

VALIDATION TEST

Title	Normal climb all engines operating.		
Id	1 c i	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that the simulation of engine thrust, aerodynamic drag and atmosphere in a steady state normal climb conditions conforms to the class of aeroplanes	Airspeed approx. 90 kts VS (Rate of Climb) approx. 1190 ft/min
Reference	Evaluation Criteria
Chapter 12 - Validation data - Performances - Test 1.c.i	+/- 3 Kts Airspeed +/- 5 % or +/- 100ft/mn Rate of Climb

Demonstration procedure	The aeroplane is established in steady climb phase over an interval of at least 1000 ft.
Manual test procedure	The pilot performs a standard climb profile, maintaining constant power setting for at least 90 seconds, using trim as required to maintain airspeed. See the initial parameters next page.
Automatic test procedure	1 c i

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Normal climb all engines operating.		
Id	1 c i	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Autopilot mode	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>	

Initial parameters	CLIMB
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : 1200 (free) IAS (kt) : 90 Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : 12 Pedal Position (%) : 0 Column Position (%) : 44 Wheel Position (%) : 0	Flaps lever position : 0 Gear lever position : 0 Left Load (%) : 92 Right Load (%) : 92 Left RPM : 2090 Right RPM : 2090

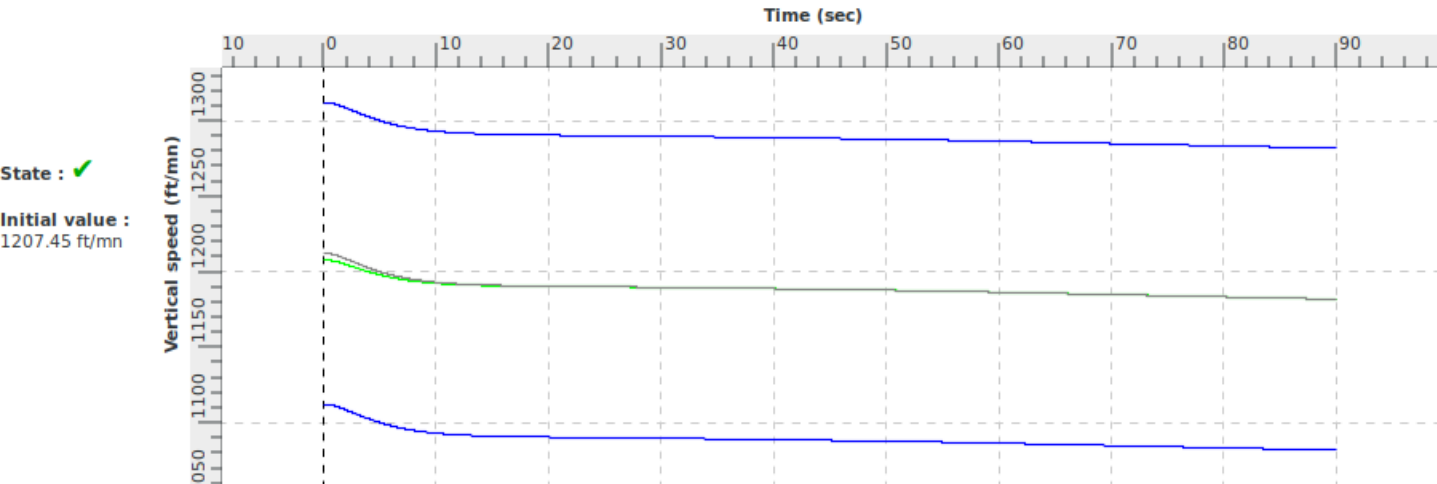
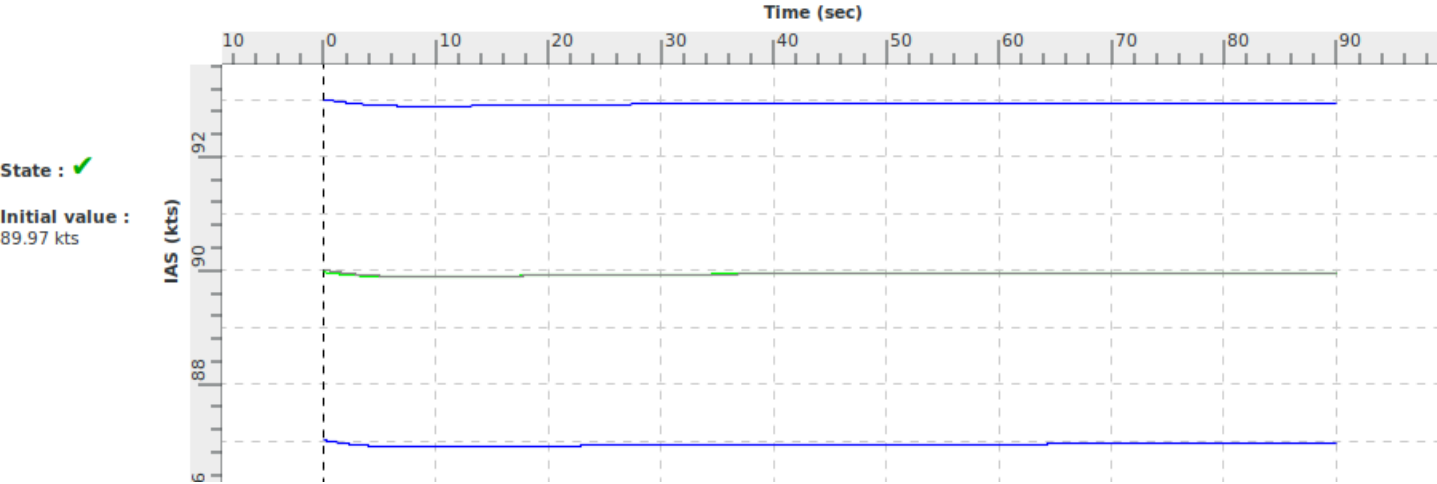
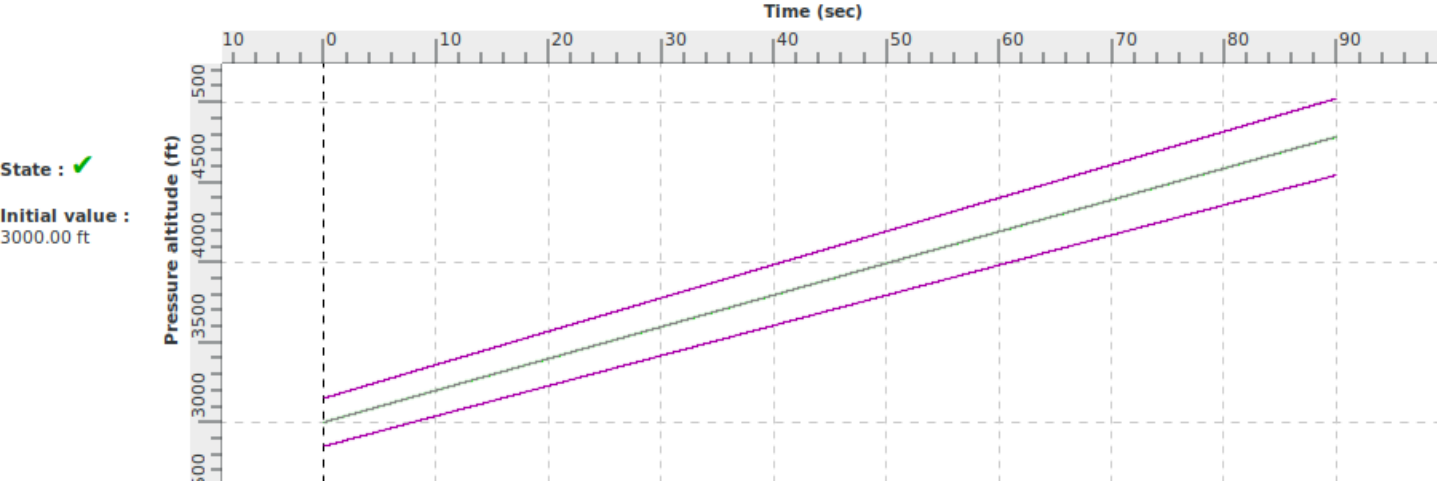
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
90.0	Stop_Test	0.0	Stop the test procedure

Title	Normal climb all engines operating.		
Id	1 c i	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

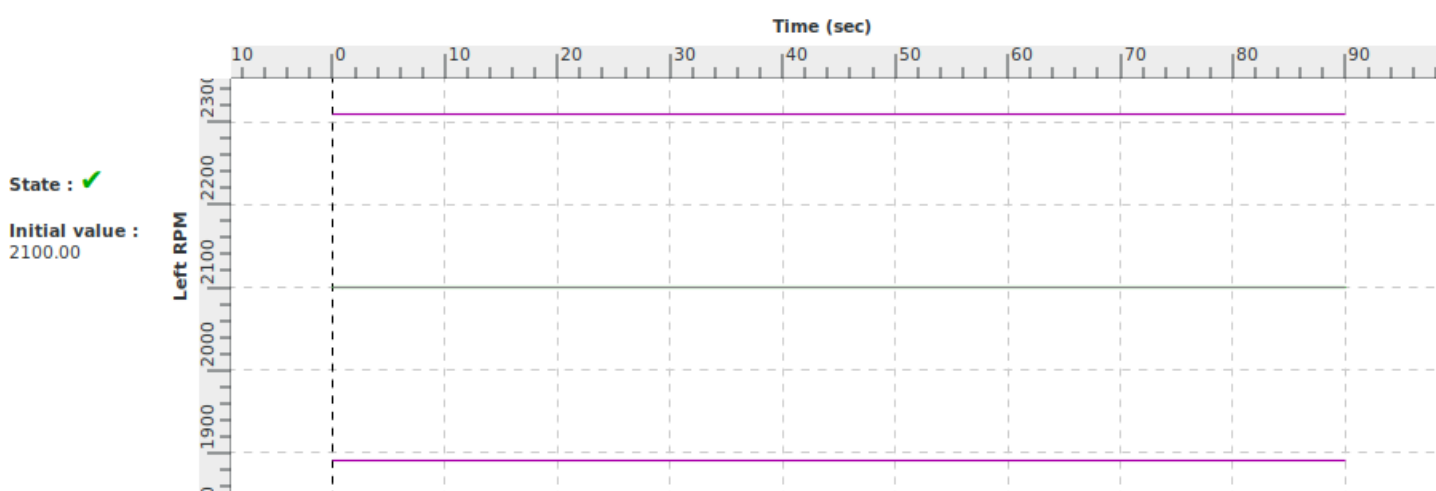
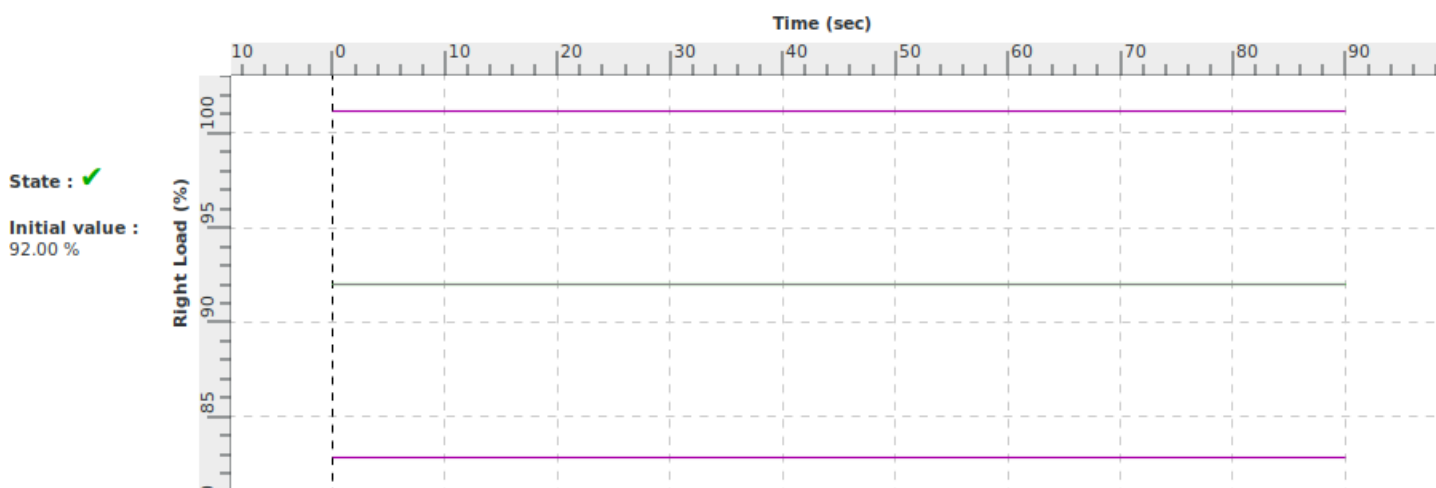
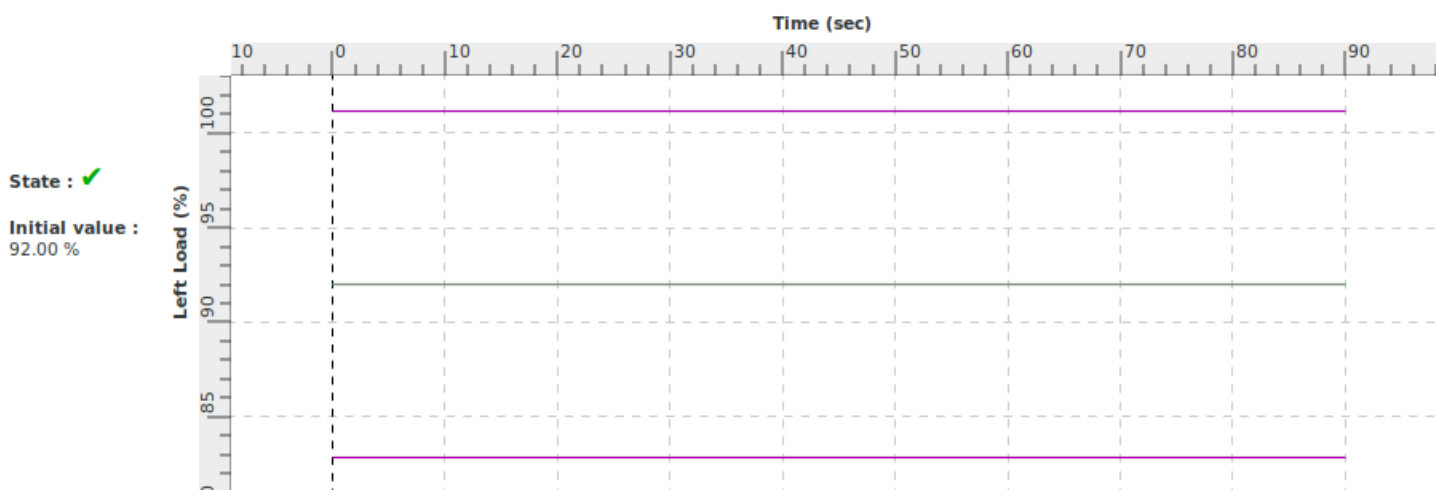
Title	Normal climb all engines operating.		
Id	1 c i	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



Legend :

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

Title	Normal climb all engines operating.		
Id	1 c i	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



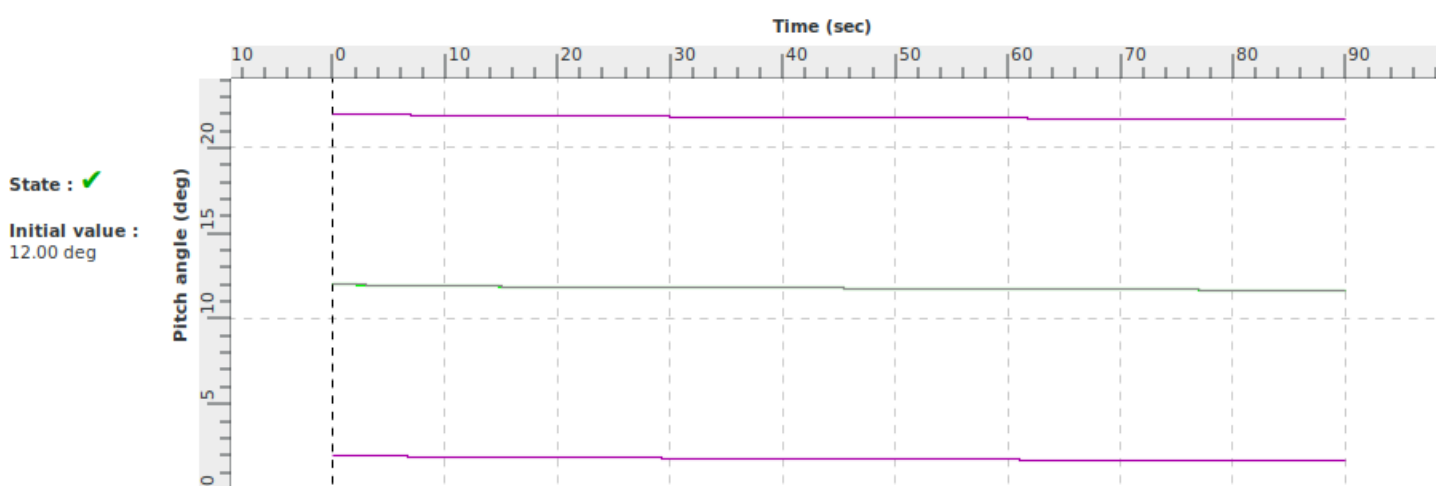
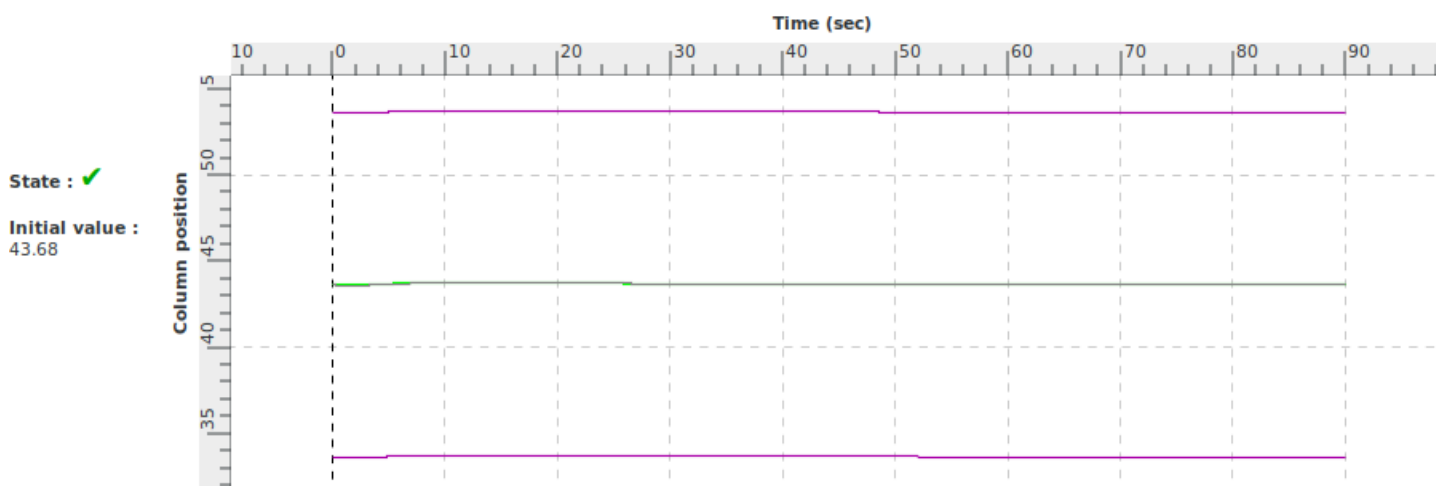
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Normal climb all engines operating.		
Id	1 c i	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



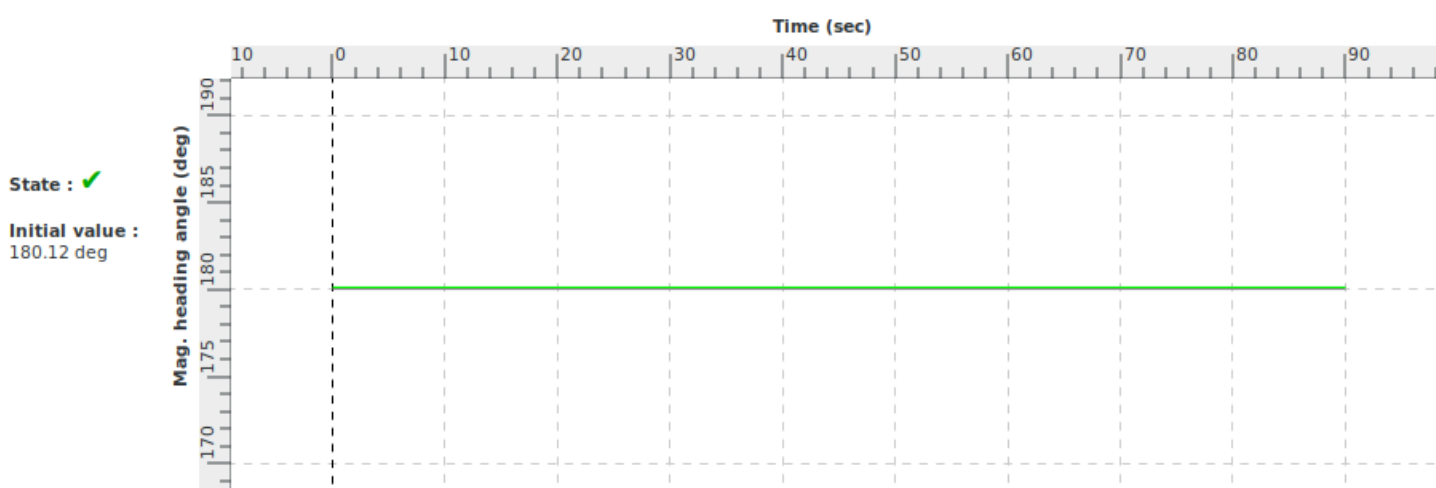
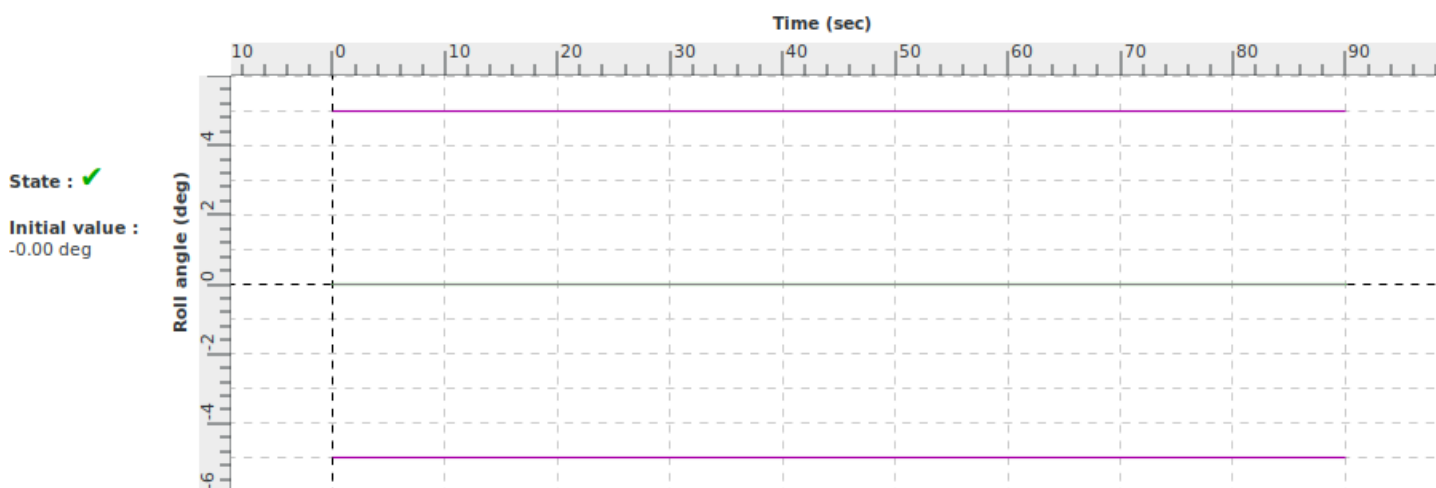
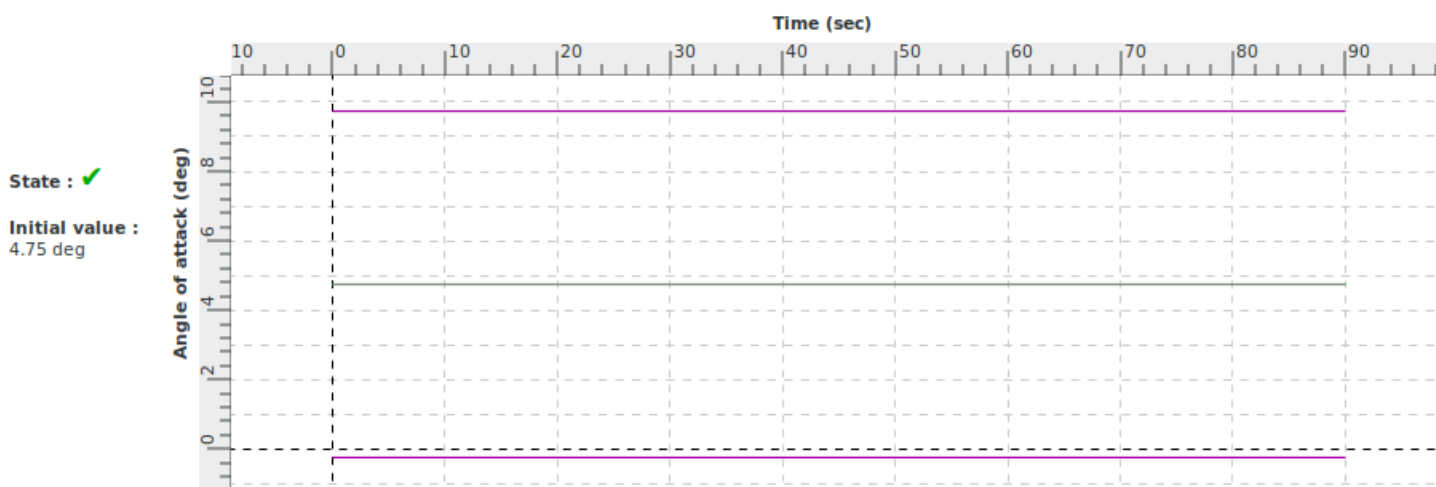
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Normal climb all engines operating.		
Id	1 c i	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	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

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

Objective	Expected Results
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
Reference	Evaluation Criteria
Chapter 12 - Validation data - Performances - Test 1.c.ii	+/-3 Kts Airspeed +/- 5 % or +/- 100ft/mn Rate of Climb

Demonstration procedure	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.
Manual test procedure	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.
Automatic test procedure	1 c ii

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	One engine inoperative second segment climb		
Id	1 c ii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
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_HDG_AND_IAS

Initial parameters	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

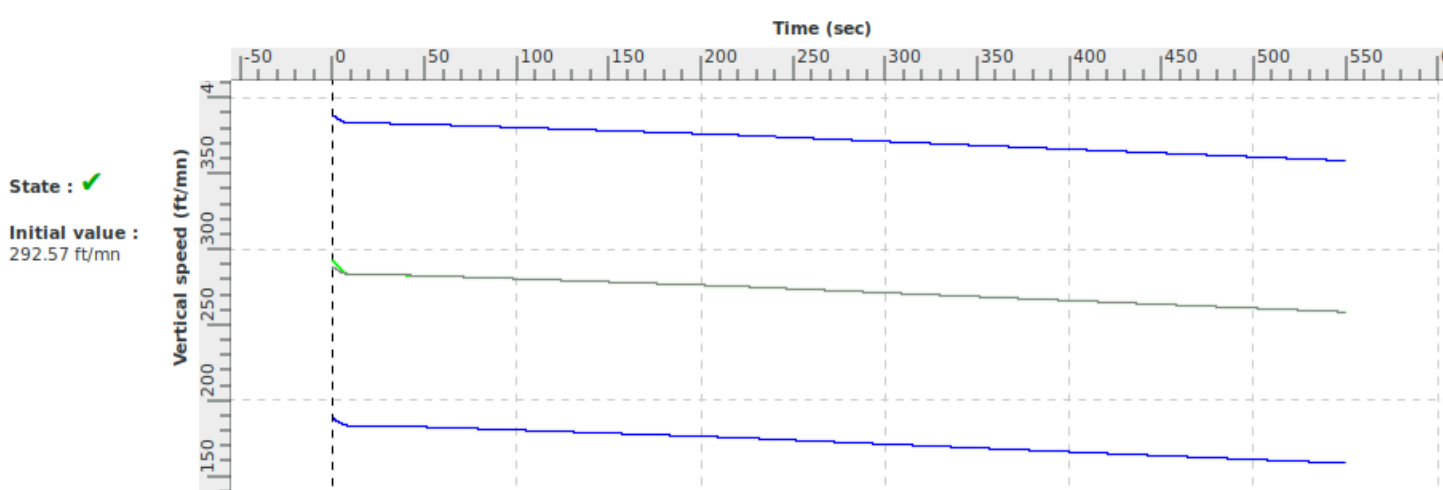
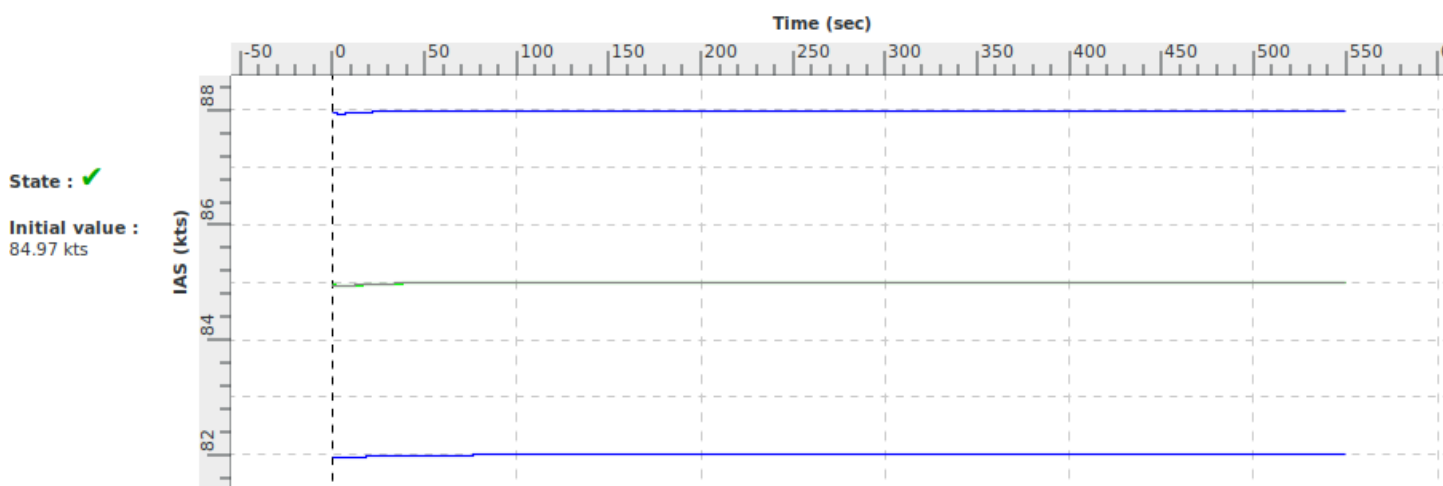
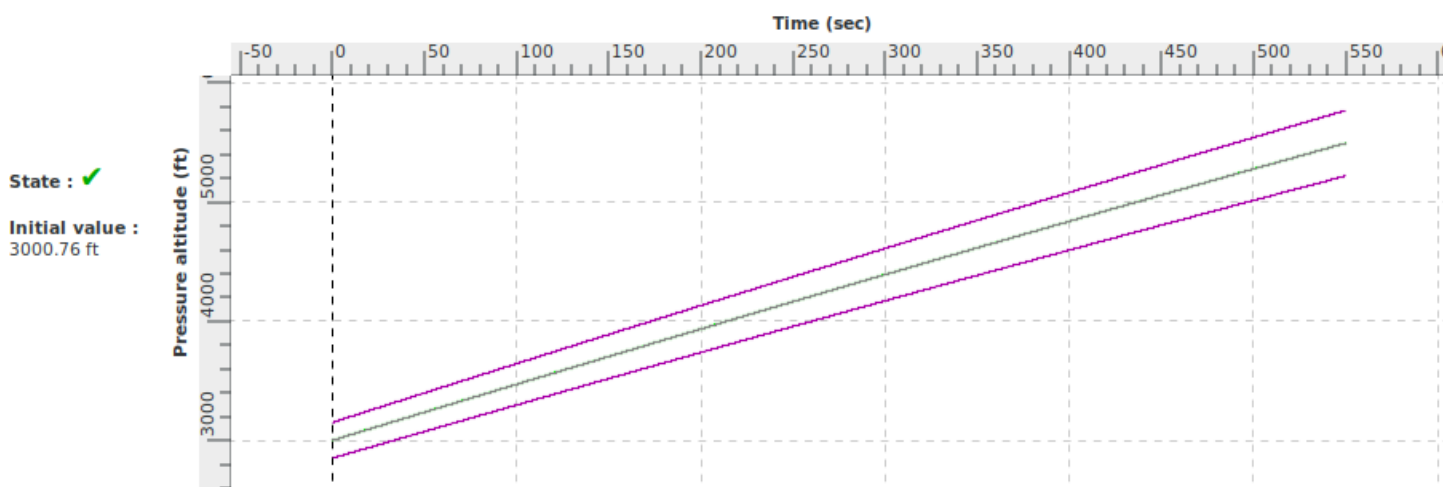
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
550.0	Stop_Test	0.0	Stop the test procedure

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

Title	One engine inoperative second segment climb		
Id	1 c ii	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



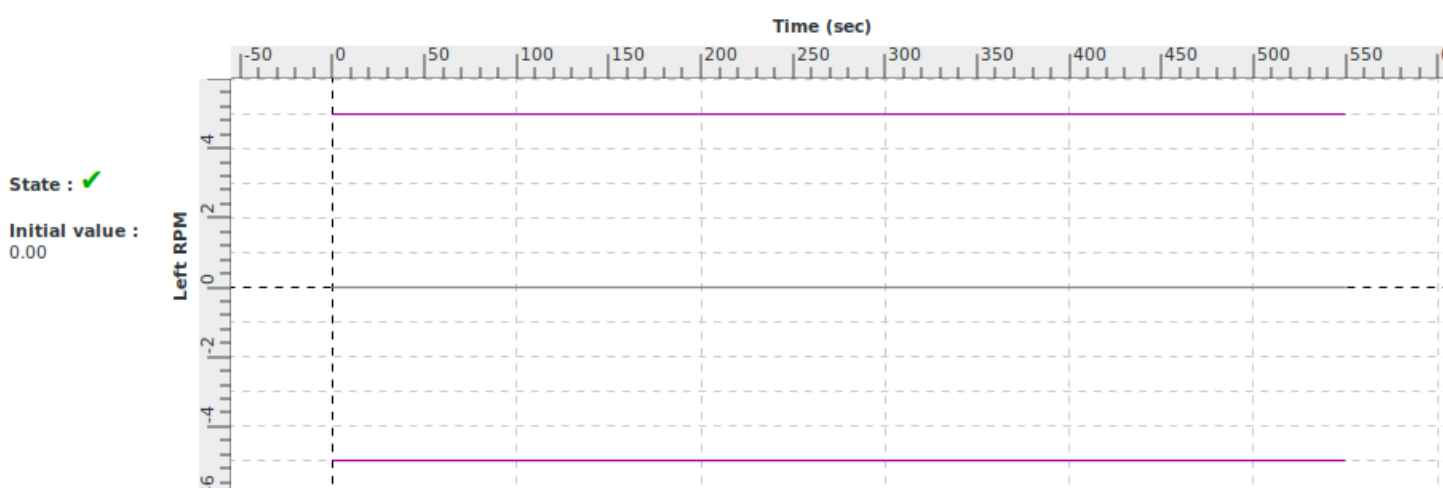
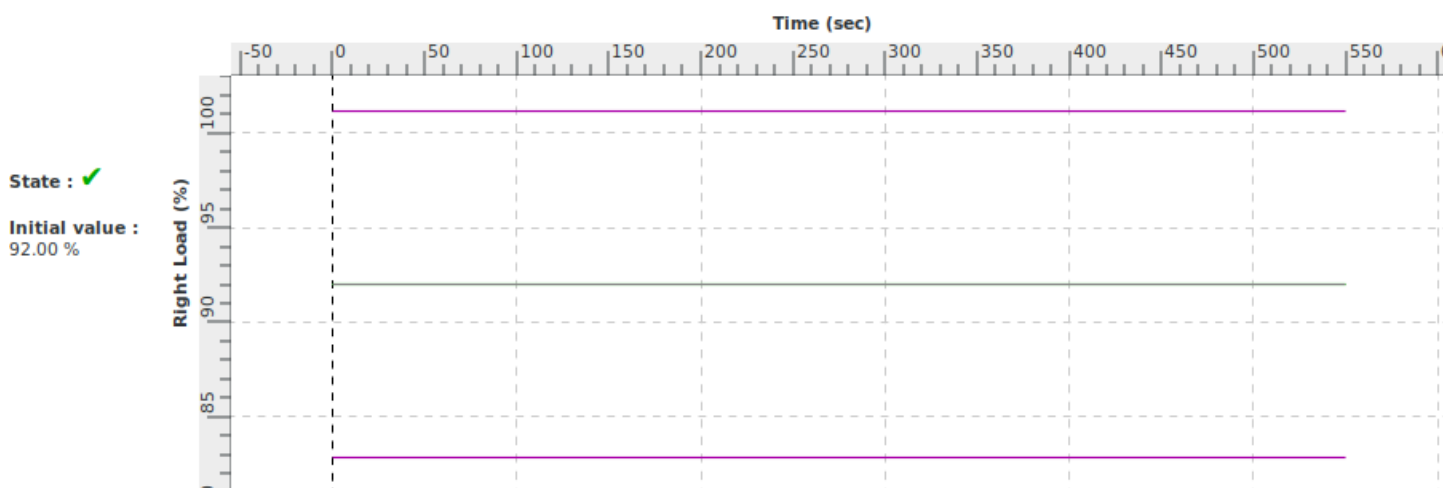
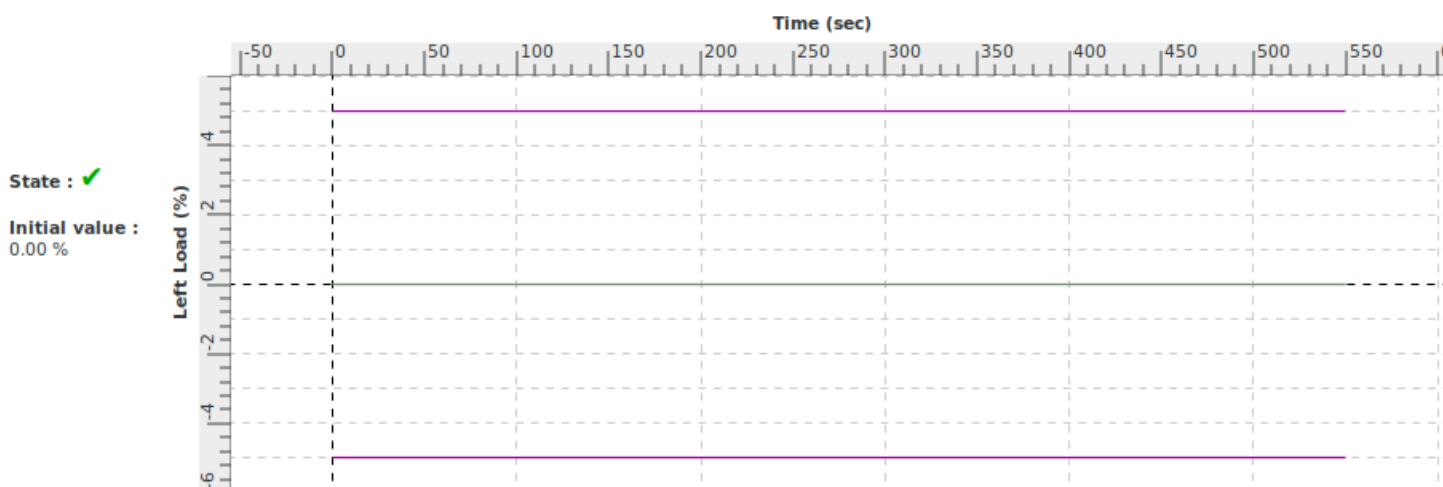
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	One engine inoperative second segment climb		
Id	1 c ii	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



