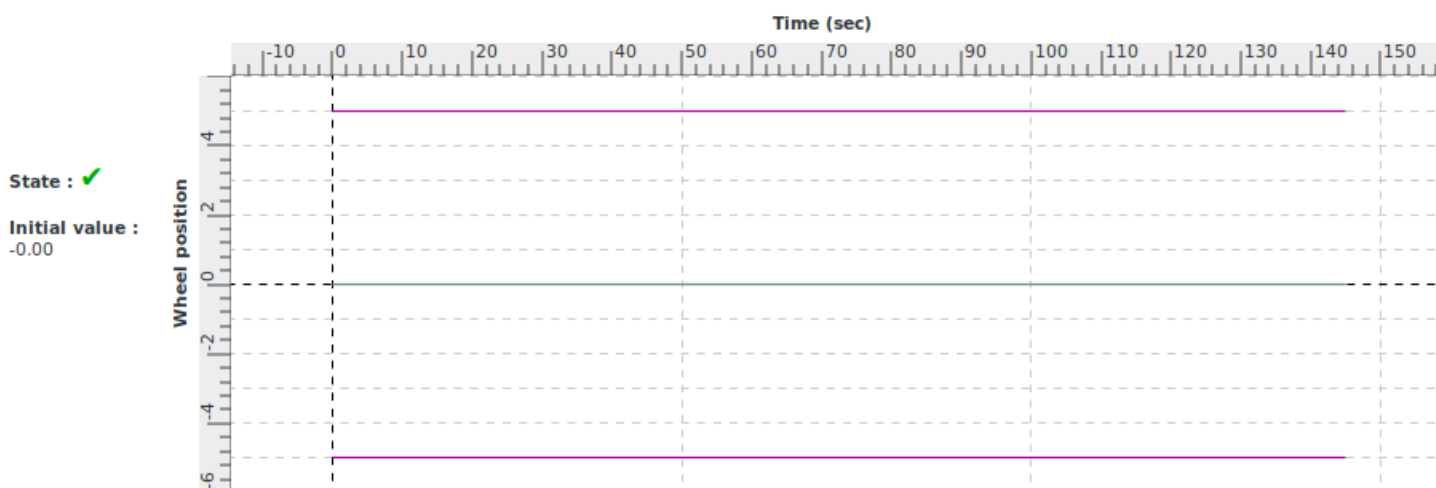
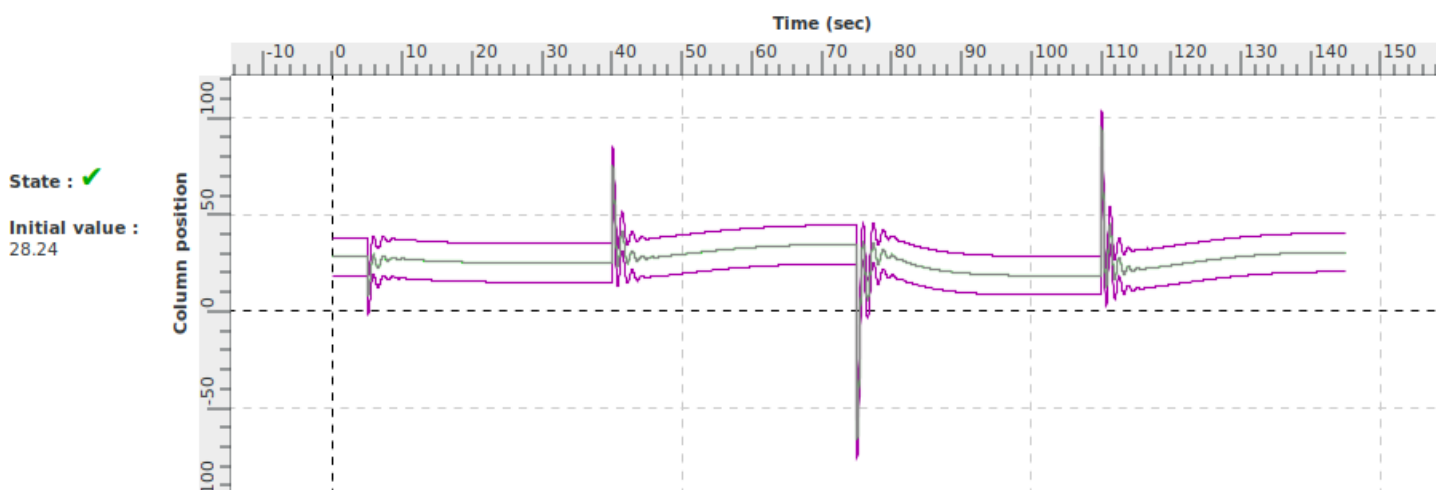
#### Legend :

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grey : master

Title	Longitudinal static stability during approach		
Id	2 c v ii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.01
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



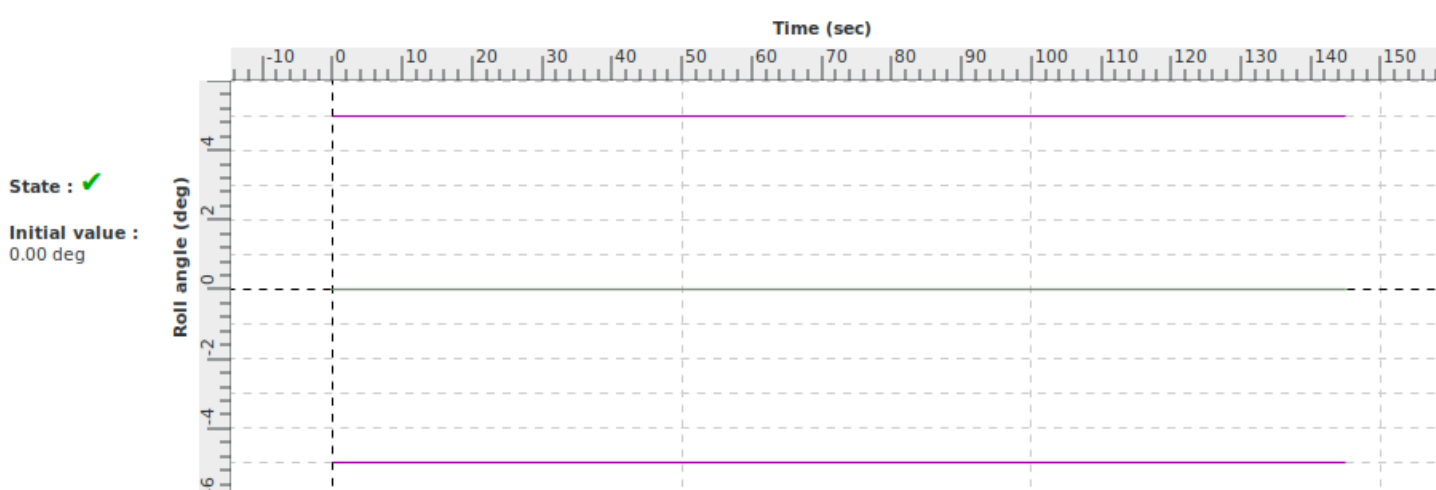
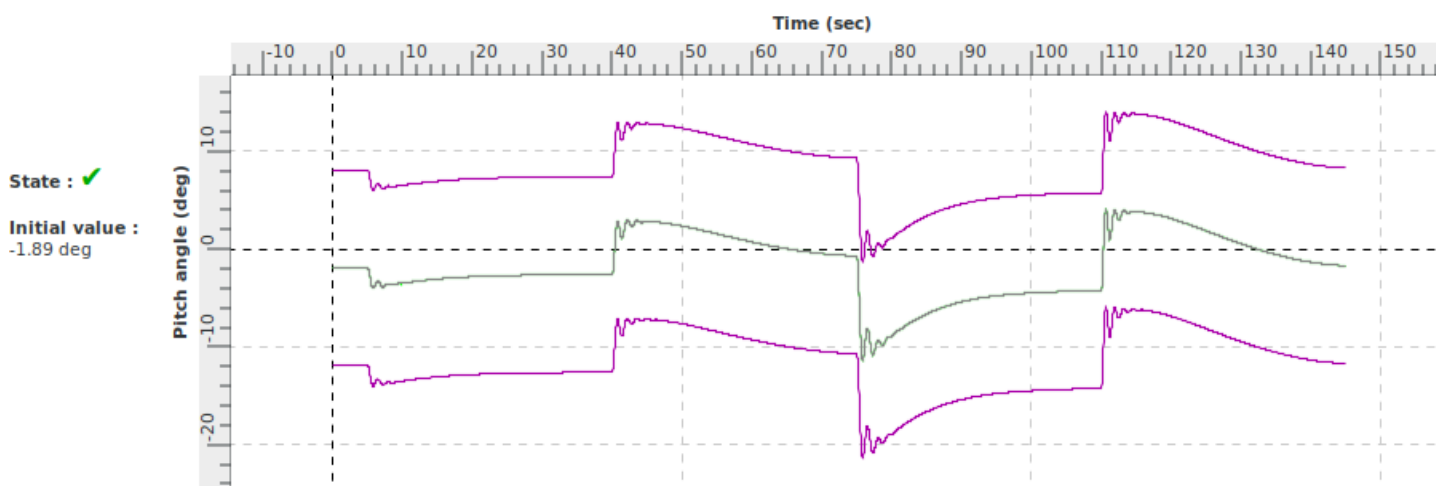
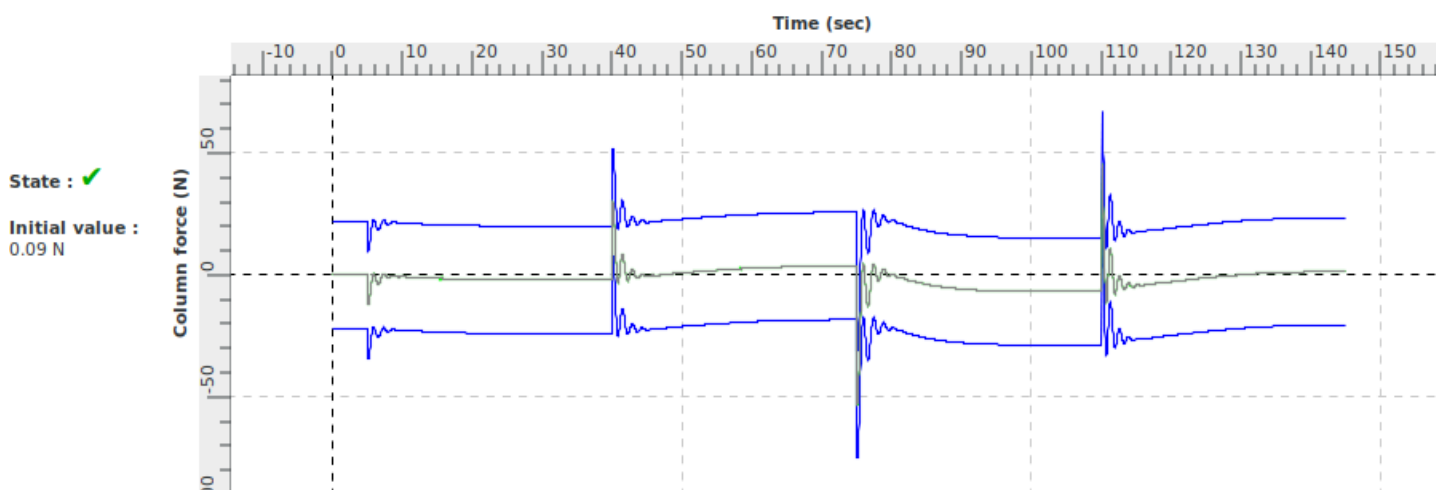
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violet : tolerances Alsim

grey : master

Title	Longitudinal static stability during approach		
Id	2 c v ii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.01
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



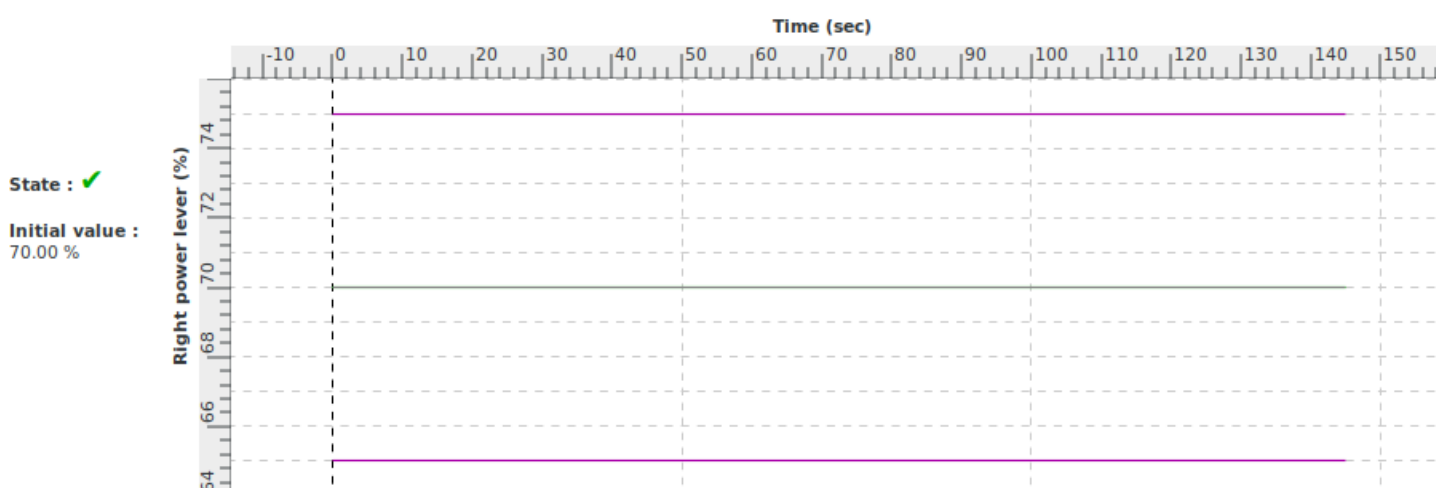
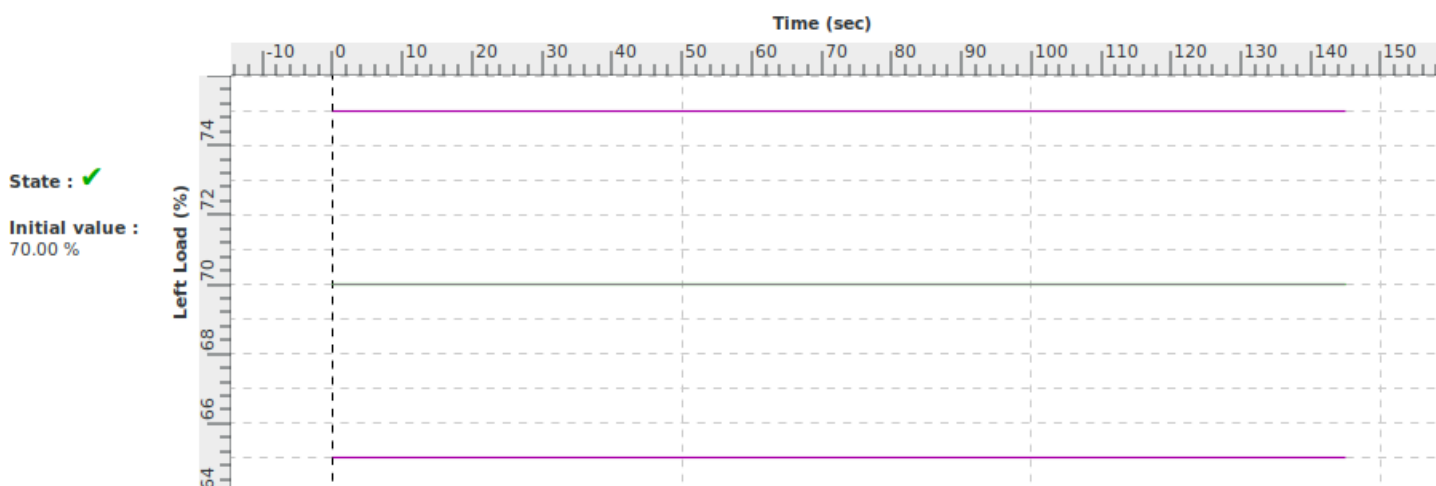
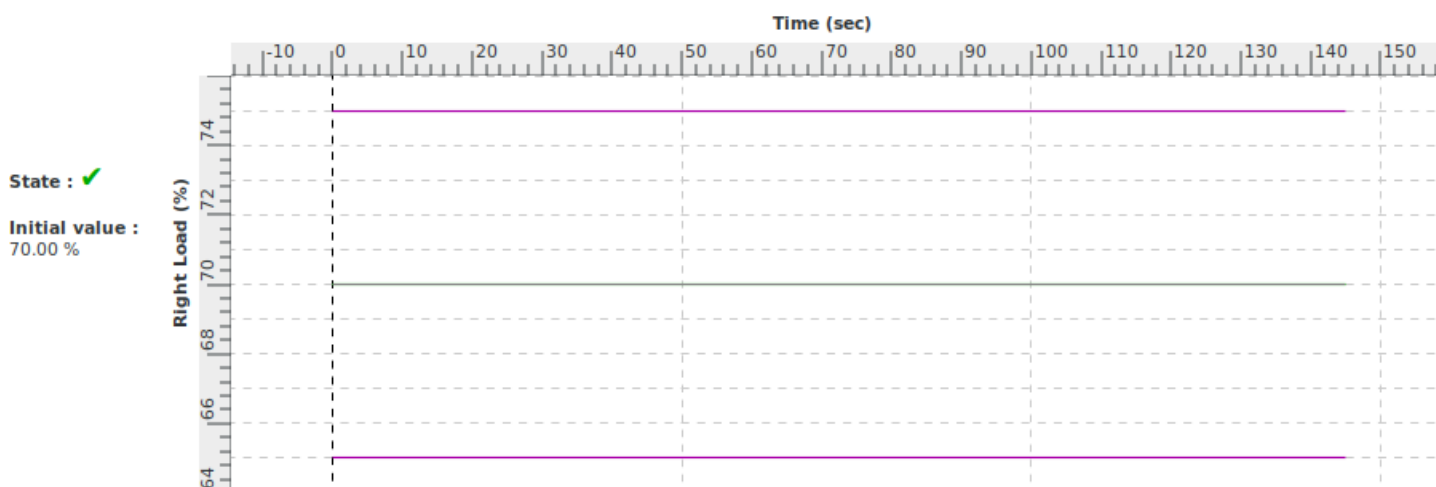
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violet : tolerances Alsim

grey : master

Title	Longitudinal static stability during approach		
Id	2 c v ii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.01
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