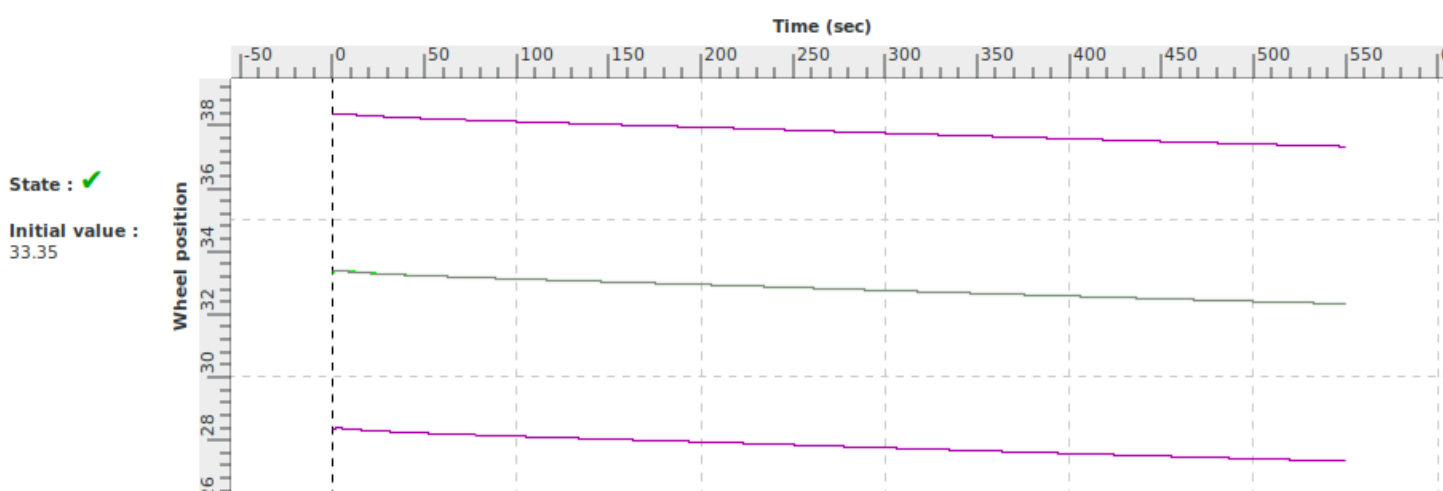
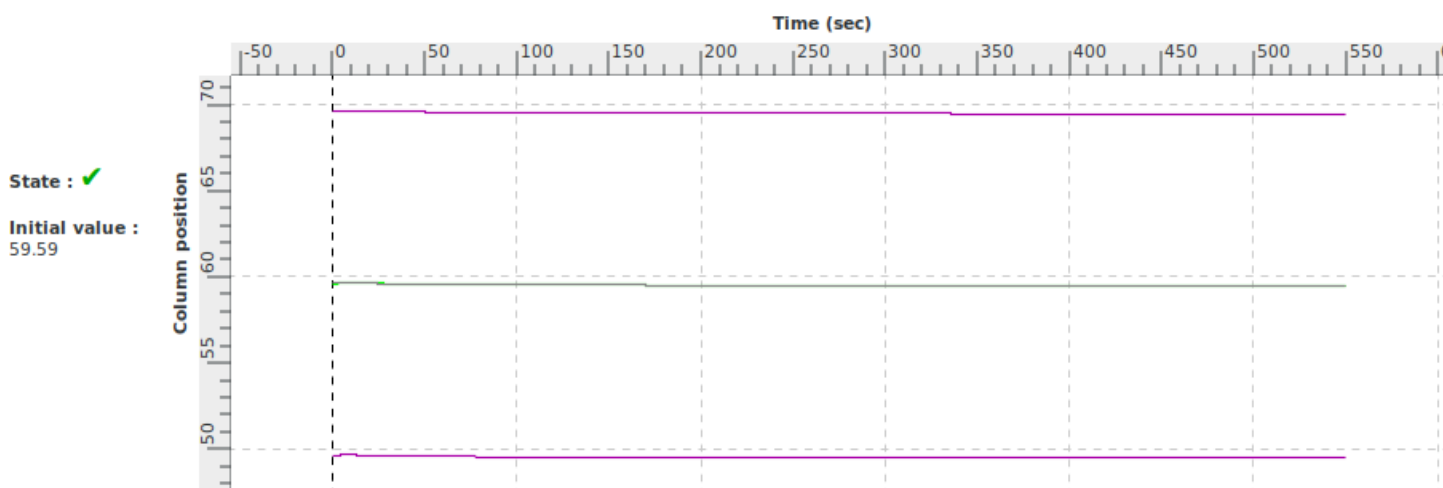
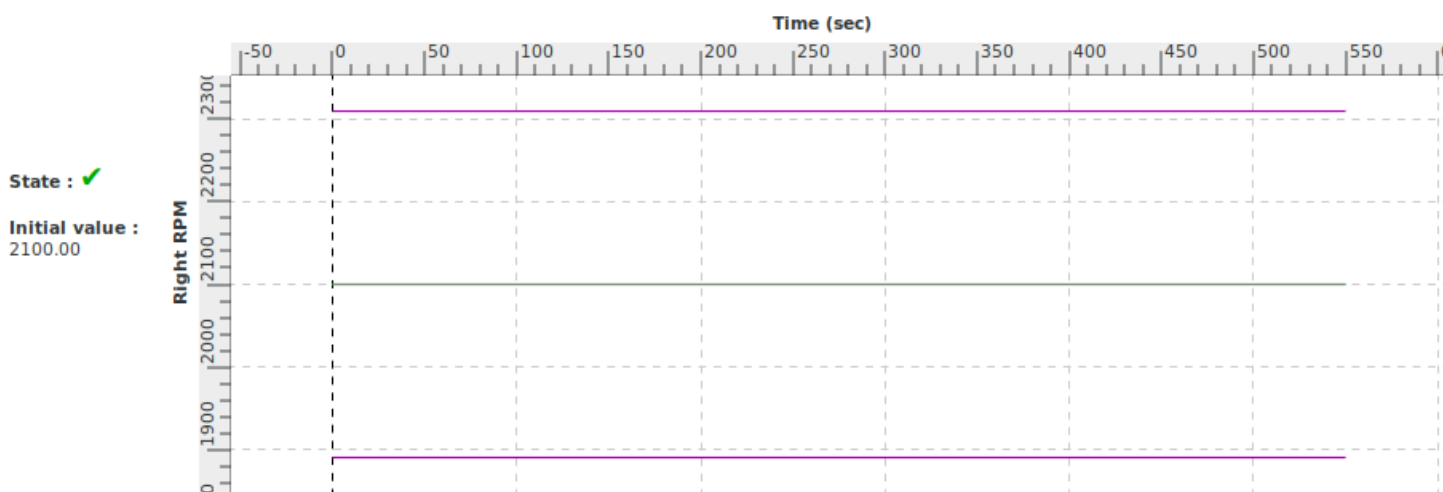
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	One engine inoperative second segment climb		
Id	1 c ii	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



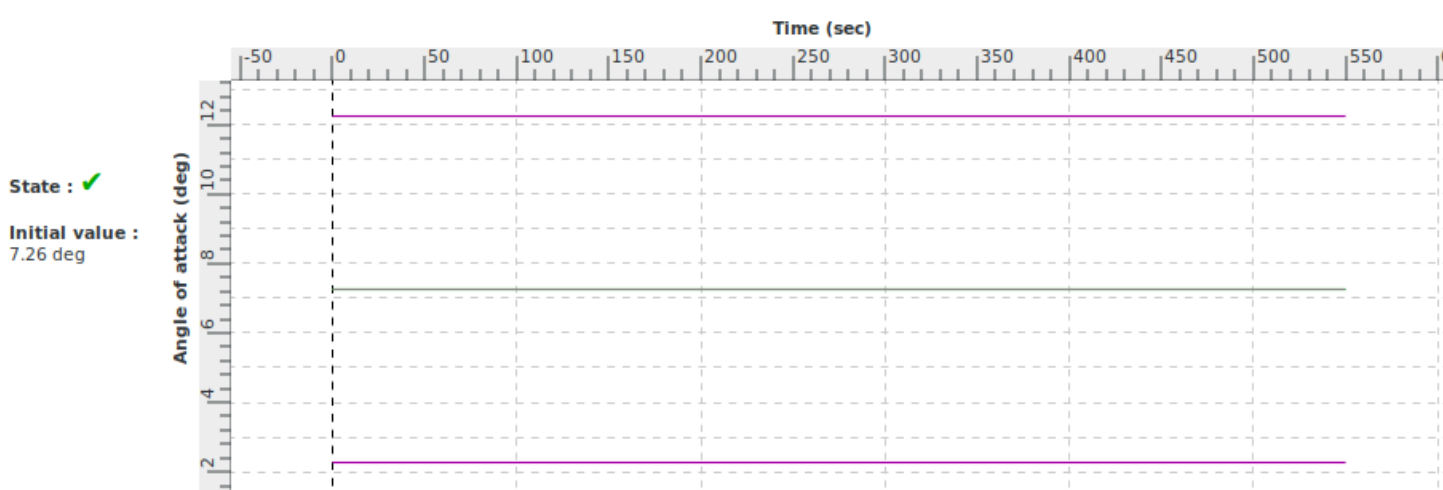
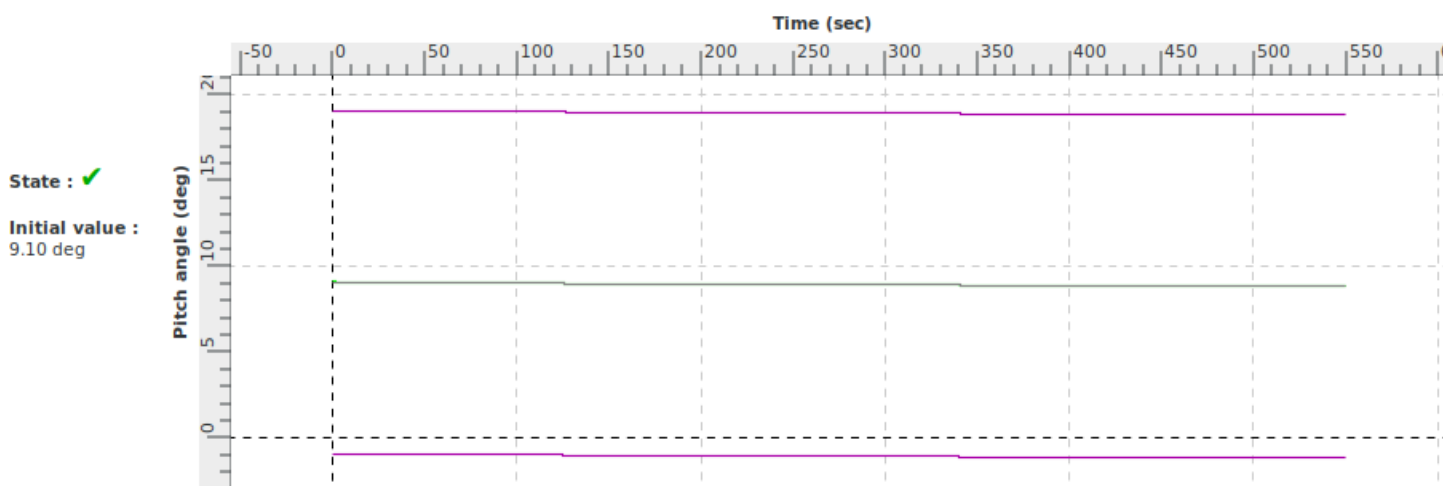
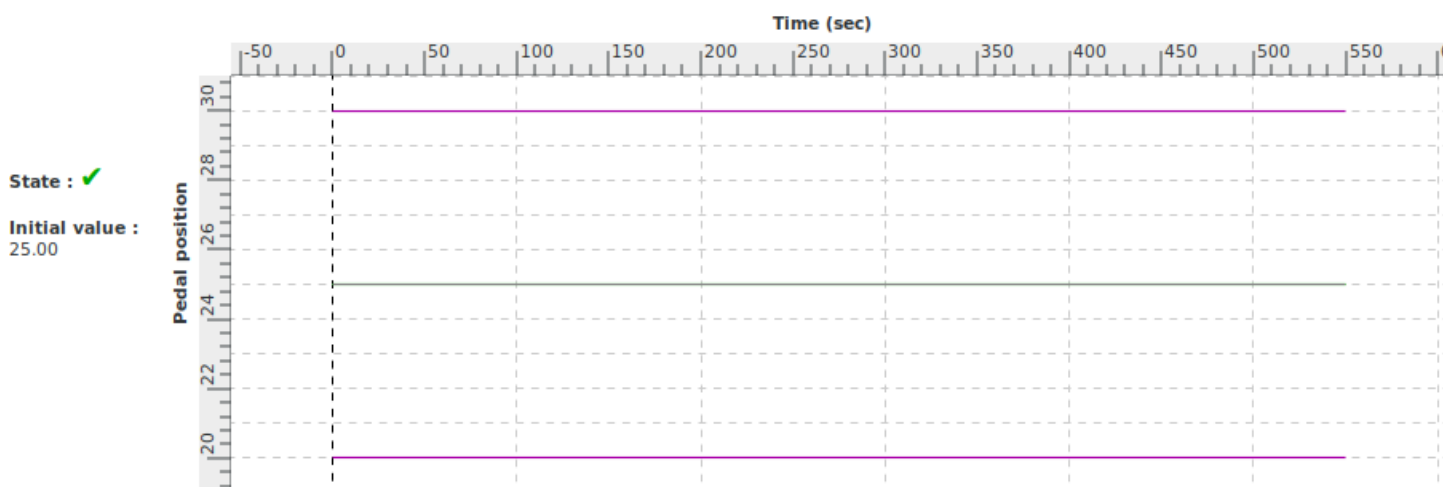
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	One engine inoperative second segment climb		
Id	1 c ii	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



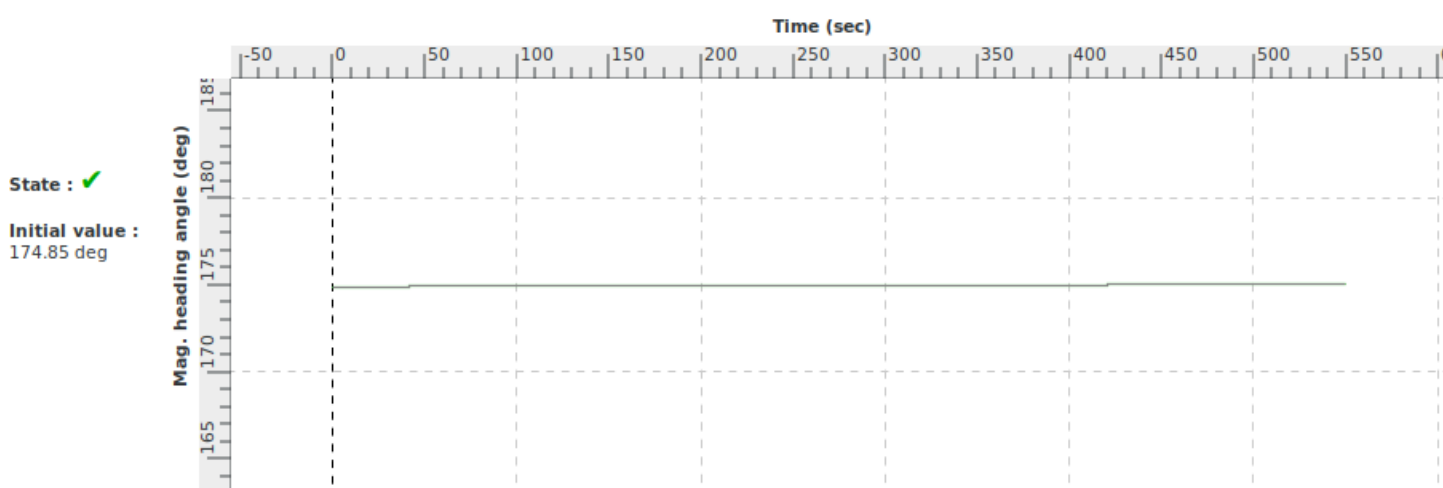
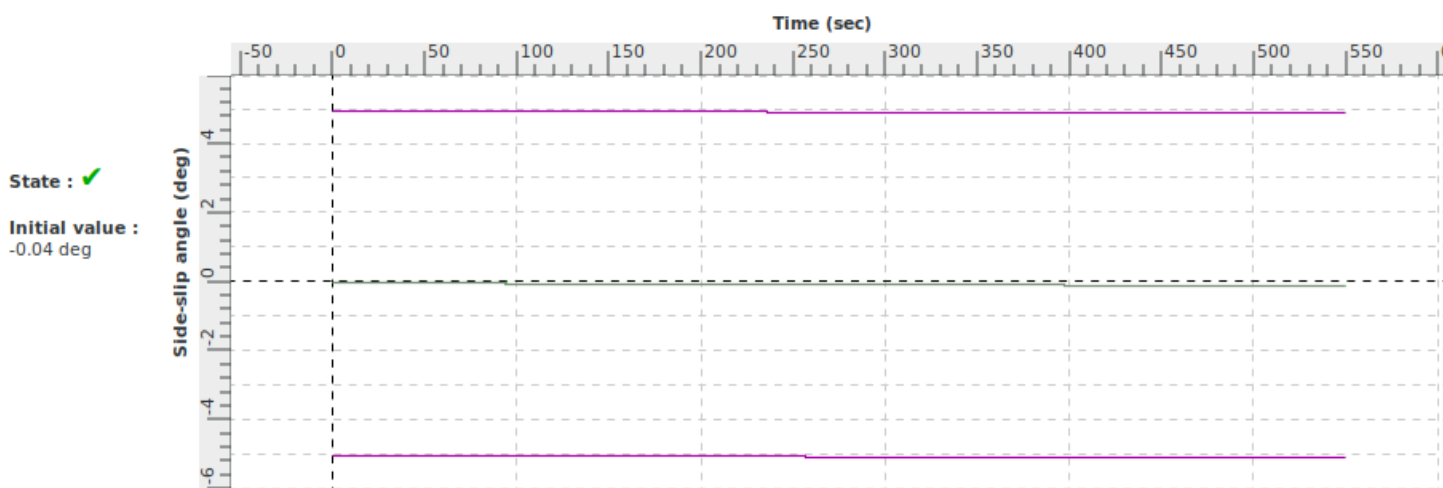
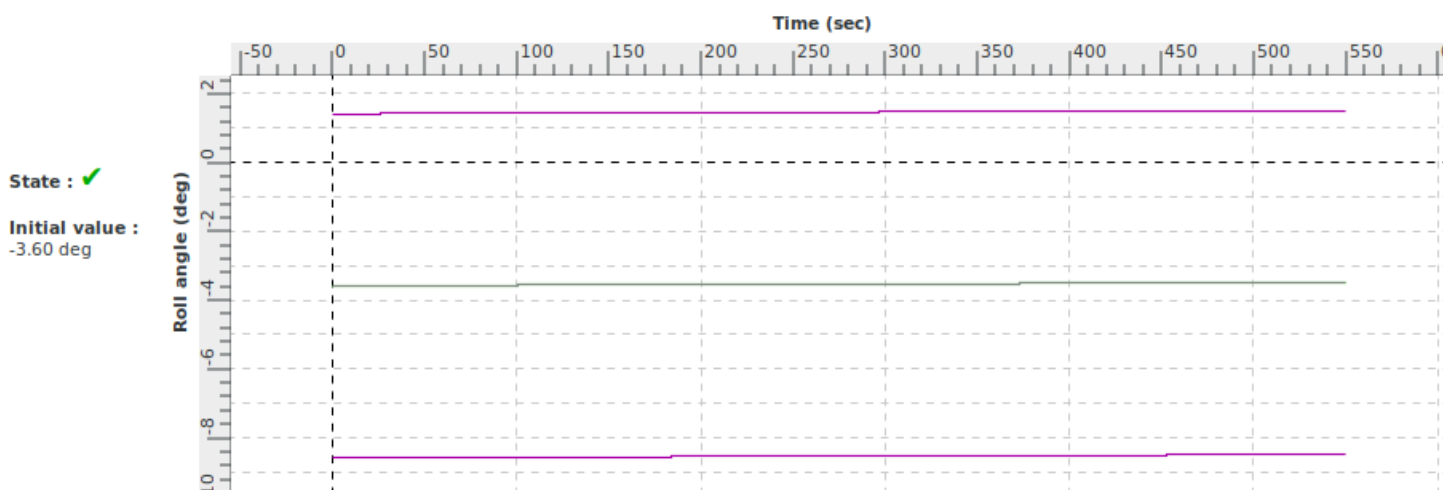
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	One engine inoperative second segment climb		
Id	1 c ii	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

Title	Engines acceleration during approach		
Id	1 f i	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that simulation of engine acceleration (time from idle to 90% of Go-Around power) conforms to the class of aeroplanes	Time from idle to 10% of maximum load : Time 0.2 sec approx Time from idle to 90% of maximum load : Time 1.3 sec approx
Reference	Evaluation Criteria
Chapter 12 - Validation data - Performances - Test 1.f.i	Correct Trend and Magnitude

Demonstration procedure	From steady approach initial conditions, throttle is rapidly moved to idle power and then rapidly advanced to go-around power position. Time to accelerate to specified power is measured.
Manual test procedure	Trim the airplane to approach conditions (the parameters are given in the next page).The throttles are moved to idle power and then rapidly advanced to go around power. Load and Power Lever Position are recorded. Transient time (to new steady state) is read from the record and compared versus airplane data.
Automatic test procedure	1 f i

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Engines acceleration during approach		
Id	1 f i	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	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	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	

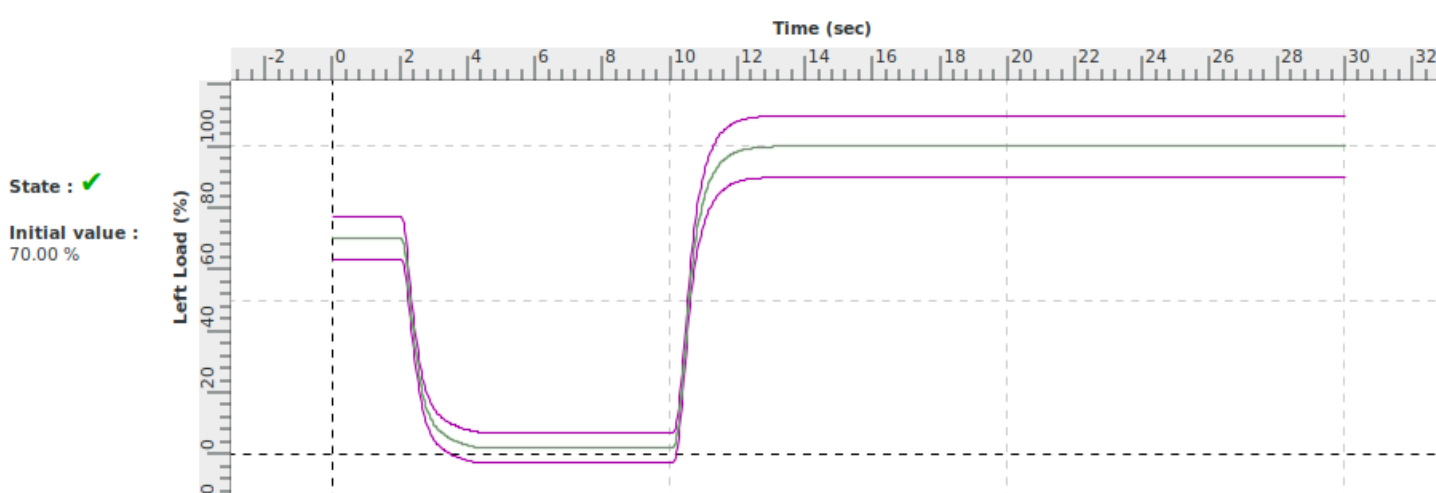
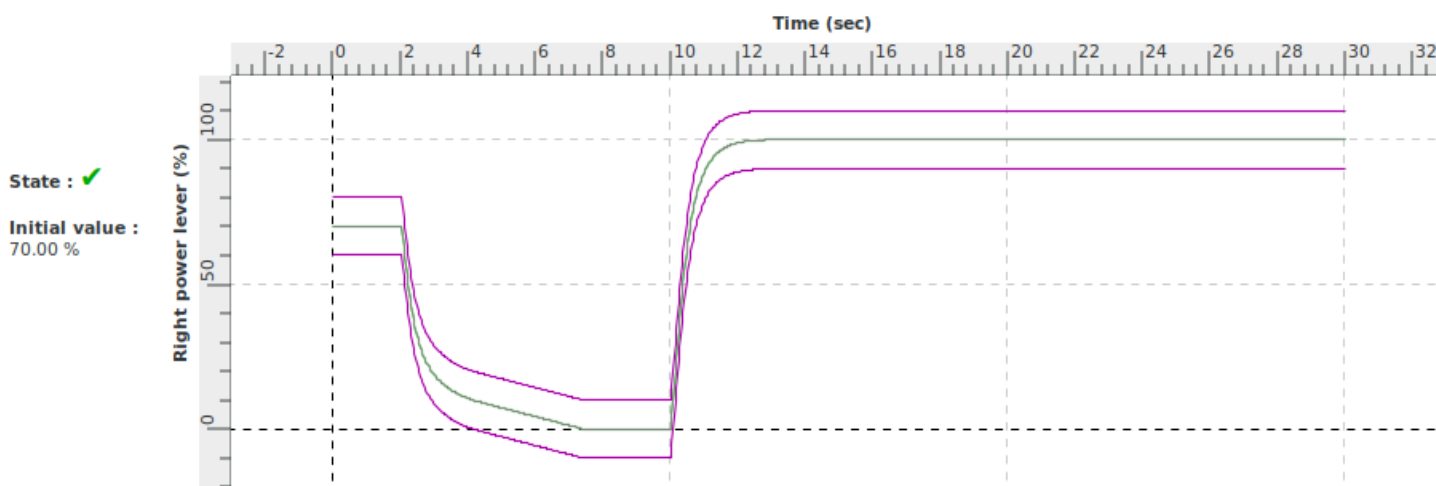
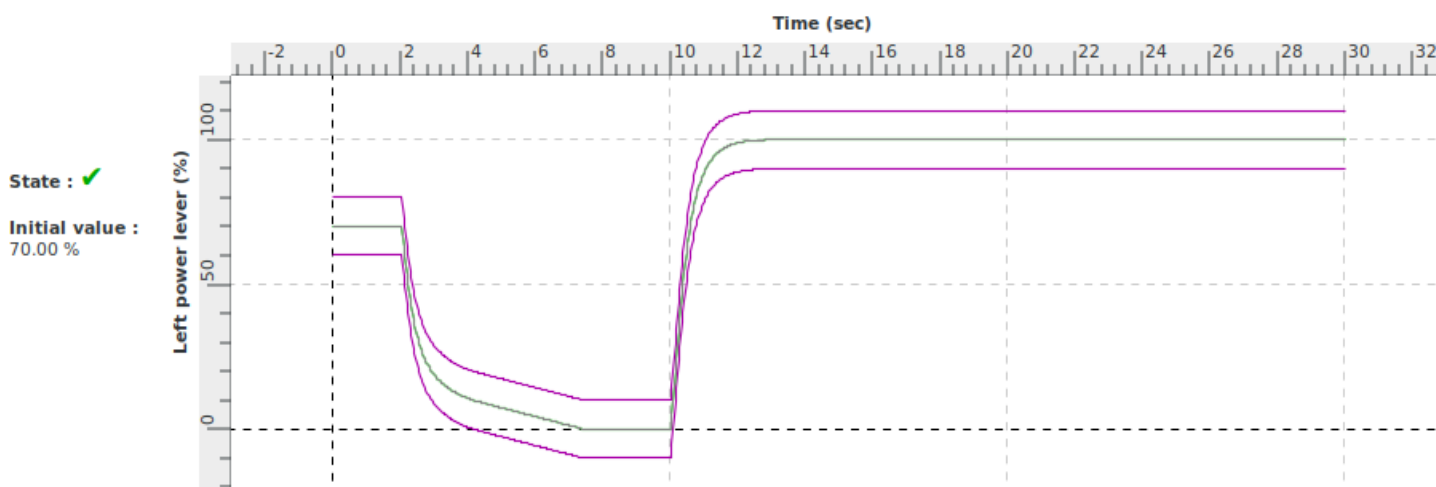
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	mode_stop	1.0	Set the aircraft to STOP or GO mode (0 means GO and 1 means STOP)
2.0	power_FLIGHT_IDLE	0.0	Set engine parameters to flight iddle power
10.0	power_GOAROUND_MAX	0.0	Set engine parameters to go-around power
30.0	Stop_Test	0.0	Stop the test procedure

Title	Engines acceleration during approach		
Id	1 f i	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Engines acceleration during approach		
Id	1 f i	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



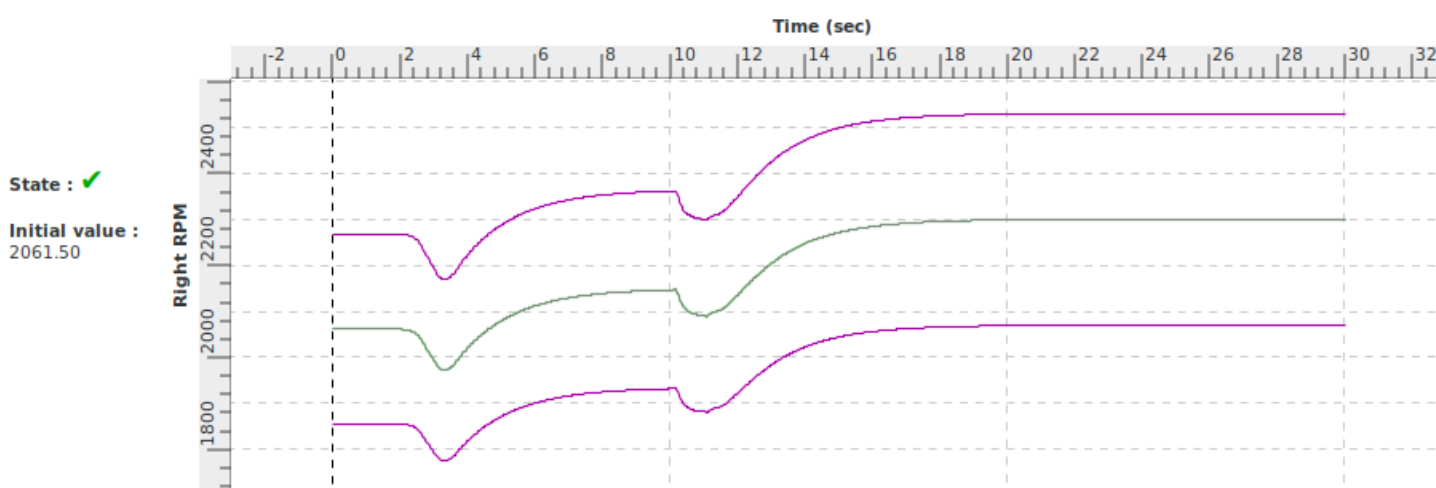
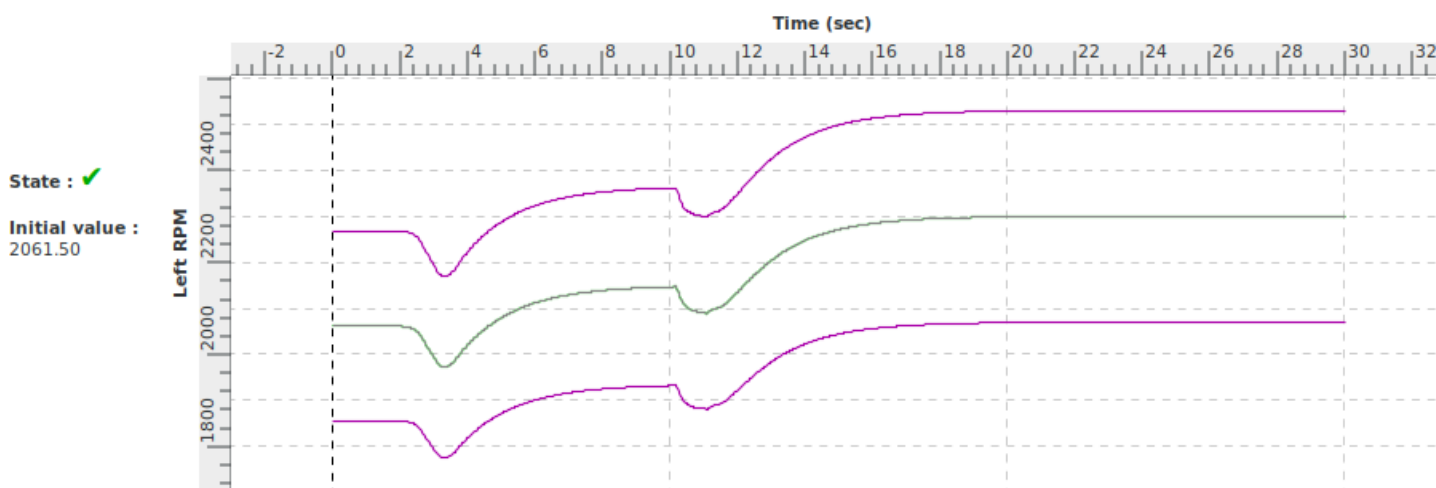
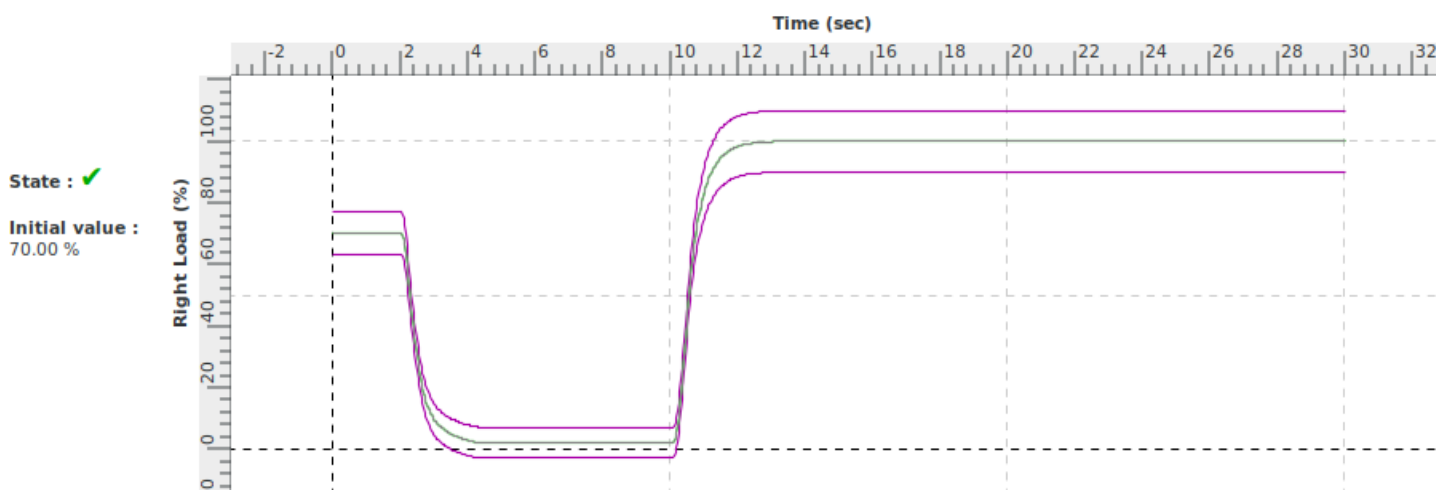
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Engines acceleration during approach		
Id	1 f i	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	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