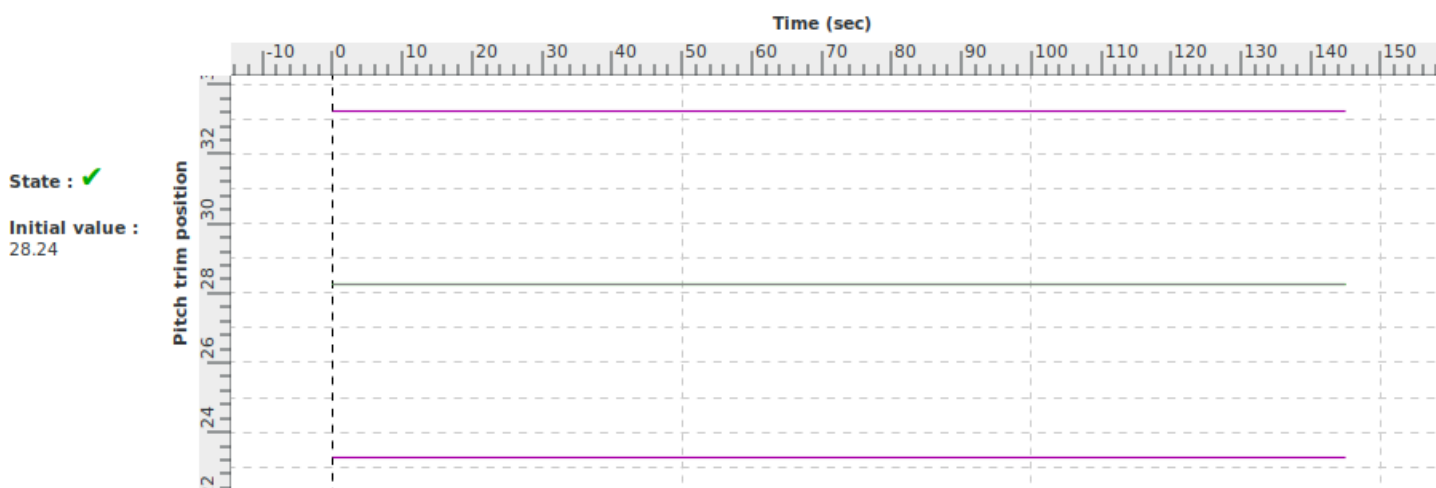
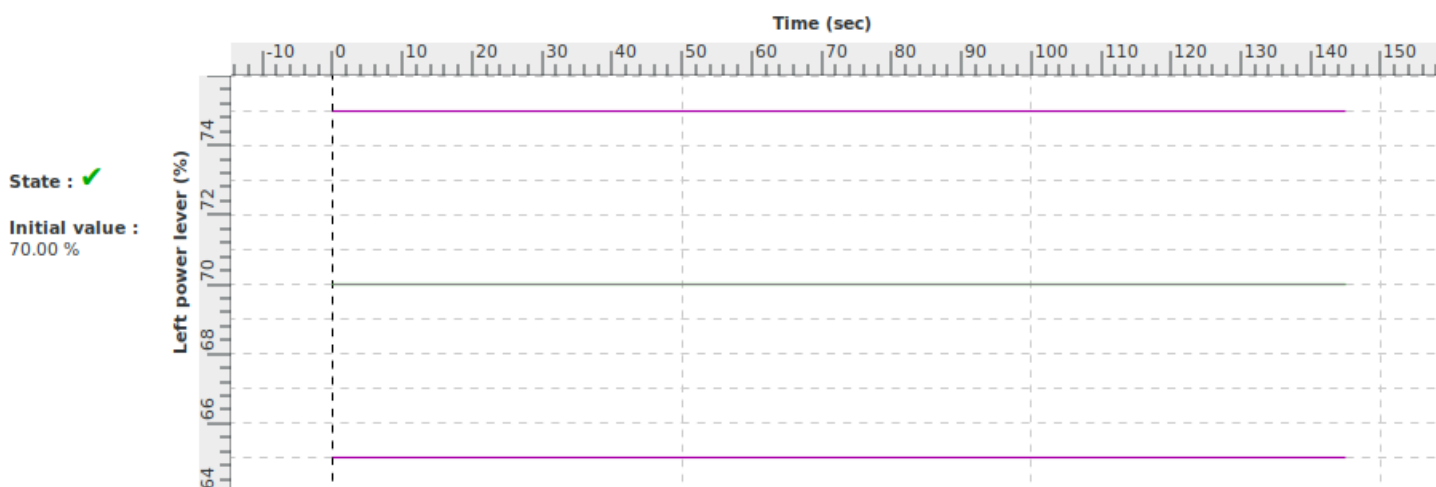
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red : results out of tolerances  
violet : tolerances Alsिम

grey : master

Title	Longitudinal static stability during approach		
Id	2 c v ii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.01
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



### Legend :

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blue : tolerances

red : results out of tolerances  
violet : tolerances Alsim

grey : master

# VALIDATION TEST

<b>Title</b>	Phugoid dynamics during cruise		
<b>Id</b>	2 c ix	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

<b>Objective</b>	<b>Expected Results</b>
Demonstrate that the simulator phugoid dynamic characteristics during cruise conform to the class of aeroplanes	Period: 50 sec approx Time to half amplitude: 66 sec approx. (results to be determined using the Table Sheet AL42_DA42VI_Tables_QTG_VolIII.xls)
<b>Reference</b>	<b>Evaluation Criteria</b>
Chapter 12 - Validation data - Handling Qualities - Test 2.c.ix	+/- 10 % Period +/- 10 % Time to 1/2 amplitude or +/- .02 of Damping ratio

<b>Demonstration procedure</b>	From steady cruise initial conditions, a pitch control step input is applied in order to trim the aeroplane to a lower speed and to excite phugoid mode. The period and half amplitude must be computed manually using the "Plot" function available on the graphs and compared with expected results. Tolerances proposed by Alsim on relevant graphs are more restrictive than required ones.
<b>Manual test procedure</b>	The pilot trims airplane at cruise. When transient disappeared, the pilot excites the longitudinal oscillations by the impulse on the control column.
<b>Automatic test procedure</b>	2 c ix

<b>Authority's approval (date, signature and comments)</b>	<b>Operator's approval (date, signature and comments)</b>

Title	Phugoid dynamics during cruise		
Id	2 c ix	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Autopilot mode	AUTO_SPEED
Automatic Vertical Speed and power maintain mode : it changes the attitude through pitch trim value and the power levers to maintain power and VS. Roll Trim is computed to maintain 0° bank angle.	

Initial parameters	CRUISE
Gross weight (kg) : 1900	Flaps lever position : 0
Balance (%) : 50	Gear lever position : 0
Altitude (ft) : 6000	Left Load (%) : 70
Vertical speed (ft/min) : 0	Right Load (%) : 70
IAS (kt) : 139 (free)	Left RPM : 2060
Heading (°) : 0 (free)	Right RPM : 2060
Bank (°) : 0	
Attitude (°) : 0	
Pedal Position (%) : 0	
Column Position (%) : 9	
Wheel Position (%) : 0	

Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
0.0	deconnectionPA_roll	0.0	disable QTG Autopilot in roll axis
0.0	deconnectionPA_rudder	0.0	disable QTG Autopilot in yaw axis
5.0	SetAttCmdPalier	10.0	Send a step in the attitude govern
8.0	SetAttCmdPalier	0.0	Send a step in the attitude govern
150.0	Stop_Test	0.0	Stop the test procedure

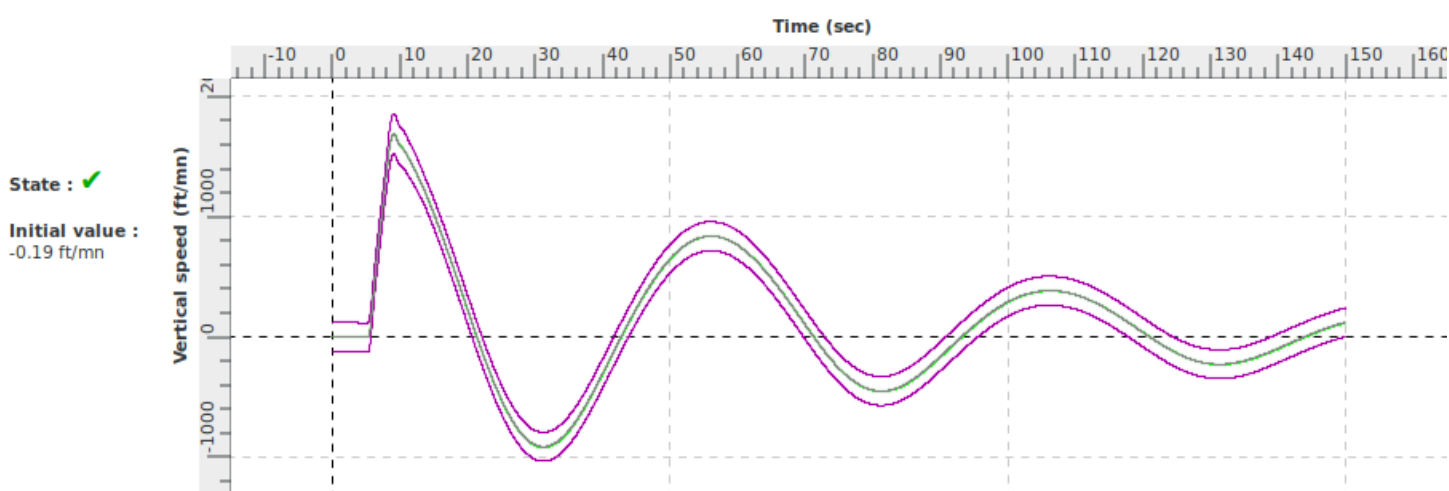
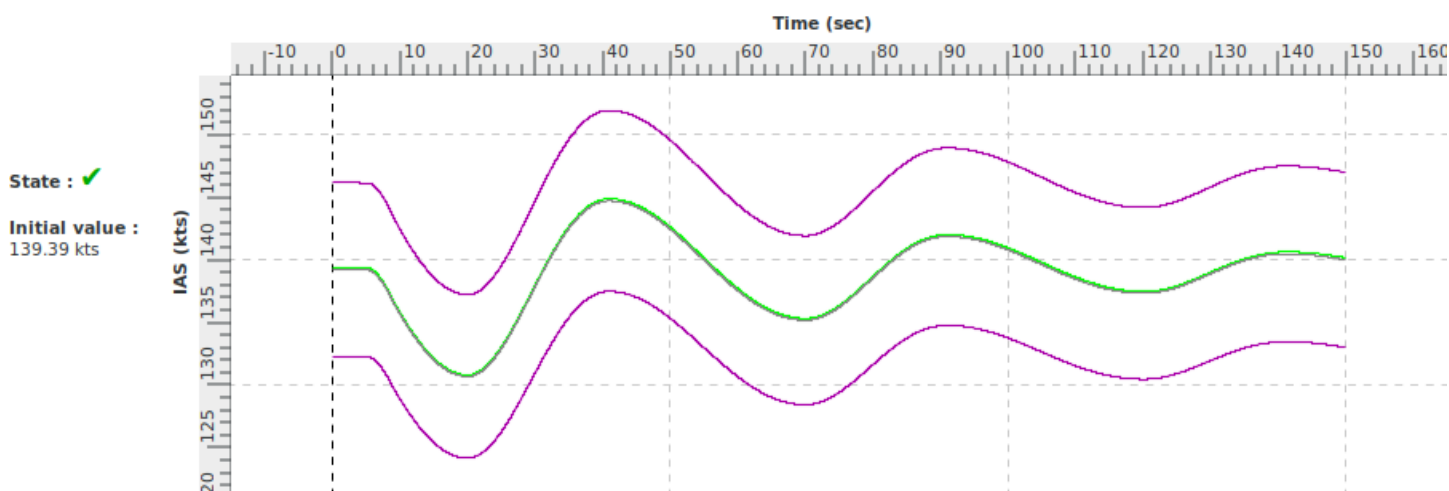
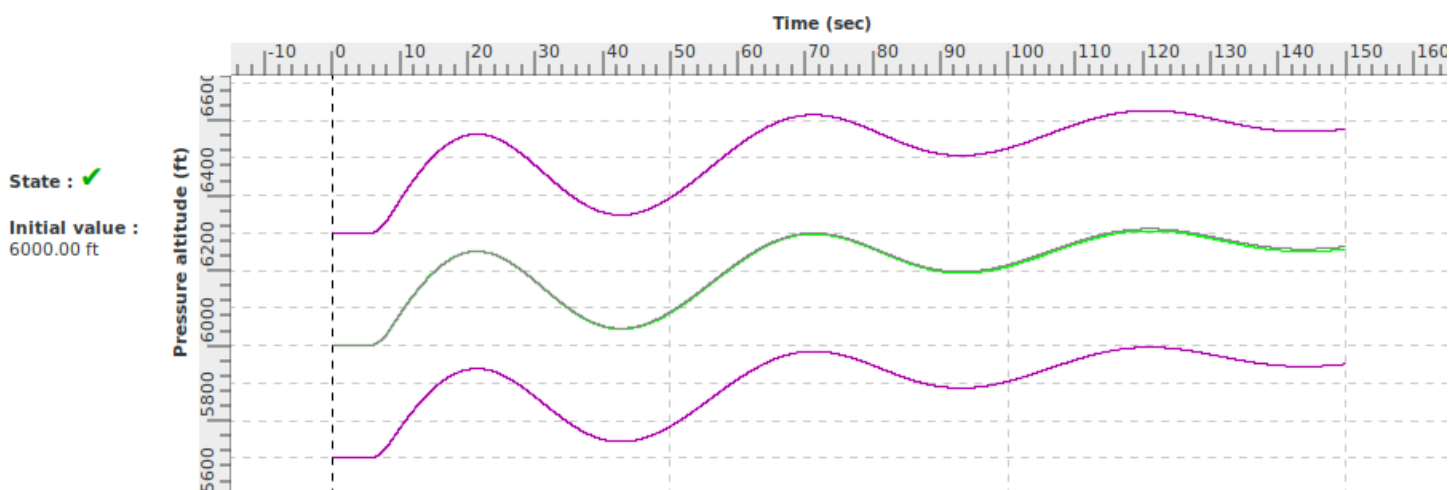
<b>Title</b>	Phugoid dynamics during cruise		
<b>Id</b>	2 c ix	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes



Title	Phugoid dynamics during cruise		
Id	2 c ix	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



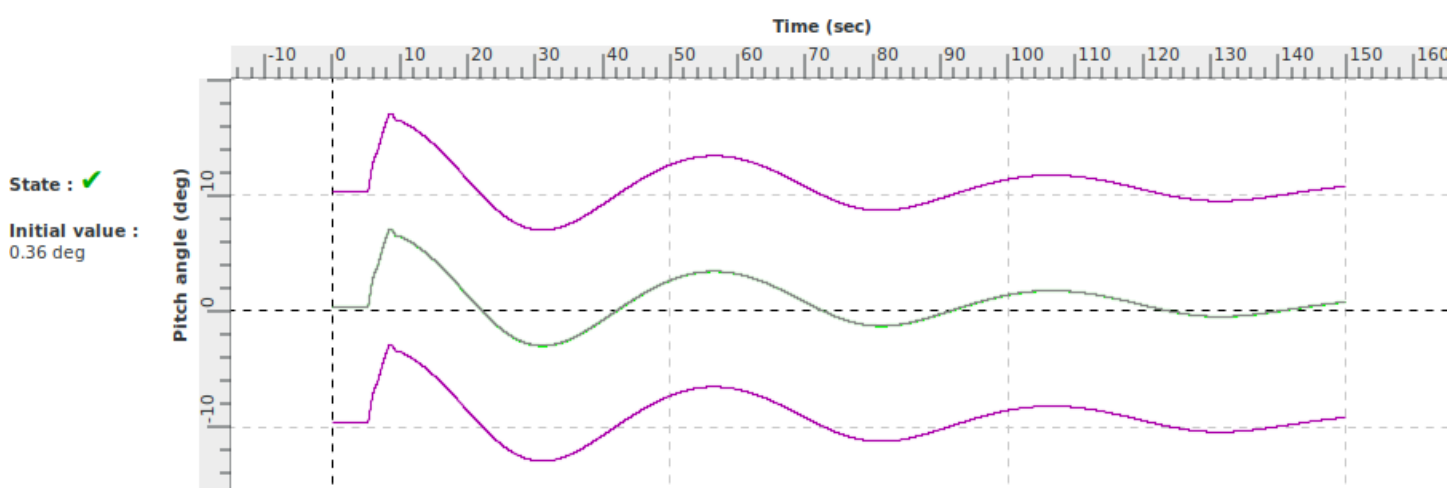
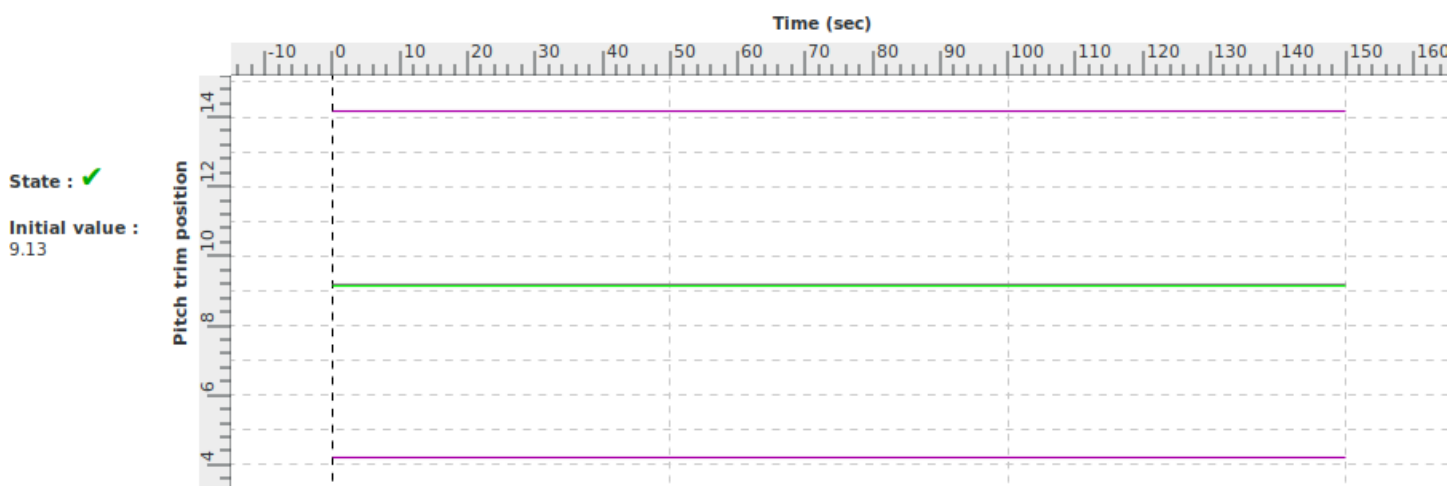
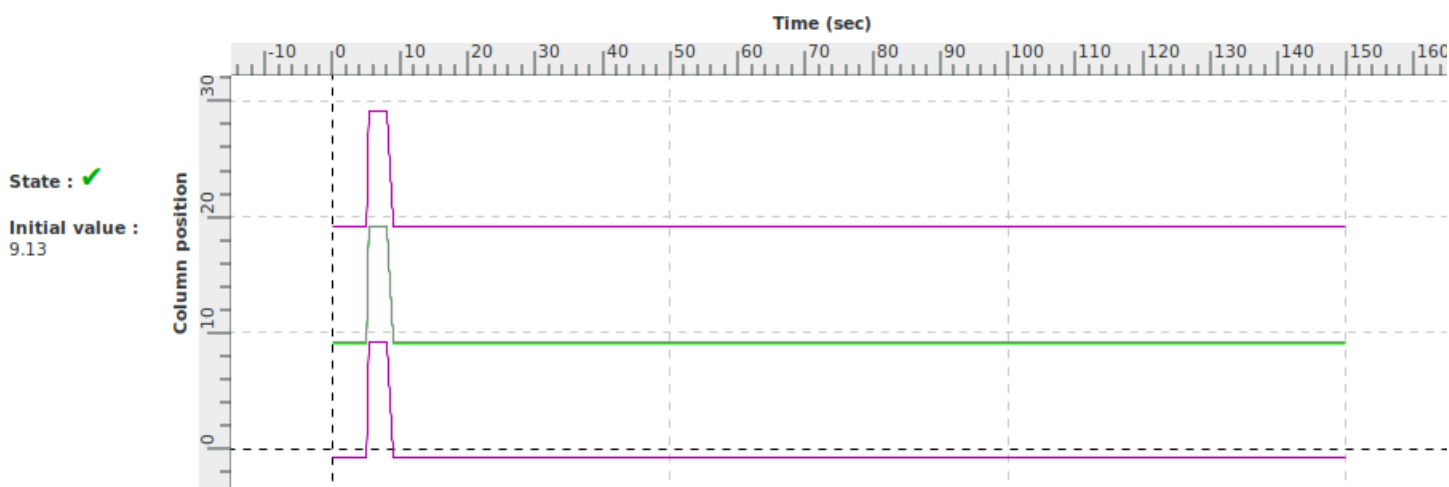
### Legend :

green : results within tolerances  
blue : tolerances

red : results out of tolerances  
violet : tolerances Alsim

grey : master

Title	Phugoid dynamics during cruise		
Id	2 c ix	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