Title	Engines deceleration on ground		
Id	1 f ii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that simulation of engine deceleration (time from initial throttle movement to 90% decay of maximum take-off power) conforms to the class of aeroplanes	Time from maximum load to 10% decay : Time 0.2 sec approx Time from maximum load to 90% decay : Time 1.1 sec approx
Reference	Evaluation Criteria
Chapter 12 - Validation data - Performances - Test 1.f.ii	Correct Trend and Magnitude

Demonstration procedure	On ground initial conditions (before take-off), the power is first increased to maximum take-off power then decreased to idle position. Time to decelerate to specified power (90% of decay) is measured.
Manual test procedure	On ground conditions (the parameters are given in the next page) with parking brakes: the throttles are rapidly advanced to take-off power then they are decreased to idle position. Load and Power Lever Position are recorded. Transient time (to new steady state) is read from the record and compared versus airplane data.
Automatic test procedure	1 f ii

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Engines deceleration on ground		
Id	1 f ii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	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	ON_GROUND
Gross weight (kg) : 1900	Flaps lever position : 0
Balance (%) : 50	Gear lever position : 1
Altitude (ft) : 0	Left Load (%) : 0
Vertical speed (ft/min) : 0	Right Load (%) : 0
IAS (kt) : 0 (free)	Left RPM : 750
Heading (°) : 0 (free)	Right RPM : 750
Bank (°) : 0	
Attitude (°) : 0	
Pedal Position (%) : 0	
Column Position (%) : 0	
Wheel Position (%) : 0	

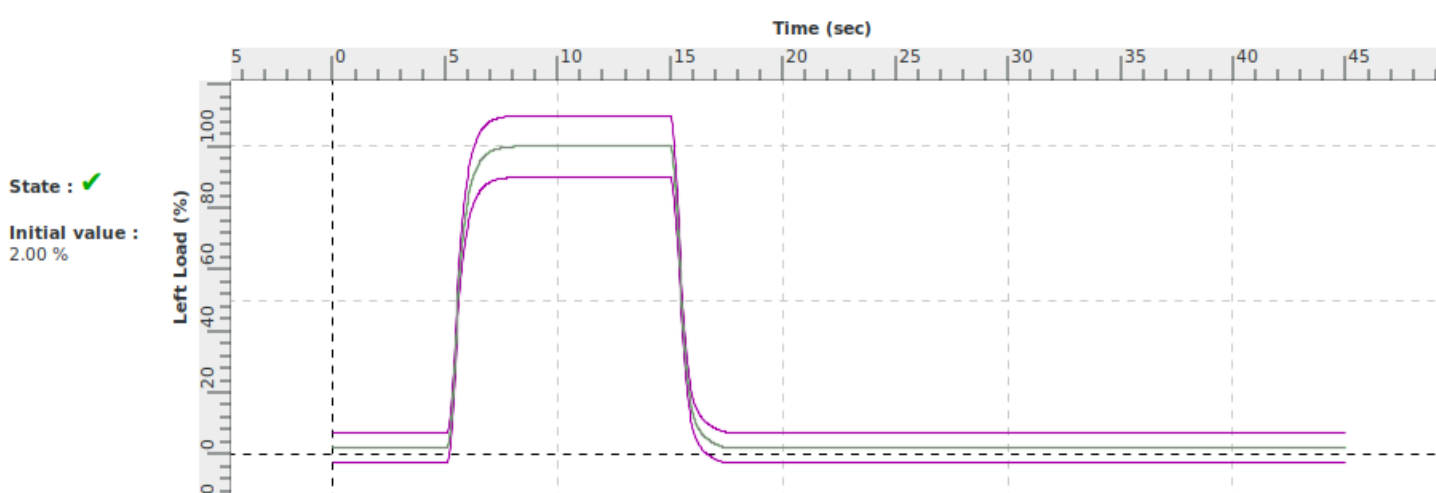
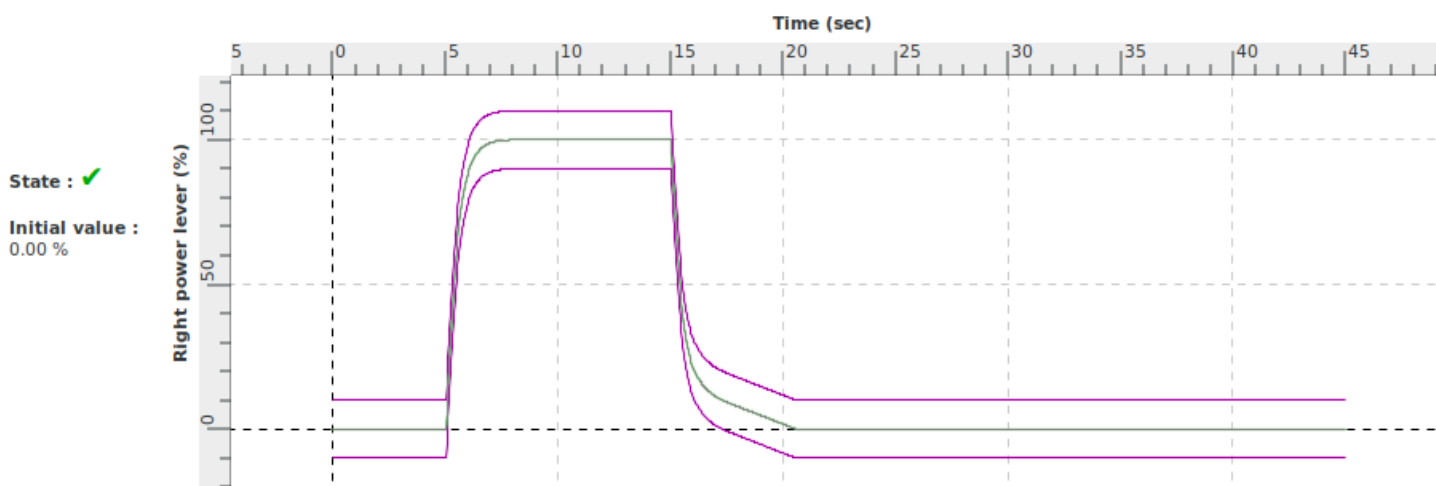
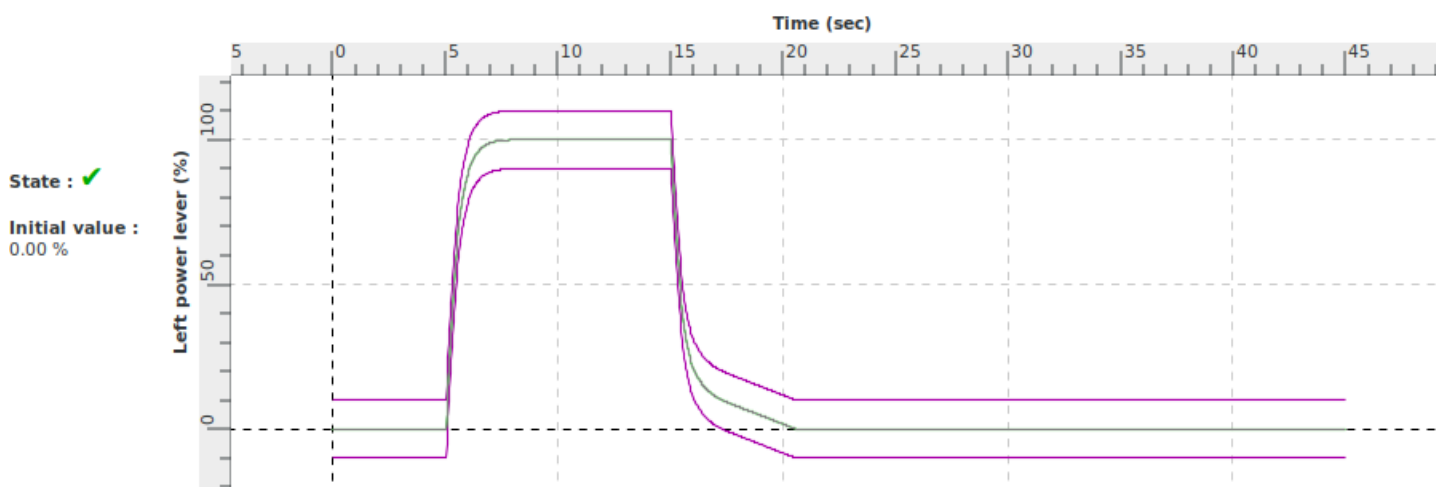
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	mode_stop	1.0	Set the aircraft to STOP or GO mode (0 means GO and 1 means STOP)
5.0	power_GOAROUND_MAX	0.0	Set engine parameters to go-around power
15.0	power_GROUND_IDLE	0.0	Set engine parameters to ground iddle power
45.0	Stop_Test	0.0	Stop the test procedure

Title	Engines deceleration on ground		
Id	1 f ii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Engines deceleration on ground		
Id	1 f ii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



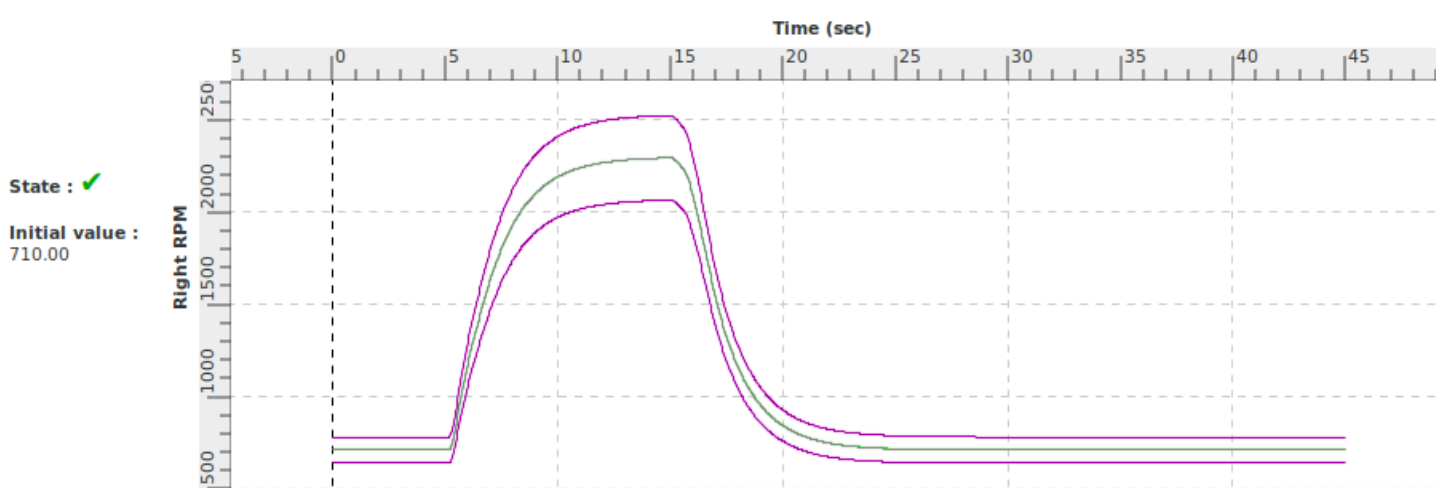
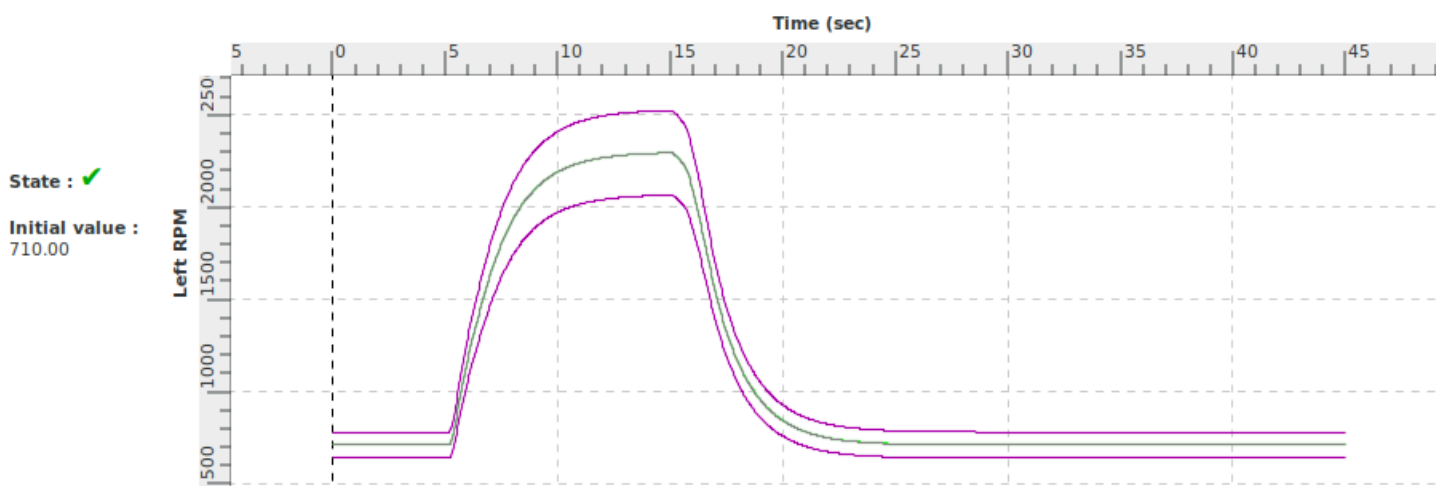
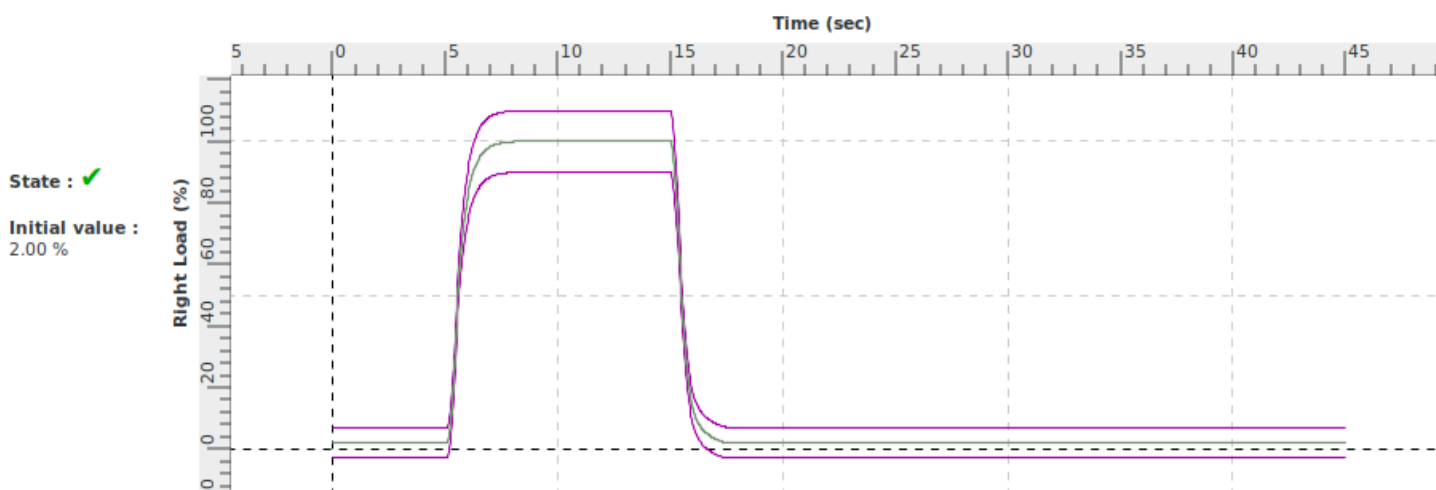
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Engines deceleration on ground		
Id	1 f ii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	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

Title	Column position vs force during cruise		
Id	2 a i 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that the simulator column position vs. control column characteristics conform to the class of aeroplanes	Column Position / Force -100% / -78 N -50% / -46 N 0% / -7 N 50% / 38 N 100% / 75 N
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.a.i.2	+/- 2.2 daN (5 Lbs) or +/- 10 % Force

Demonstration procedure	At the given trimmed flight conditions, the control column is moved at slow rate over its full range. Control Force is plotted versus position and then compared to the aircraft reference data.
Manual test procedure	Airplane is trimmed at cruise conditions and put in freeze mode, then the pilot slowly moves column over its full travel in both directions, using a dynamometer (results to be determined using the Table Sheet AL42_DA42VI_Tables_QTG_VoIII.xls).
Automatic test procedure	2 a i 2

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Column position vs force during cruise		
Id	2 a i 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Autopilot mode	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>	

Initial parameters	CRUISE
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 6000 Vertical speed (ft/min) : 0 (free) IAS (kt) : 139 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

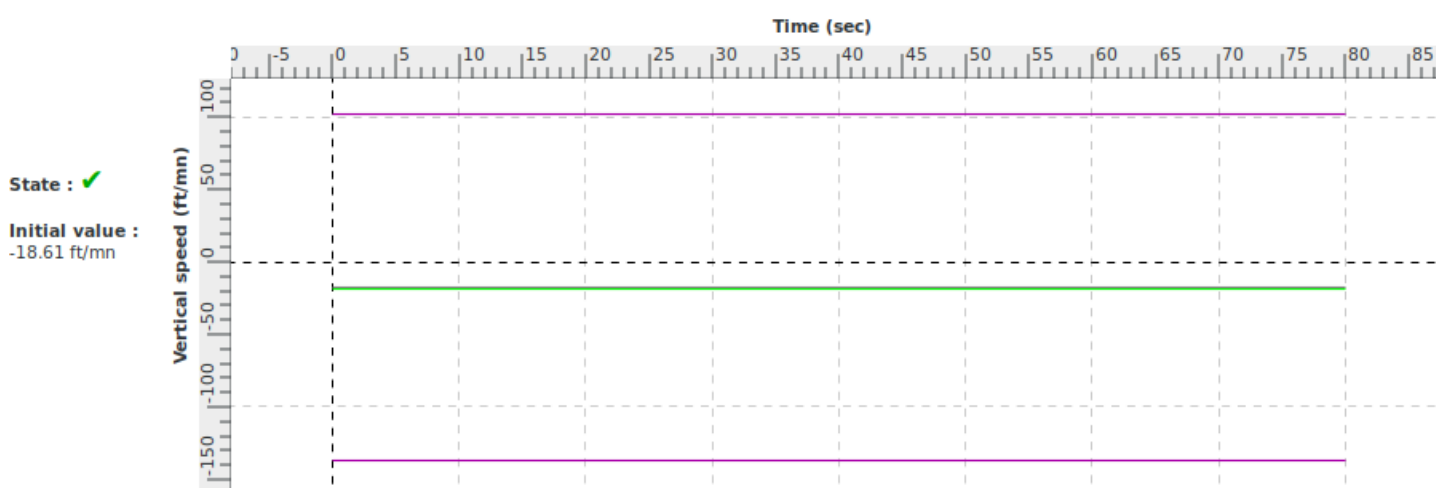
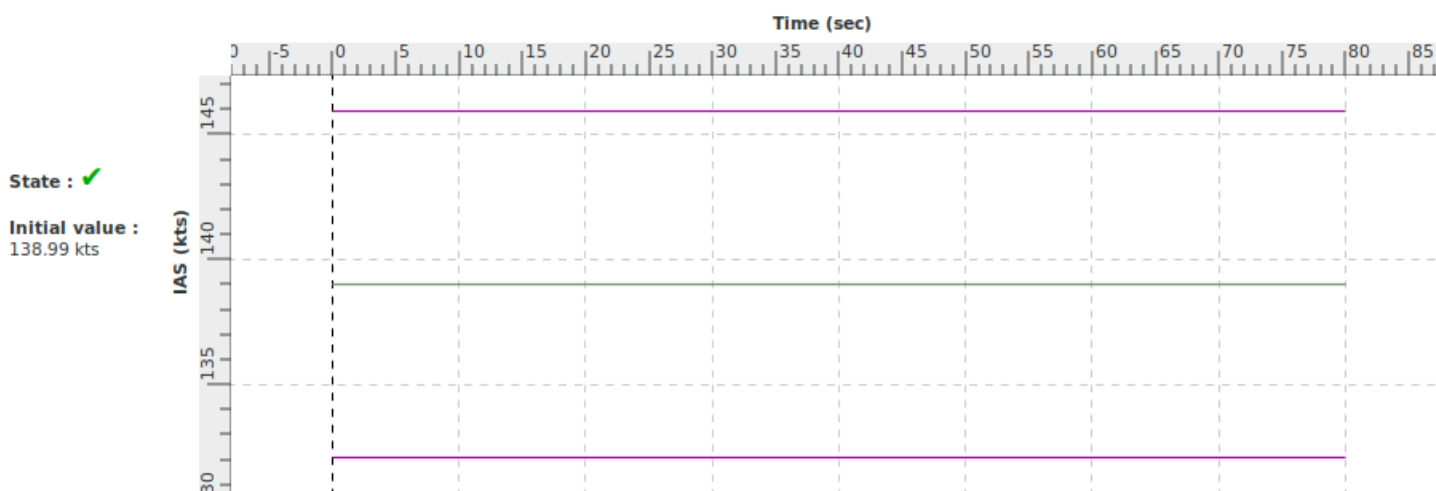
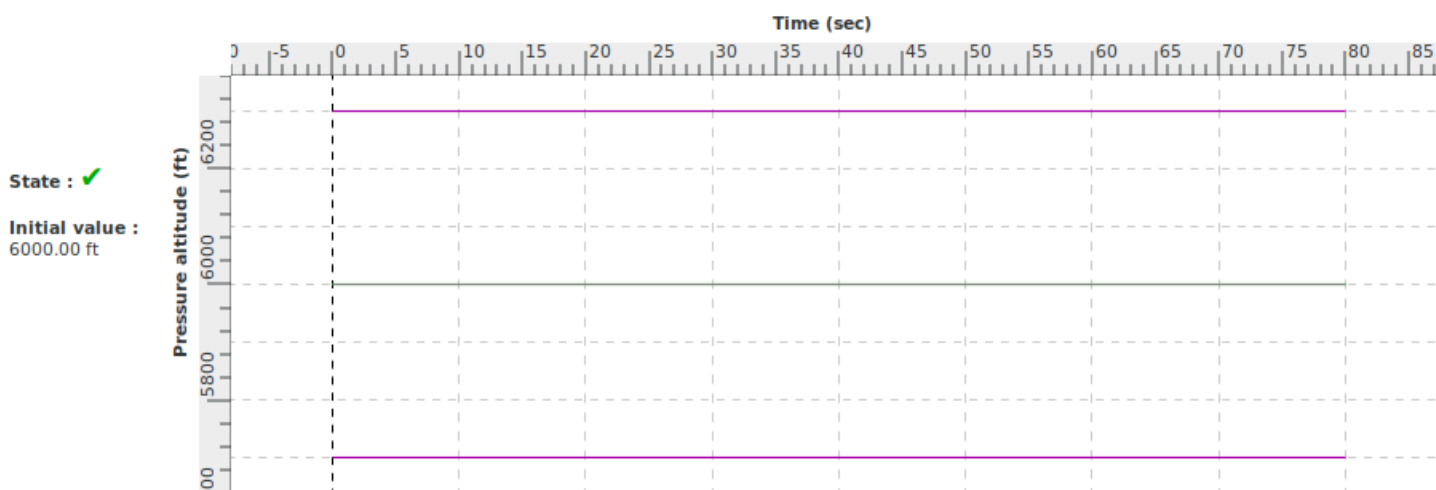
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	mode_stop	1.0	Set the aircraft to STOP or GO mode (0 means GO and 1 means STOP)
3.0	SetAttCmdPalier	107.0	Send a step in the attitude govern
25.0	SetAttCmdPalier	-100.0	Send a step in the attitude govern
65.0	SetAttCmdPalier	0.0	Send a step in the attitude govern
80.0	Stop_Test	0.0	Stop the test procedure

Title	Column position vs force during cruise		
Id	2 a i 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Column position vs force during cruise		
Id	2 a i 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



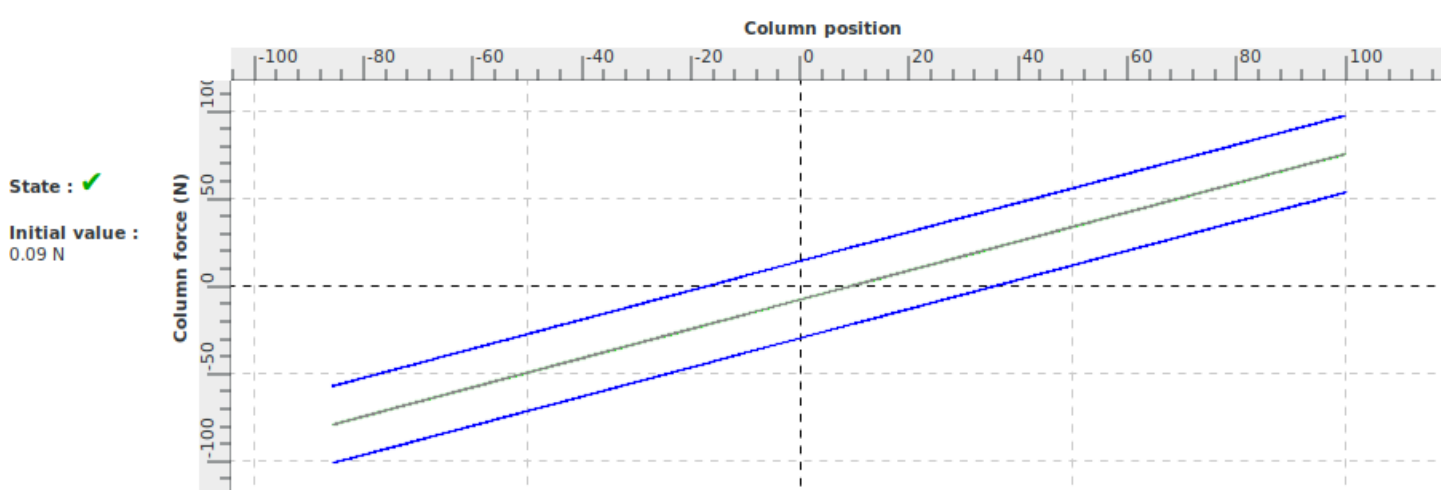
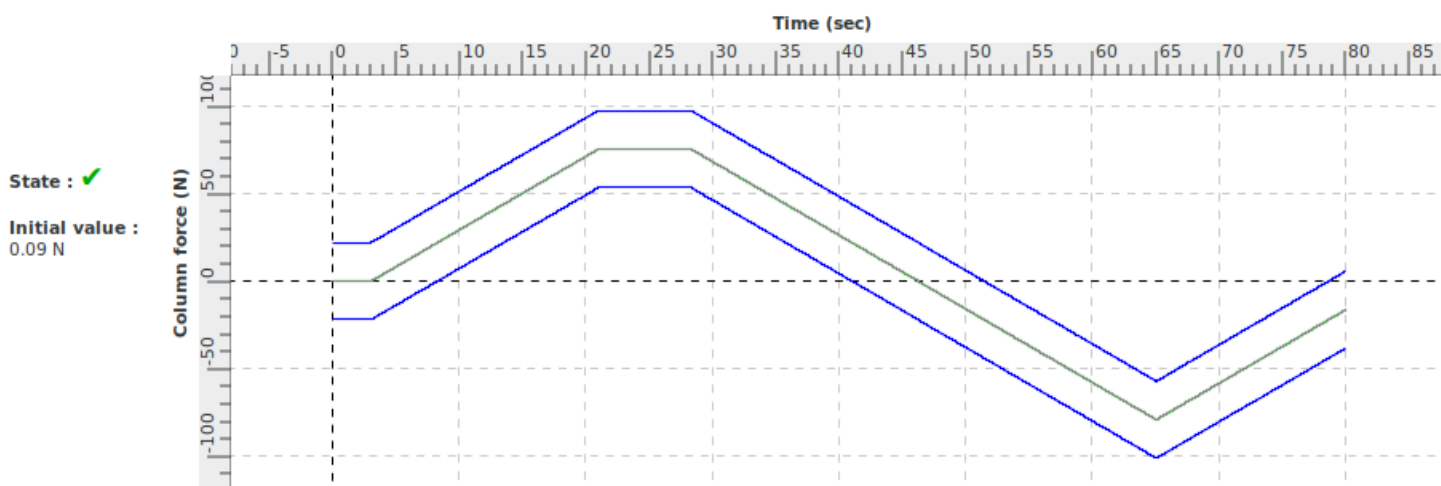
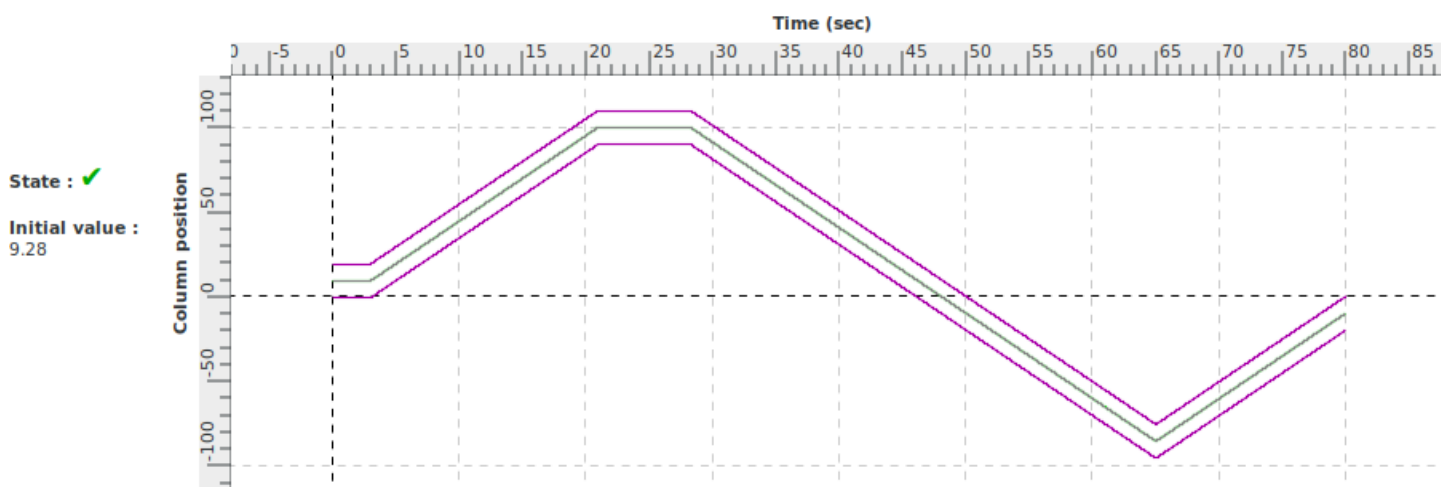
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Column position vs force during cruise		
Id	2 a i 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	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

Title	Wheel position vs force during cruise		
Id	2 a ii 2	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

Objective	Expected Results
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
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.a.ii.2	+/- 1.3 daN (3 Lbs) or +/- 10 % force

Demonstration procedure	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.
Manual test procedure	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).
Automatic test procedure	2 a ii 2

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Wheel position vs force during cruise		
Id	2 a ii 2	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_HEADING
Automatic AUTO_HEADING mode : Heading is maintained constant through roll and yaw trim and Vertical Speed through pitch trim.	

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	Right RPM : 2060
Bank (°) : 0 (free)	
Attitude (°) : 0	
Pedal Position (%) : 0	
Column Position (%) : 9	
Wheel Position (%) : 0	

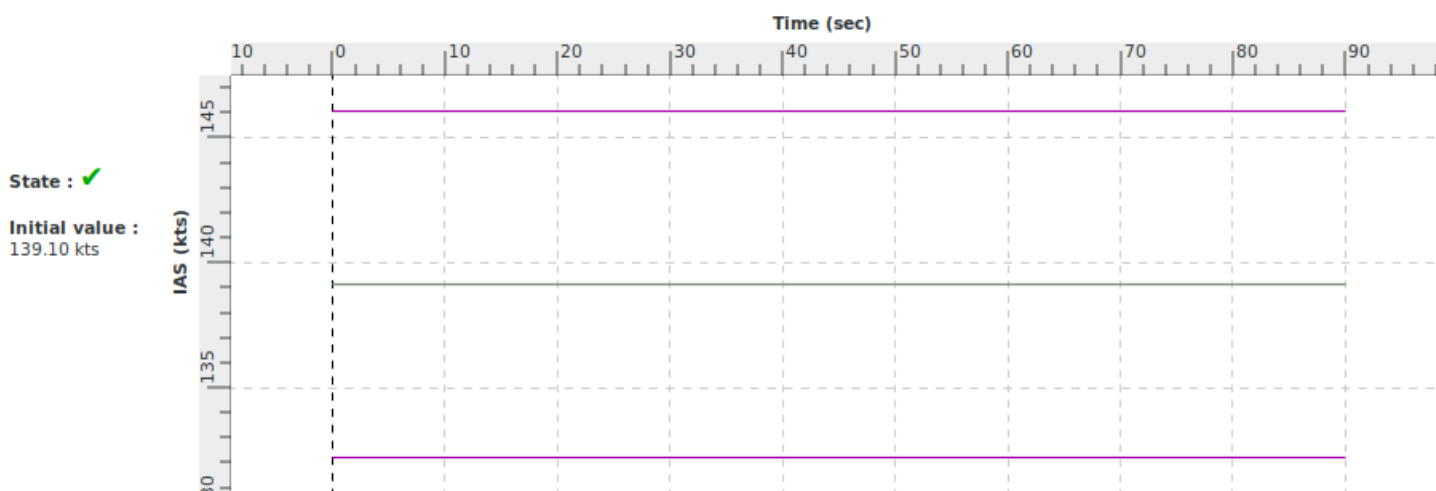
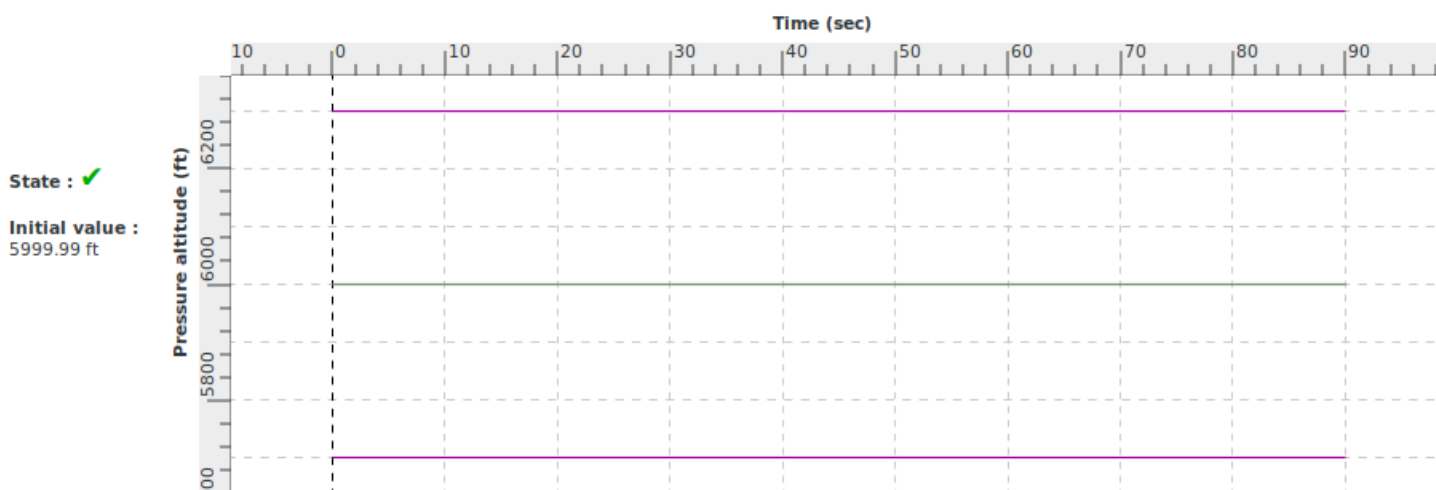
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	mode_stop	1.0	Set the aircraft to STOP or GO mode (0 means GO and 1 means STOP)
3.0	SetRollCmdPalier	103.0	Send a step in the roll govern
24.0	SetRollCmdPalier	-100.0	Send a step in the roll govern
64.3	SetRollCmdPalier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

Title	Wheel position vs force during cruise		
Id	2 a ii 2	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

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



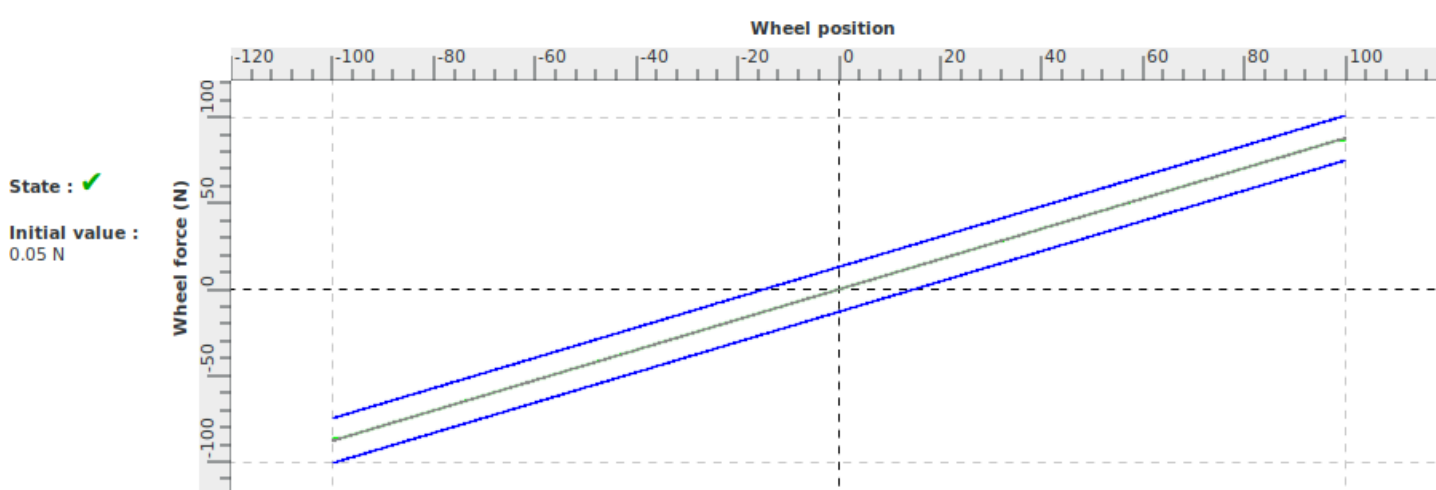
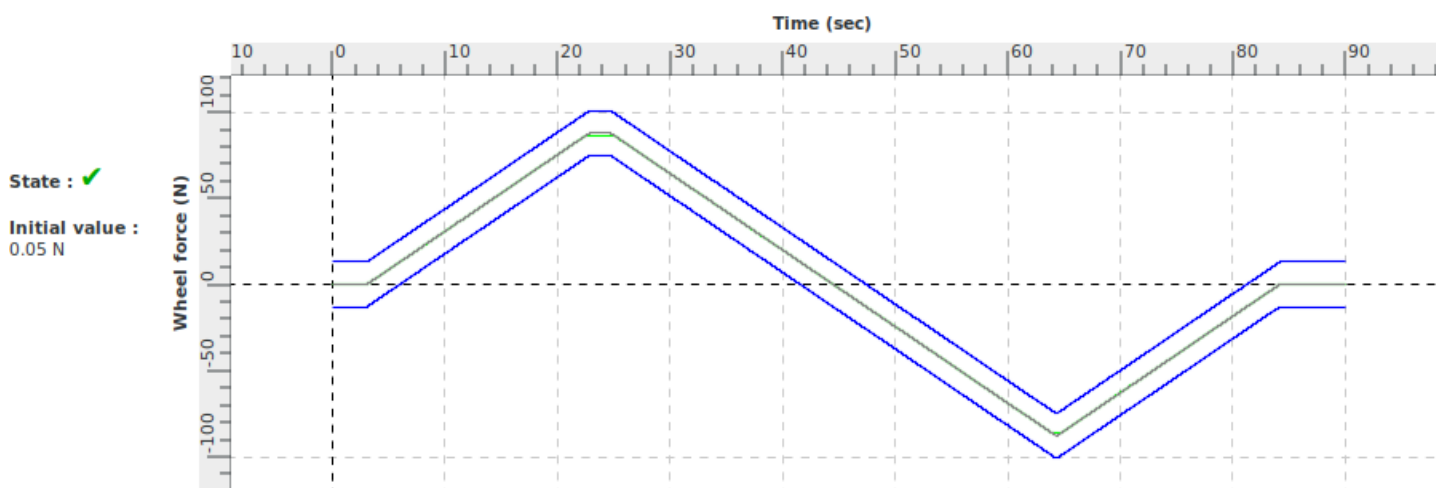
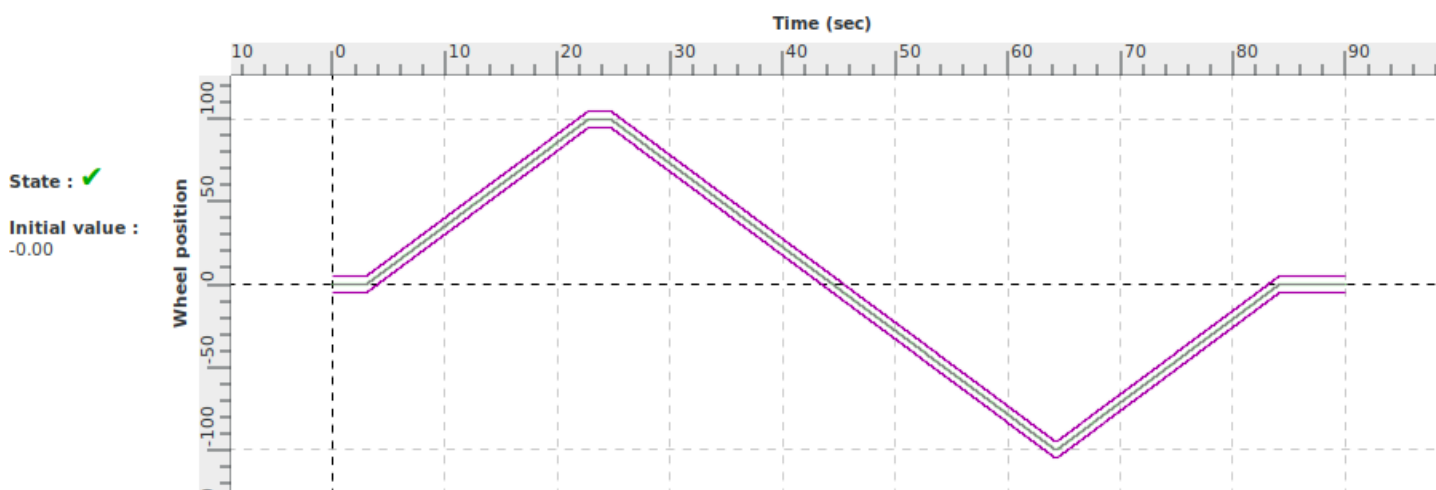
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

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



Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

VALIDATION TEST

Title	Rudder position vs force during cruise		
Id	2 a iii 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that the simulator pedal controller position vs. pedal controller force characteristics conform to the class of aeroplanes	Rudder Position / Pedal Force -100% / -353 N -50% / -175 N 0% / 0 N 50% / 176 N 100% / 353 N
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.a.iii.2	+/- 2.2.daN (5 Lbs) or +/- 10 % force

Demonstration procedure	At the given trimmed flight conditions, the control rudder is moved at slow rate over its full range. Control Force is plotted versus position and then compared to the aircraft reference data.
Manual test procedure	Airplane is trimmed at cruise conditions and put in freeze mode, then the pilot slowly moves pedals over its full travel in both directions using a dynamometer (results to be determined using the Table Sheet AL42_DA42VI_Tables_QTG_VoIII.xls).
Automatic test procedure	2 a iii 2

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Rudder position vs force during cruise		
Id	2 a iii 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

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

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	Right RPM : 2060
Bank (°) : 0 (free)	
Attitude (°) : 0	
Pedal Position (%) : 0	
Column Position (%) : 9	
Wheel Position (%) : 0	

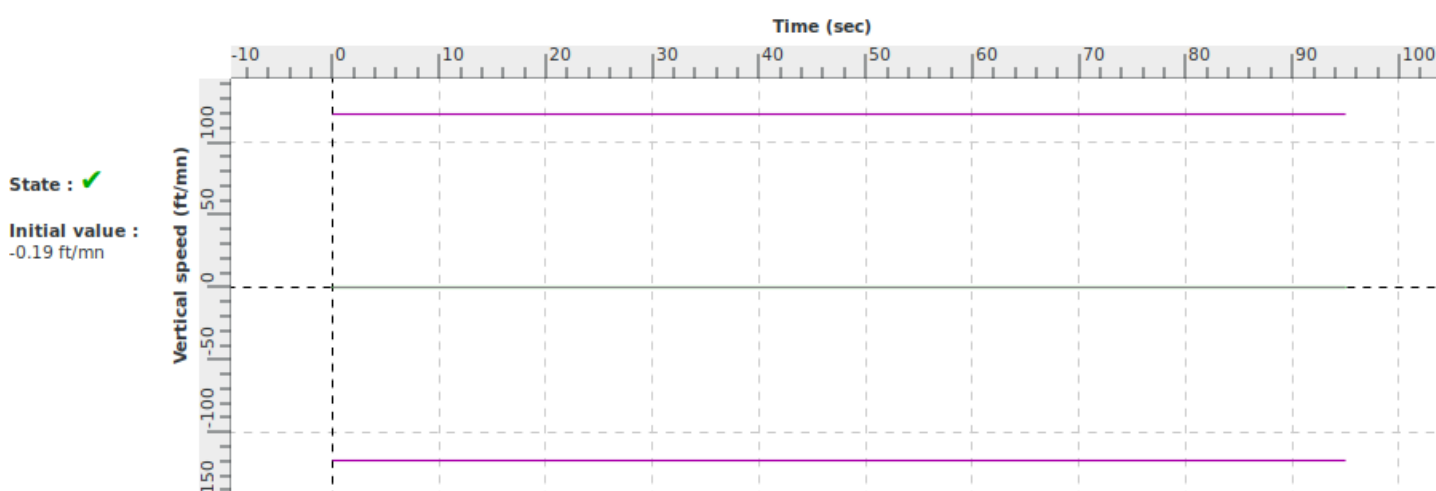
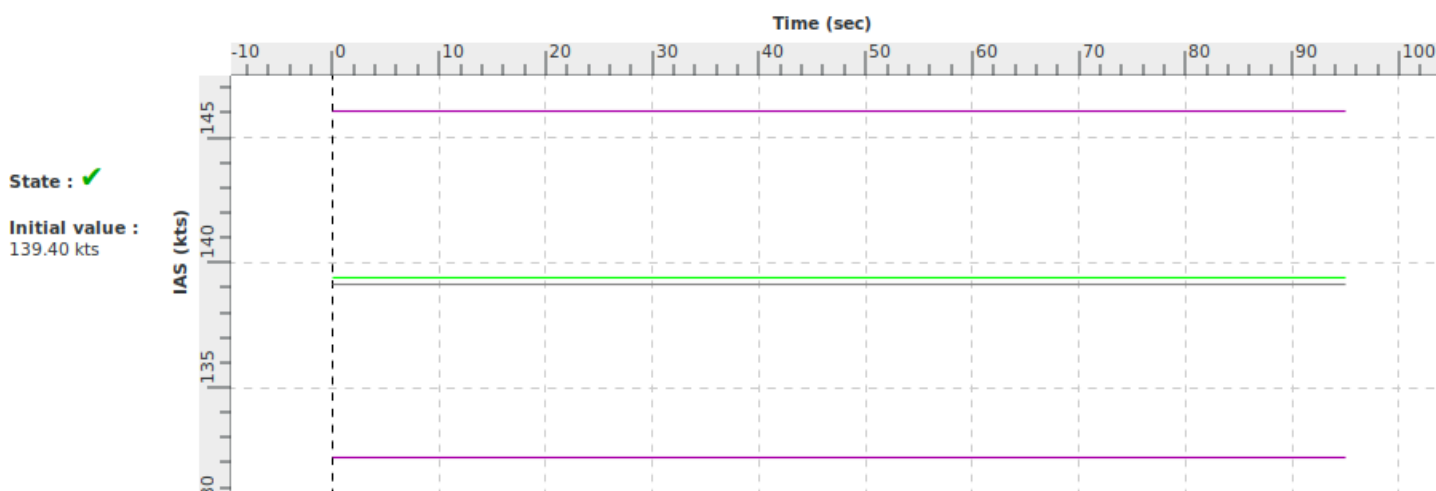
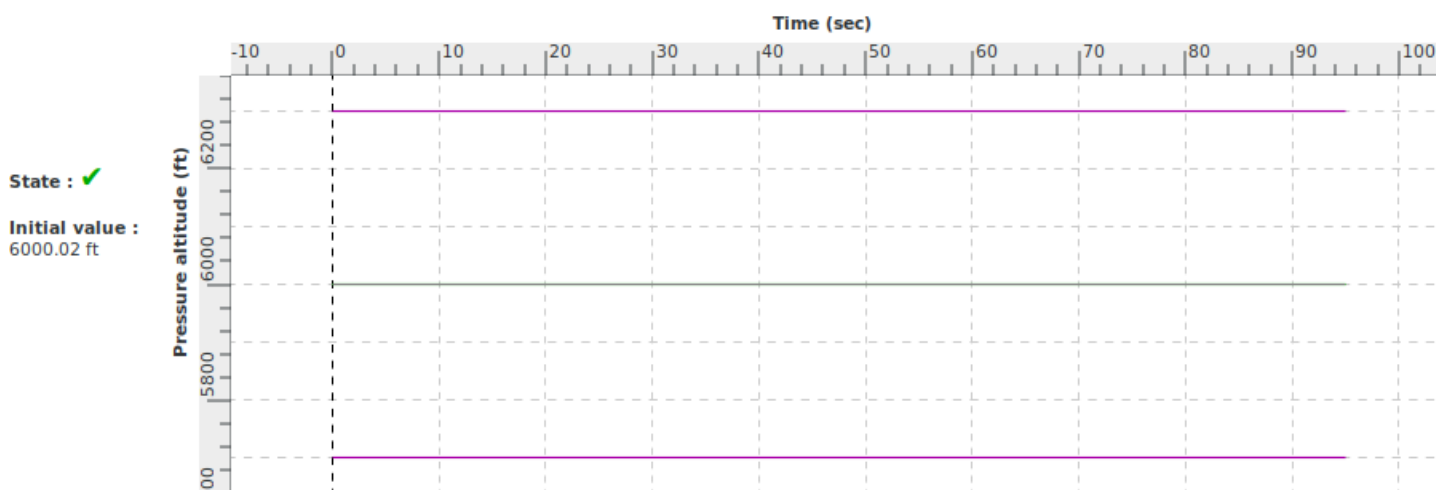
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	mode_stop	1.0	Set the aircraft to STOP or GO mode (0 means GO and 1 means STOP)
3.0	SetRudderCmdPalier	100.0	Send a step in the rudder govern
23.0	SetRudderCmdPalier	-100.0	Send a step in the rudder govern
63.5	SetRudderCmdPalier	0.0	Send a step in the rudder govern
95.0	Stop_Test	0.0	Stop the test procedure

Title	Rudder position vs force during cruise		
Id	2 a iii 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

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



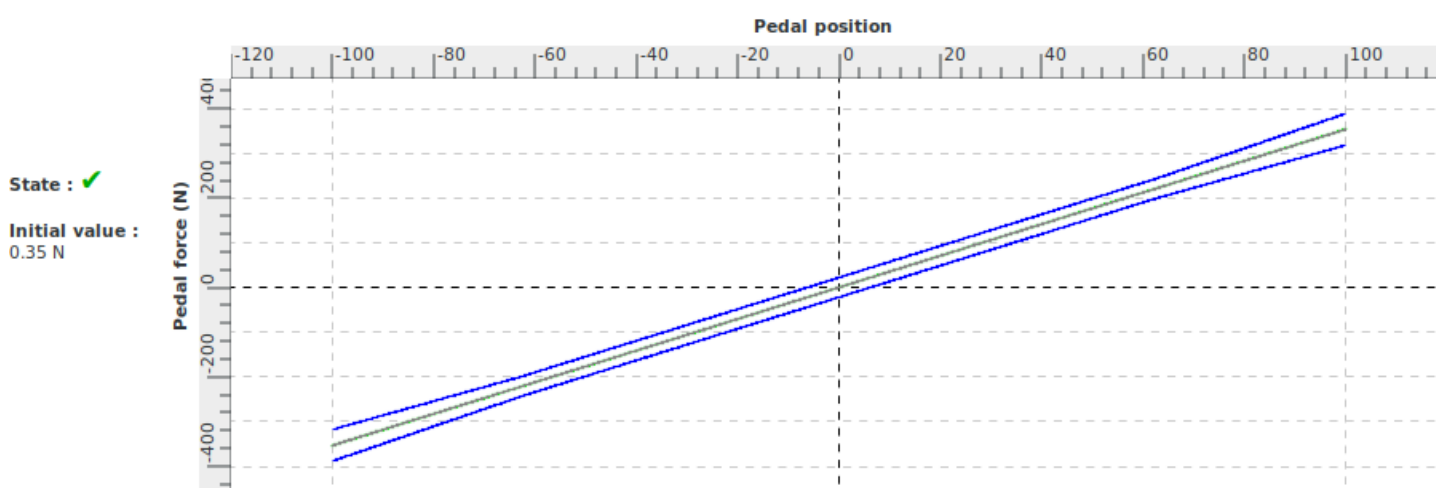
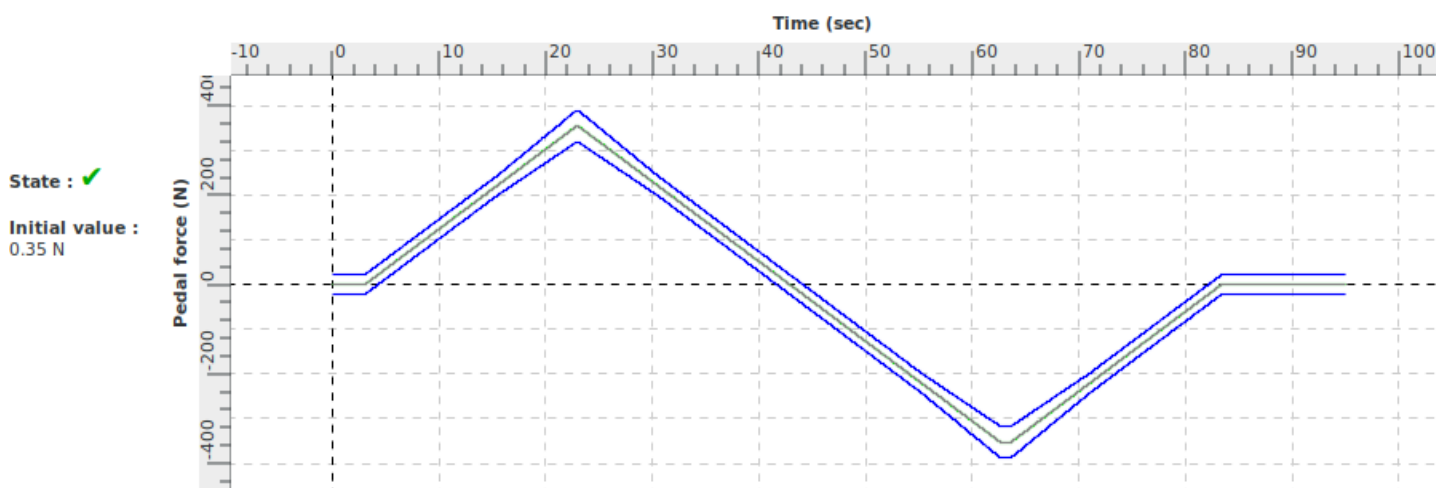
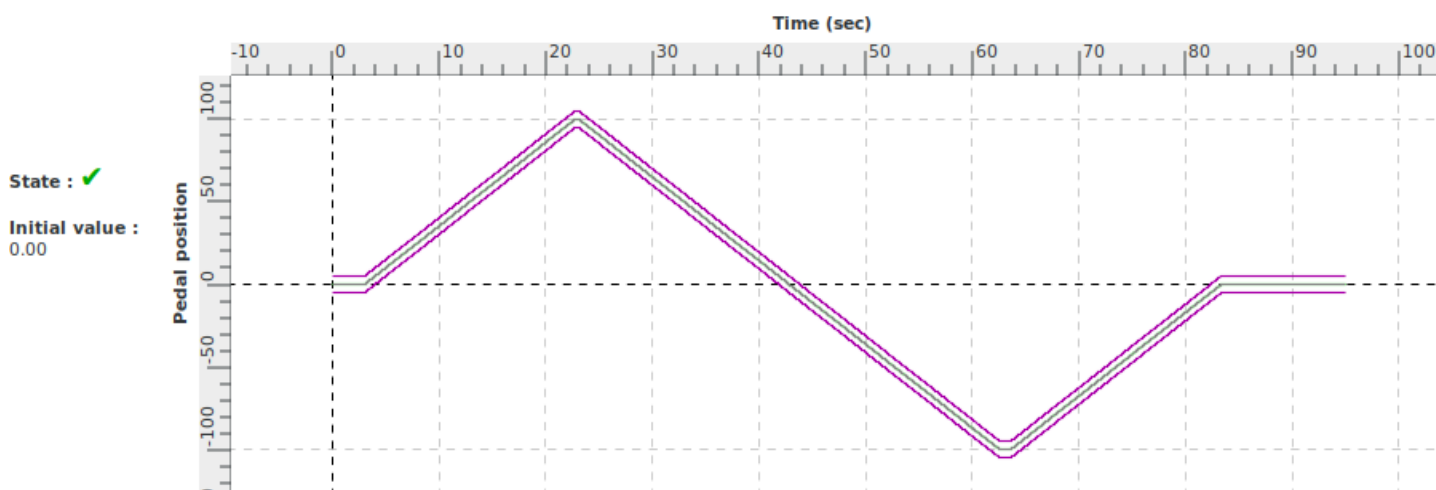
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Rudder position vs force during cruise		
Id	2 a iii 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	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

Title	Power change dynamics during approach		
Id	2 c i 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that the power change induced longitudinal dynamics during approach conforms to the class of aeroplanes	Max. Dynamics Variations: Airspeed 0 kt Pitch angle +3 deg Altitude +700 ft
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.i.1	Airspeed +/- 3 kt Altitude +/- 100 ft Pitch +/- 1.5° or 20%

Demonstration procedure	From steady approach initial conditions, power lever is set to maximum go-around position.
Manual test procedure	Pilot trims the airplane in approach flight condition and then, the power is increased to maximum go-around position, allowing free uncontrolled aircraft response. The results are recorded and compared to the airplane data.
Automatic test procedure	2 c i 1

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Power change dynamics during approach		
Id	2 c i 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	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	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	Right Load (%) : 70
IAS (kt) : 106 (free)	Left RPM : 2060
Heading (°) : 0 (free)	Right RPM : 2060
Bank (°) : 0	
Attitude (°) : -1	
Pedal Position (%) : 0	
Column Position (%) : 32	
Wheel Position (%) : 0	

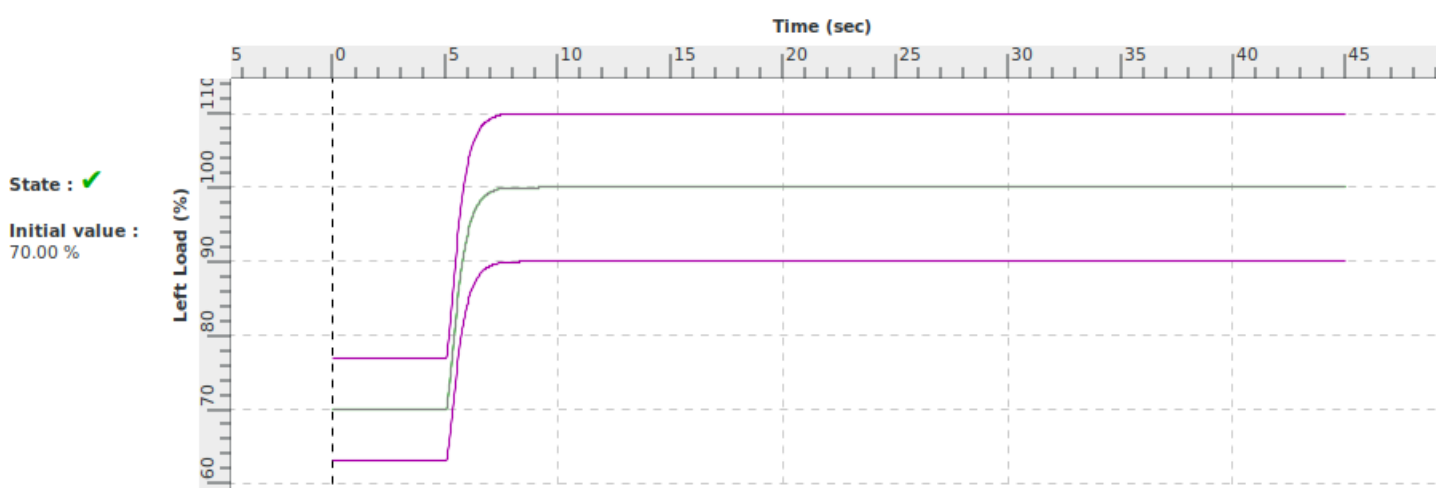
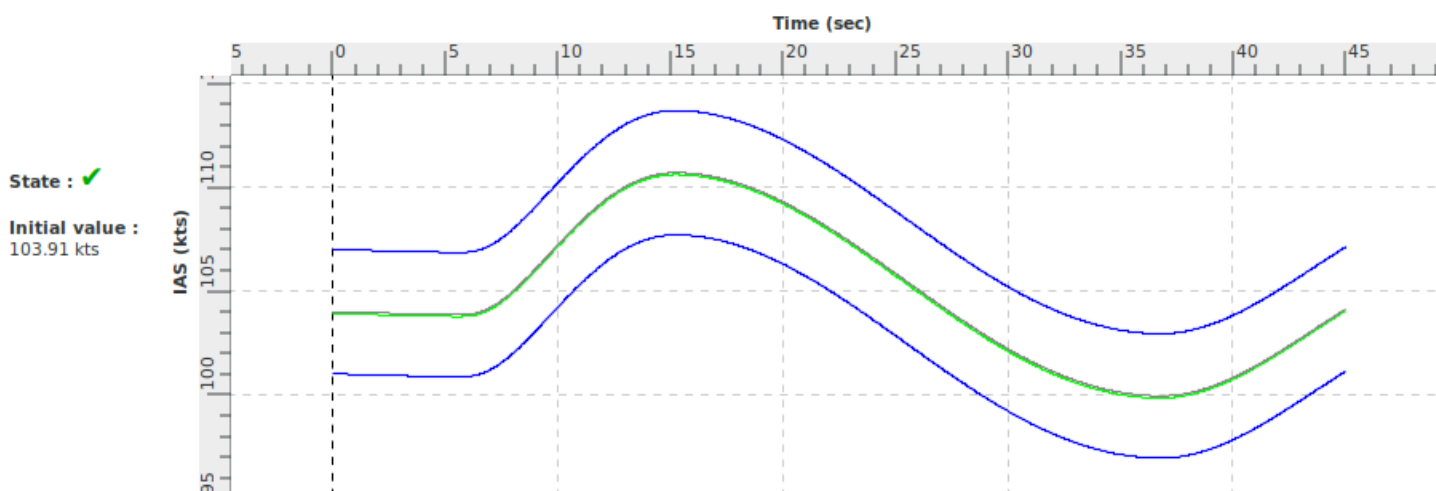
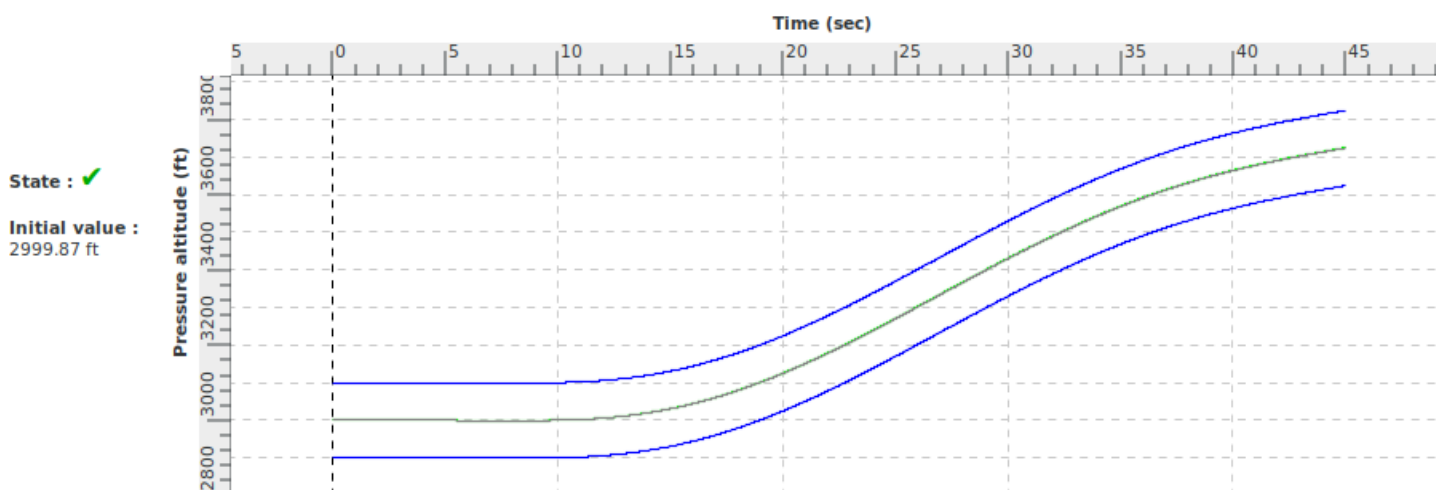
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
0.0	deconnectionPA_roll	0.0	disable QTG Autopilot in roll axis
0.0	deconnectionPA_rudder	0.0	disable QTG Autopilot in yaw axis
5.0	power_GOAROUND_MAX	29.0	Set engine parameters to go-around power
45.0	Stop_Test	0.0	Stop the test procedure

Title	Power change dynamics during approach		
Id	2 c i 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Power change dynamics during approach		
Id	2 c i 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



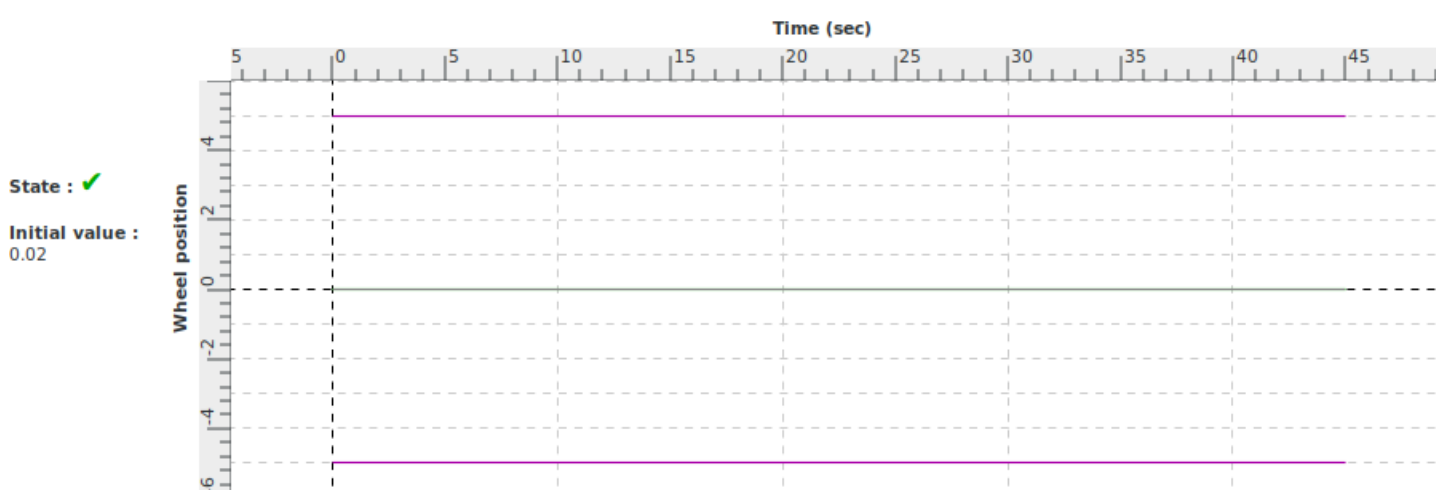
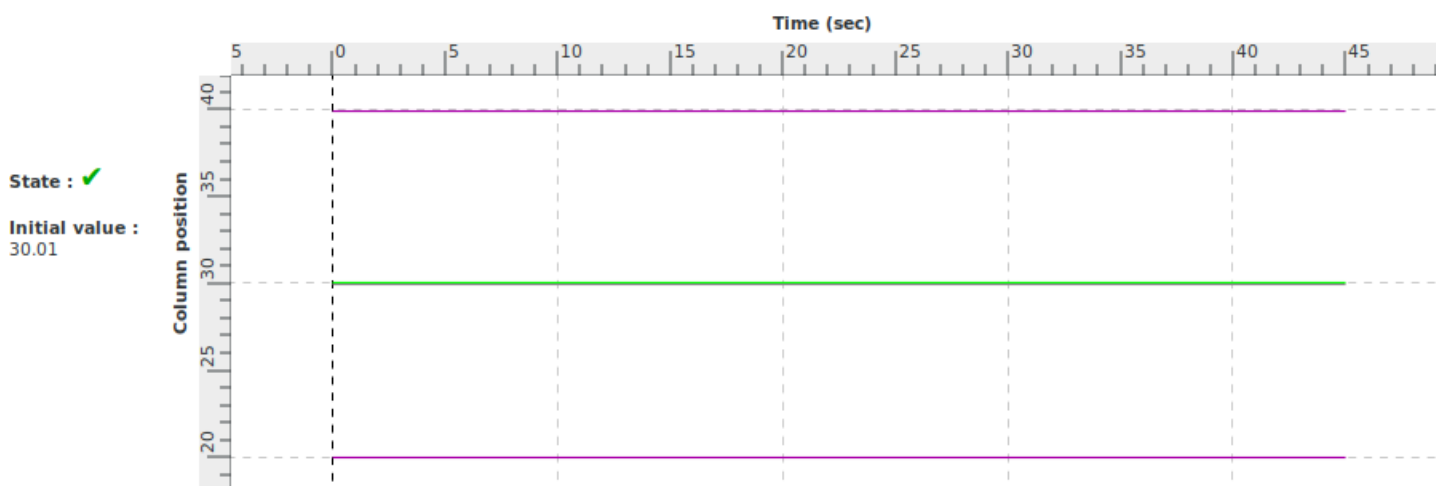
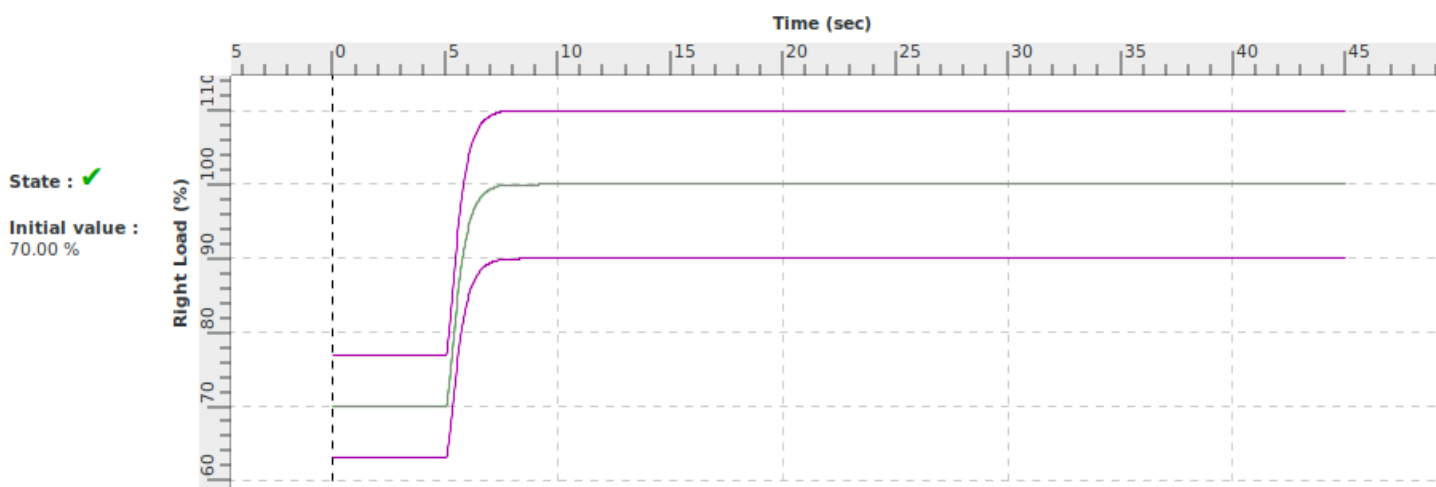
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Power change dynamics during approach		
Id	2 c i 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