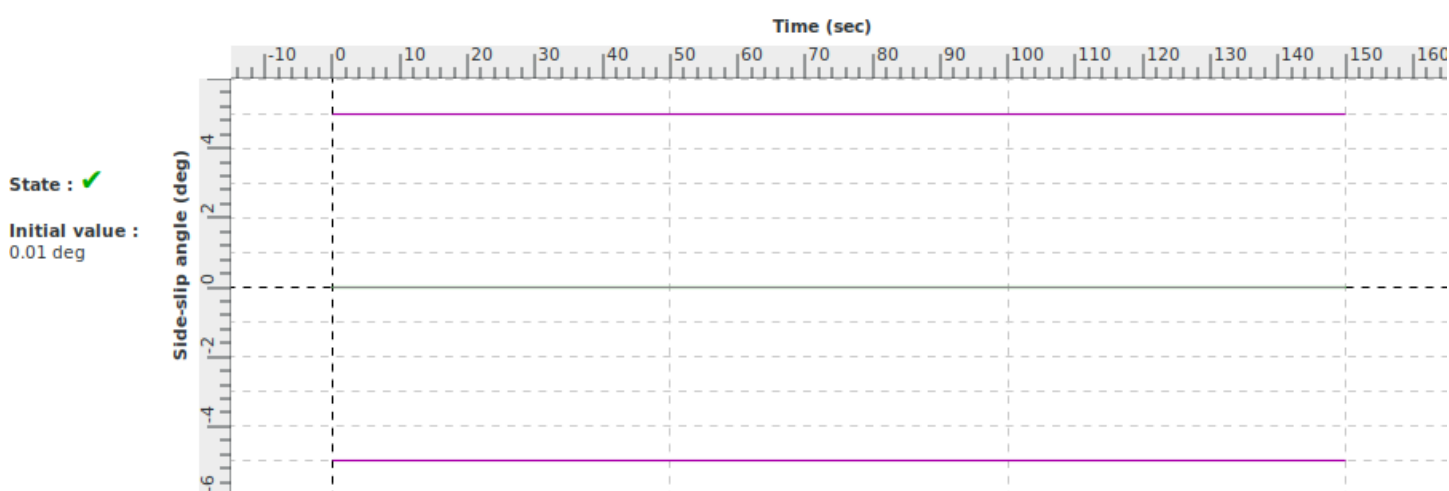
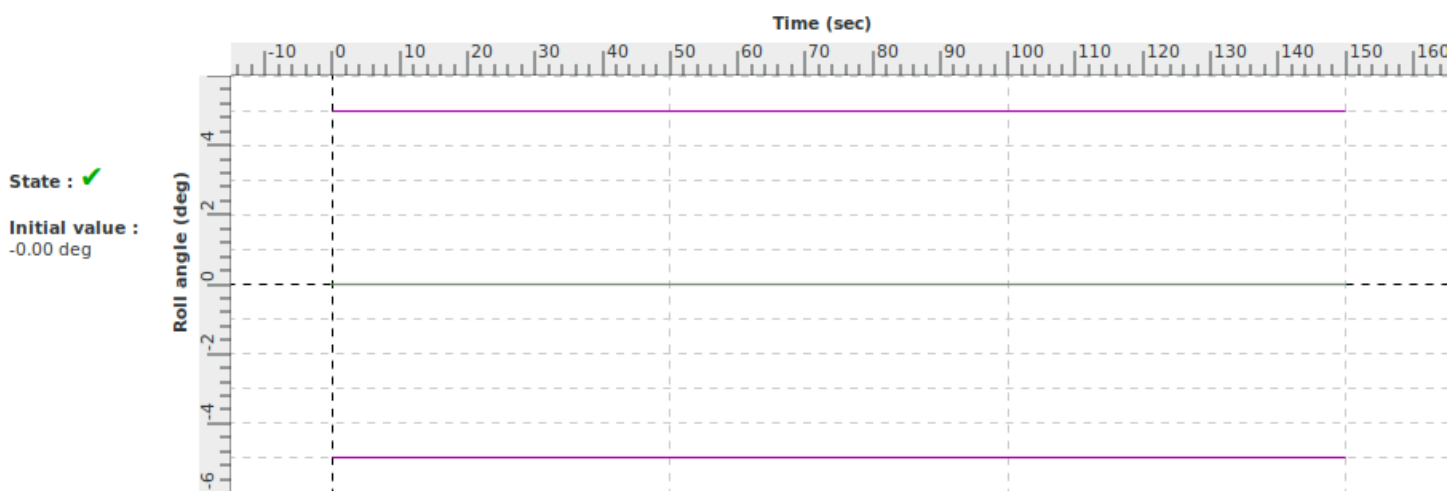
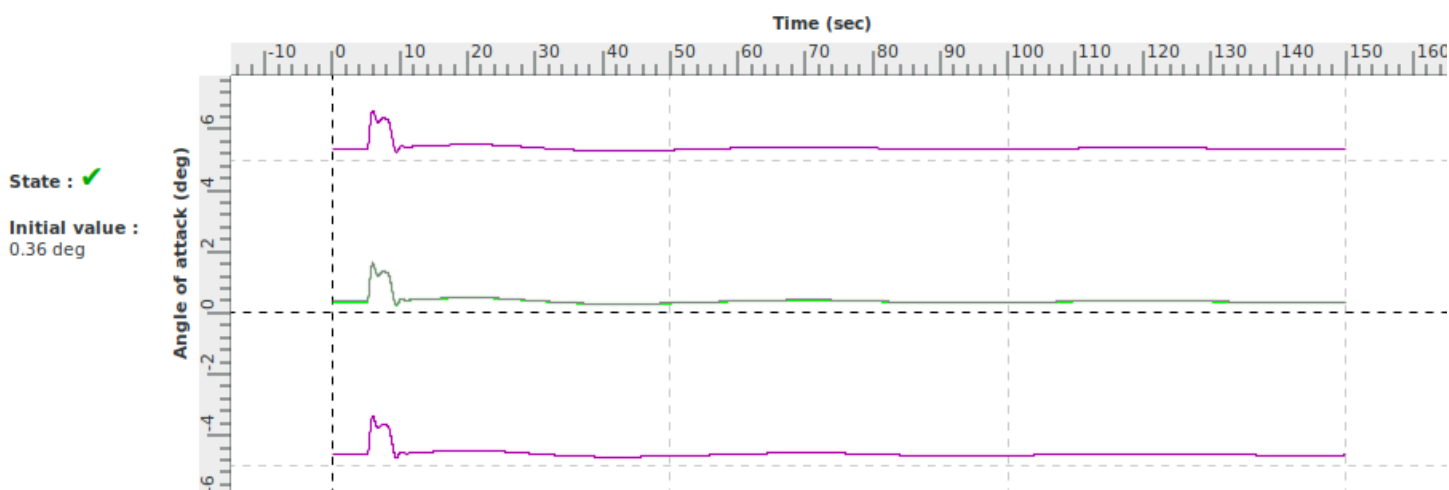
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violet : tolerances Alsim

grey : master

Title	Phugoid dynamics during cruise		
Id	2 c ix	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



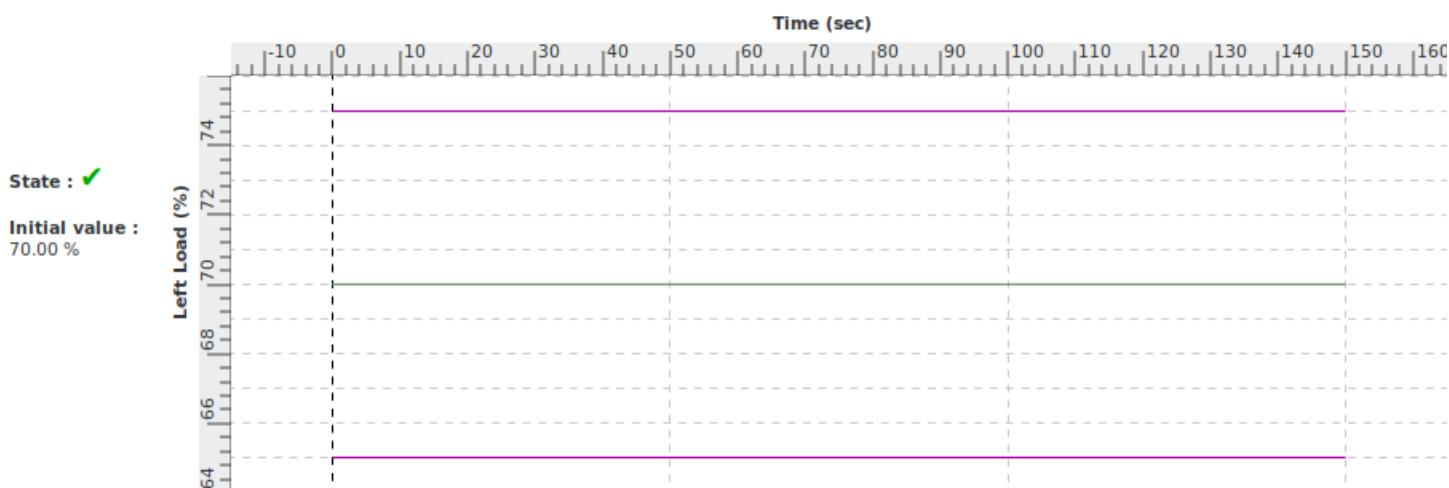
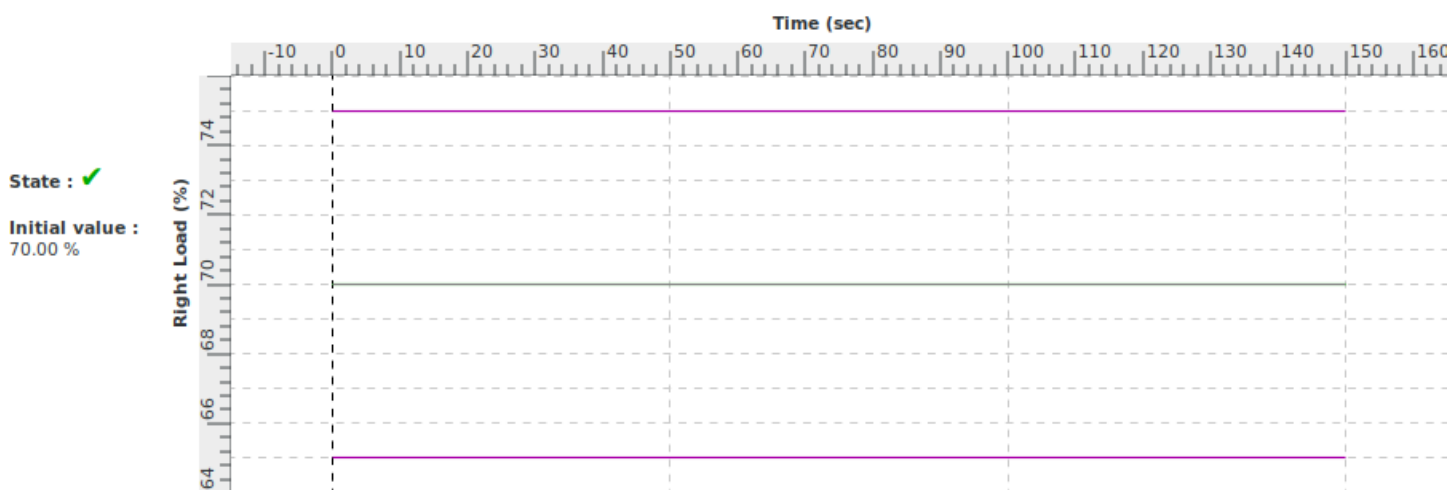
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violet : tolerances Alsimsim

grey : master

Title	Phugoid dynamics during cruise		
Id	2 c ix	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



### Legend :

green : results within tolerances  
blue : tolerances

red : results out of tolerances  
violet : tolerances Alsim

grey : master

# VALIDATION TEST

<b>Title</b>	Roll response rate during approach		
<b>Id</b>	2 d ii b	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

<b>Objective</b>	<b>Expected Results</b>
Demonstrate that the simulator roll rate response to roll control input conforms to the class of aeroplanes	+/-5 deg/sec Roll rate 20 % Wheel deflection
<b>Reference</b>	<b>Evaluation Criteria</b>
Chapter 12 - Validation data - Handling Qualities - Test 2.d.ii.b	+/- 2°/s or +/-10% Roll Rate

<b>Demonstration procedure</b>	From steady approach initial conditions, a wheel deflection step input of about 20% of maximum is applied for the two directions left then right.
<b>Manual test procedure</b>	In ISA conditions and approach condition, the pilot trims the airplane for approach. When approach is stabilised, the pilot moves the wheel 20% of total travel keeping constant control deflection until about 10° of bank angle and the pilot slightly returns to null deflection. Then the pilot performs the same manoeuvre in the opposite direction using wheel deflection as required.
<b>Automatic test procedure</b>	2 d ii b

<b>Authority's approval (date, signature and comments)</b>	<b>Operator's approval (date, signature and comments)</b>

Title	Roll response rate during approach		
<b>Id</b>	2 d ii b	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

<b>Autopilot mode</b>	AUTO_VZ
<p>Automatic IAS (airspeed) and power maintain mode : it changes the attitude through pitch trim value and the power levers to maintain power and IAS. Roll Trim is computed to maintain 0° bank angle.</p>	

<b>Initial parameters</b>	HOLD_FLAPS_APP_GEAR
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : 0 (free) IAS (kt) : 106 Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : -1 Pedal Position (%) : 0 Column Position (%) : 32 Wheel Position (%) : 0	Flaps lever position : 1 Gear lever position : 1 Left Load (%) : 70 Right Load (%) : 70 Left RPM : 2060 Right RPM : 2060