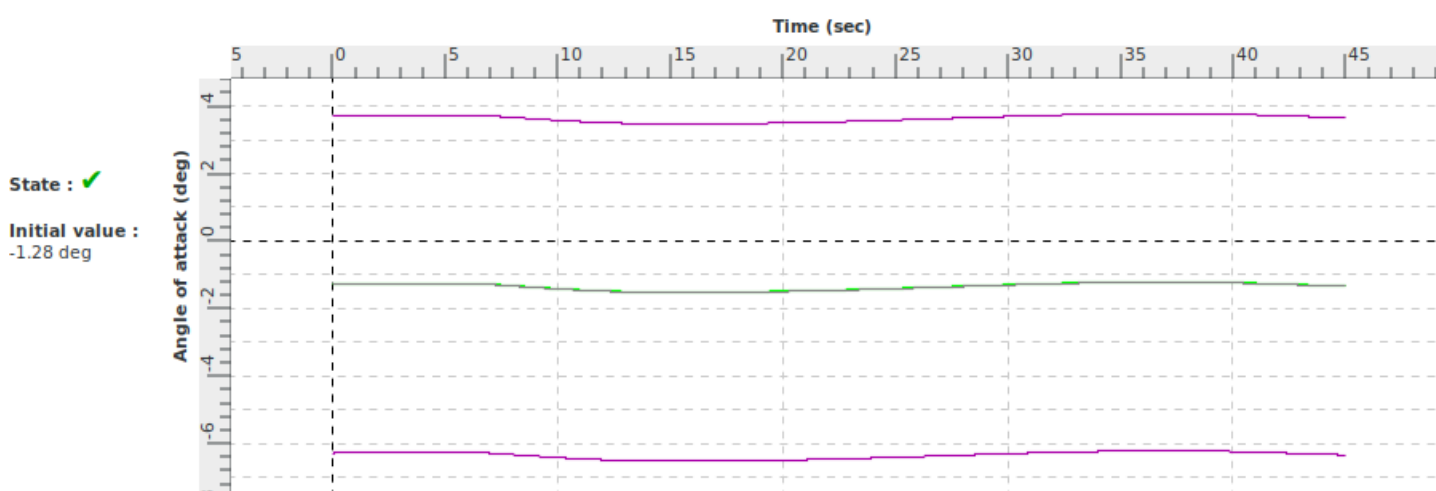
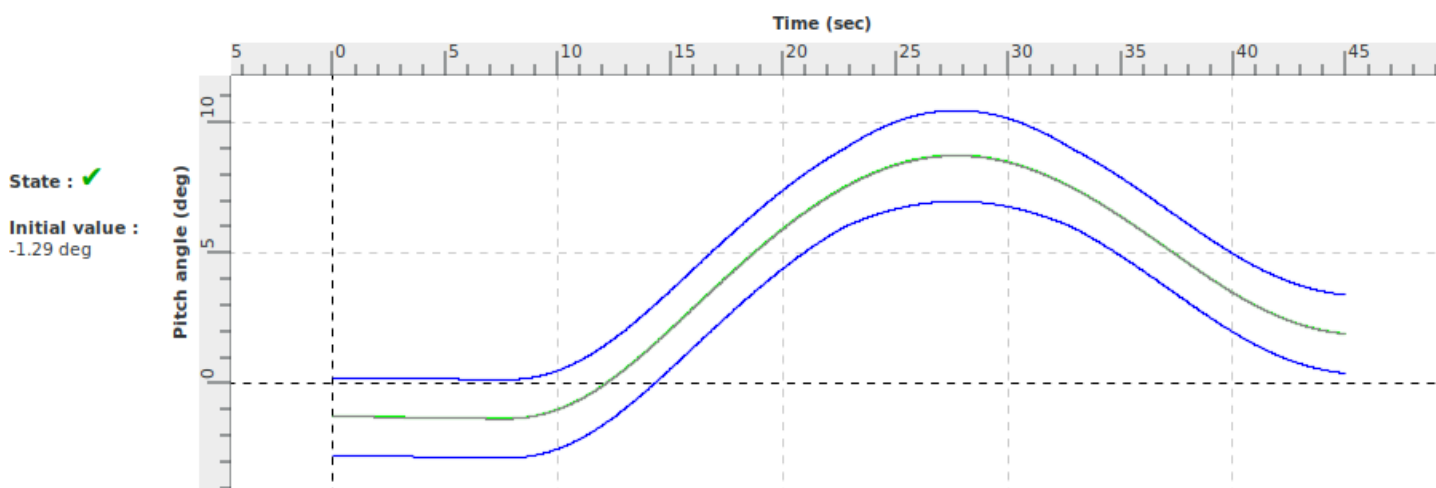
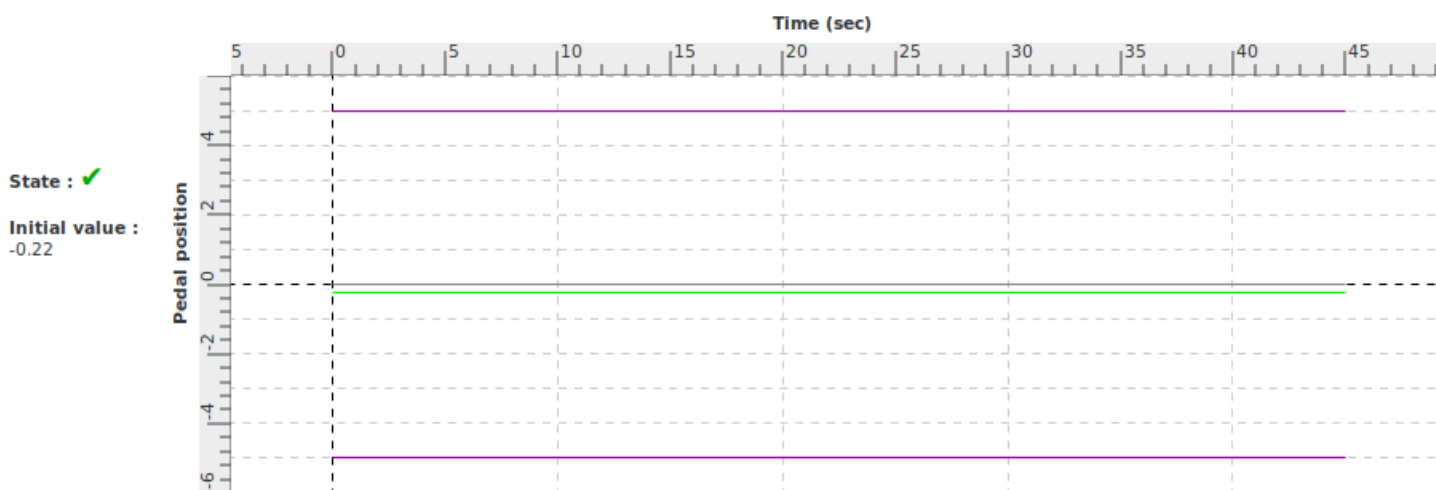
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Power change dynamics during approach		
Id	2 c i 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



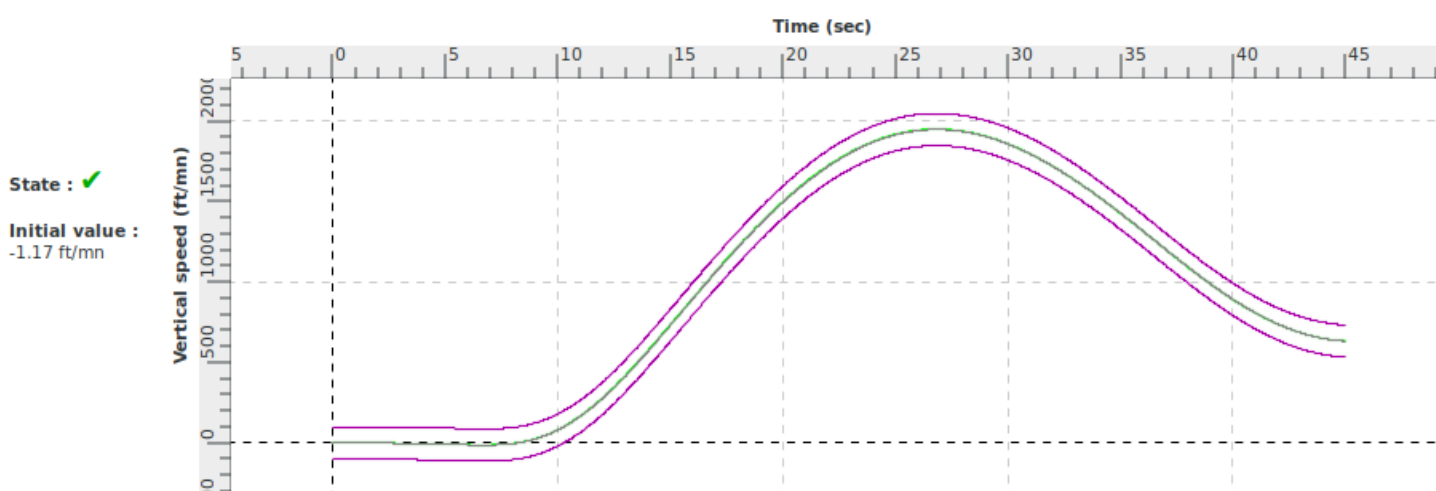
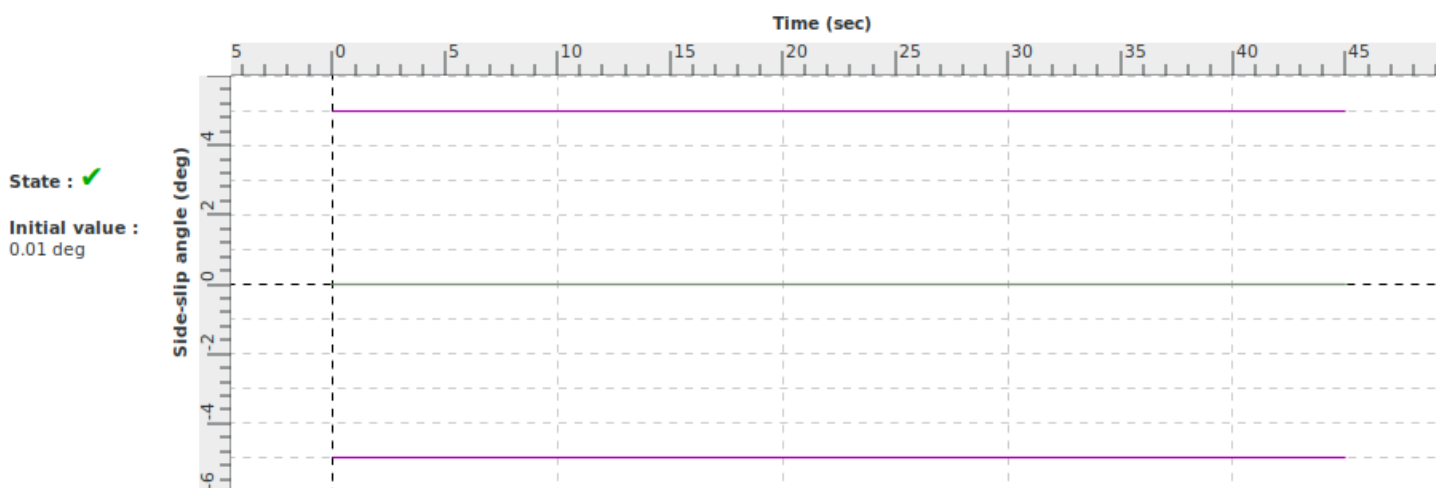
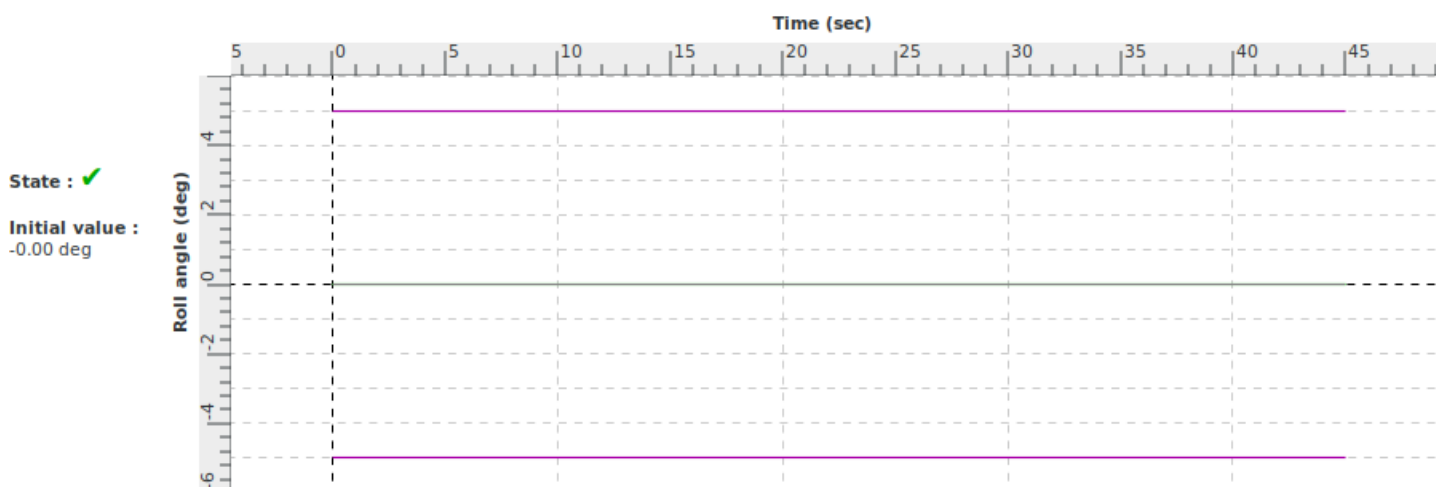
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Power change dynamics during approach		
Id	2 c i 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



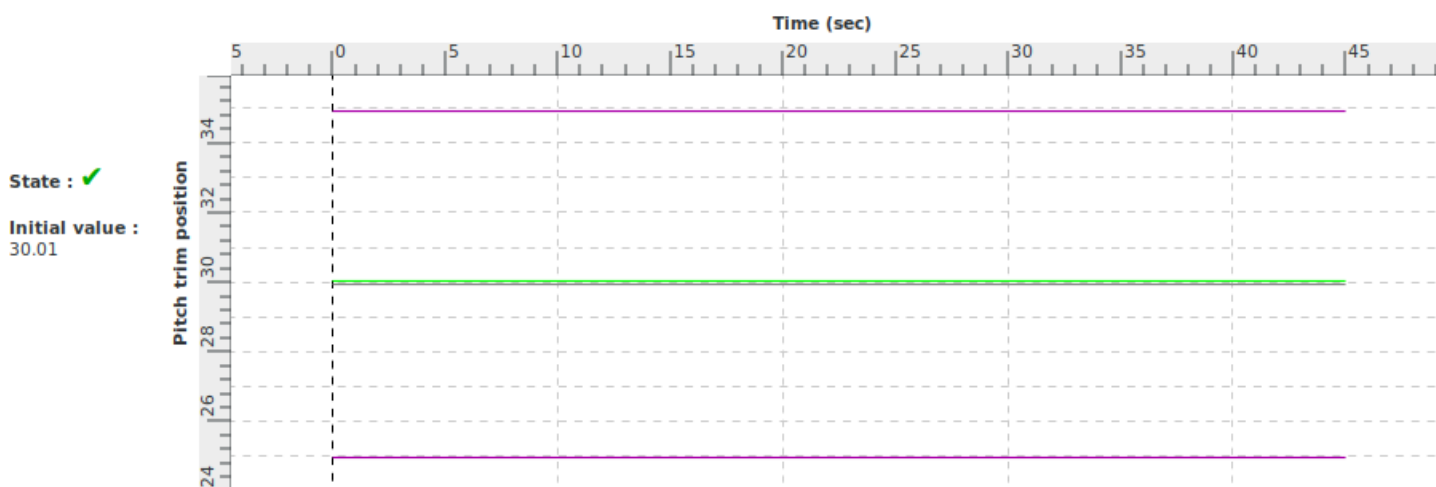
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Power change dynamics during approach		
Id	2 c i 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	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

Title	Power change force during approach		
Id	2 c i 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that the power change induced pitch control force during approach conforms to the class of aeroplanes	Max. force variation : -30 N
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.i.2	+/- 2,2 daN (5Lbs) +/- or 10% Force

Demonstration procedure	From steady approach initial conditions, power lever is set to maximum go-around position.
Manual test procedure	Pilot trims the airplane in approach flight condition. Maintaining approach conditions, using control column, pilot increases the power. The results are recorded and compared to the airplane data
Automatic test procedure	2 c i 2

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Power change force during approach		
Id	2 c i 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Autopilot mode	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>	

Initial parameters	DESCENT_FLAPS_APP
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : -450 IAS (kt) : 90 (free) Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : -2 Pedal Position (%) : 0 Column Position (%) : 44 Wheel Position (%) : 0	Flaps lever position : 1 Gear lever position : 1 Left Load (%) : 30 Right Load (%) : 30 Left RPM : 1930 Right RPM : 1930

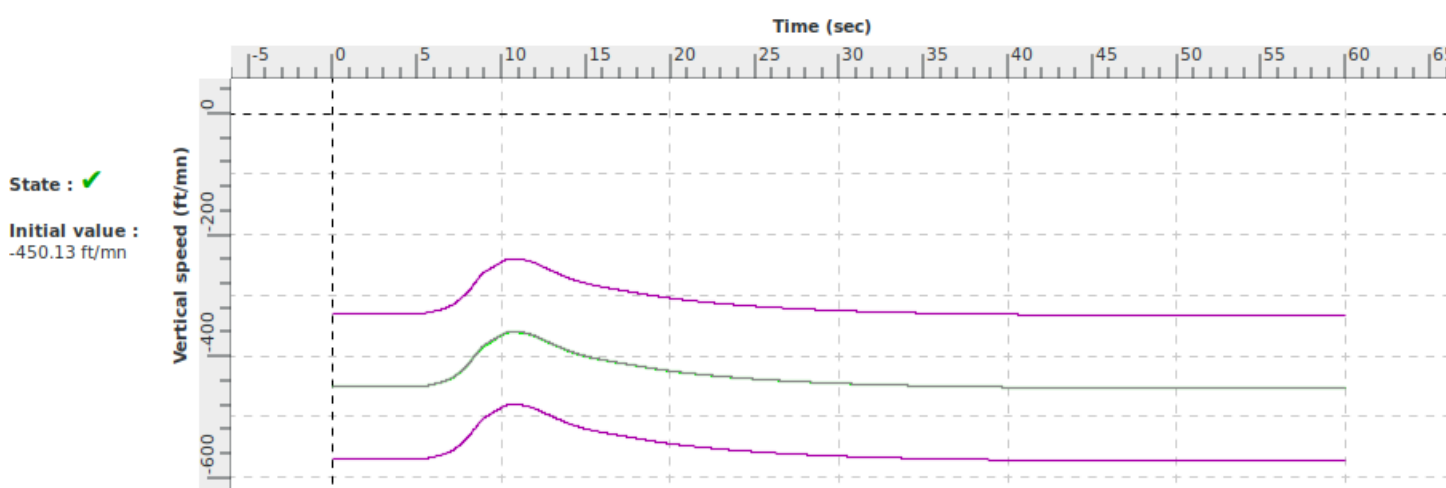
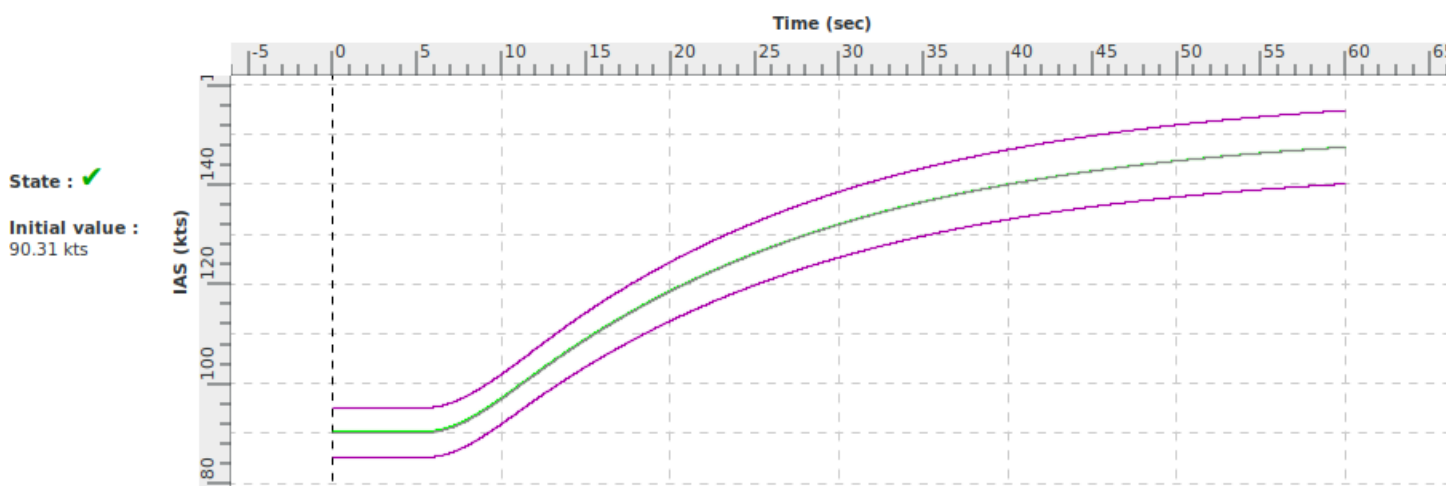
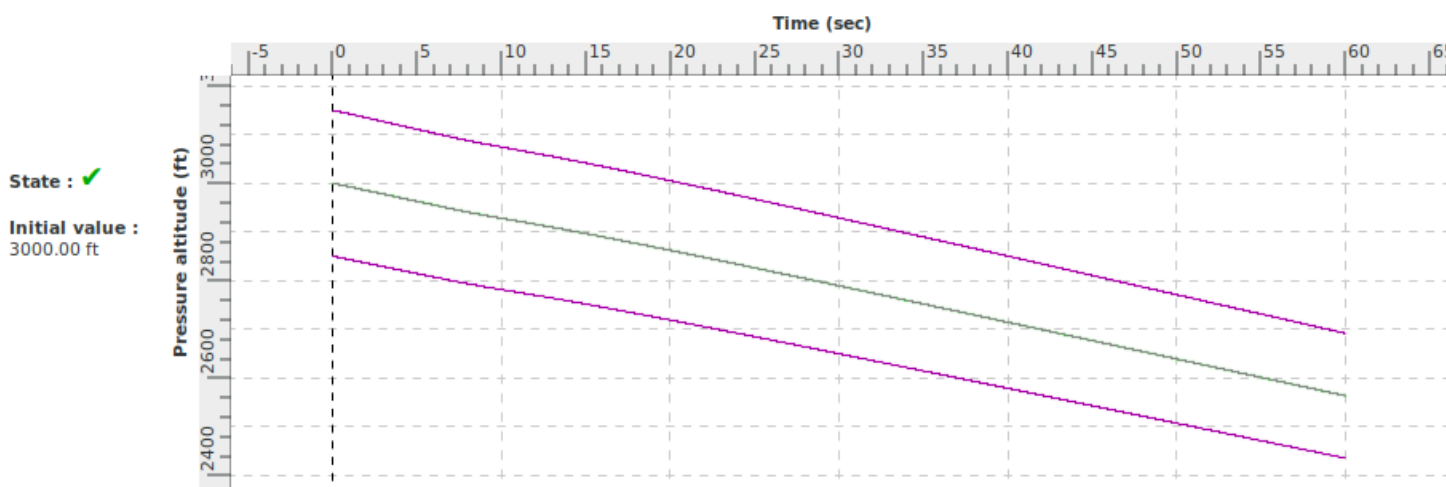
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
5.0	power_GOAROUND_MAX	29.0	Set engine parameters to go-around power
60.0	Stop_Test	0.0	Stop the test procedure

Title	Power change force during approach		
Id	2 c i 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Power change force during approach		
Id	2 c i 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



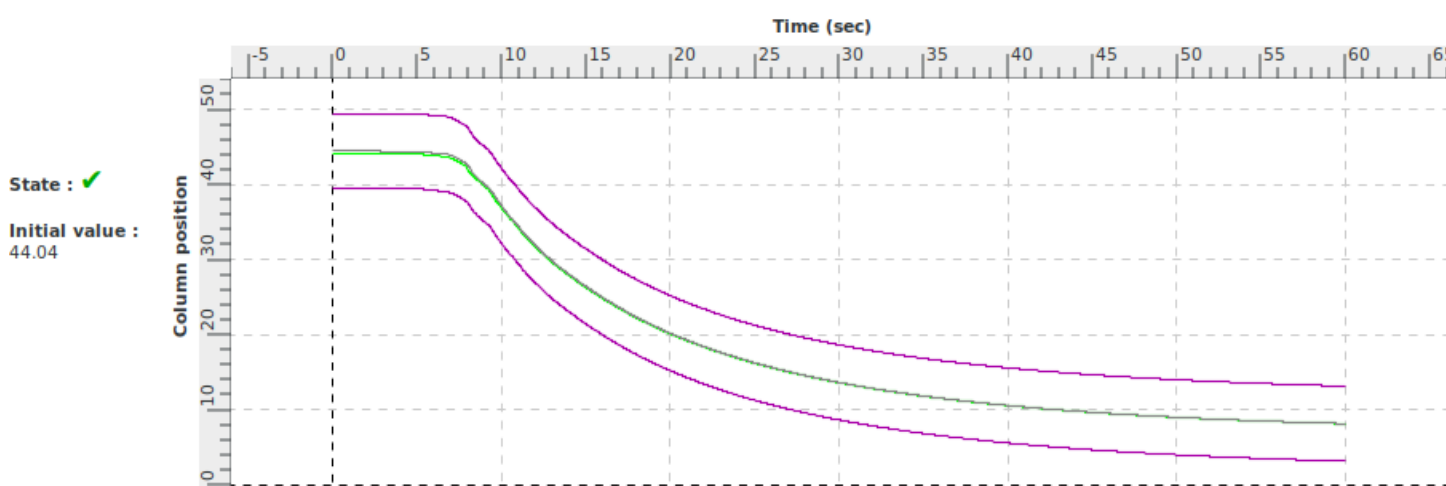
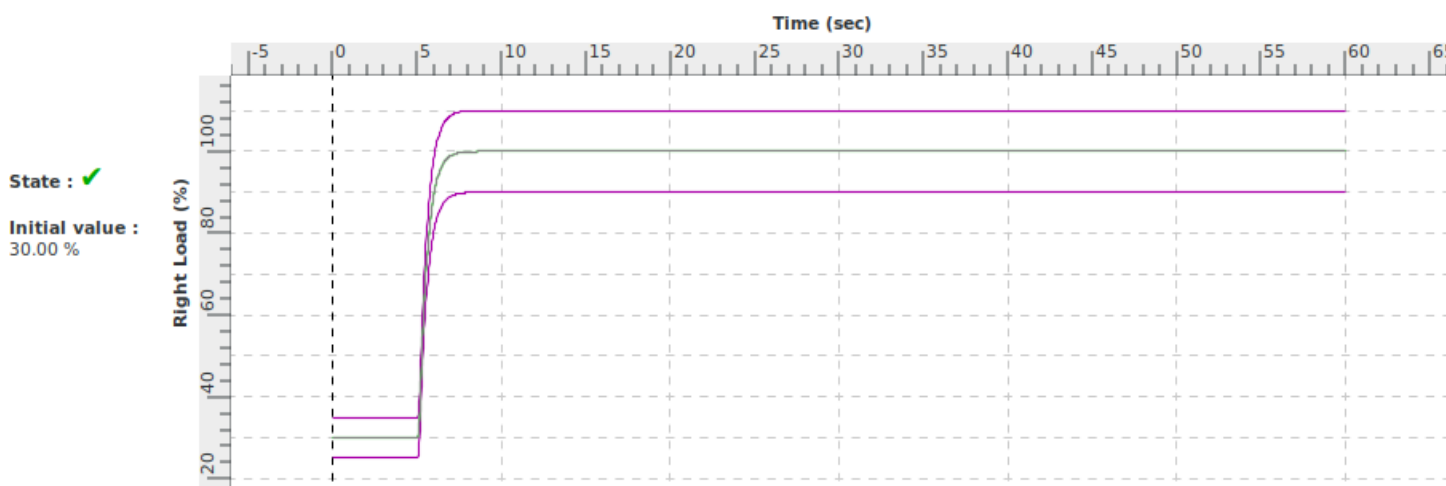
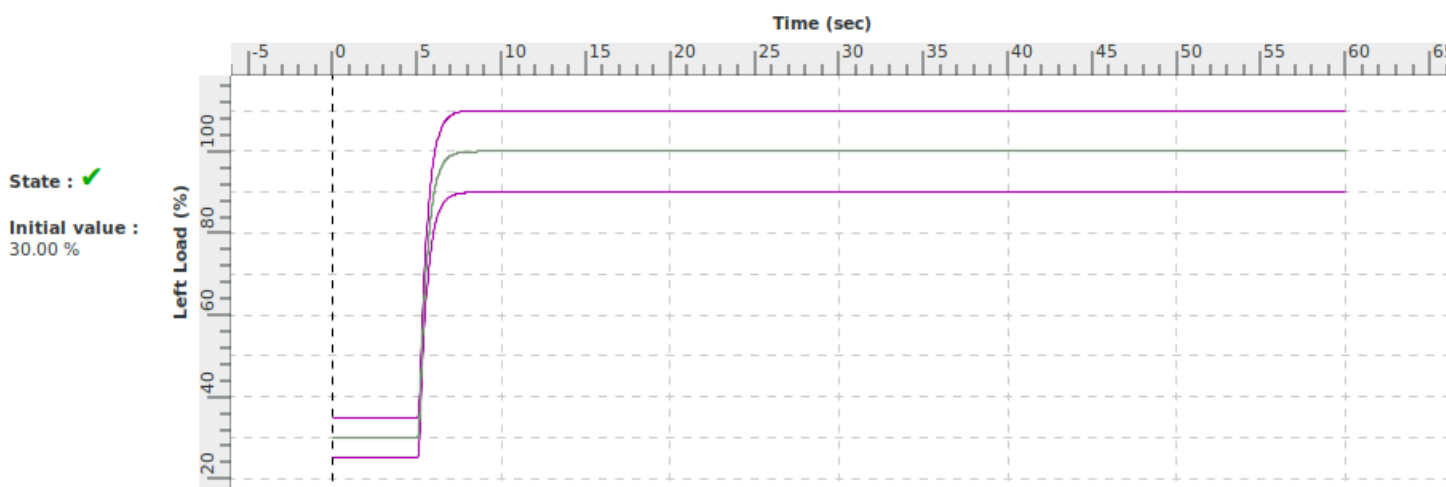
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Power change force during approach		
Id	2 c i 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



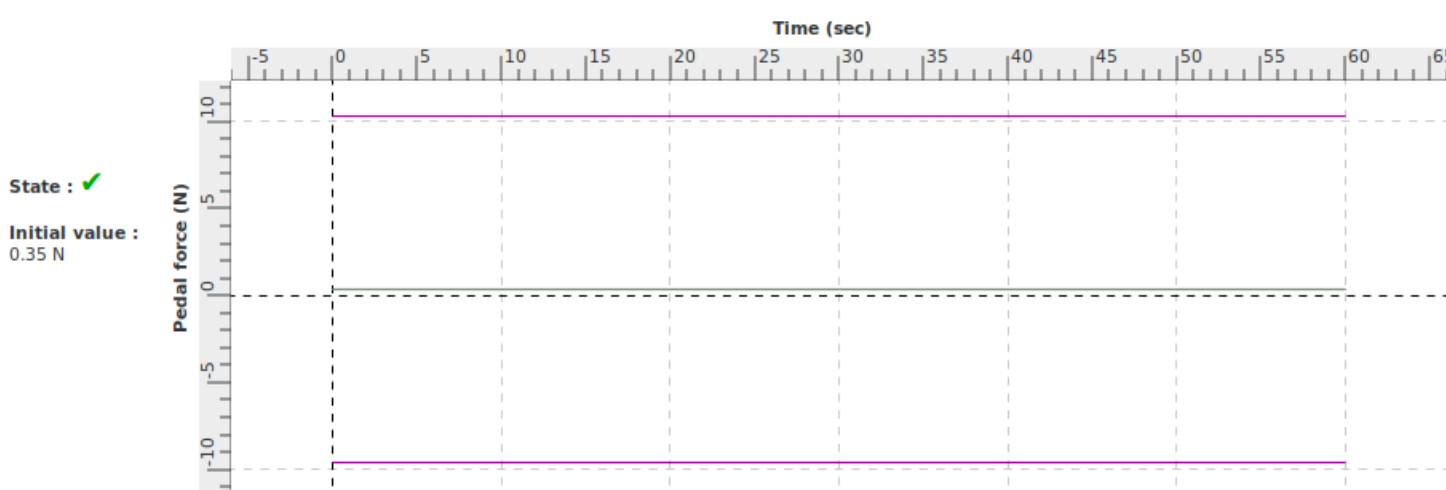
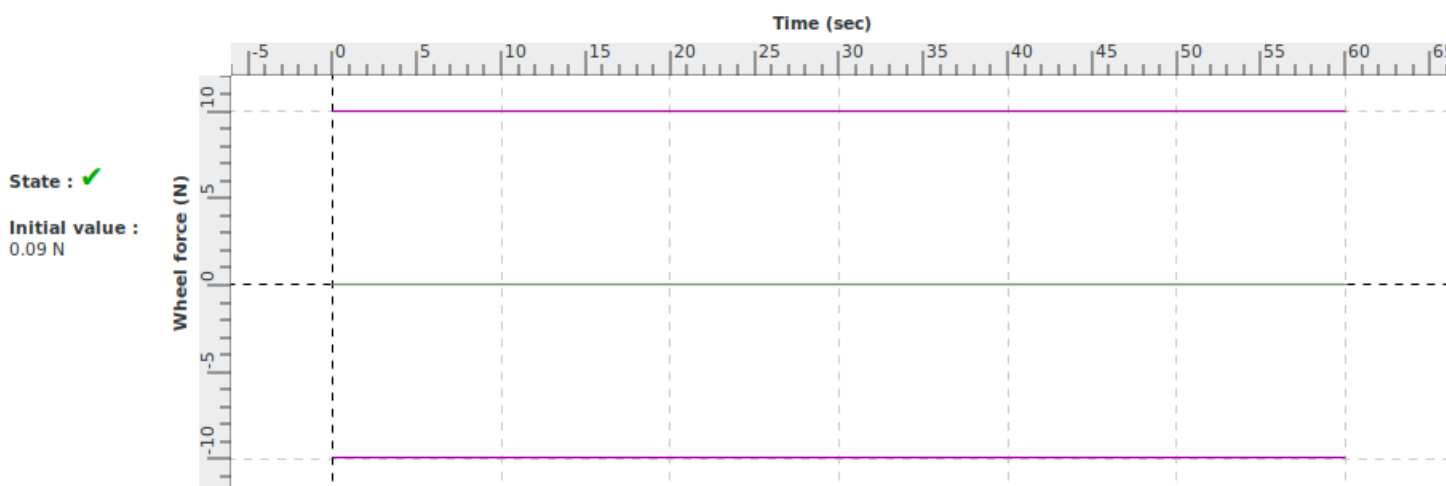
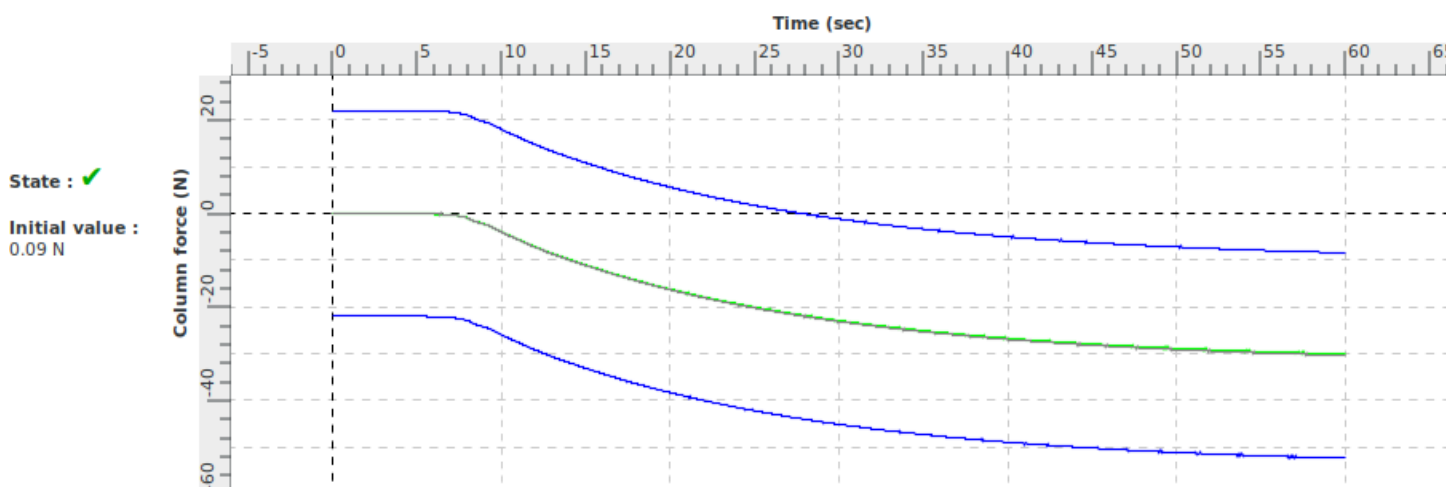
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Power change force during approach		
Id	2 c i 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



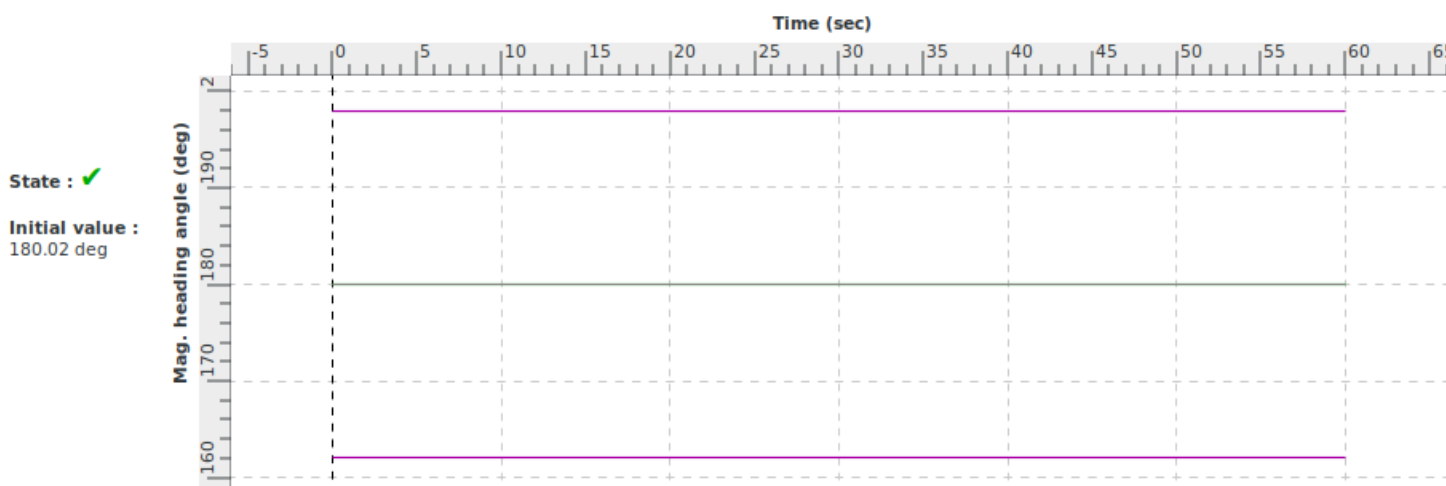
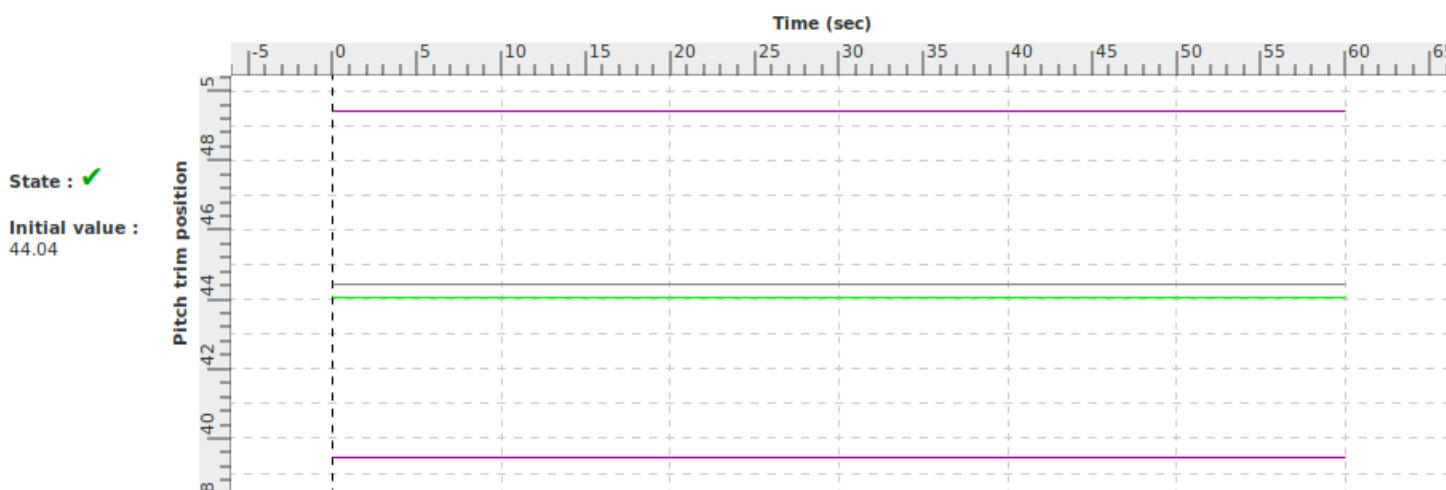
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Power change force during approach		
Id	2 c i 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	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

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

Objective	Expected Results
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>
Reference	Evaluation Criteria
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>

Demonstration procedure	From steady take-off initial conditions, flaps are retracted.
Manual test procedure	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.
Automatic test procedure	2 c ii 1 a

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

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
<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>	

Initial parameters	TAKE_OFF
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 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 : 0 Left Load (%) : 100 Right Load (%) : 100 Left RPM : 2090 Right RPM : 2090

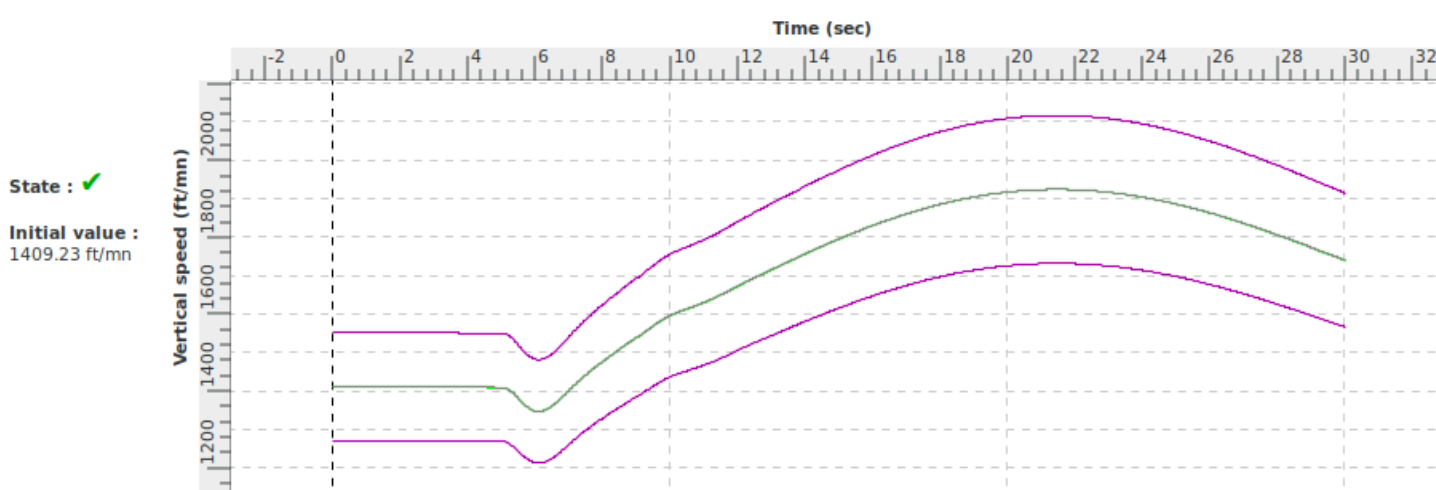
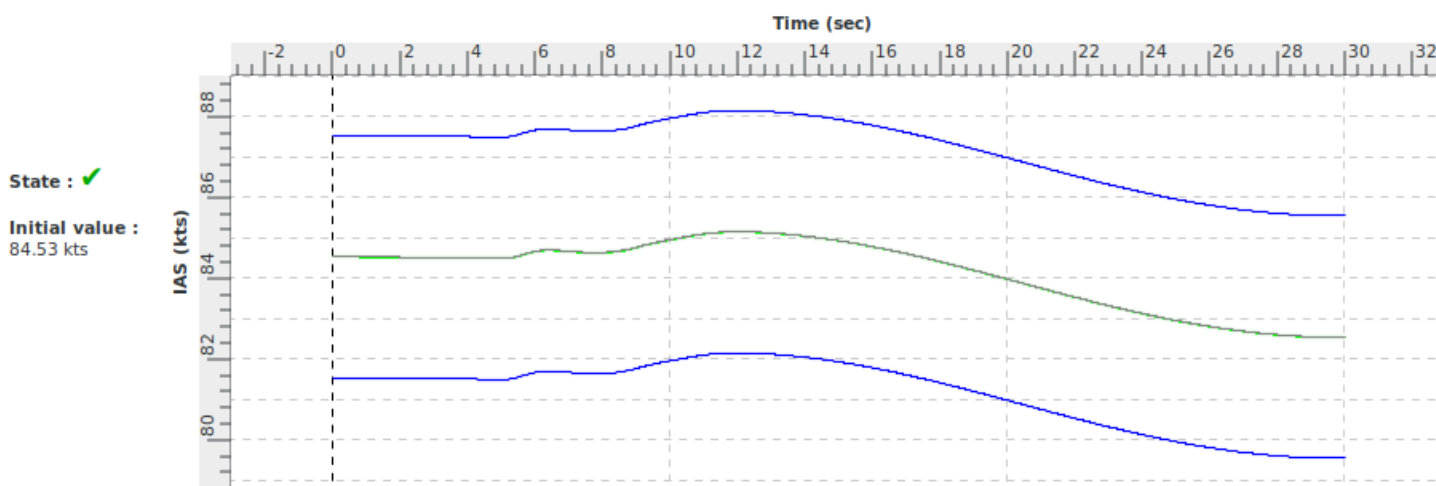
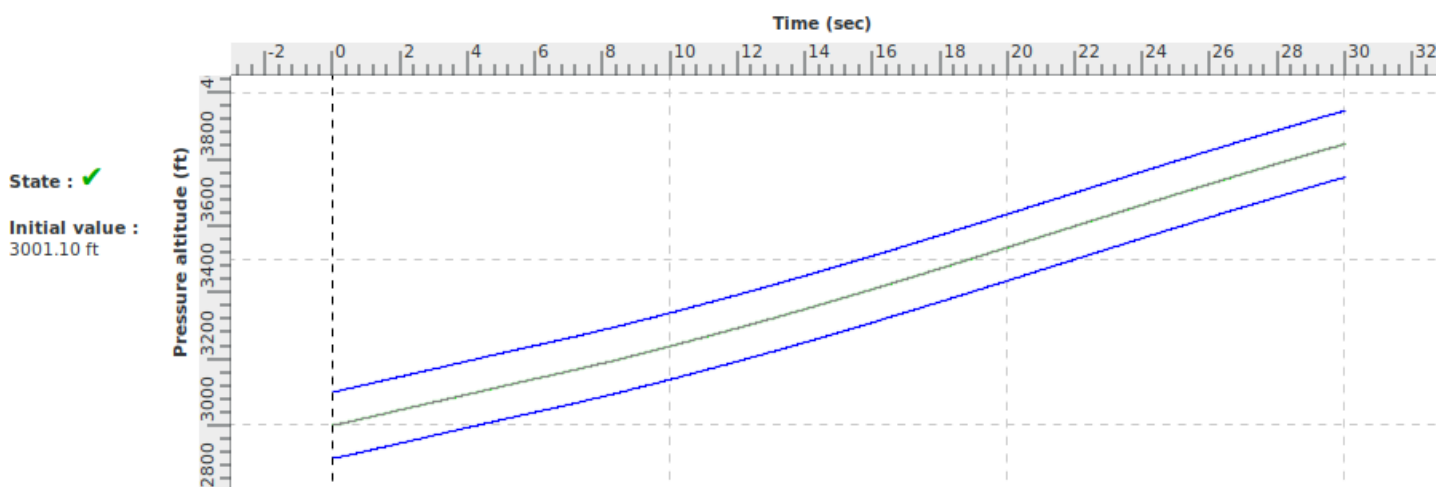
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
0.0	deconnectionPA_roll	0.0	disable QTG Autopilot in roll axis
0.0	deconnectionPA_rudder	0.0	disable QTG Autopilot in yaw axis
5.0	Flaps	0.0	Move the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

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

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Flaps change dynamics during take-off (retraction)		
Id	2 c ii 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



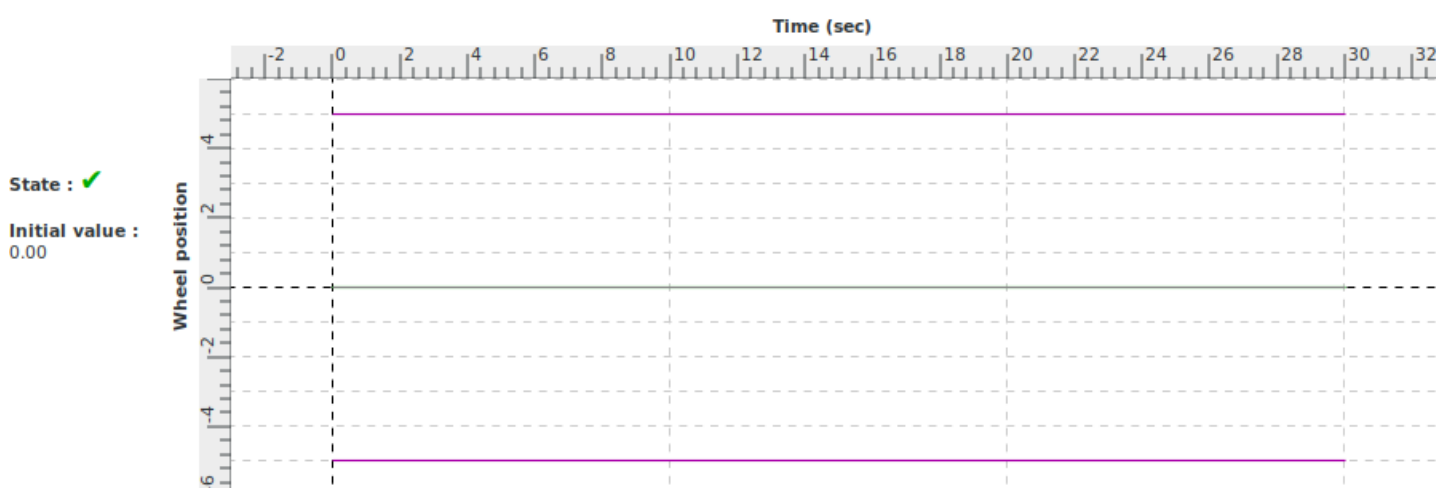
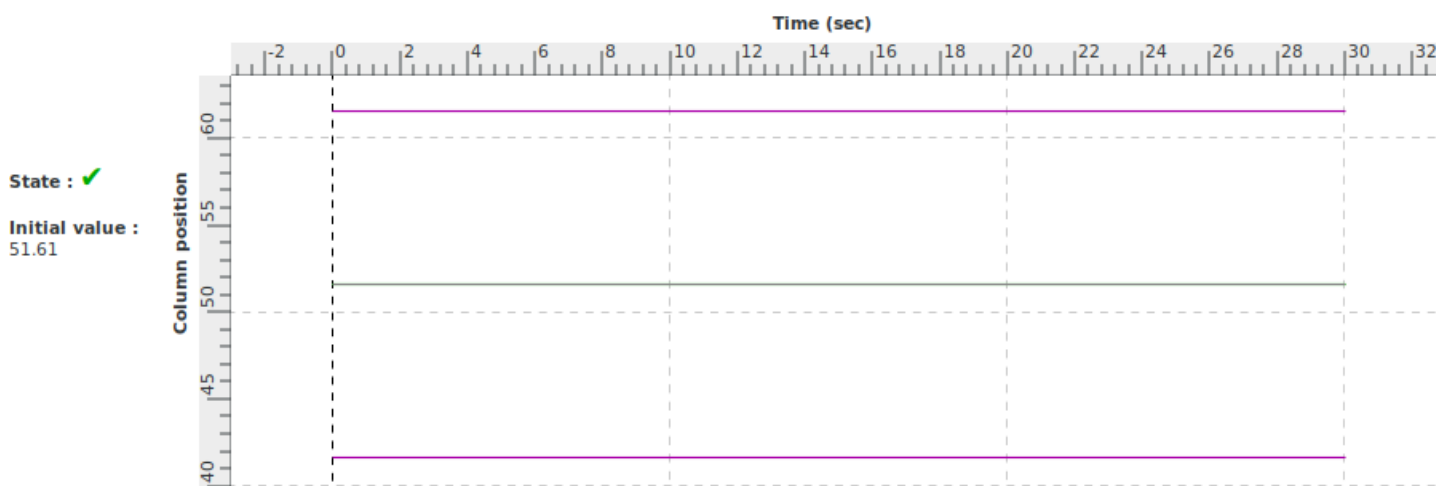
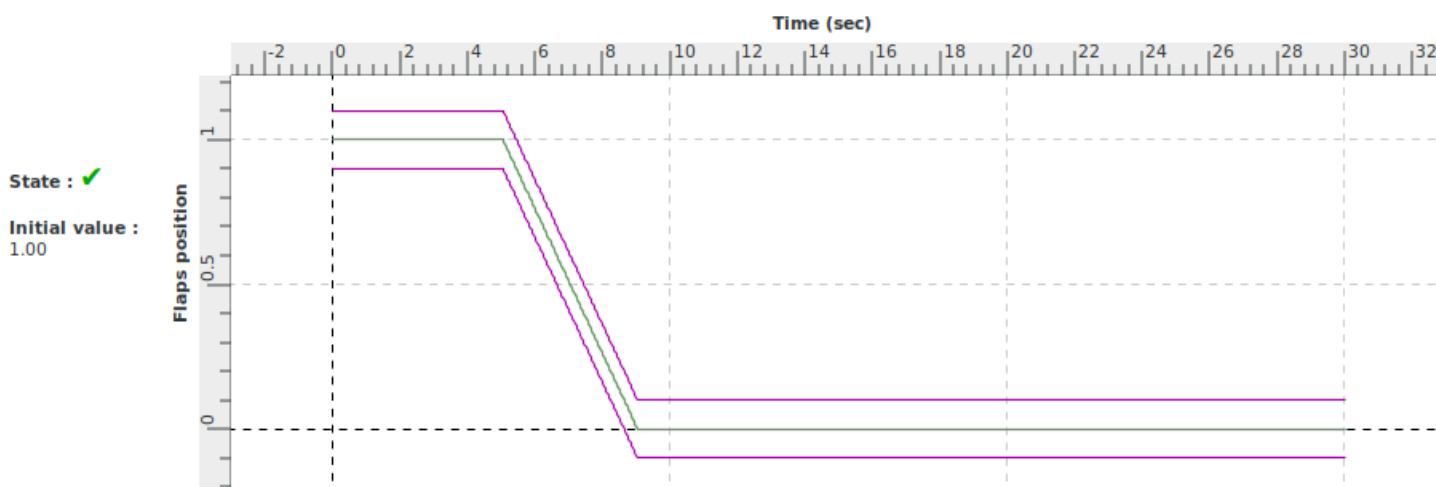
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Flaps change dynamics during take-off (retraction)		
Id	2 c ii 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



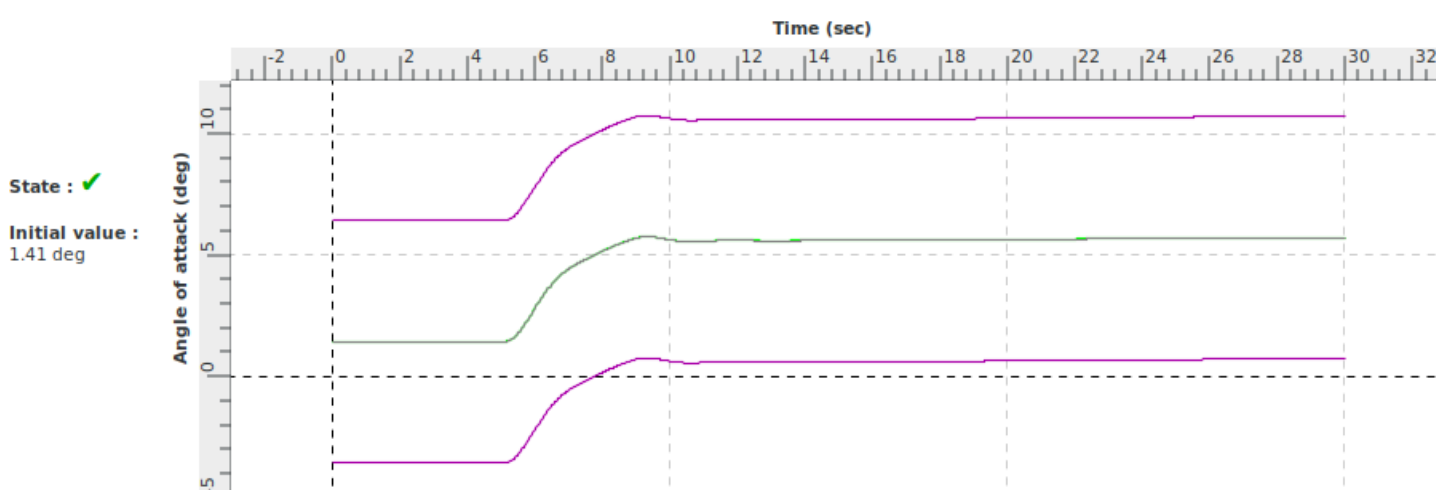
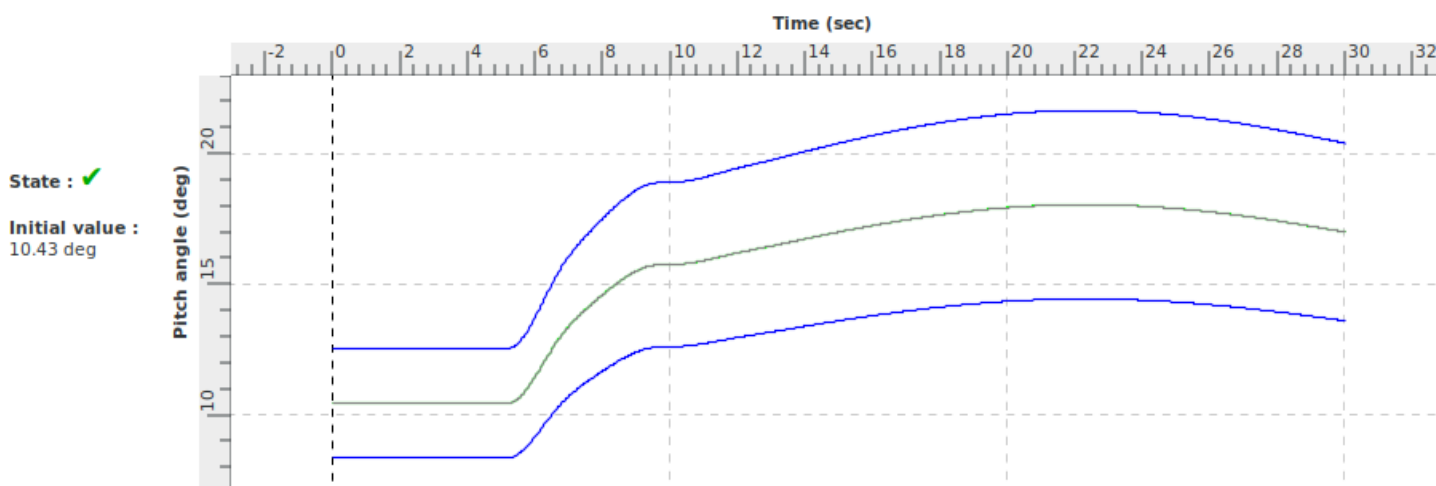
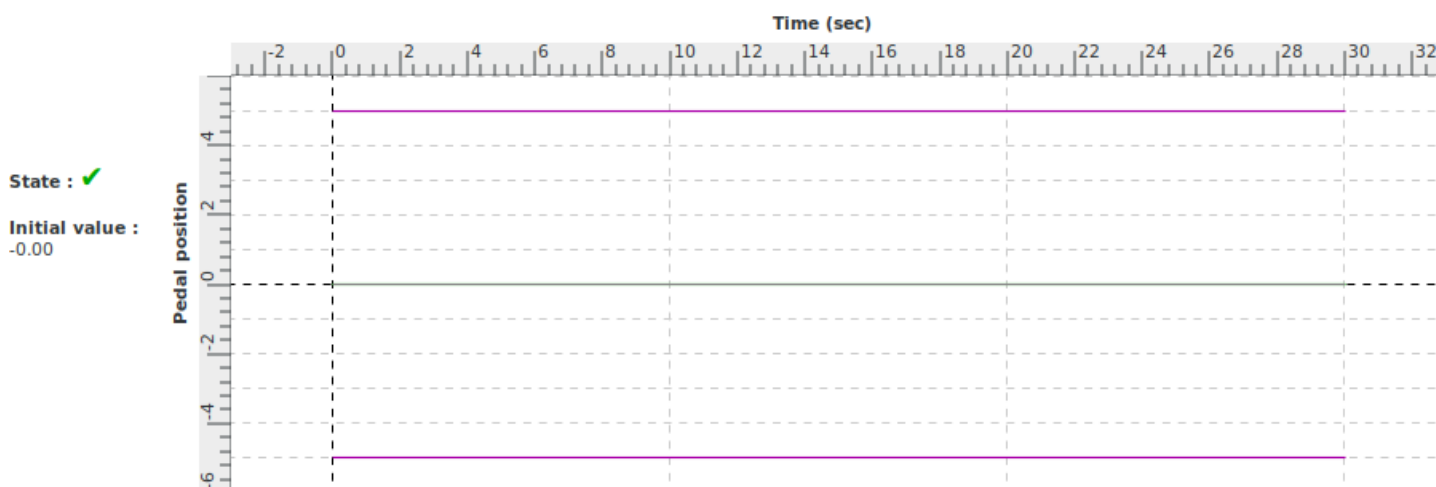
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsimg

grey : master

Title	Flaps change dynamics during take-off (retraction)		
Id	2 c ii 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



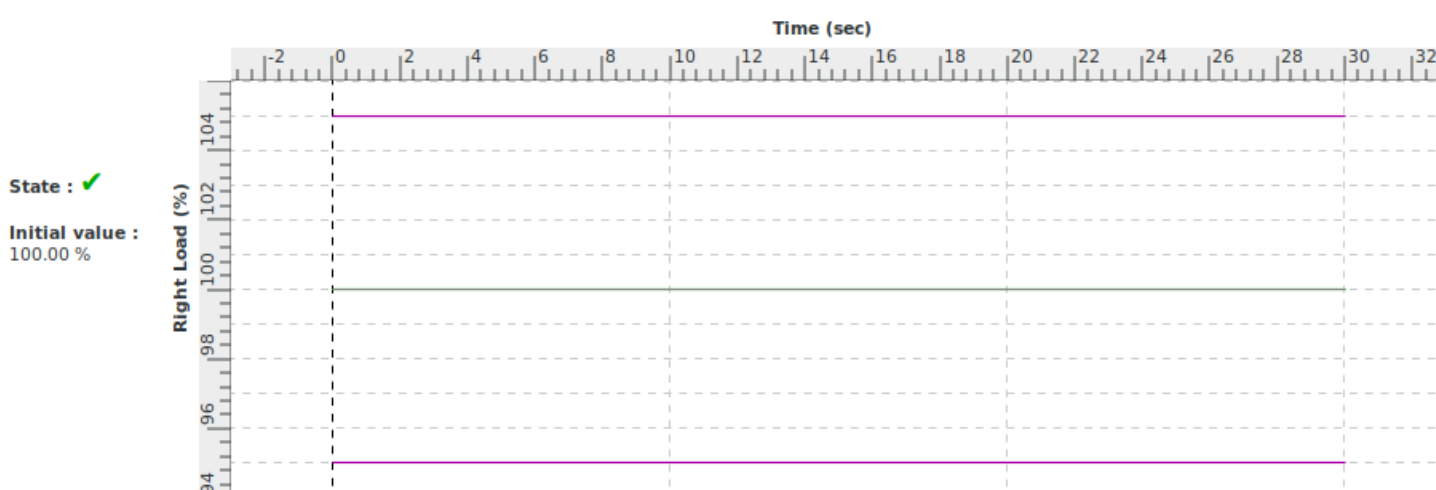
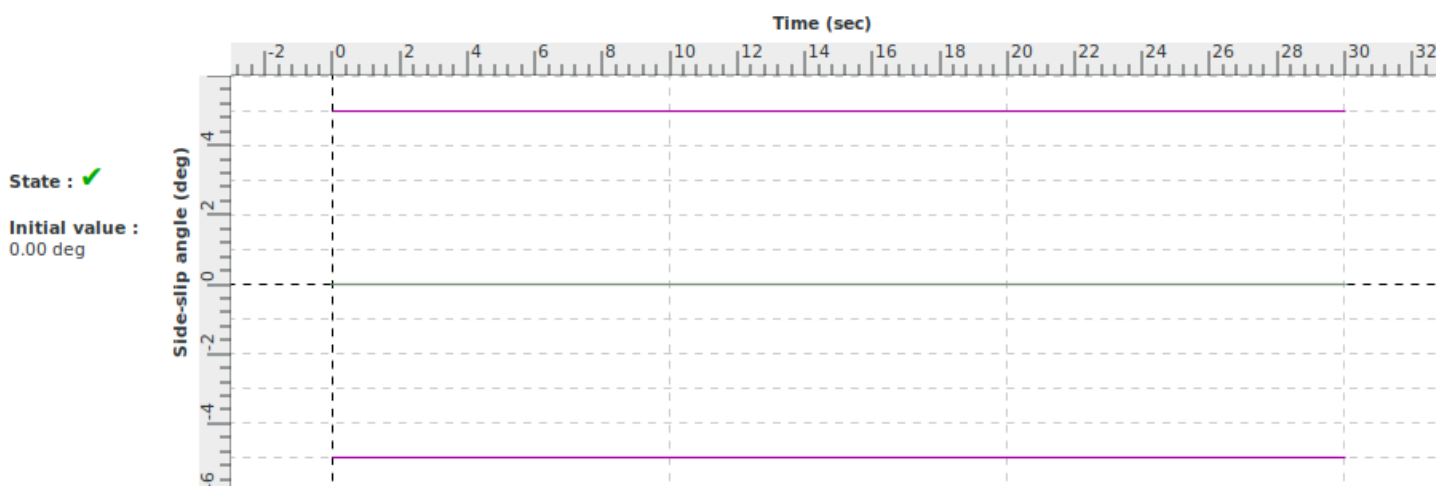
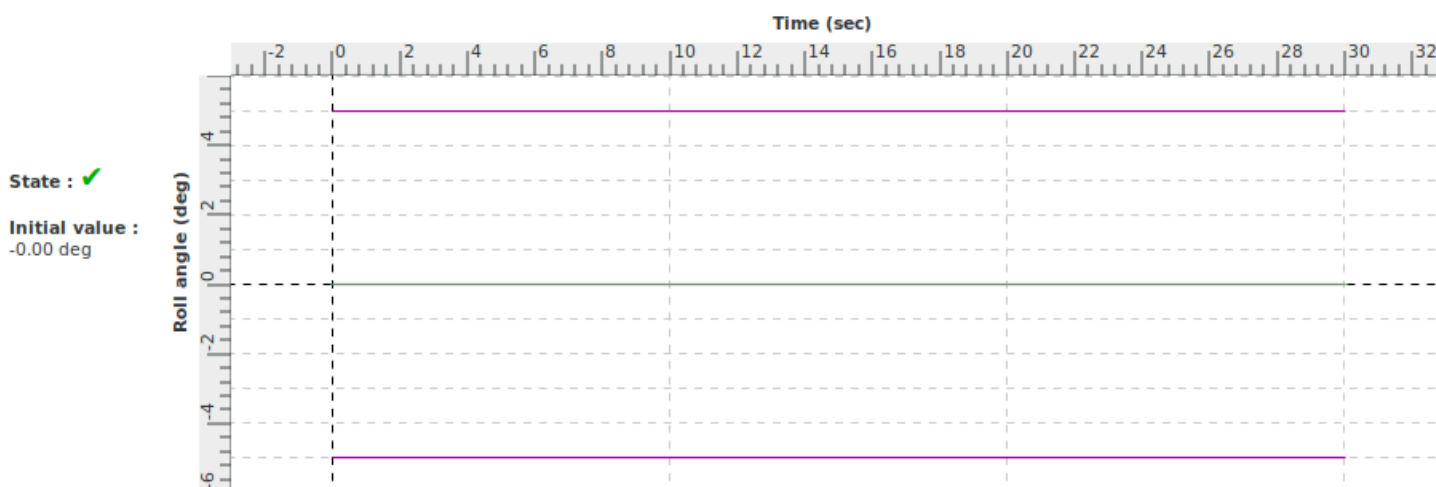
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Flaps change dynamics during take-off (retraction)		
Id	2 c ii 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



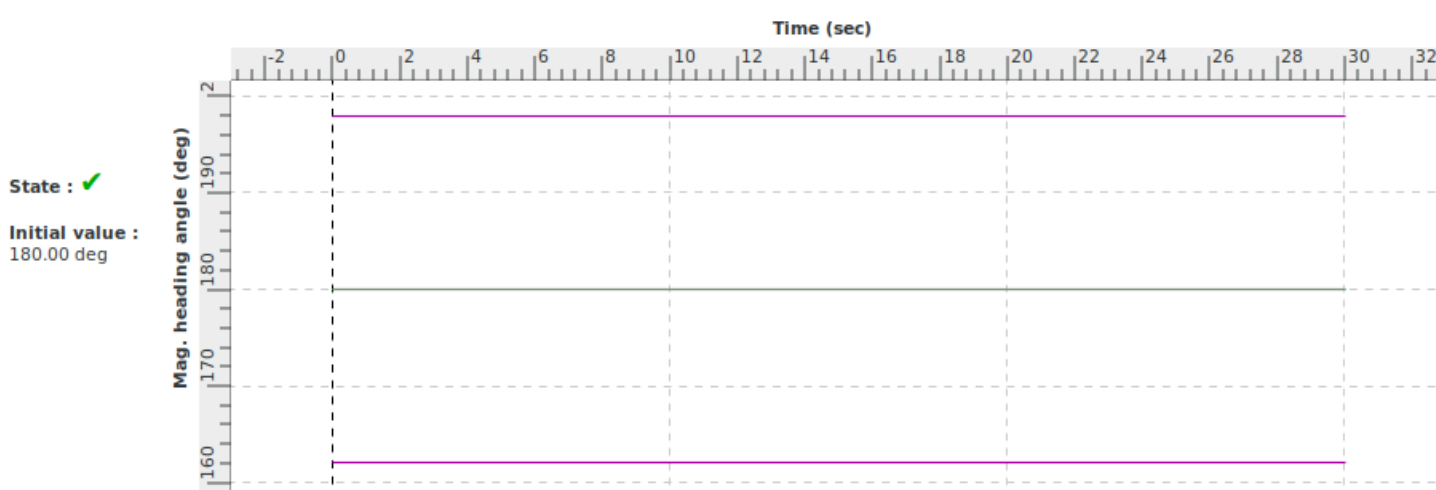
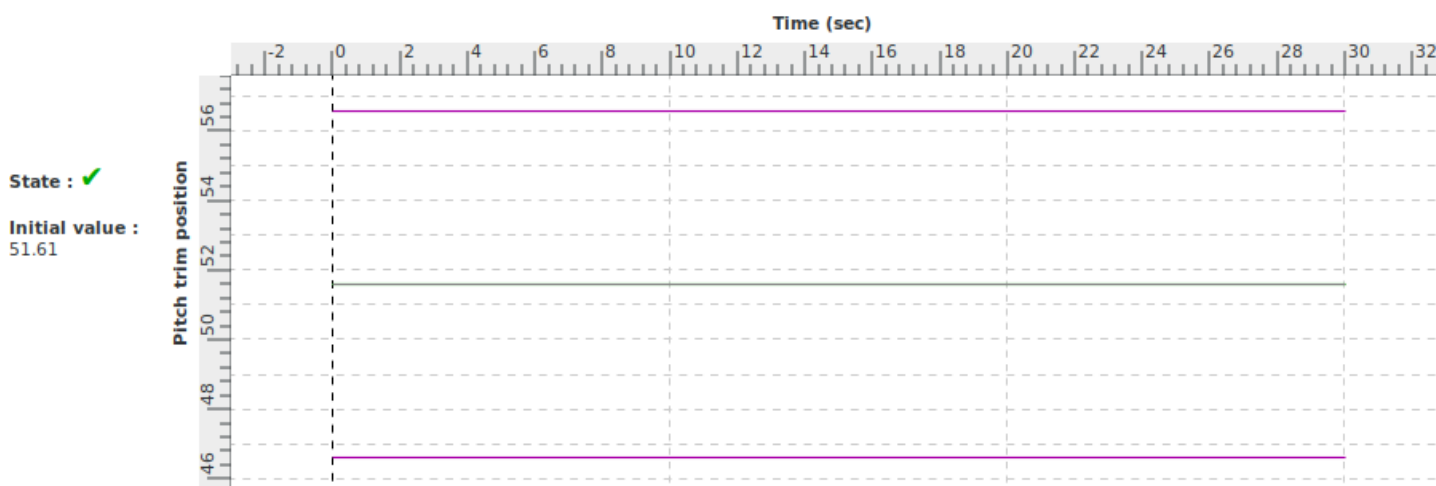
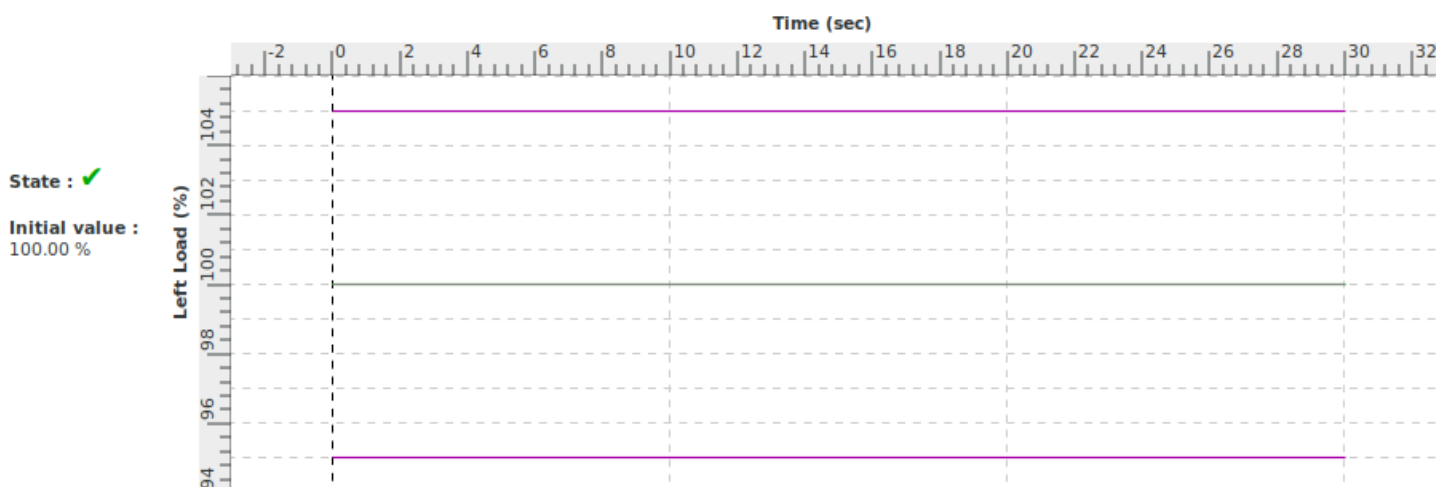
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsimg

grey : master

Title	Flaps change dynamics during take-off (retraction)		
Id	2 c ii 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