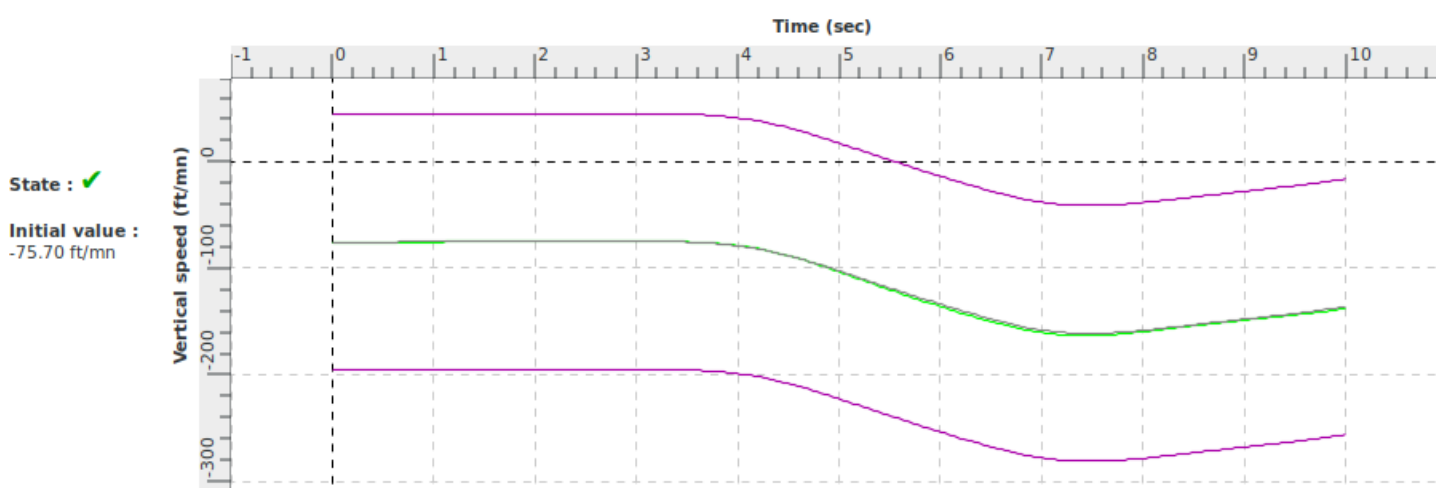
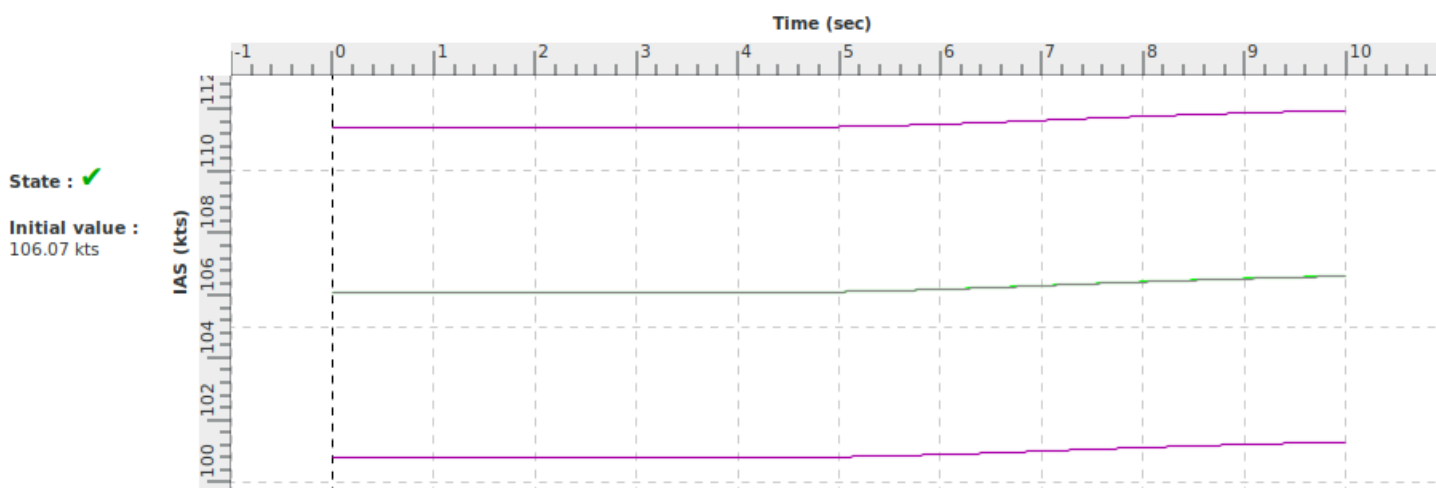
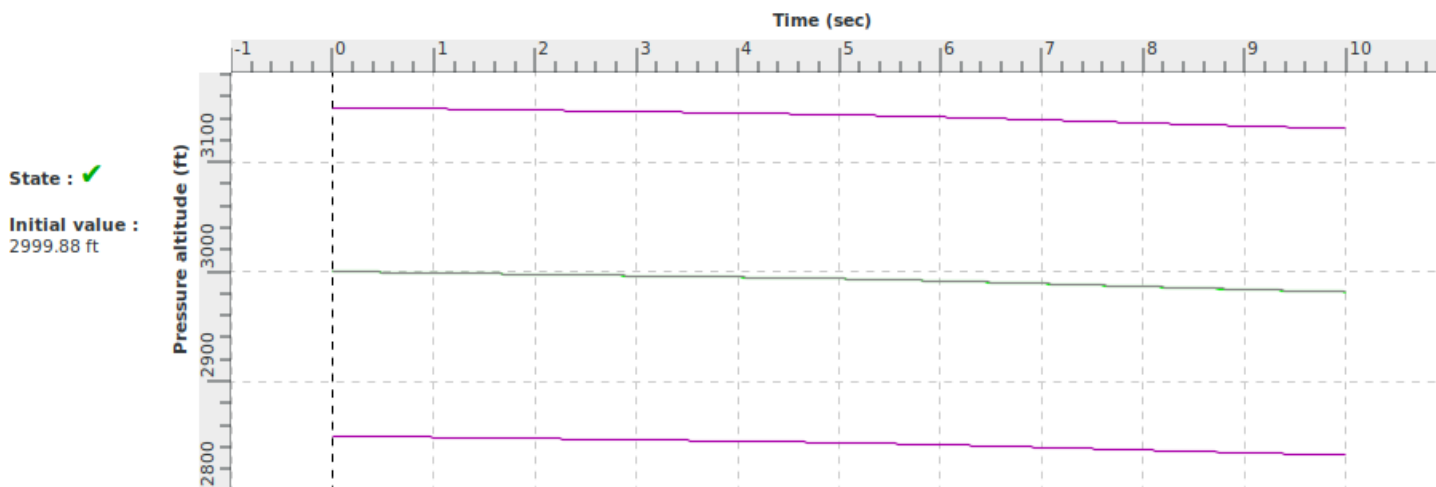
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
0.0	deconnectionPA_rudder	0.0	disable QTG Autopilot in yaw axis
1.0	SetRollCmdPalier	0.0	Send a step in the roll govern
2.0	SetRollCmdPalier	20.0	Send a step in the roll govern
4.0	SetRollCmdPalier	0.0	Send a step in the roll govern
6.0	SetRollCmdPalier	-20.0	Send a step in the roll govern
8.0	SetRollCmdPalier	0.0	Send a step in the roll govern

<b>Title</b>	Roll response rate during approach		
<b>Id</b>	2 d ii b	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Roll response rate during approach		
Id	2 d ii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



### Legend :

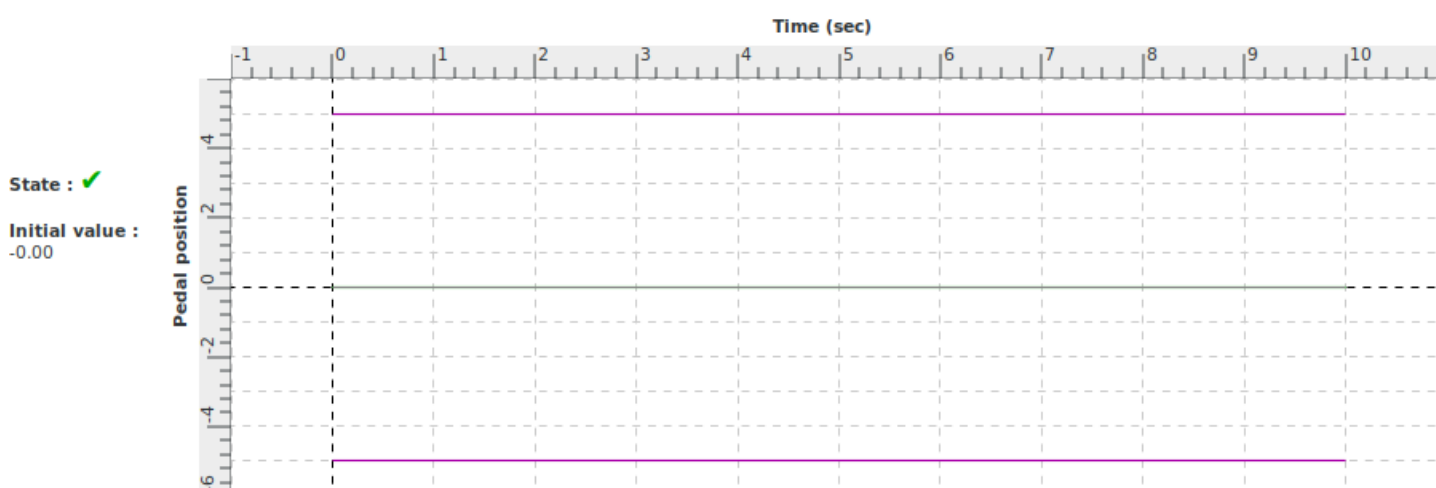
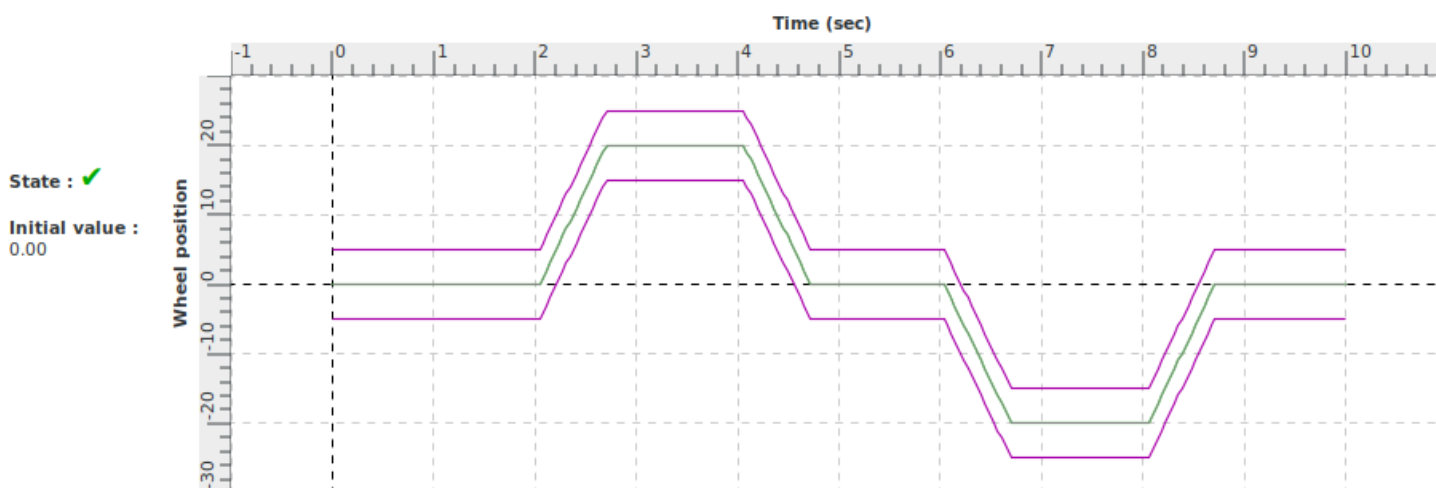
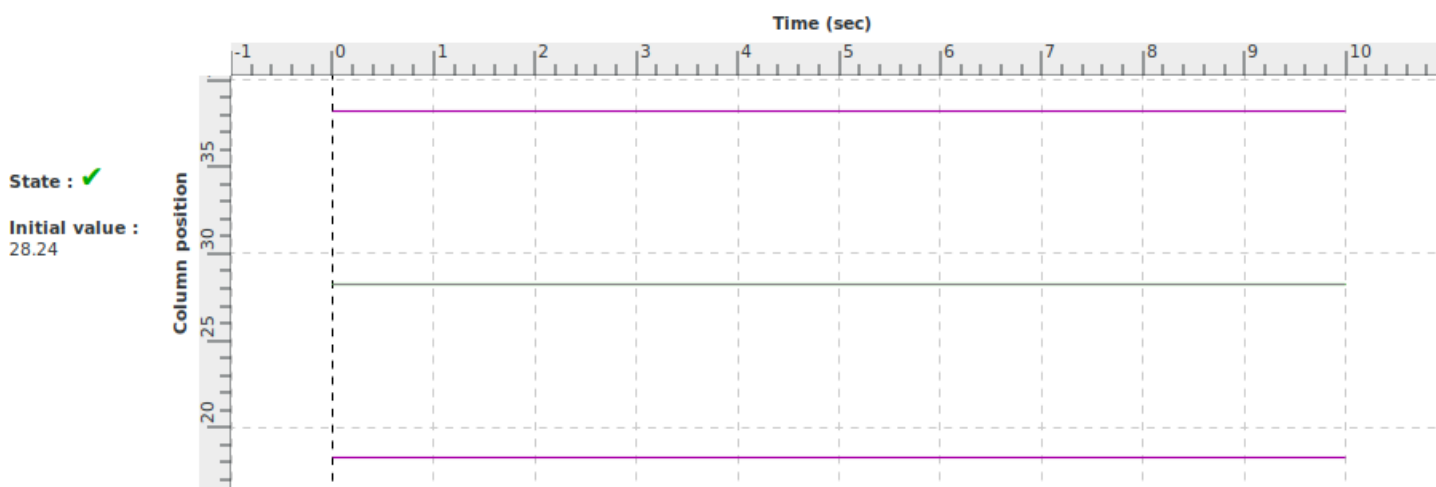
green : results within tolerances  
blue : tolerances

red : results out of tolerances  
violet : tolerances Alsिम

grey : master



Title	Roll response rate during approach		
Id	2 d ii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



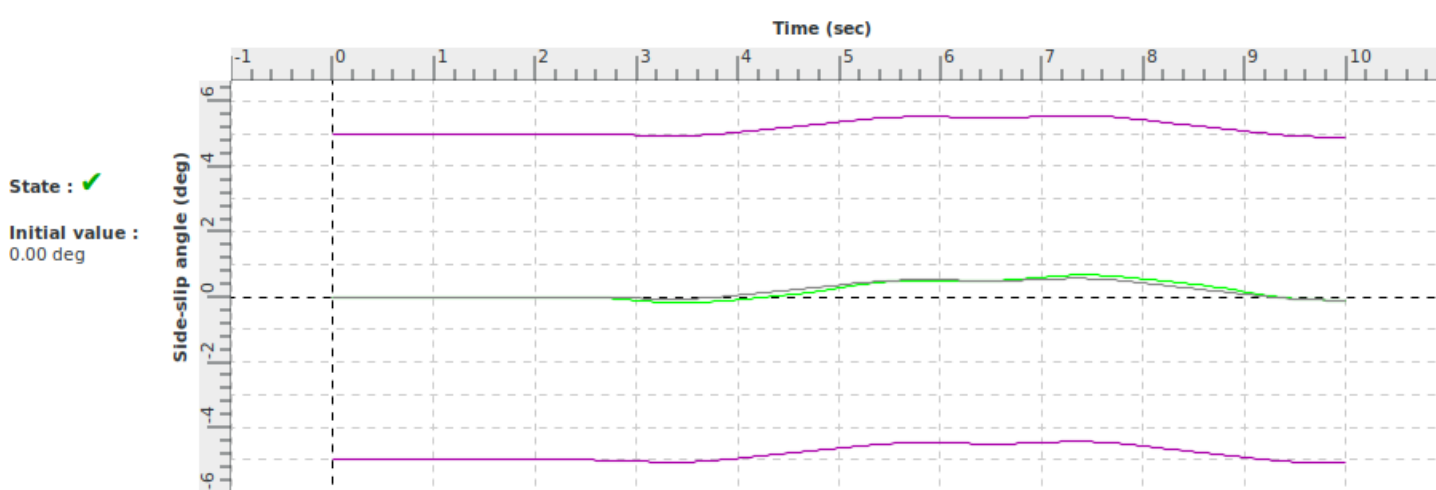
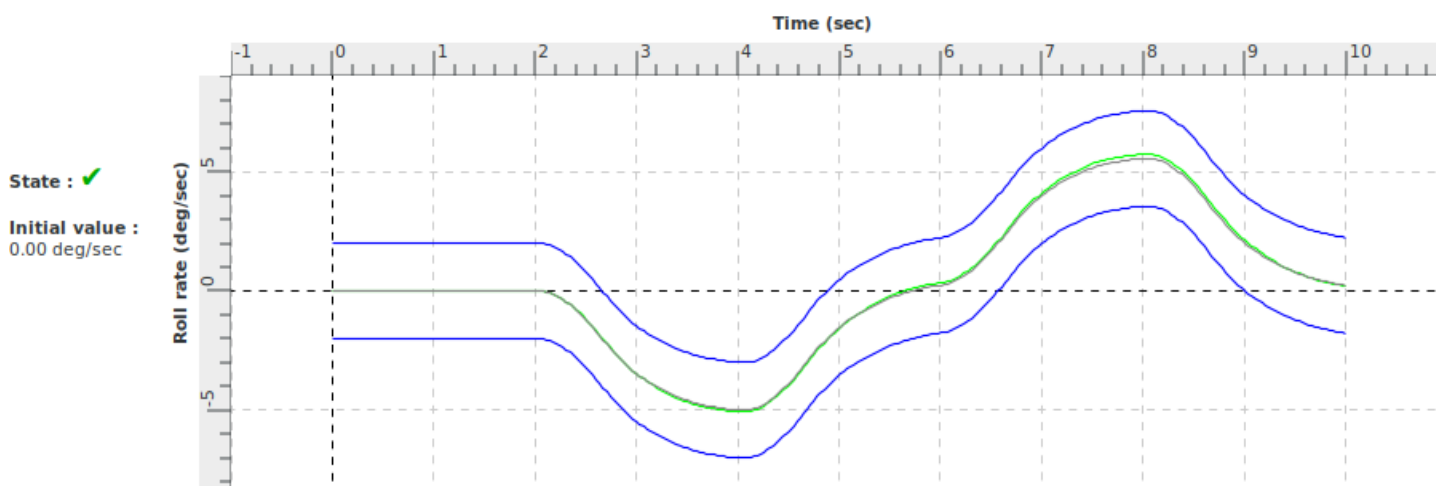
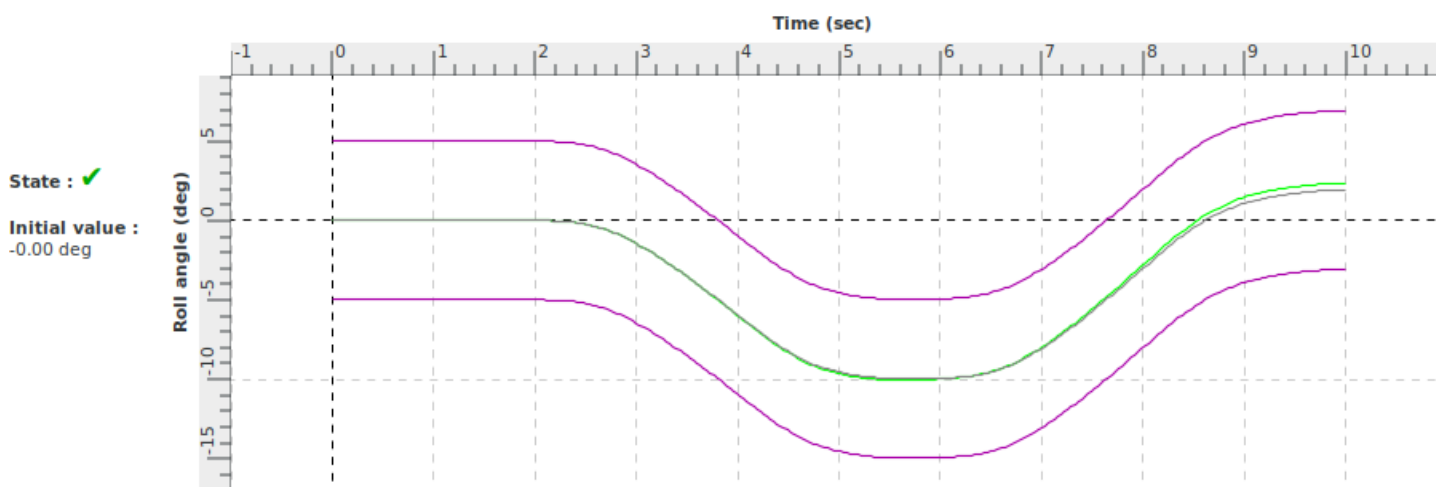
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violet : tolerances Alsim

grey : master

Title	Roll response rate during approach		
Id	2 d ii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