VALIDATION TEST

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

Objective	Expected Results
Demonstrate that the simulator response to a flap extension during approach conforms to the class of aeroplanes	<p>Increments (from configuration change to 20s after):</p> <p>Airspeed: 0.4 Kts</p> <p>Pitch Angle: -2 deg</p> <p>Altitude: -220 ft</p>
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.ii.1.b	<p>Airspeed +/- 3 kt</p> <p>Altitude +/- 100 ft</p> <p>Pitch +/- 1.5° or 20%</p>

Demonstration procedure	From steady approach initial conditions, flaps are extended.
Manual test procedure	The aircraft is trimmed at approach flight condition. Then, the pilot sets the flaps from position 1 to 2, and allows the airplane to respond freely.
Automatic test procedure	2 c ii 1 b

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

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

Autopilot mode	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>	

Initial parameters	DESCENT_FLAPS_APP
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : -450 (free) IAS (kt) : 90 Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : -2 Pedal Position (%) : 0 Column Position (%) : 44 Wheel Position (%) : 0	Flaps lever position : 1 Gear lever position : 1 Left Load (%) : 30 Right Load (%) : 30 Left RPM : 1930 Right RPM : 1930

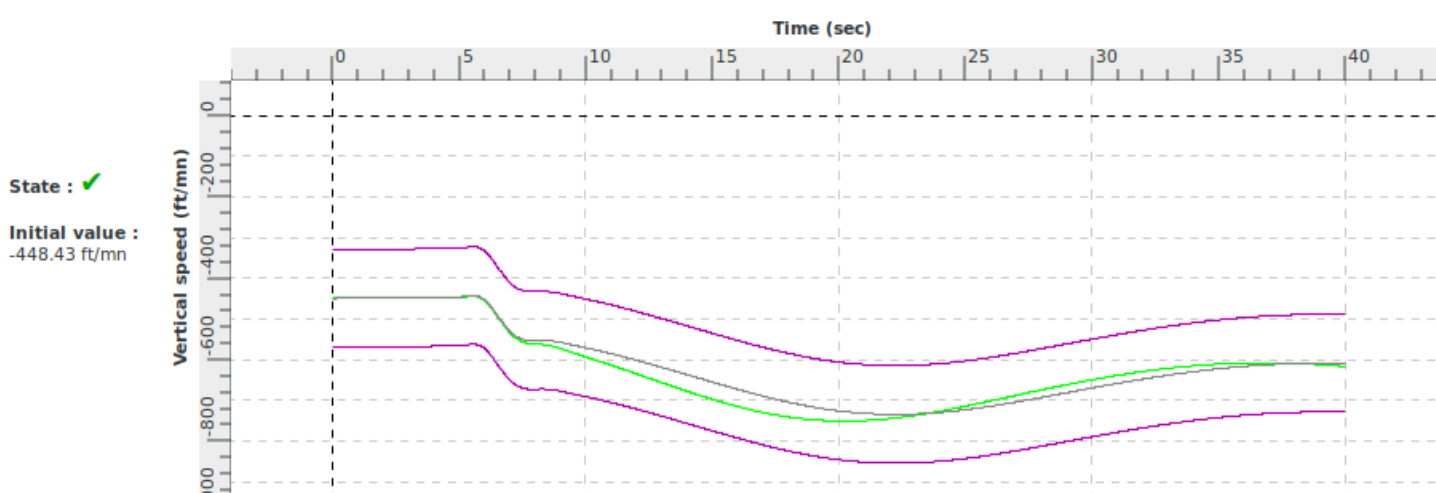
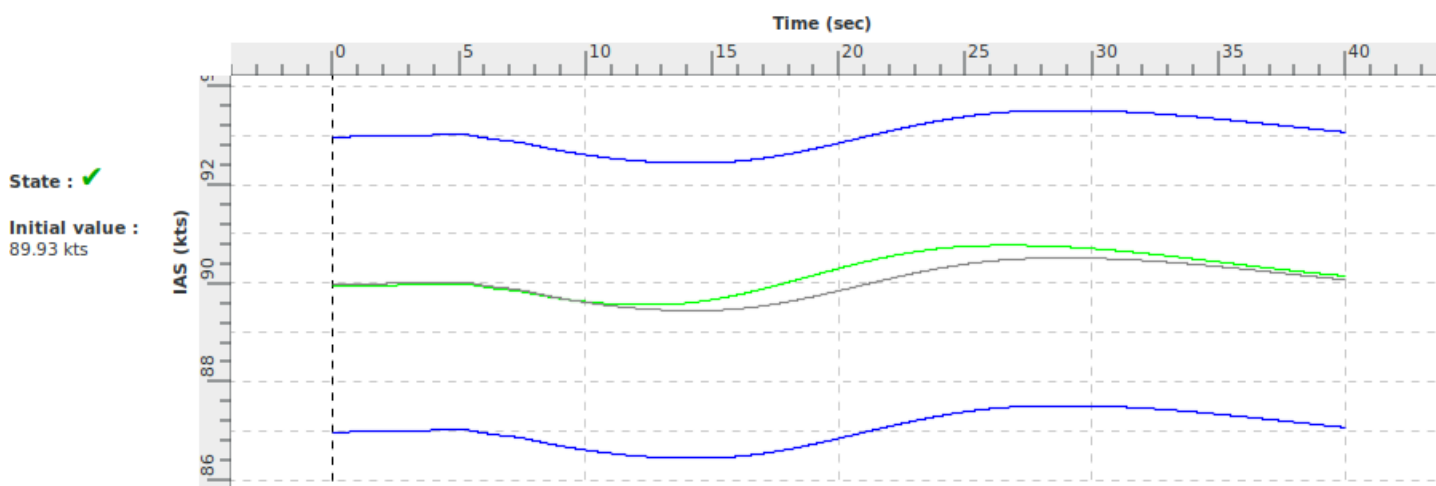
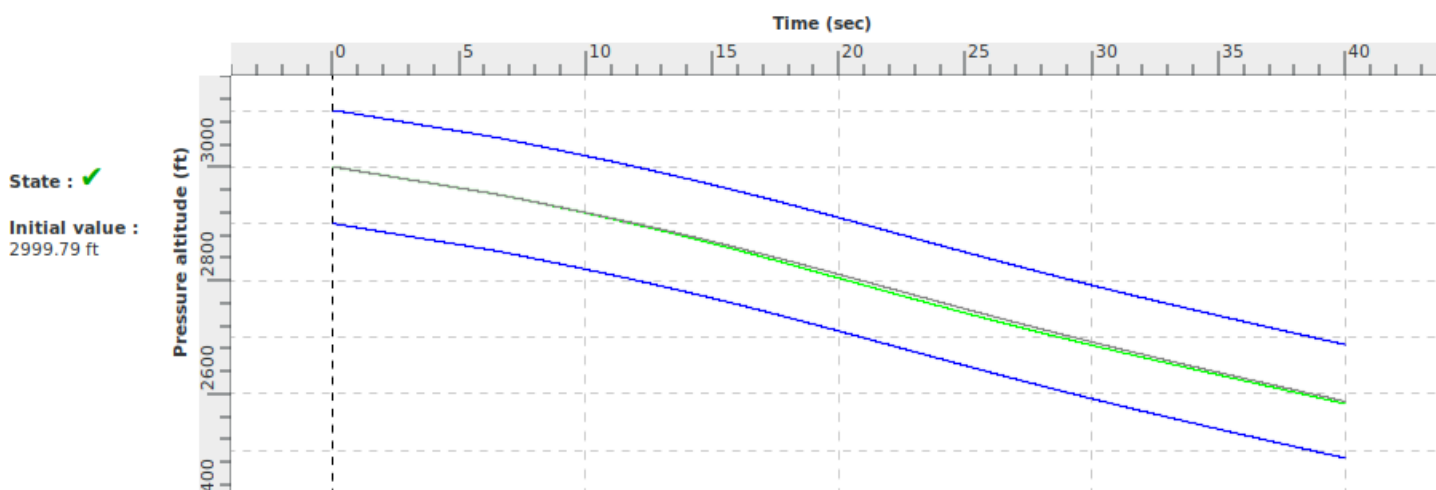
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
0.0	deconnectionPA_roll	0.0	disable QTG Autopilot in roll axis
0.0	deconnectionPA_rudder	0.0	disable QTG Autopilot in yaw axis
5.0	Flaps	2.0	Move the flaps lever to the desired position
40.0	Stop_Test	0.0	Stop the test procedure

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

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Flaps change dynamics during approach (extension)		
Id	2 c ii 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



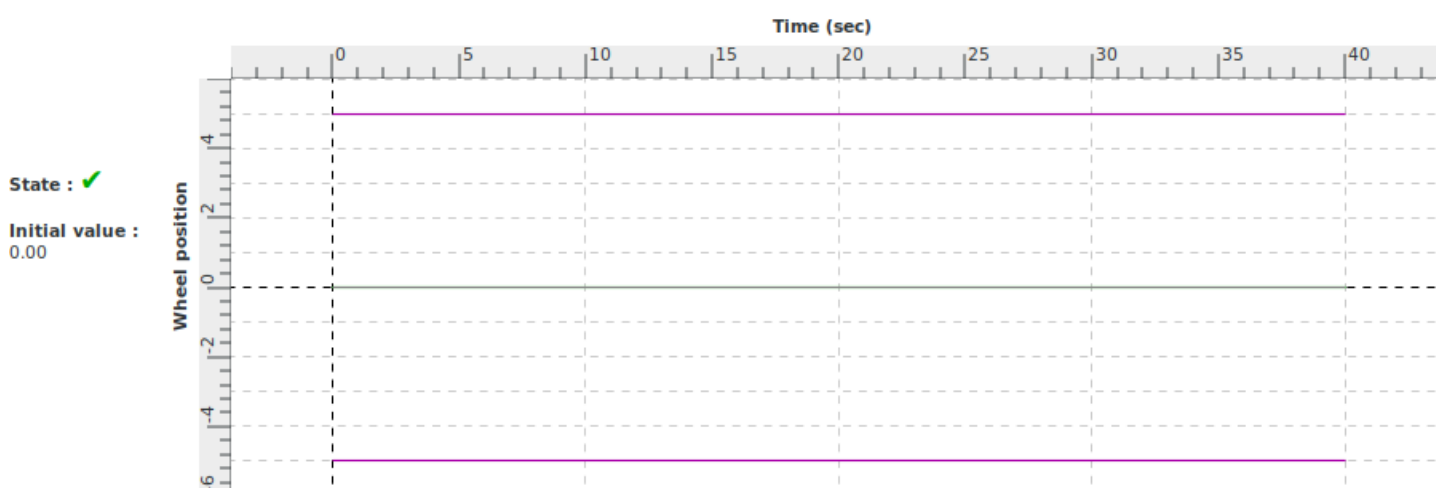
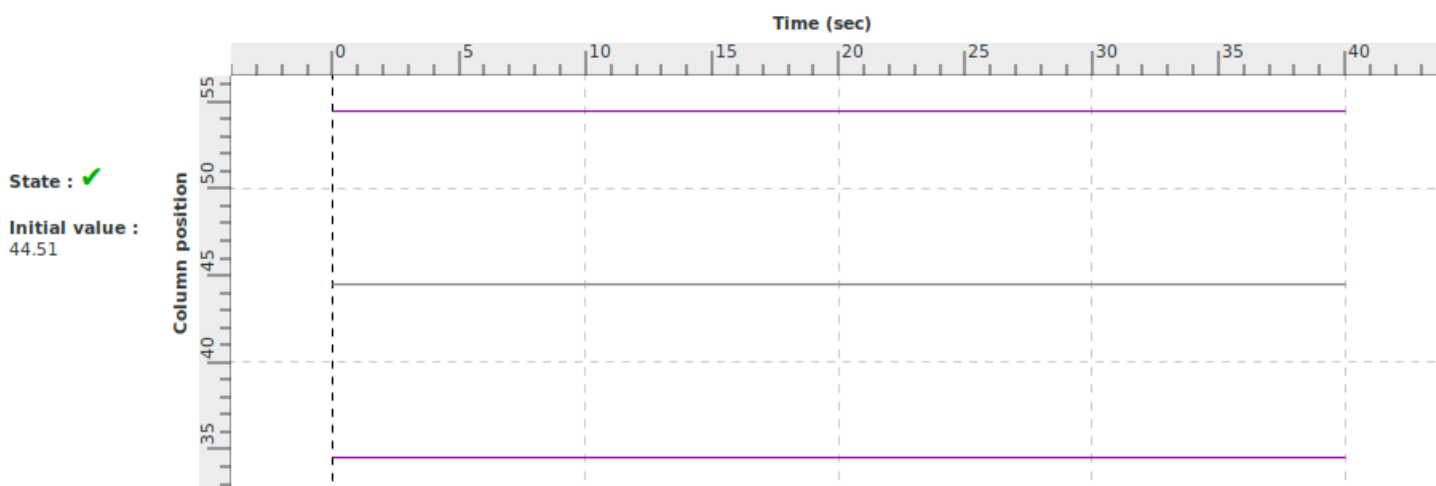
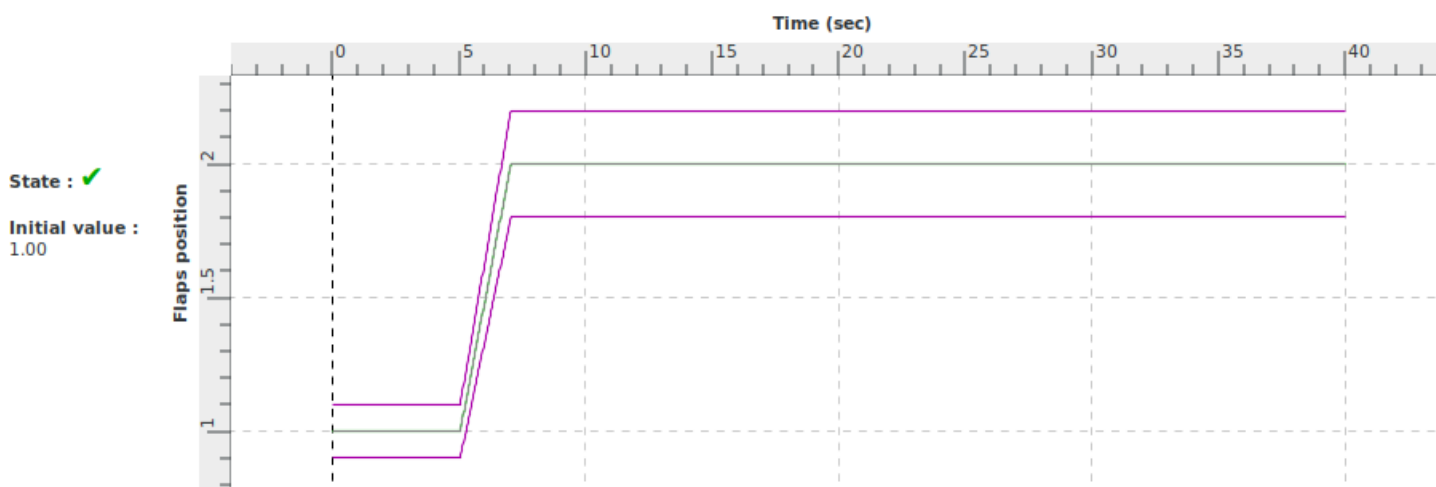
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Flaps change dynamics during approach (extension)		
Id	2 c ii 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



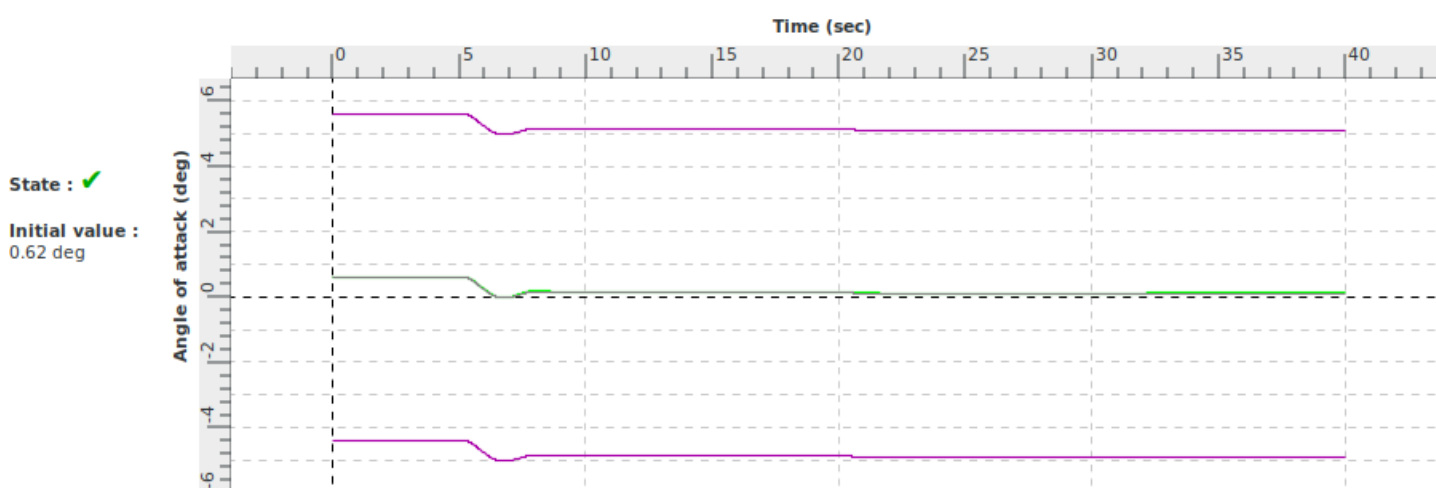
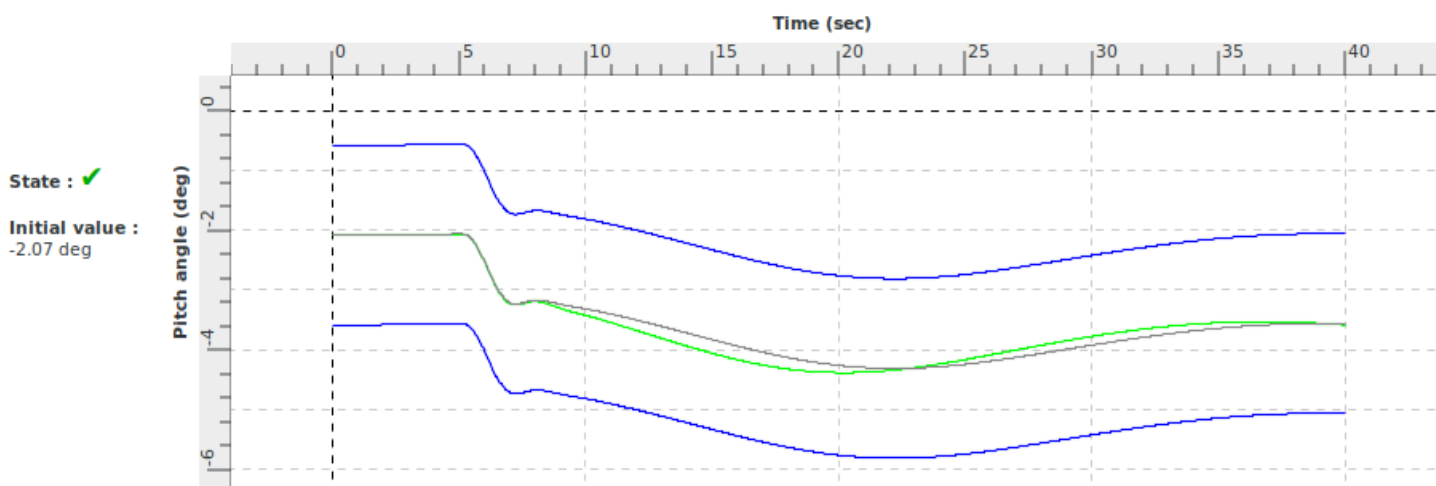
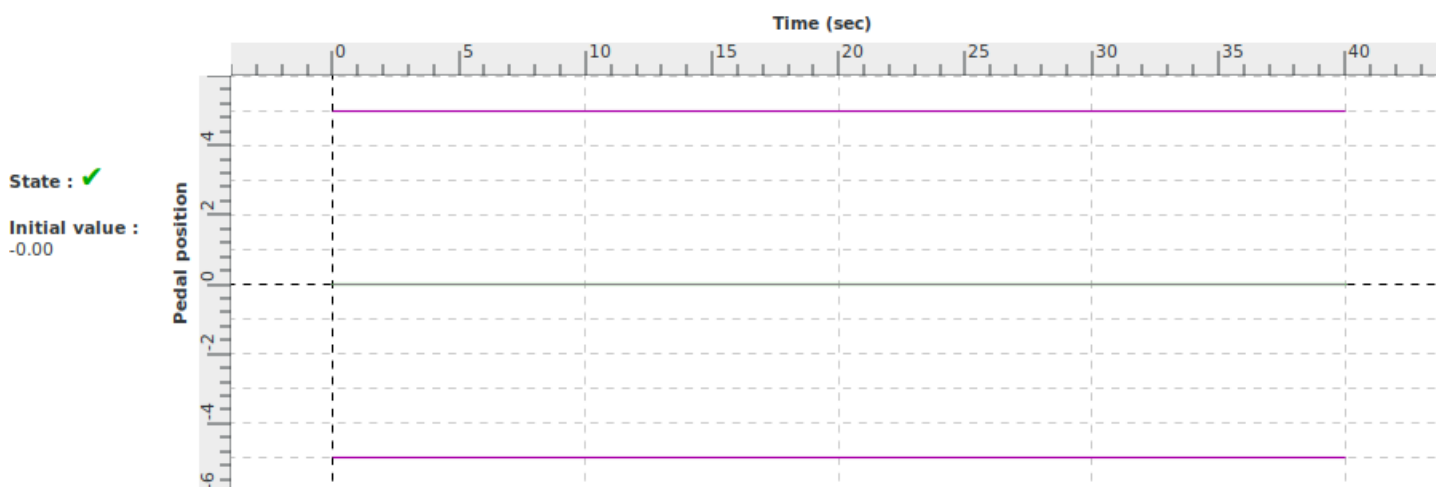
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Flaps change dynamics during approach (extension)		
Id	2 c ii 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



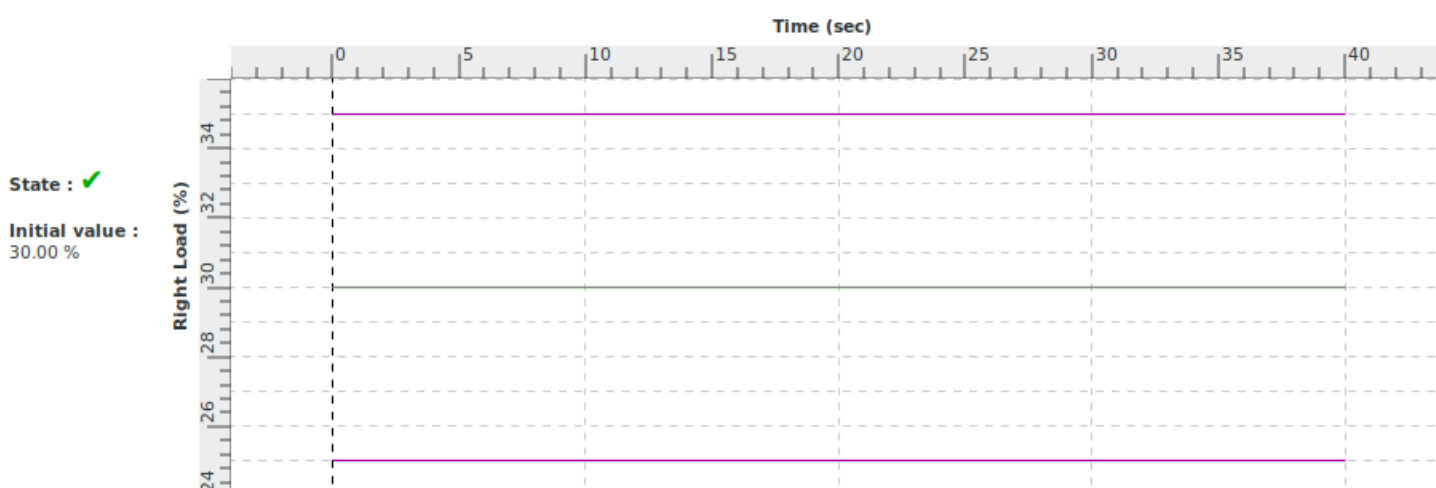
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Flaps change dynamics during approach (extension)		
Id	2 c ii 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



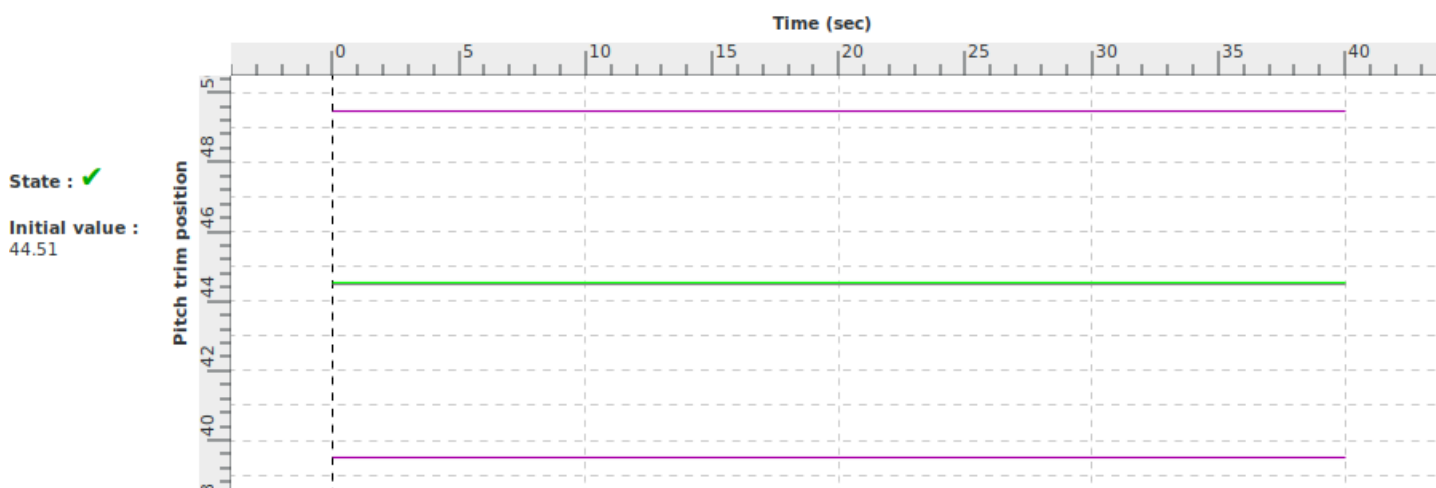
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Flaps change dynamics during approach (extension)		
Id	2 c ii 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	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

Title	Flaps change force during take-off (retraction)		
Id	2 c ii 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that the force change due to flap retraction during take-off conforms to the class of aeroplanes	Maximum Increments: -4 N of Control force
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.ii.2.a	+/- 2,2 daN (5Lbs) or +/- 10% Force

Demonstration procedure	From steady take-off initial conditions, flaps are retracted.
Manual test procedure	Without trimming or power settings change, pilot maintains constant flight path angle. When the climb is stabilised, the pilot sets the flap from position 1 to 0, maintaining the same rate of climb using control column.
Automatic test procedure	2 c ii 2 a

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Flaps change force during take-off (retraction)		
Id	2 c ii 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	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 Balance (%) : 50 Altitude (ft) : 3000 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 : 0 Left Load (%) : 100 Right Load (%) : 100 Left RPM : 2090 Right RPM : 2090

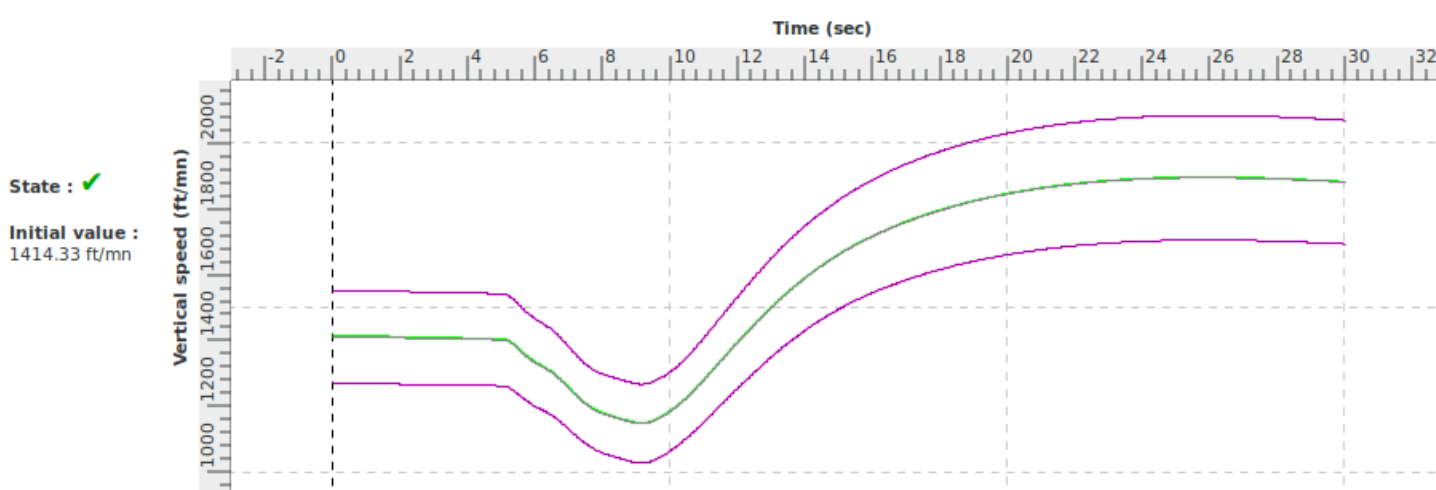
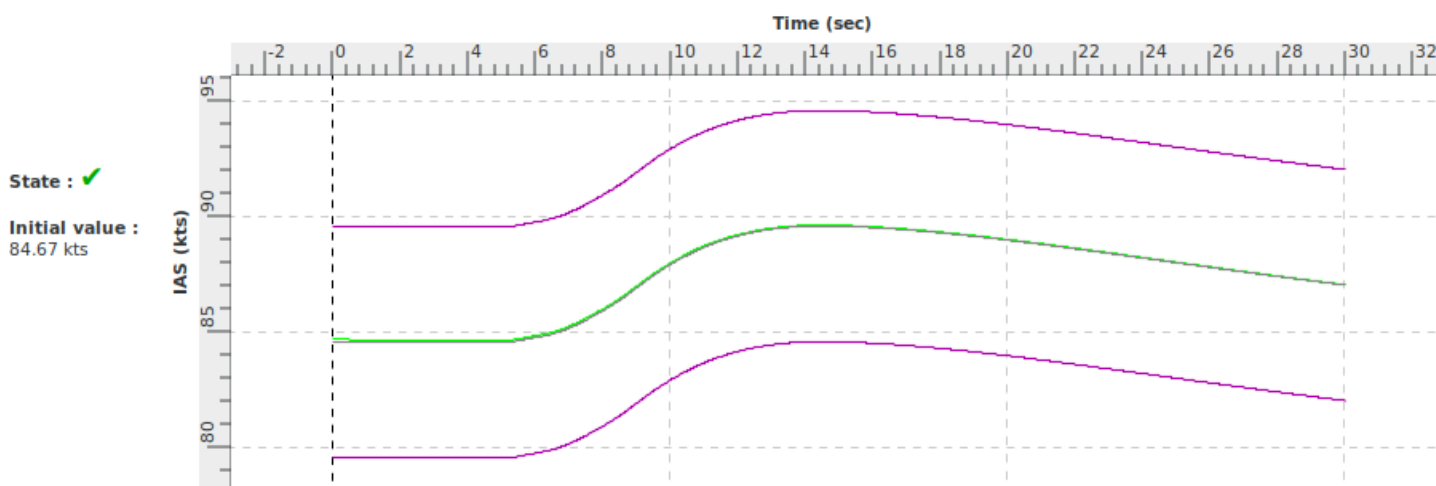
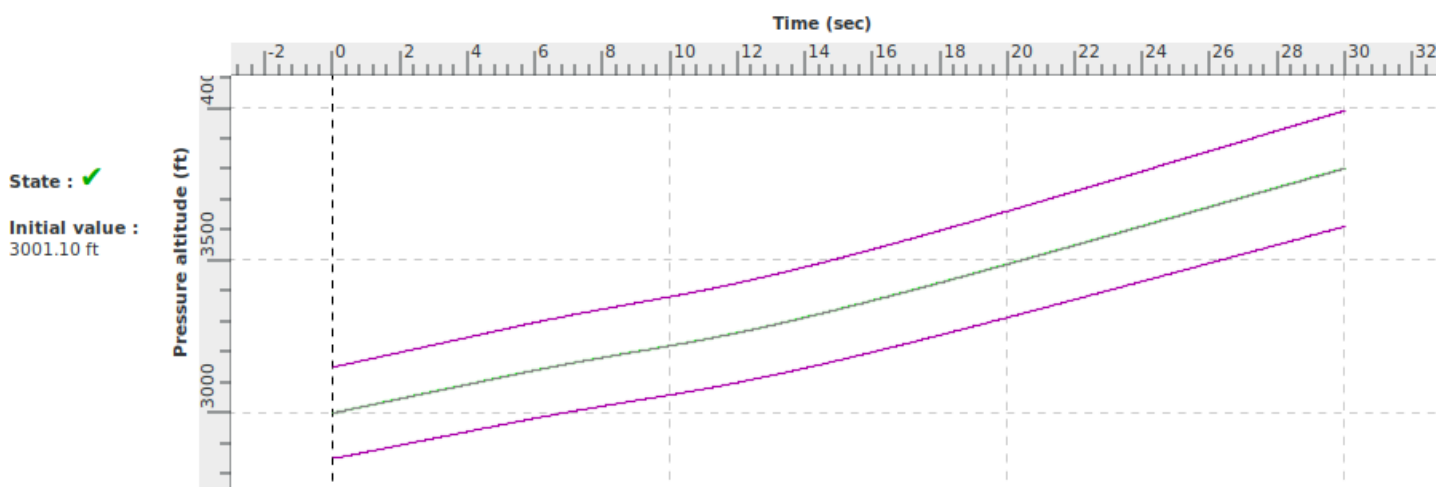
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
5.0	Flaps	0.0	Move the flaps lever to the desired position
30.0	Stop_Test	0.0	Stop the test procedure

Title	Flaps change force during take-off (retraction)		
Id	2 c ii 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Flaps change force during take-off (retraction)		
Id	2 c ii 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