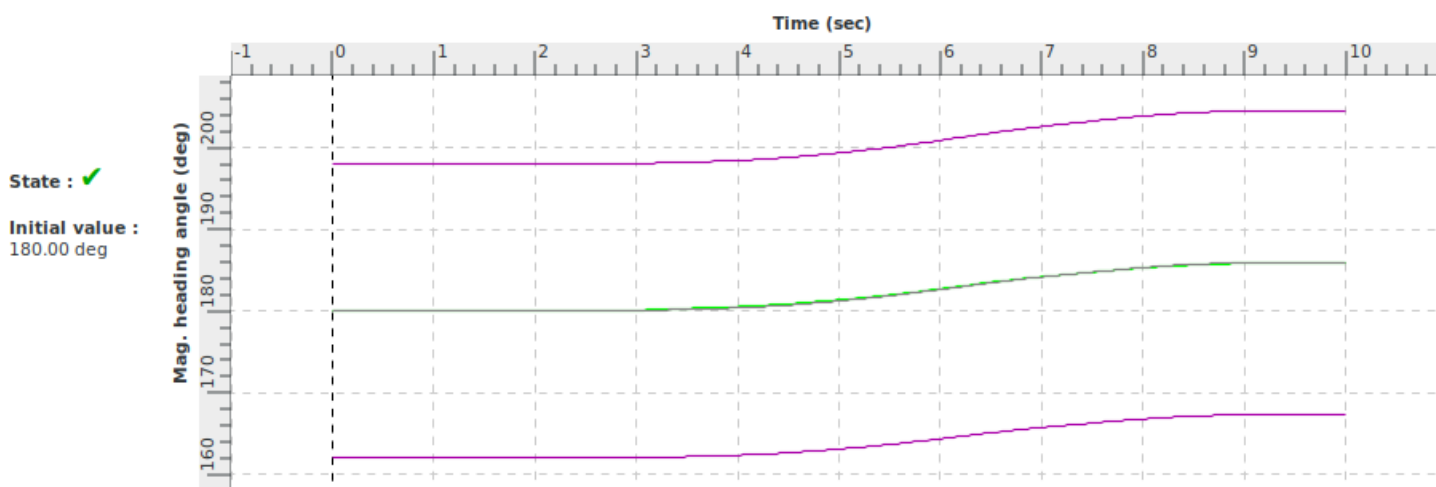
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violet : tolerances Alsims

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Title	Roll response rate during approach		
Id	2 d ii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



### Legend :

green : results within tolerances  
blue : tolerances

red : results out of tolerances  
violet : tolerances Alsim

grey : master

# VALIDATION TEST

<b>Title</b>	Engine inoperative trim second segment climb		
<b>Id</b>	2 d v a	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.02
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	27/07/21
<b>Result Load</b>	2012.01	<b>Master Load</b>	2012.01

<b>Objective</b>	<b>Expected Results</b>
Demonstrate that the simulation of the effects of directional trim during an engine inoperative manoeuvre conforms to the class of aeroplanes	Sideslip angle = 0 deg Rudder control = 25 %
<b>Reference</b>	<b>Evaluation Criteria</b>
Chapter 12 - Validation data - Handling Qualities - Test 2.d.v.a	+/-1° Rudder angle (equivalent 3% of pedal position) +/-2° Sideslip angle

<b>Demonstration procedure</b>	The aeroplane is established in steady one engine inoperative second segment climb phase. The pilot trims the aeroplane for the engine out condition.  Tolerance: 60° is representative of the maximum rudder deflection observed on this class of aeroplane i.e 1° of rudder deflection corresponds to 3.3% of pedal position.
<b>Manual test procedure</b>	See the aircraft configuration described next page. In ISA conditions and one engine inoperative climb configuration, the pilot trims the aeroplane for the engine out condition with the relevant propeller feathered.
<b>Automatic test procedure</b>	2 d v a

<b>Authority's approval (date, signature and comments)</b>	<b>Operator's approval (date, signature and comments)</b>

<b>Title</b>	Engine inoperative trim second segment climb		
<b>Id</b>	2 d v a	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.02
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	27/07/21
<b>Result Load</b>	2012.01	<b>Master Load</b>	2012.01

<b>Autopilot mode</b>	AUTO_HEADING
Automatic AUTO_HEADING mode : Heading is maintained constant through roll and yaw trim and Vertical Speed through pitch trim.	

<b>Initial parameters</b>	CLIMB N-1
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : 230 IAS (kt) : 85 (free) Heading (°) : 0 Bank (°) : 0 (free) Attitude (°) : 9 Pedal Position (%) : 25 Column Position (%) : 60 Wheel Position (%) : -5	Flaps lever position : 0 Gear lever position : 0 Left Load (%) : 0 Right Load (%) : 92 Left RPM : 0 Right RPM : 2090

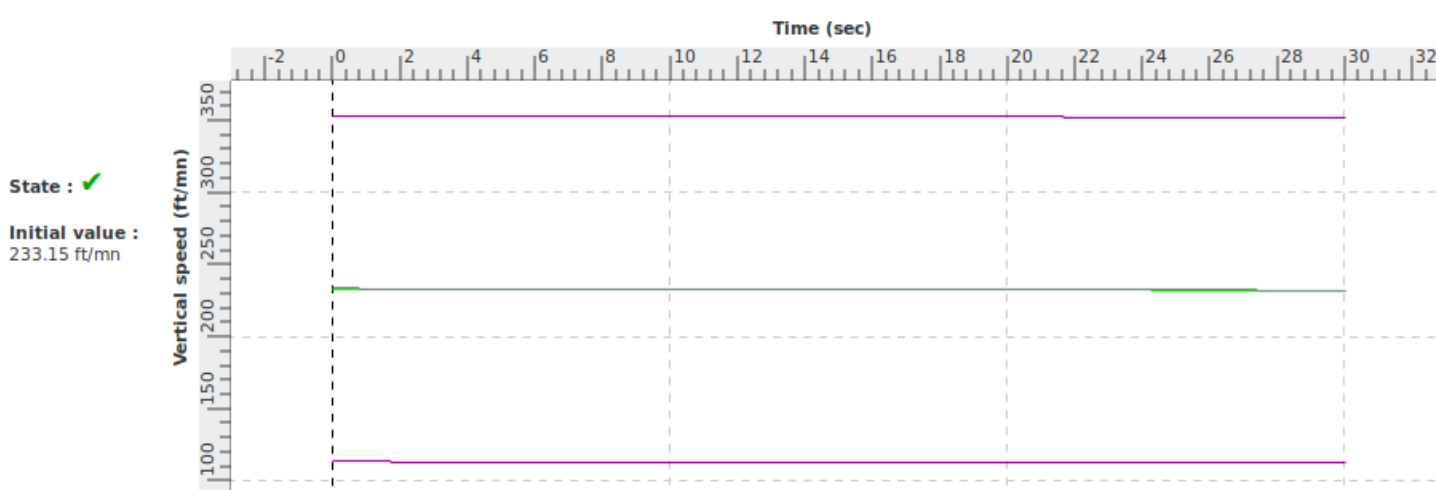
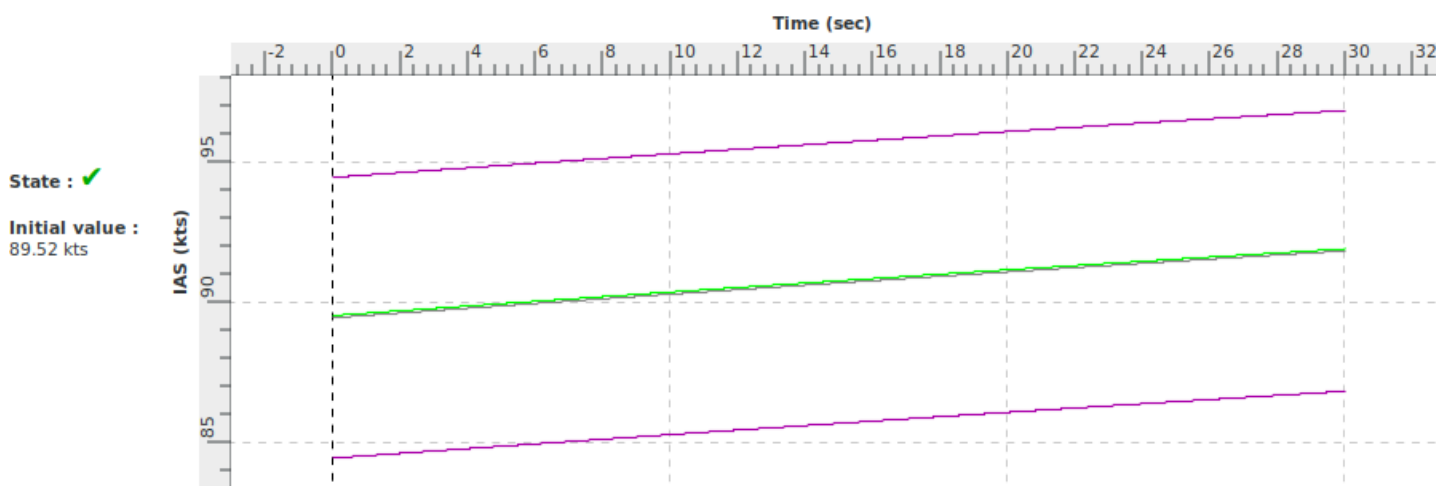
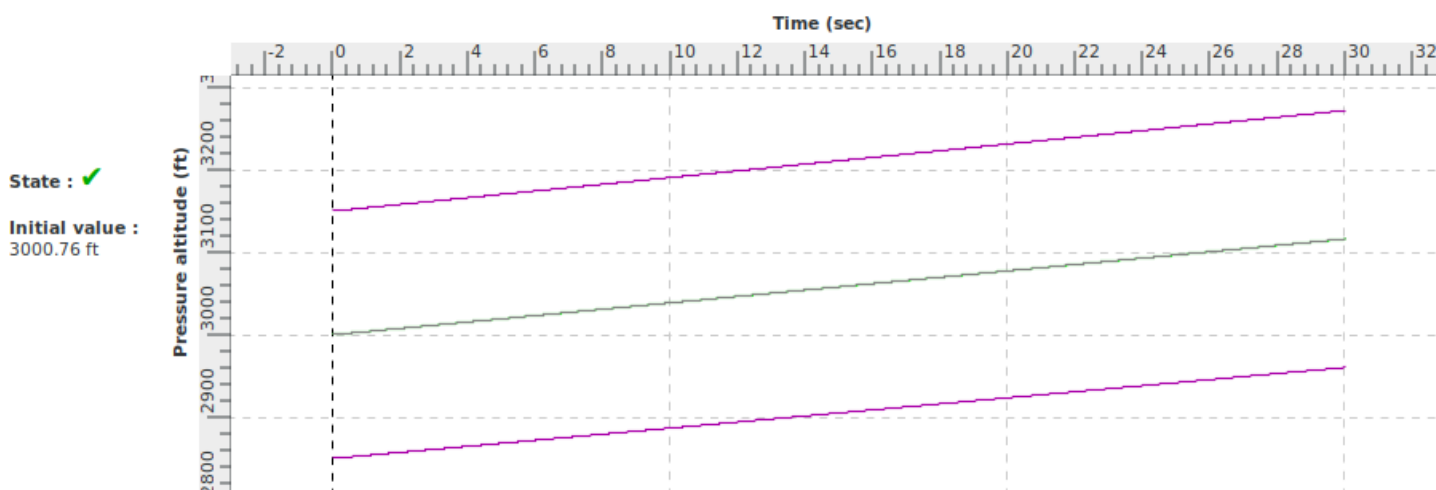
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
30.0	Stop_Test	0.0	Stop the test procedure

<b>Title</b>	Engine inoperative trim second segment climb		
<b>Id</b>	2 d v a	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.02
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	27/07/21
<b>Result Load</b>	2012.01	<b>Master Load</b>	2012.01

Log of Revision		
Rev. Nbr	Date	Reason for revision
1.01	29/03/21	1909 Master. Change of pedal input. New expected results
1.02	27/07/21	2012-R1 Master. Expected results unchanged.

Notes

Title	Engine inoperative trim second segment climb		
Id	2 d v a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



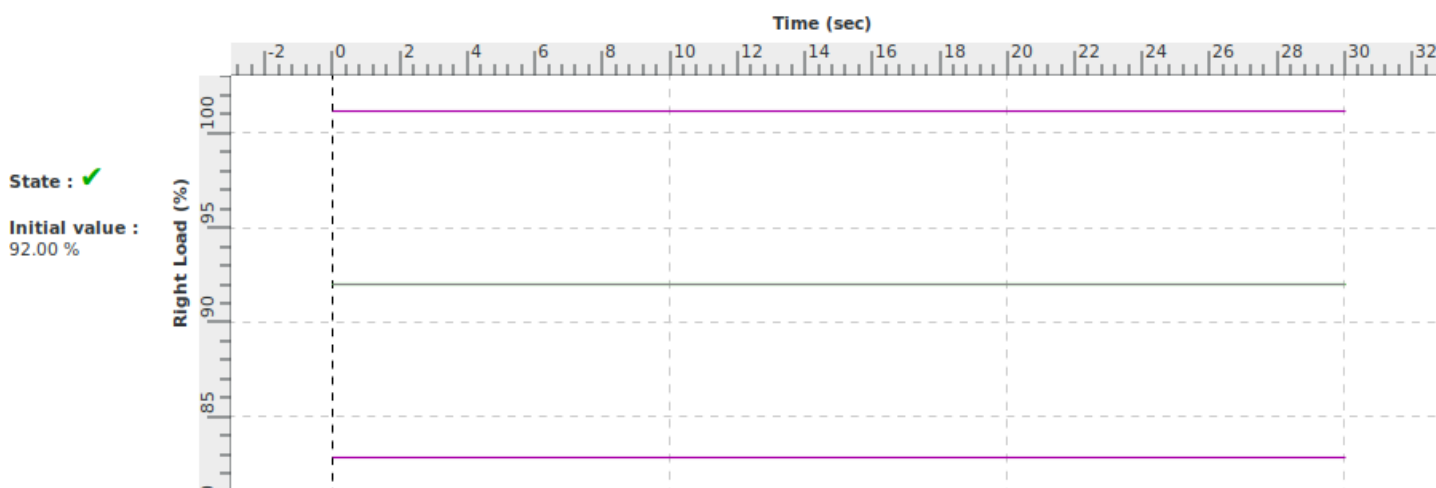
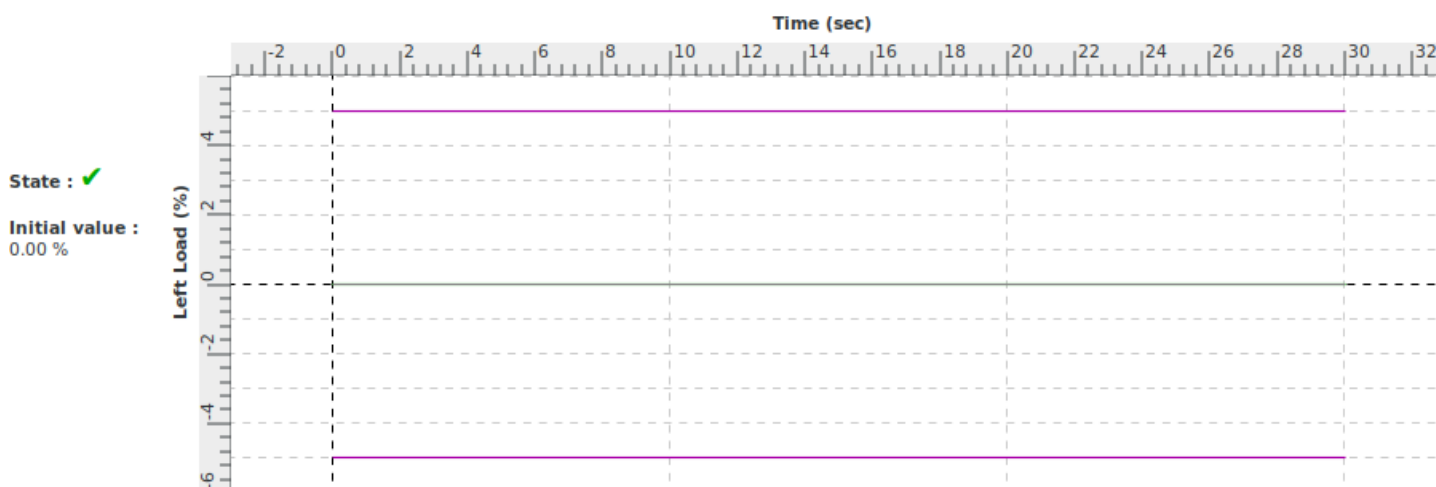
### Legend :

green : results within tolerances  
blue : tolerances

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grey : master

Title	Engine inoperative trim second segment climb		
Id	2 d v a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



### Legend :

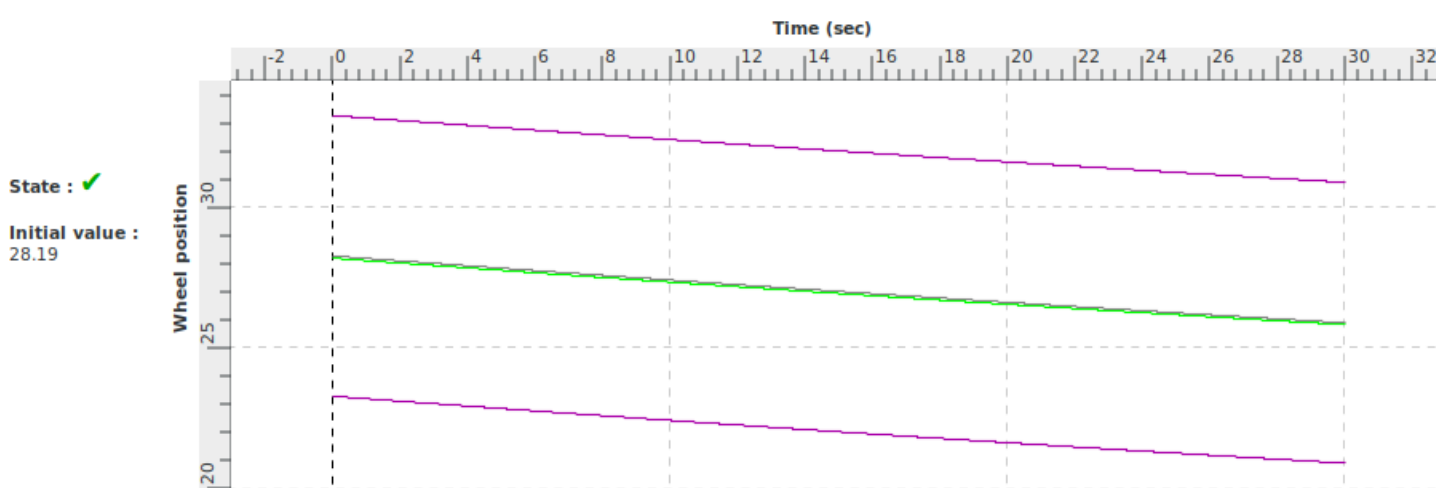
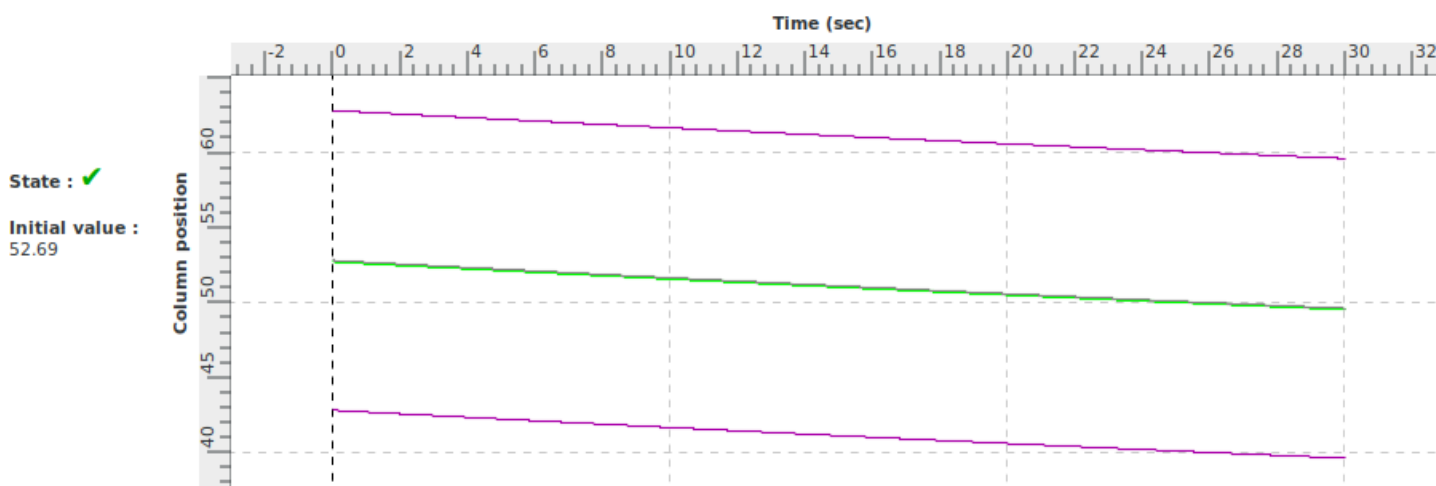
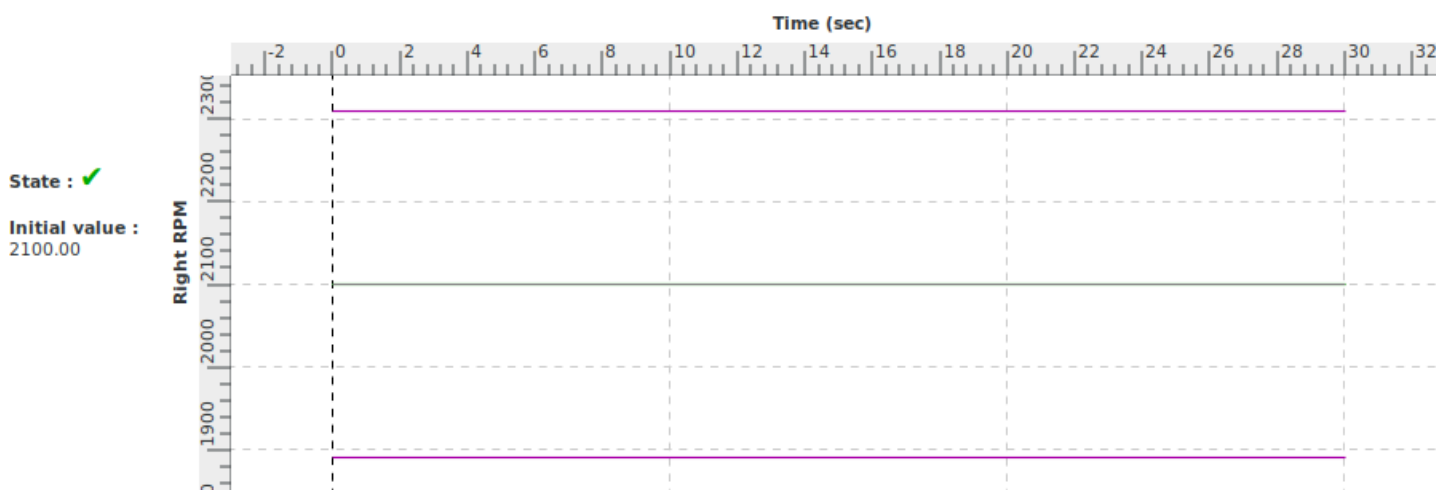
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grey : master



Title	Engine inoperative trim second segment climb		
Id	2 d v a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



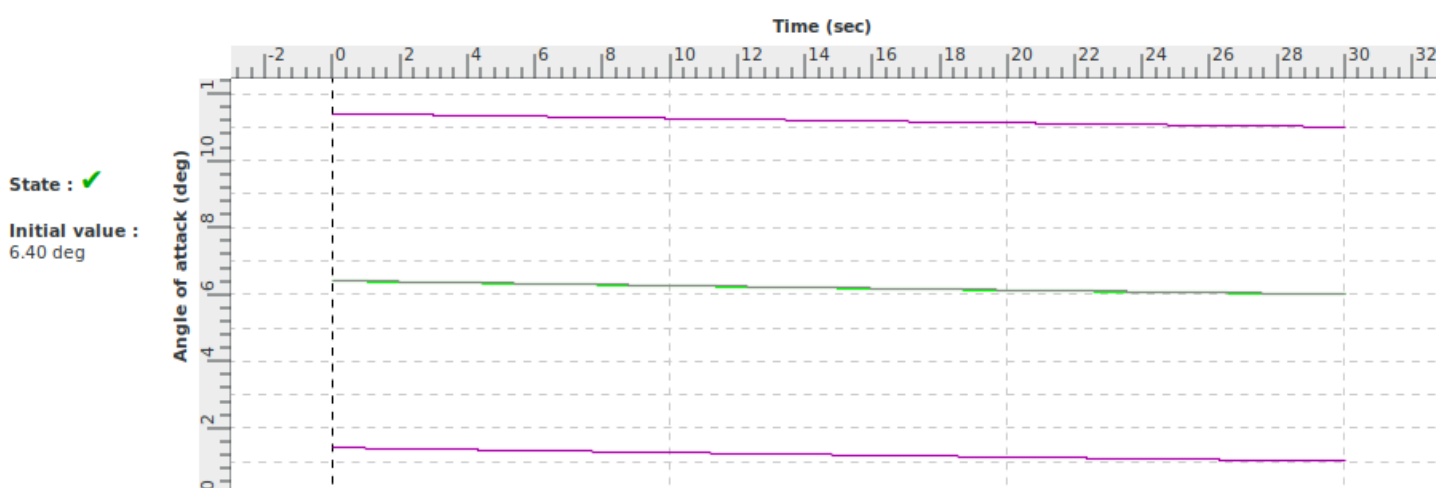
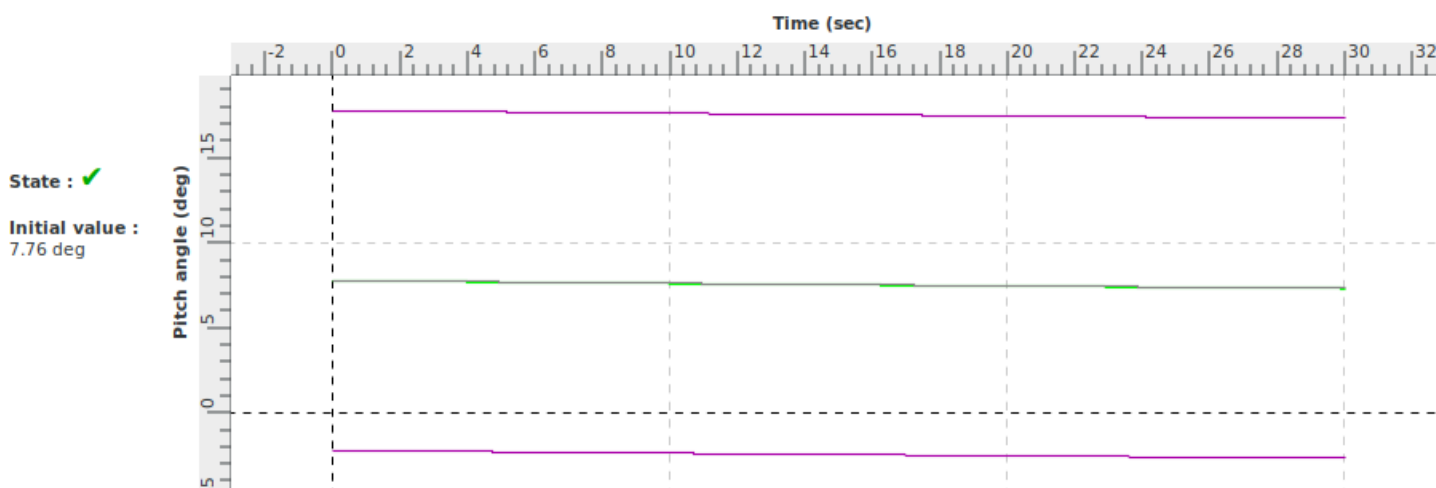
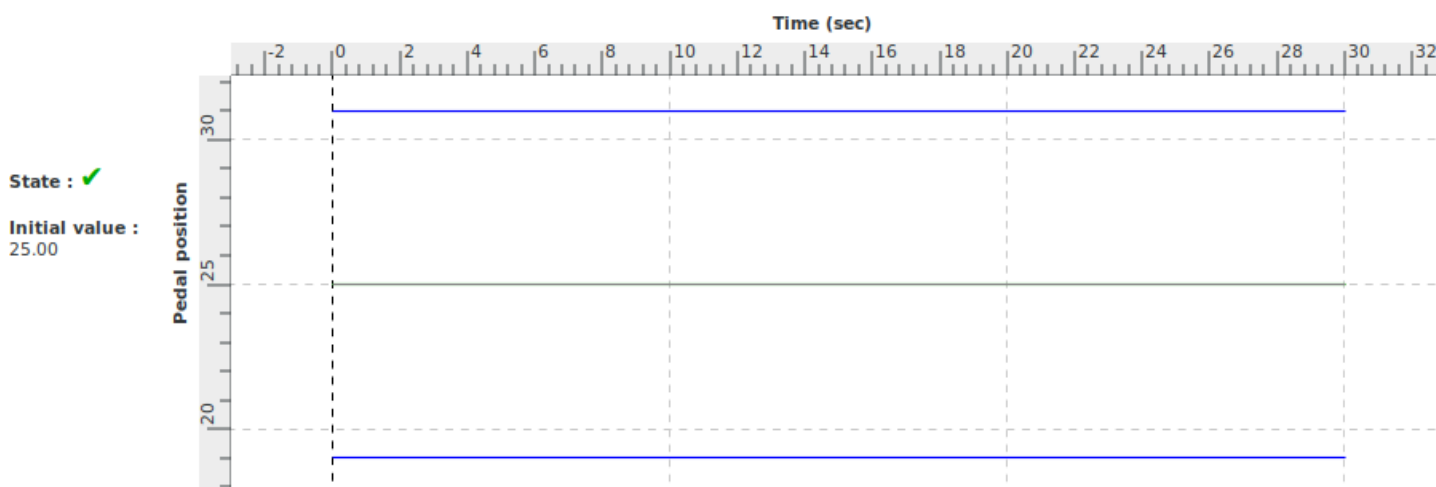
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grey : master

Title	Engine inoperative trim second segment climb		
Id	2 d v a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



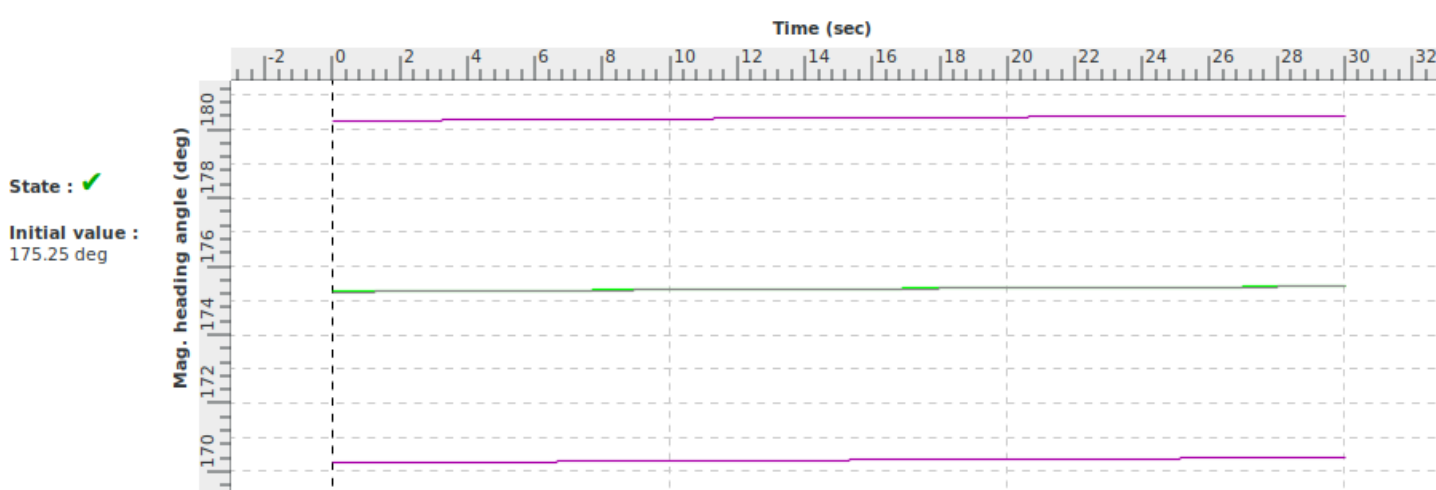
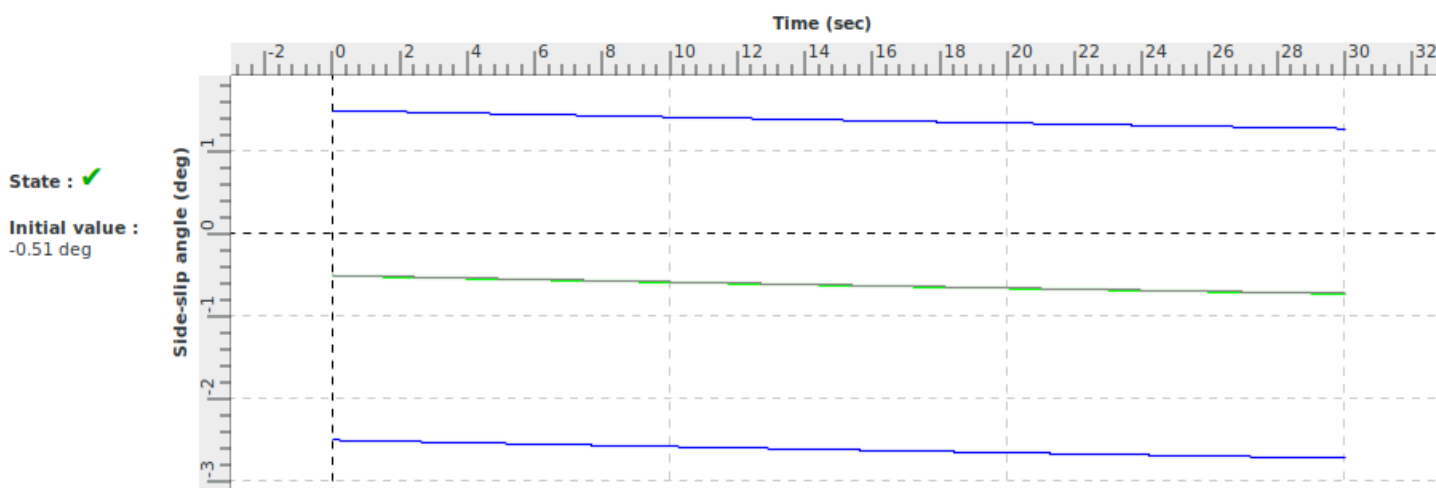
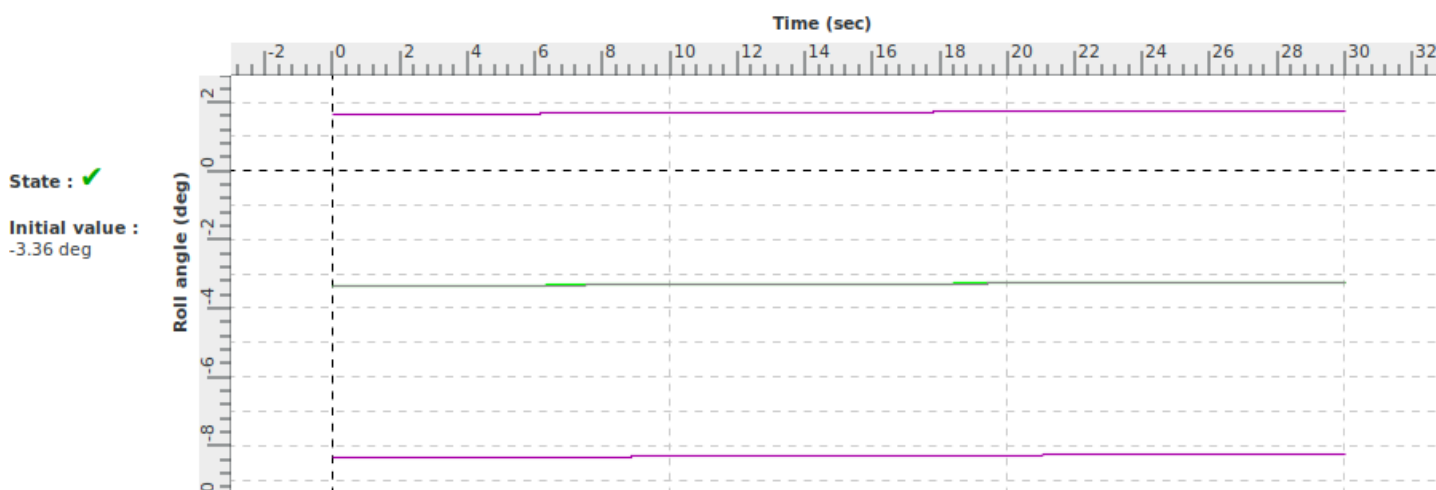
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grey : master

Title	Engine inoperative trim second segment climb		
Id	2 d v a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



### Legend :

green : results within tolerances  
blue : tolerances

red : results out of tolerances  
violet : tolerances Alsim

grey : master

# VALIDATION TEST

<b>Title</b>	Dutch roll (yaw damper off) during approach		
<b>Id</b>	2 d vii b	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.02
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	27/07/21
<b>Result Load</b>	2012.01	<b>Master Load</b>	2012.01

<b>Objective</b>	<b>Expected Results</b>
Demonstrate that the lateral/directional dynamic stability characteristics of the simulator in the dutch roll mode during approach conform to the class of aeroplanes	Roll/yaw period: 1.9 s Time to half amplitude: 0.7 s Phase Delay: 0.8 s (results to be determined using the Table Sheet AL42_DA42VI_Tables_QTG_VolIII.xls)
<b>Reference</b>	<b>Evaluation Criteria</b>
Chapter 12 - Validation data - Handling Qualities - Test 2.d.vii.b	+/- 0.5s or 10% of period +/-10% of time of 1/2 amplitude or 0.02 of damping ratio +/-20% or +/-1s of time difference between peaks of bank and sideslip

<b>Demonstration procedure</b>	From steady approach initial conditions, a short pedal impulse is applied in both directions left then right in order to excite the Dutch roll mode. The period and, time to 1/2 amplitude and time difference between peaks must be computed manually using the "Plot" function available on the graphs and compared with expected results. Tolerances proposed by Alsim on relevant graphs are more restrictive than required ones.
<b>Manual test procedure</b>	In ISA conditions and approach configuration, the pilot trims the airplane at approach. Then, the pilot applies impulse excitation on the pedals and leaves the controls free 5 to 10 seconds.
<b>Automatic test procedure</b>	2 d vii b

<b>Authority's approval (date, signature and comments)</b>	<b>Operator's approval (date, signature and comments)</b>

<b>Title</b>	Dutch roll (yaw damper off) during approach		
<b>Id</b>	2 d vii b	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.02
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	27/07/21
<b>Result Load</b>	2012.01	<b>Master Load</b>	2012.01

<b>Autopilot mode</b>	AUTO_SPEED
<p>Automatic Vertical Speed and power maintain mode : it changes the attitude through pitch trim value and the power levers to maintain power and VS. Roll Trim is computed to maintain 0° bank angle.</p>	

<b>Initial parameters</b>	HOLD_FLAPS_APP_GEAR
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : 0 IAS (kt) : 106 (free) Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : -1 Pedal Position (%) : 0 Column Position (%) : 32 Wheel Position (%) : 0	Flaps lever position : 1 Gear lever position : 1 Left Load (%) : 70 Right Load (%) : 70 Left RPM : 2060 Right RPM : 2060

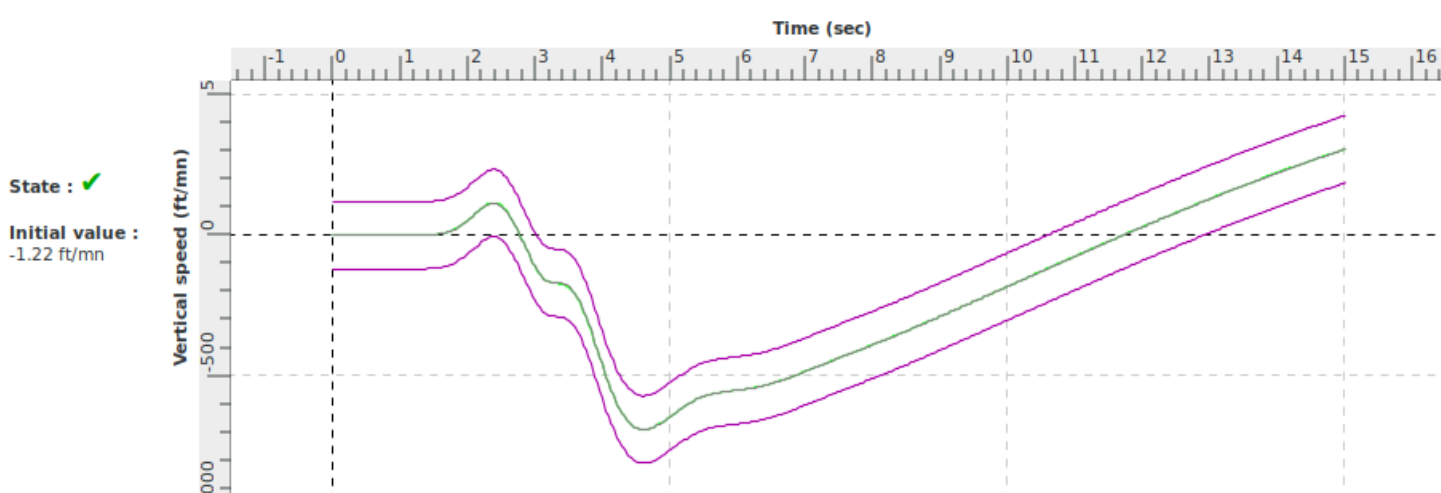
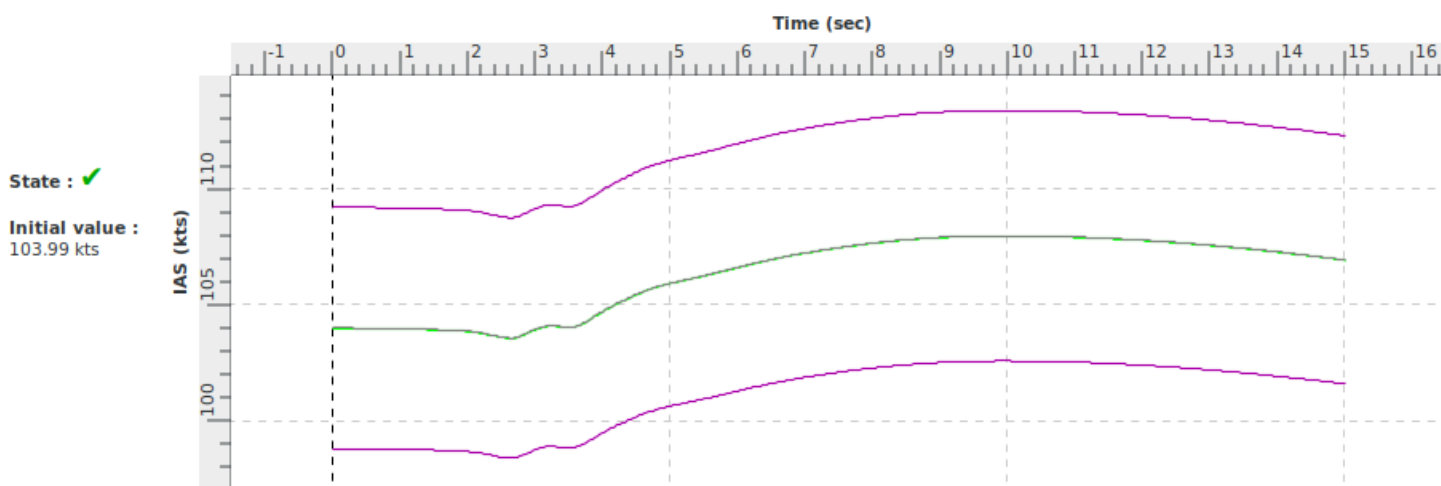
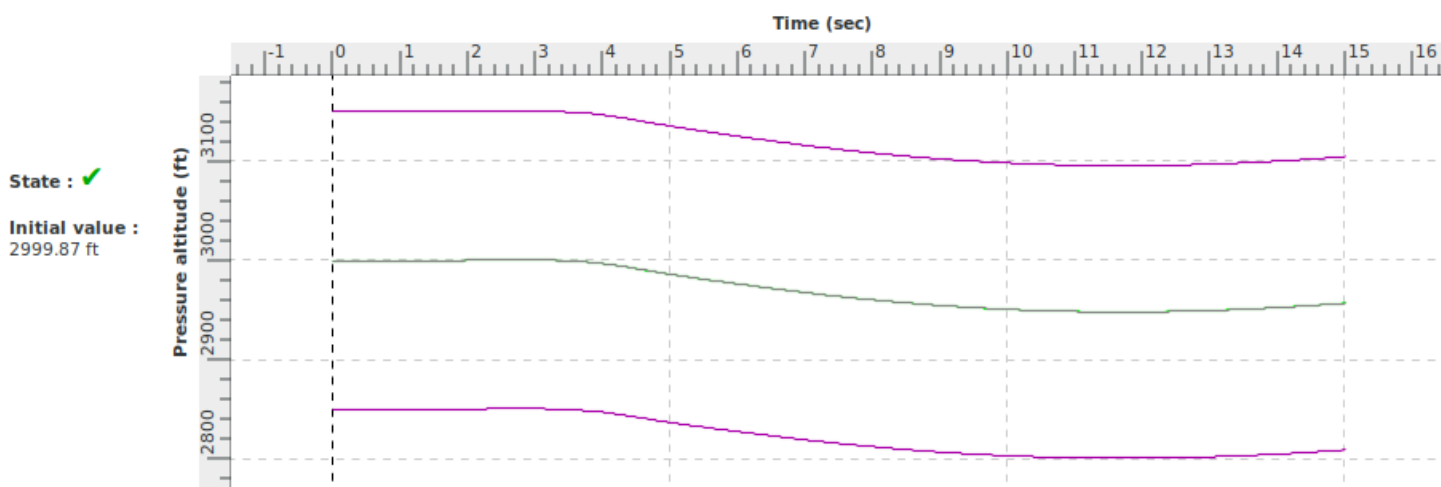
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_roll	0.0	disable QTG Autopilot in roll axis
1.0	SetRudderCmdPalier	-70.0	Send a step in the rudder govern
1.0	SetAttCmdPalier	0.0	Send a step in the attitude govern
1.0	SetRollCmdPalier	0.0	Send a step in the roll govern
2.0	SetRudderCmdPalier	70.0	Send a step in the rudder govern
3.0	SetRudderCmdPalier	0.0	Send a step in the rudder govern
15.0	Stop_Test	0.0	Stop the test procedure

<b>Title</b>	Dutch roll (yaw damper off) during approach		
<b>Id</b>	2 d vii b	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.02
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	27/07/21
<b>Result Load</b>	2012.01	<b>Master Load</b>	2012.01

Log of Revision		
Rev. Nbr	Date	Reason for revision
1.01	29/03/21	1909 Master. No impact on the expected results
1.02	27/07/21	2012-R1 Master. Expected results unchanged.

Notes

Title	Dutch roll (yaw damper off) during approach		
Id	2 d vii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



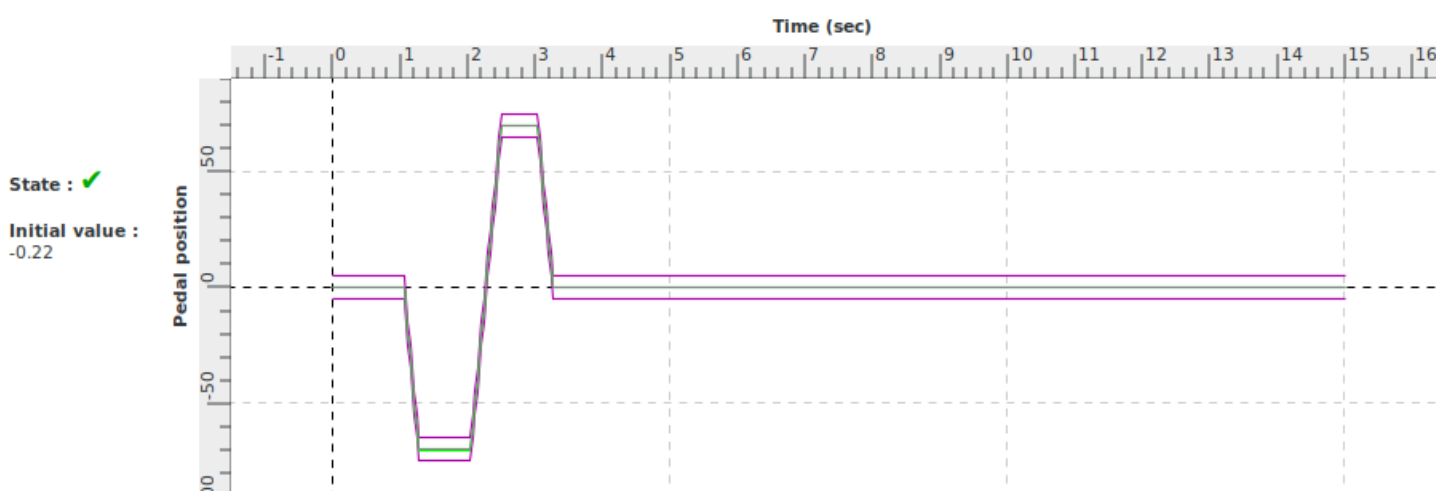
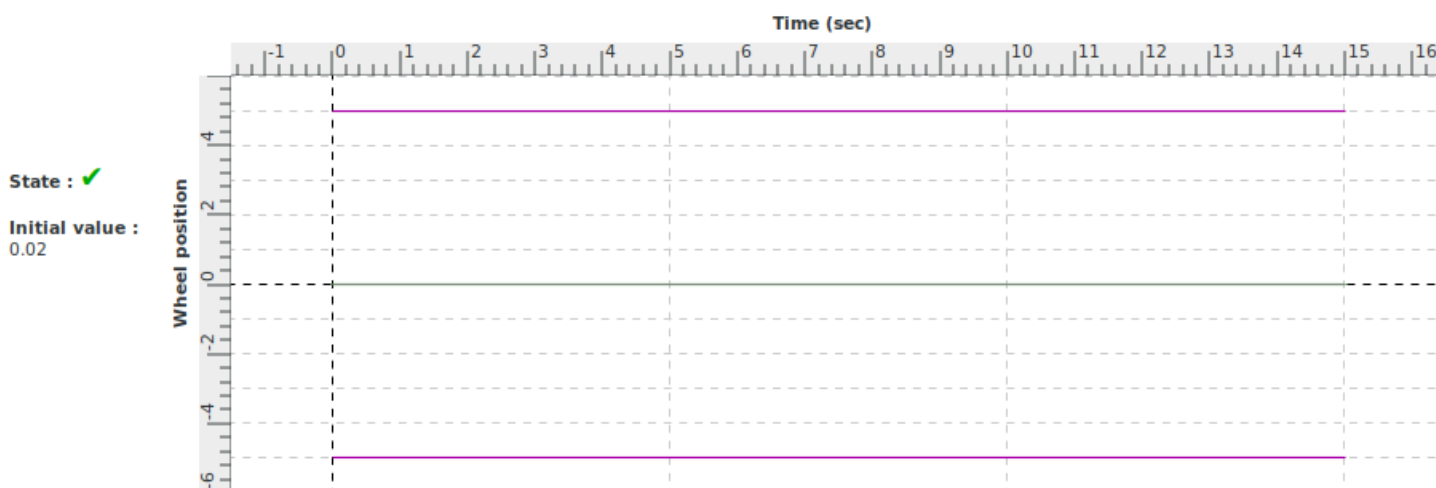
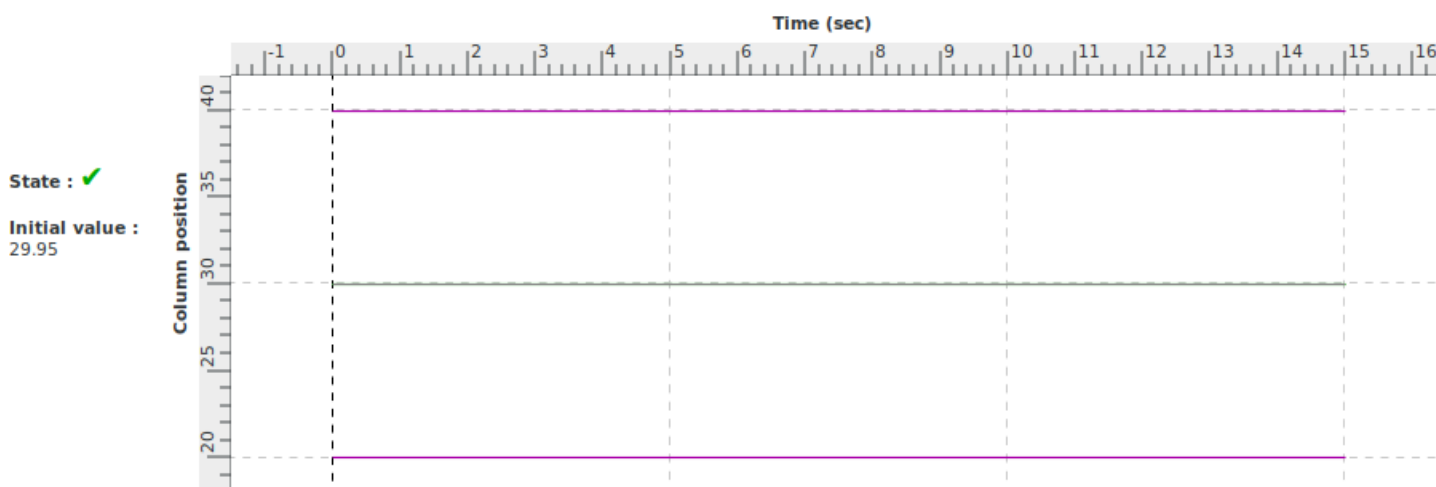
### Legend :

green : results within tolerances  
blue : tolerances

red : results out of tolerances  
violet : tolerances Alsim

grey : master

Title	Dutch roll (yaw damper off) during approach		
Id	2 d vii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



### Legend :

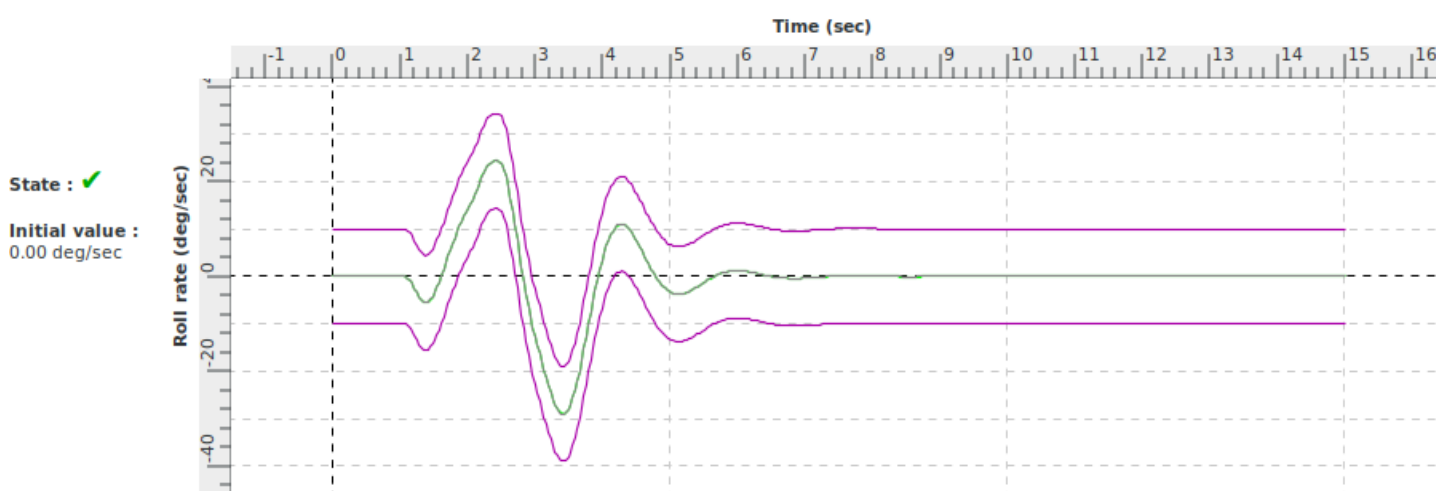
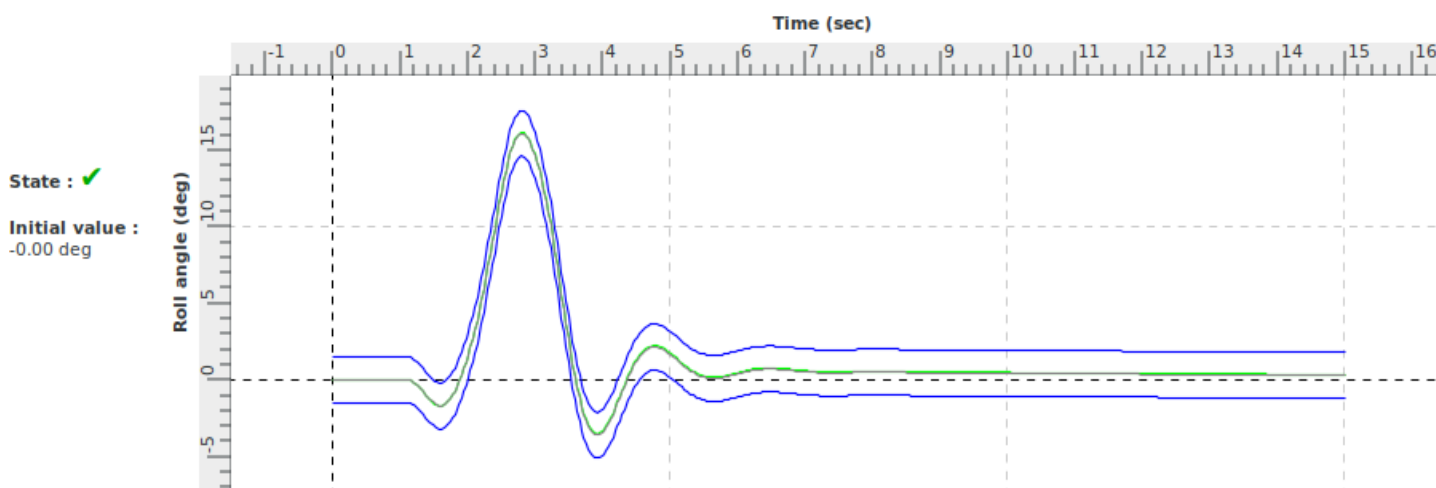
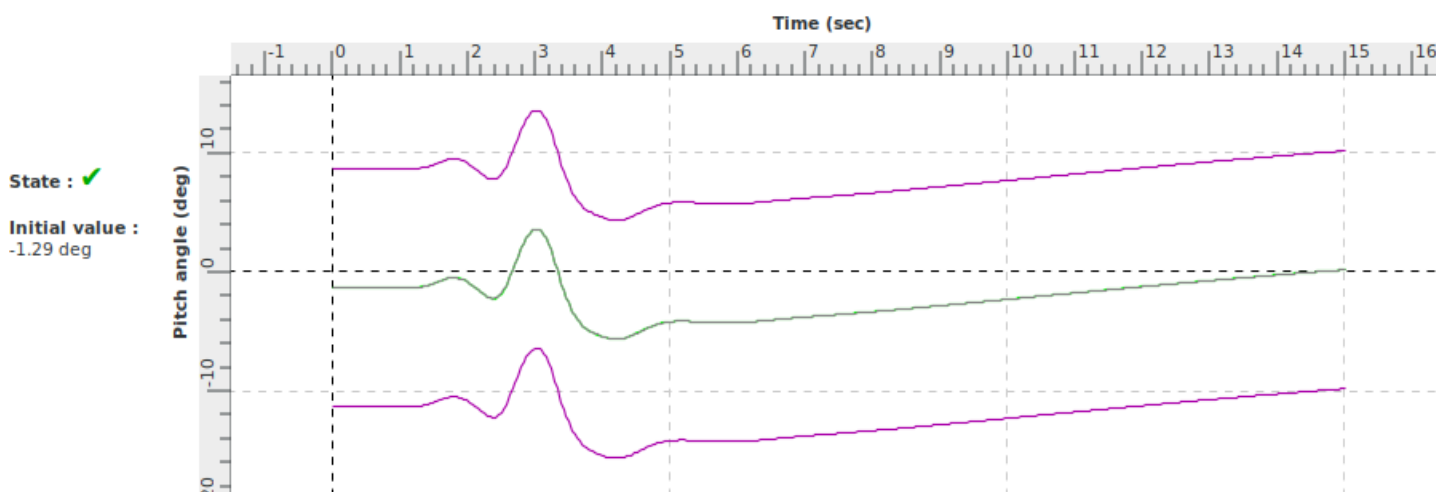
green : results within tolerances  
blue : tolerances

red : results out of tolerances  
violet : tolerances Alsim

grey : master



Title	Dutch roll (yaw damper off) during approach		
Id	2 d vii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



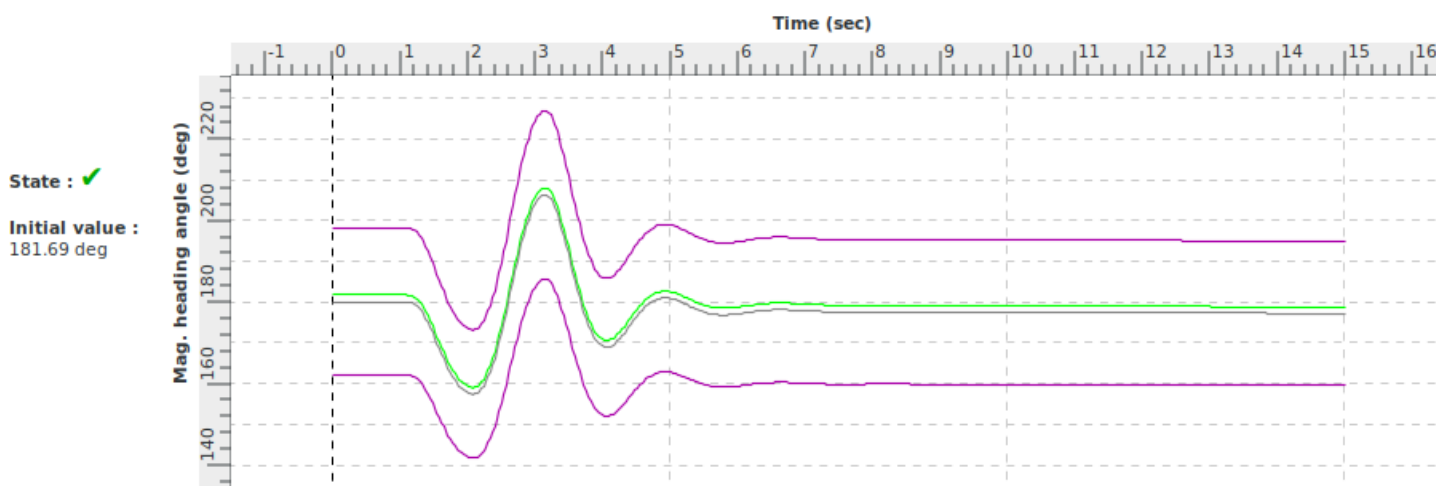
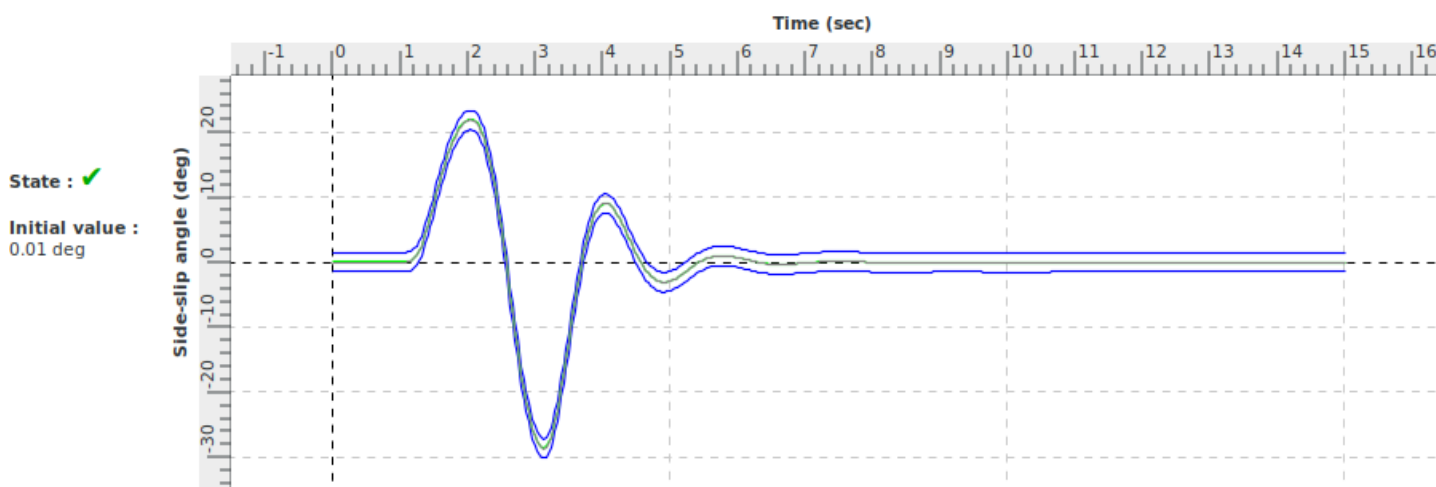
### Legend :

green : results within tolerances  
blue : tolerances

red : results out of tolerances  
violet : tolerances Alsim

grey : master

Title	Dutch roll (yaw damper off) during approach		
Id	2 d vii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	22/08/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



### Legend :

green : results within tolerances  
blue : tolerances

red : results out of tolerances  
violet : tolerances Alsim

grey : master

# VALIDATION TEST

<b>Title</b>	Transport delay on roll axis		
<b>Id</b>	4 a i b	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

<b>Objective</b>	<b>Expected Results</b>
Demonstrate that the cue correlation and responses of visual and instrument drives are sufficient to be representative of the cues perceived in the class of aeroplanes	Transport delay time : less than 300 ms
<b>Reference</b>	<b>Evaluation Criteria</b>
Chapter 12 - Validation data - Visual System Tests - Test 4.a.i.b	less than 300 ms

<b>Demonstration procedure</b>	The roll trim is moved to force the control loading system to move the wheel &&The wheel position is plotted versus time while the instruments and visual system response are also plotted versus time
<b>Manual test procedure</b>	The pilot moves rapidly the wheel control of about 20% on one side.
<b>Automatic test procedure</b>	4 a i b

<b>Authority's approval (date, signature and comments)</b>	<b>Operator's approval (date, signature and comments)</b>

<b>Title</b>	Transport delay on roll axis		
<b>Id</b>	4 a i b	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

<b>Autopilot mode</b>	AUTO_SPEED
<p>Automatic Vertical Speed and power maintain mode : it changes the attitude through pitch trim value and the power levers to maintain power and VS. Roll Trim is computed to maintain 0° bank angle.</p>	

<b>Initial parameters</b>	CRUISE
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 6000 Vertical speed (ft/min) : 0 IAS (kt) : 139 (free) Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : 0 Pedal Position (%) : 0 Column Position (%) : 9 Wheel Position (%) : 0	Flaps lever position : 0 Gear lever position : 0 Left Load (%) : 70 Right Load (%) : 70 Left RPM : 2060 Right RPM : 2060

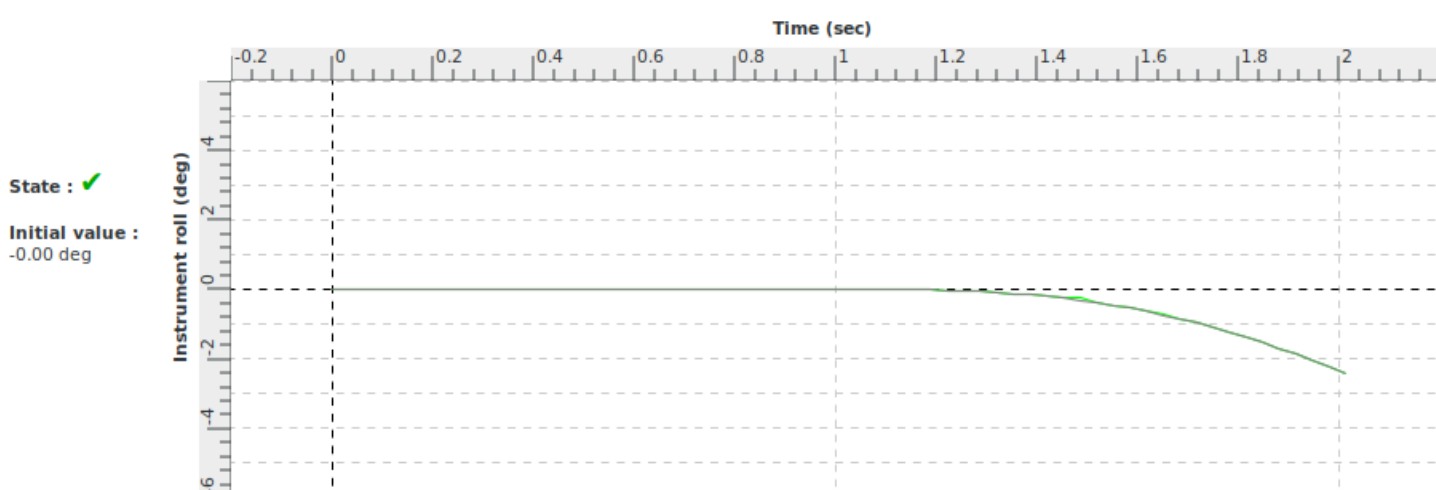
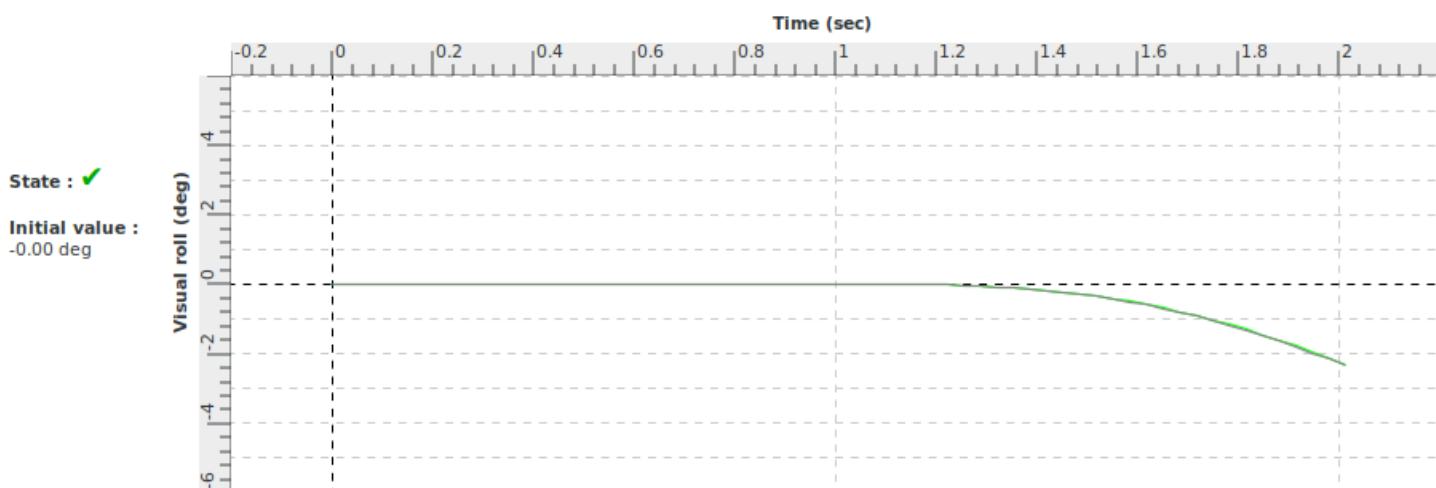
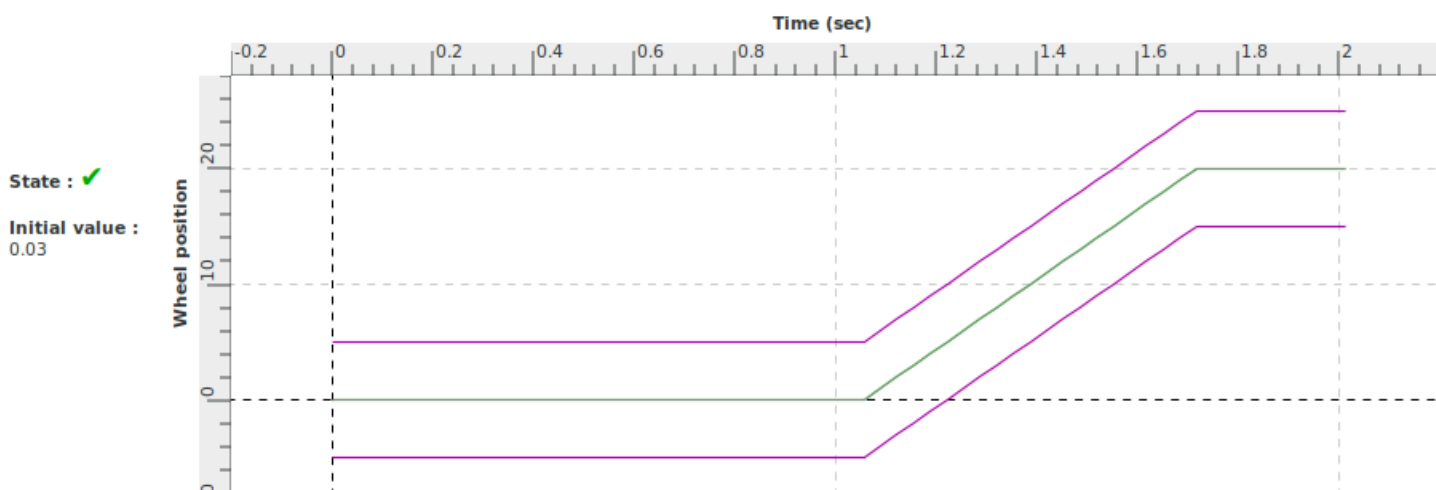
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
1.0	SetRollCmdPalier	20.0	Send a step in the roll govern
2.0	Stop_Test	0.0	Stop the test procedure

<b>Title</b>	Transport delay on roll axis		
<b>Id</b>	4 a i b	<b>Aircraft</b>	DA42-VI
<b>Device</b>	A42M2-12	<b>Version</b>	1.0
<b>Qualification Level</b>	FNPT2	<b>Operator</b>	AFTA
<b>Result Date</b>	22/08/23	<b>Master Date</b>	01/03/19
<b>Result Load</b>	2012.01	<b>Master Load</b>	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Transport delay on roll axis		
Id	4 a i b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	22/08/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



### Legend :

green : results within tolerances  
blue : tolerances

red : results out of tolerances  
violet : tolerances Alsिम

grey : master