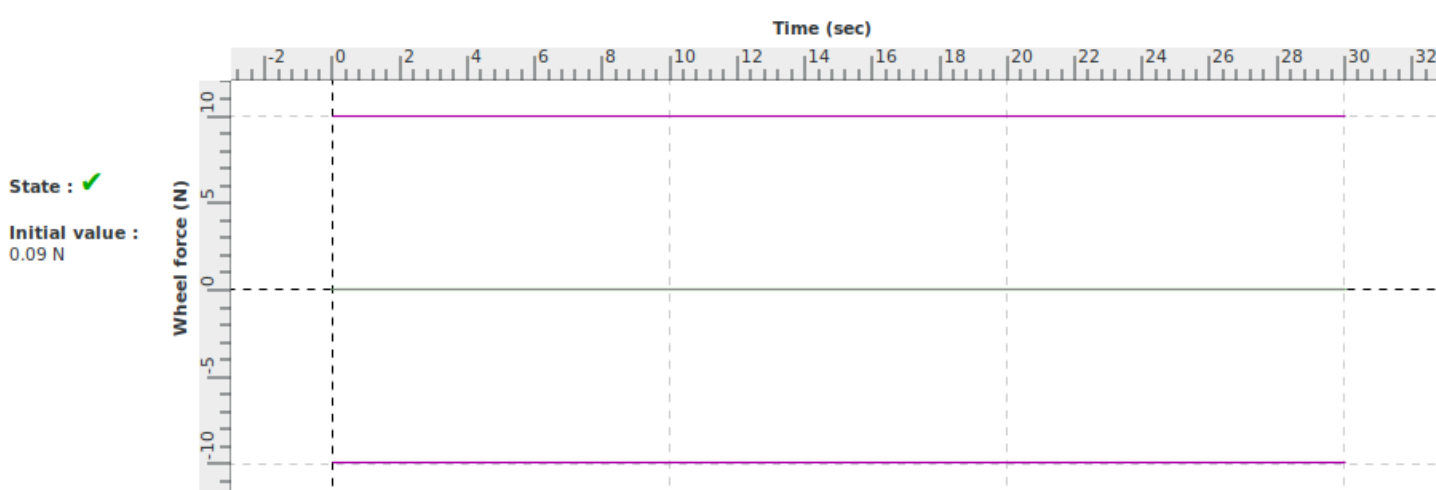
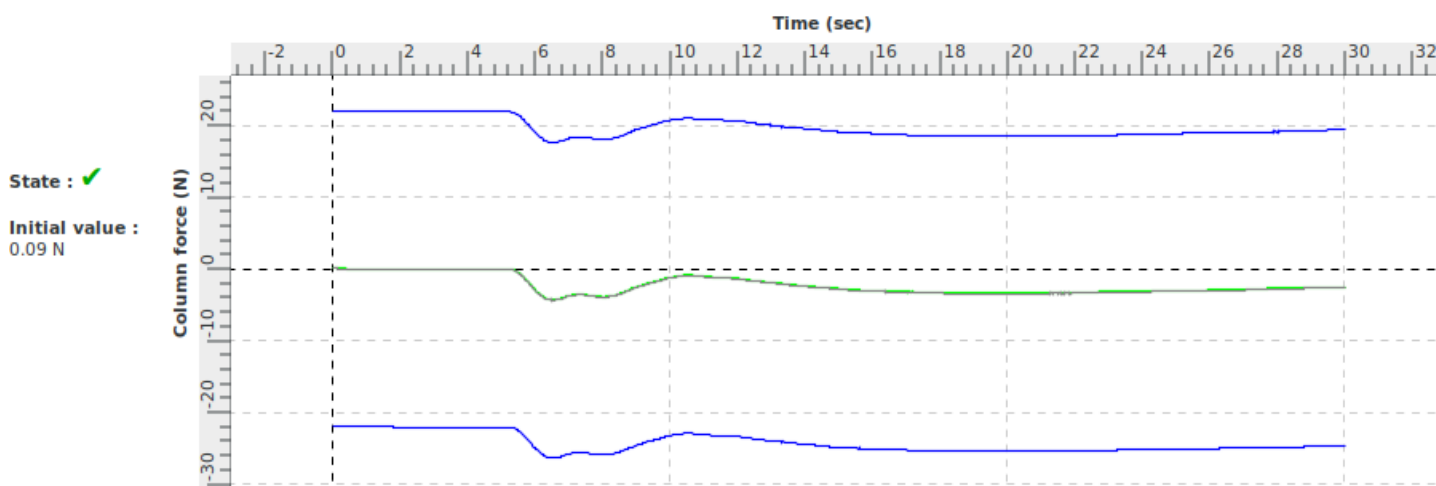
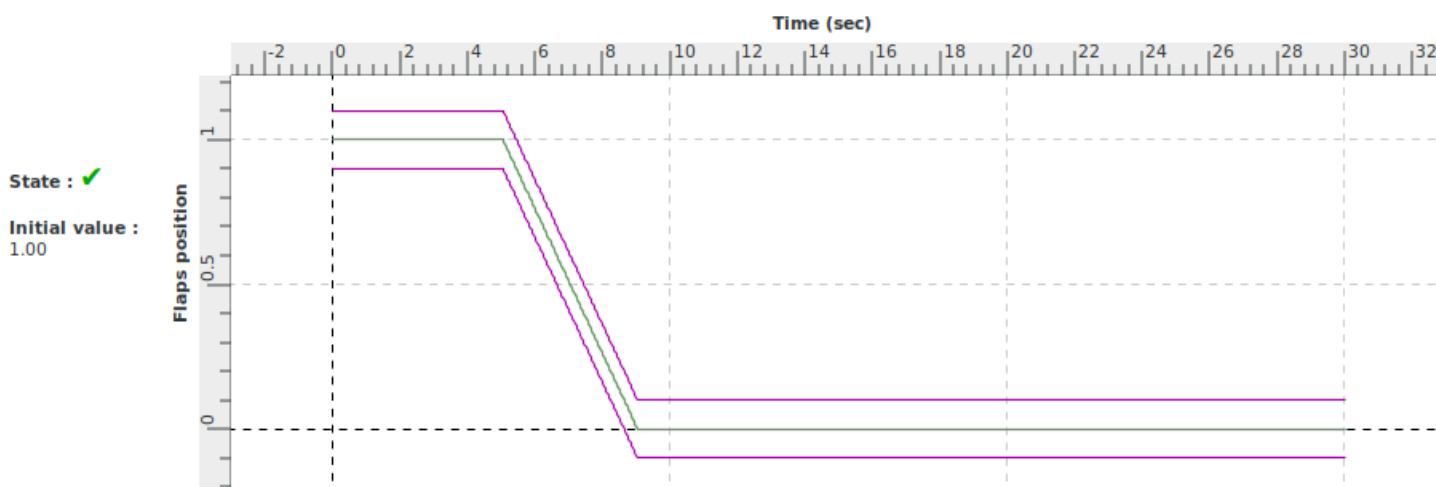
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Flaps change force during take-off (retraction)		
Id	2 c ii 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



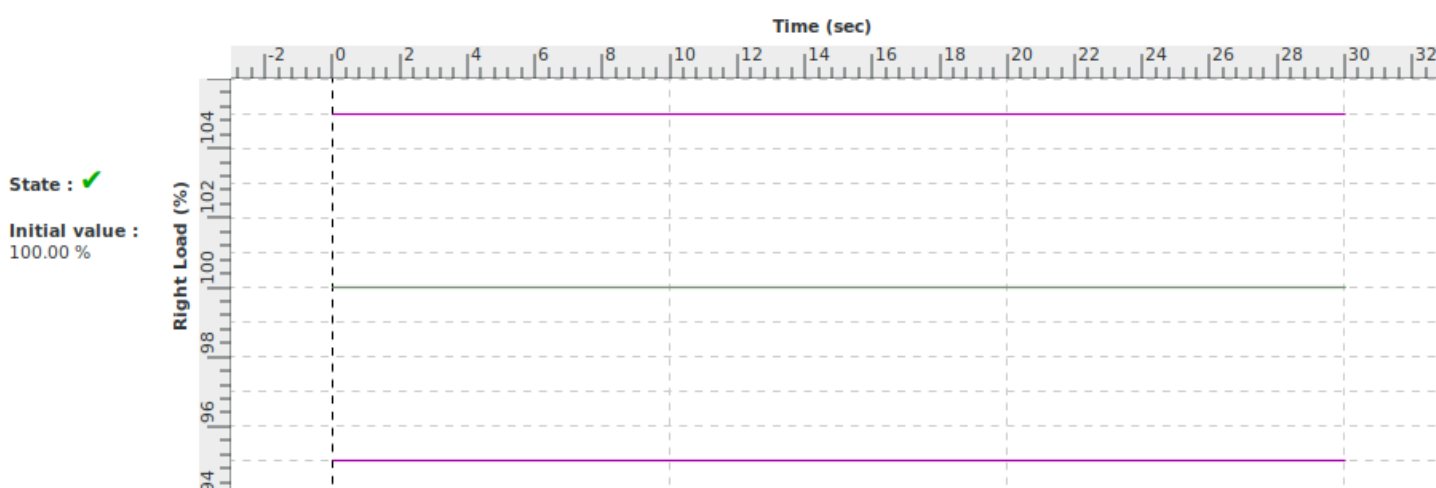
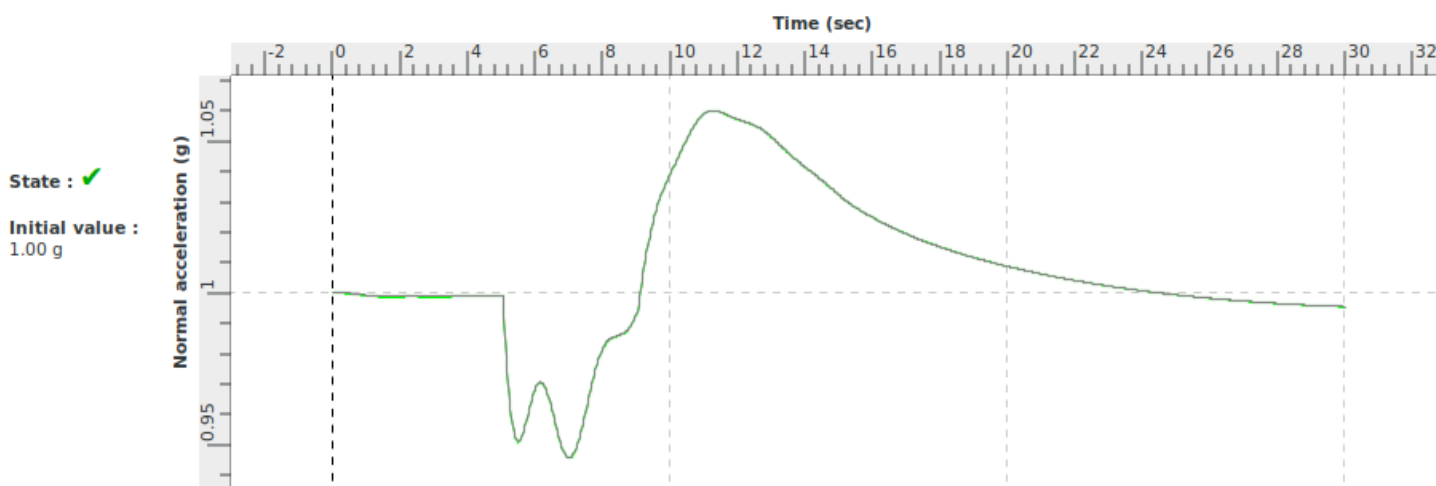
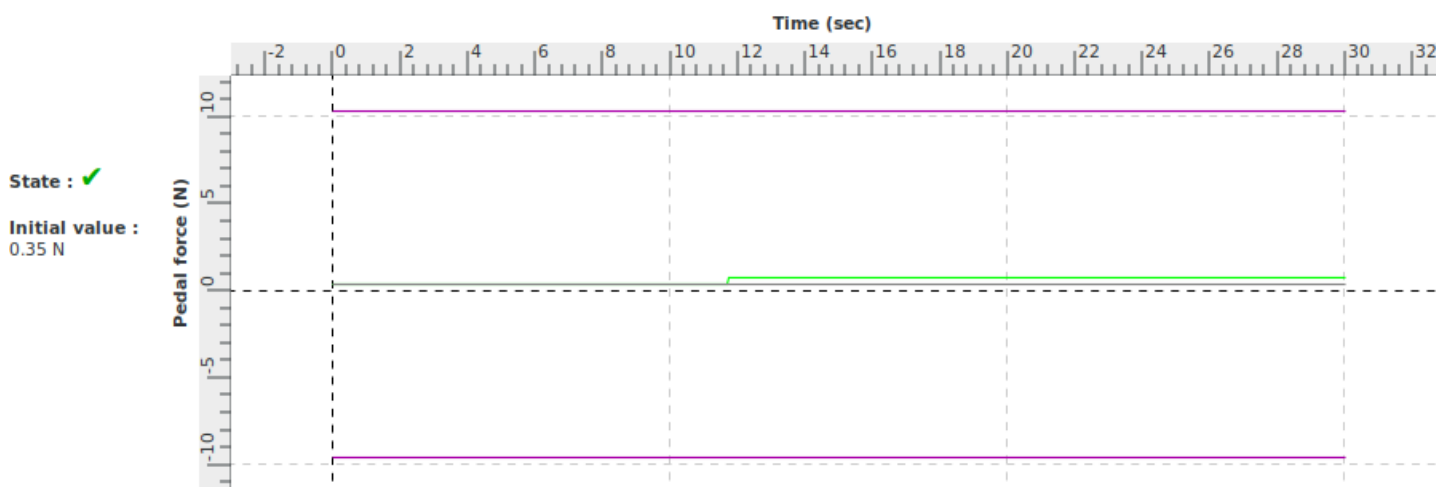
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Flaps change force during take-off (retraction)		
Id	2 c ii 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



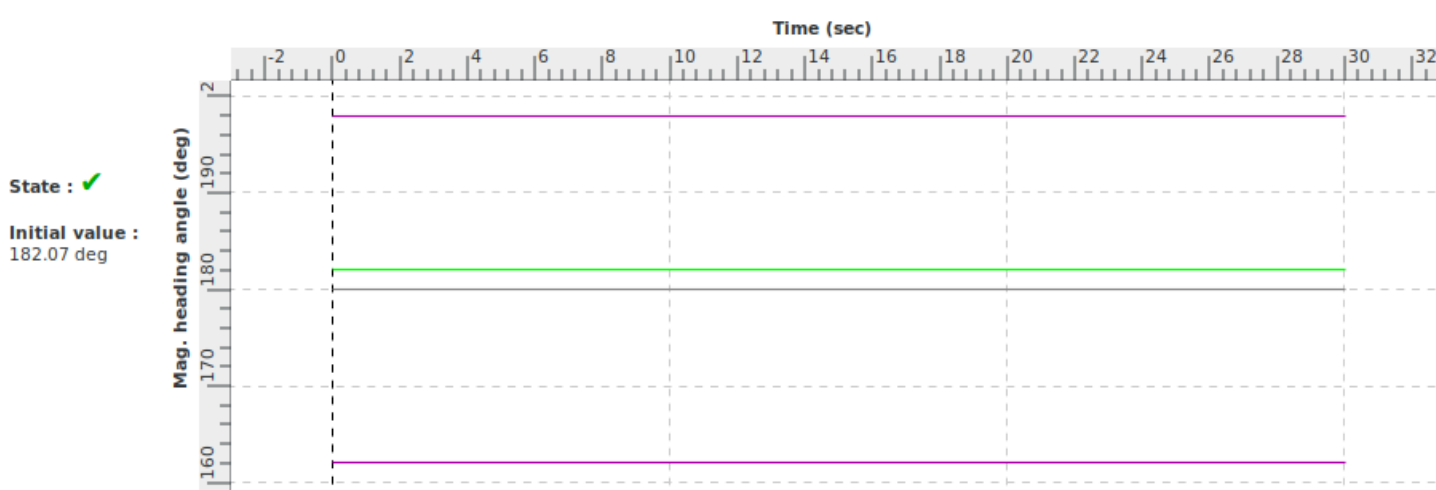
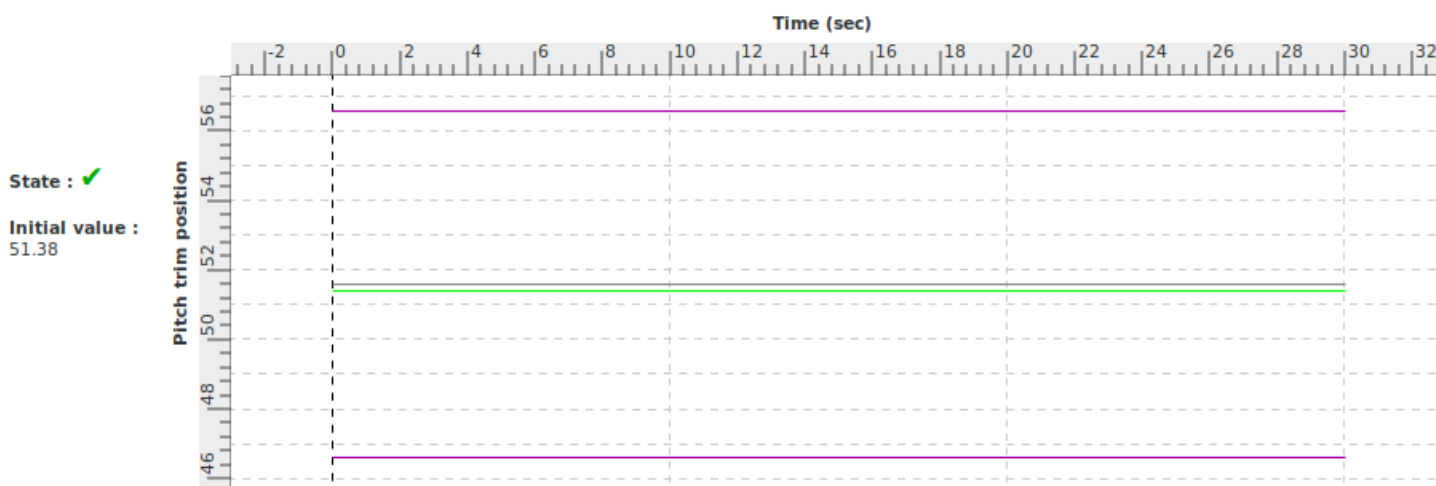
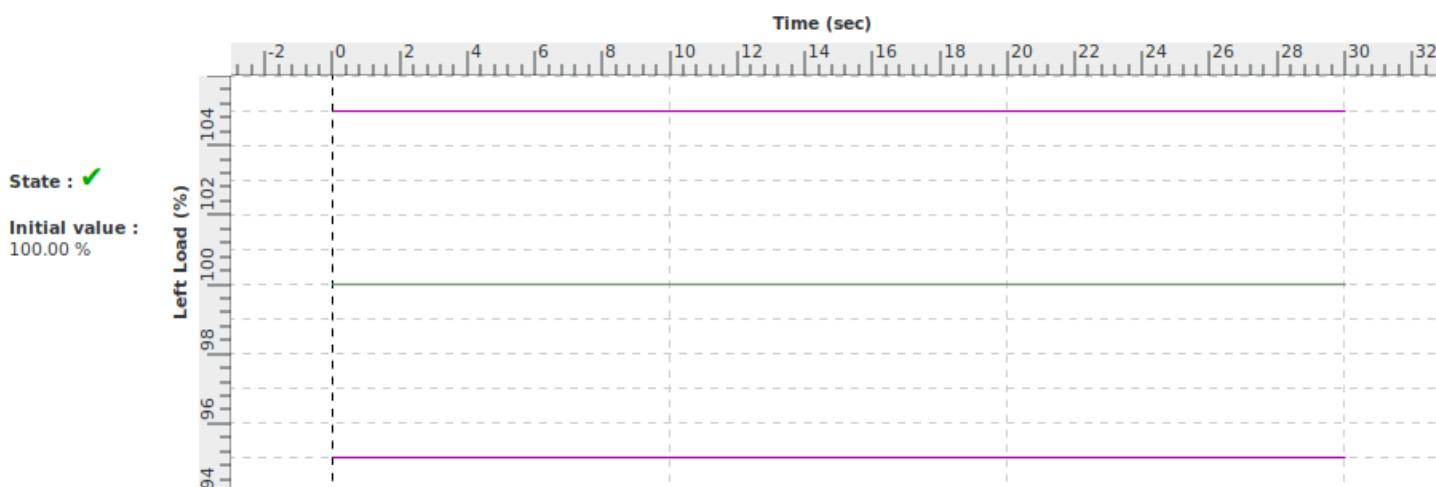
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Flaps change force during take-off (retraction)		
Id	2 c ii 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



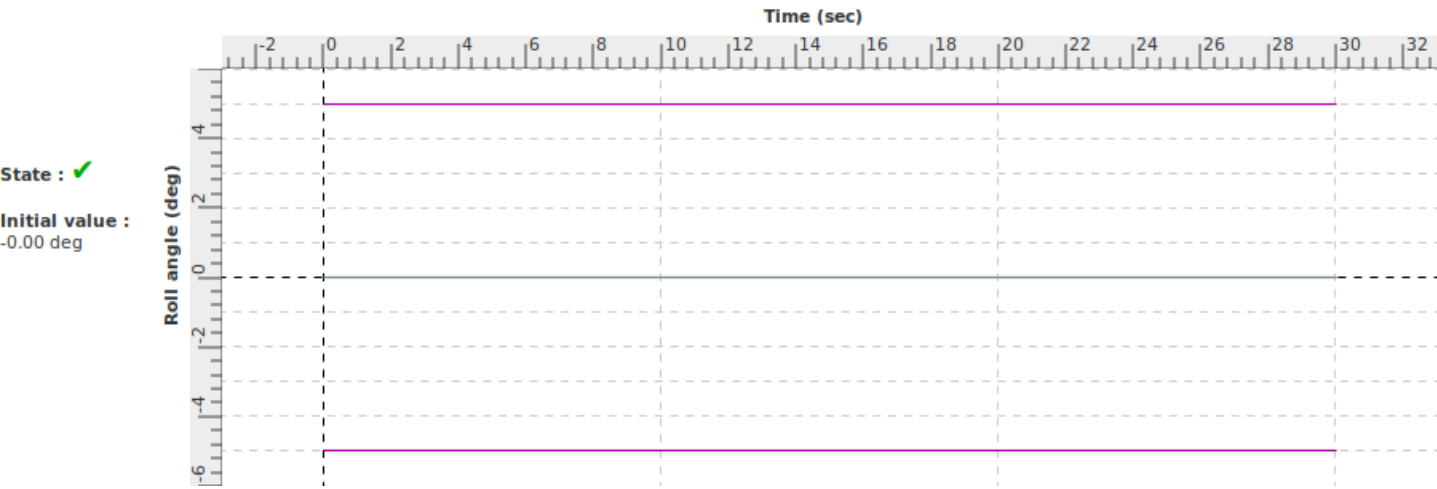
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsimg

grey : master

Title	Flaps change force during take-off (retraction)		
Id	2 c ii 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	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

Title	Flaps change force during approach (extension)		
Id	2 c ii 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that the the force change due to flap extension during approach conforms to the class of aeroplanes	Maximum Increments : 1 N of Control force
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.ii.2.b	+/- 2,2 daN (5Lbs) or +/- 10% Force

Demonstration procedure	From steady approach initial conditions, flaps are extended.
Manual test procedure	Without trimming or power settings change, pilot maintains constant flight path angle. When the approach is stabilised, the pilot sets the flaps from position 1 to position 2, maintaining the same rate of descent using control column.
Automatic test procedure	2 c ii 2 b

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Flaps change force during approach (extension)		
Id	2 c ii 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Autopilot mode	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>	

Initial parameters	DESCENT_FLAPS_APP
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : -450 (free) IAS (kt) : 90 Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : -2 Pedal Position (%) : 0 Column Position (%) : 44 Wheel Position (%) : 0	Flaps lever position : 1 Gear lever position : 1 Left Load (%) : 30 Right Load (%) : 30 Left RPM : 1930 Right RPM : 1930

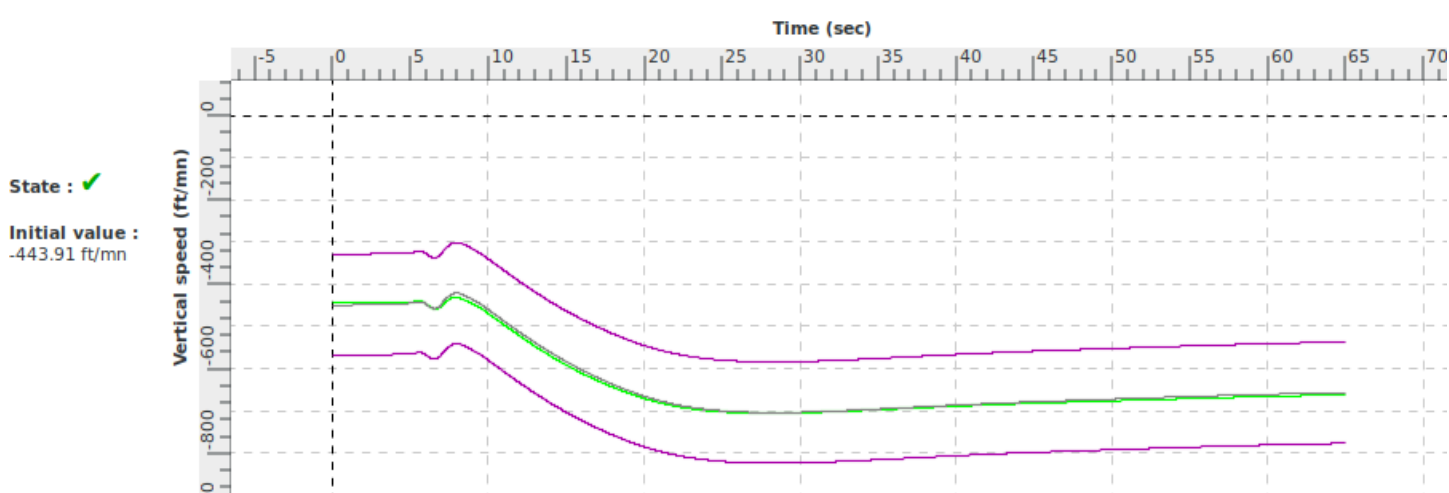
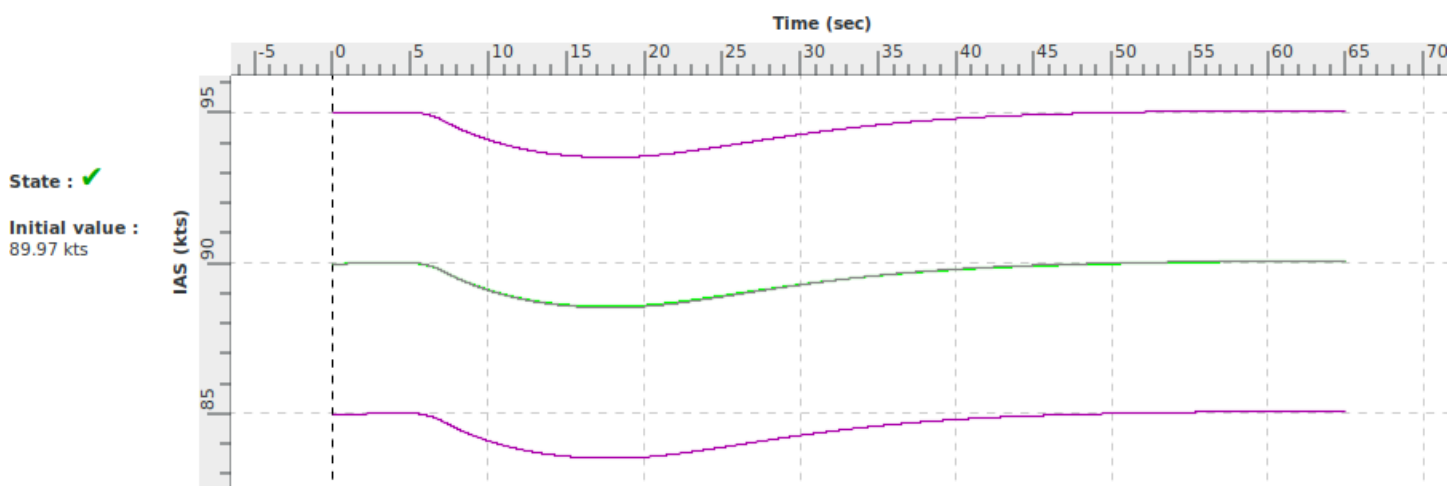
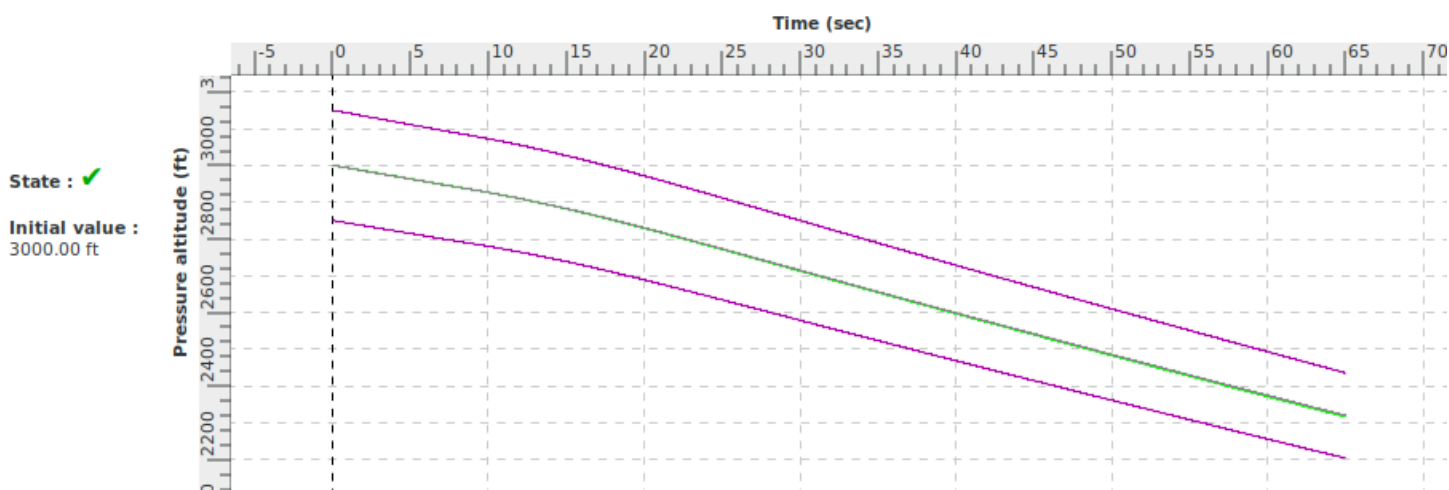
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
5.0	Flaps	2.0	Move the flaps lever to the desired position
65.0	Stop_Test	0.0	Stop the test procedure

Title	Flaps change force during approach (extension)		
Id	2 c ii 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Flaps change force during approach (extension)		
Id	2 c ii 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



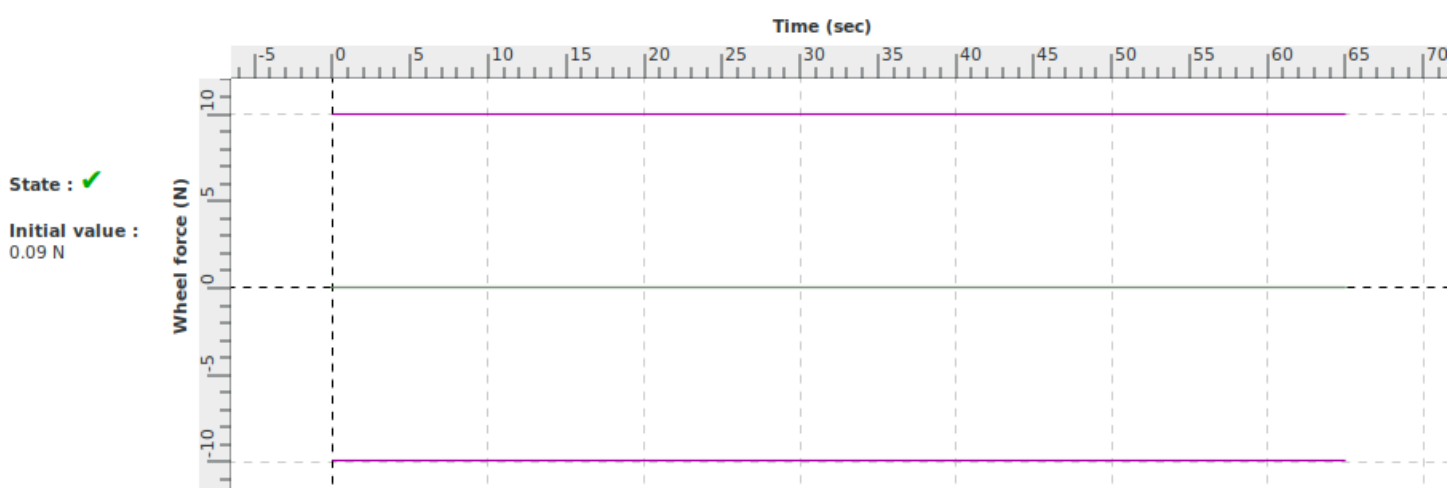
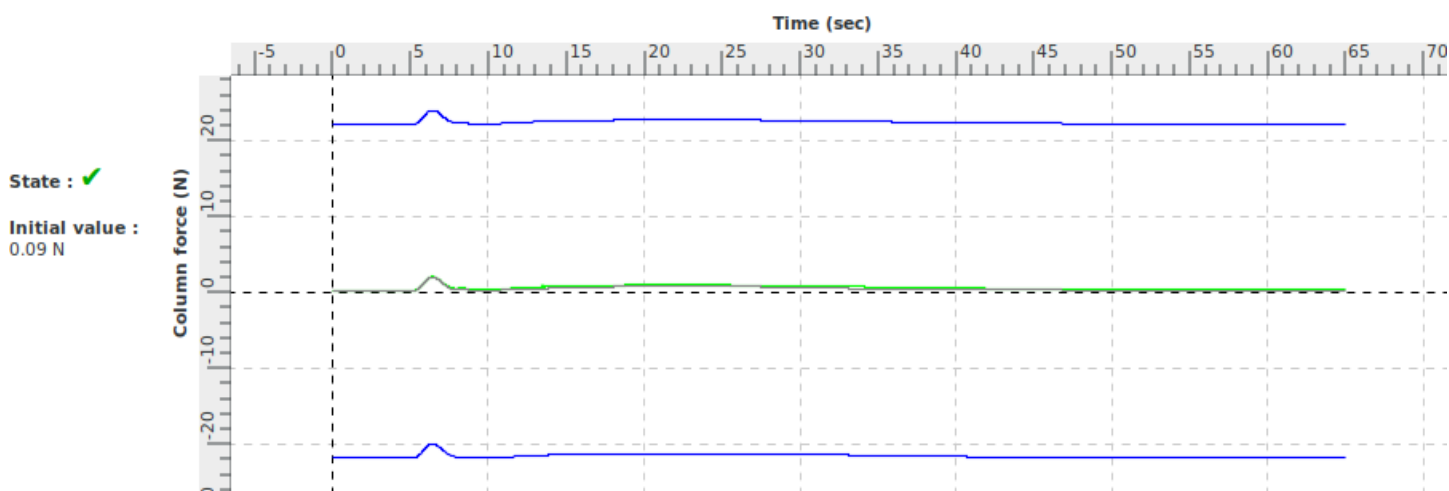
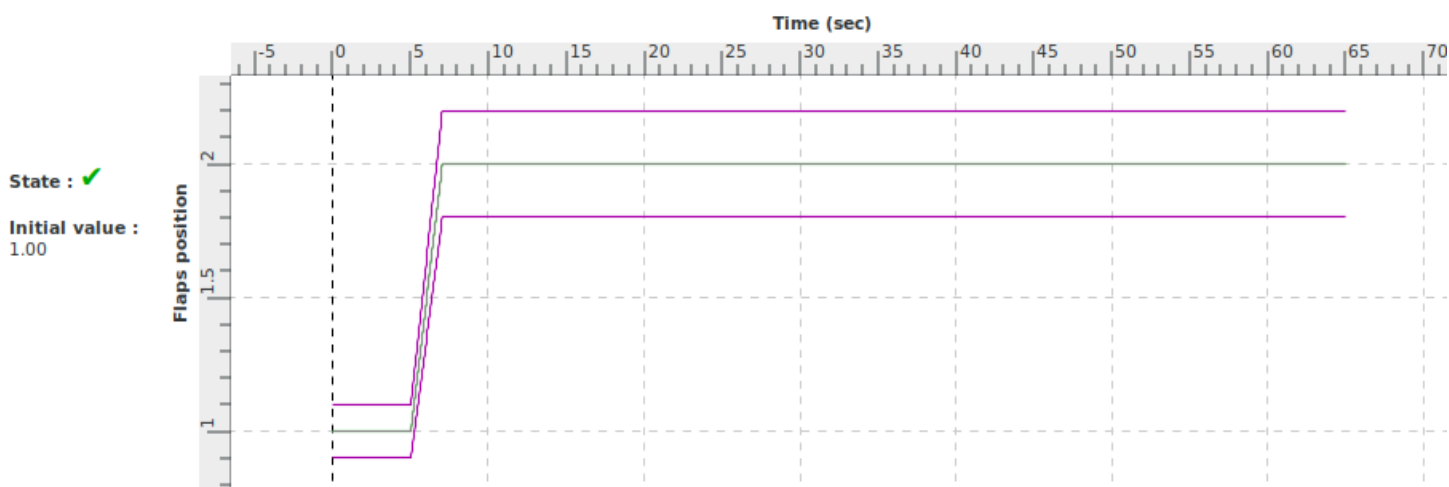
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Flaps change force during approach (extension)		
Id	2 c ii 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



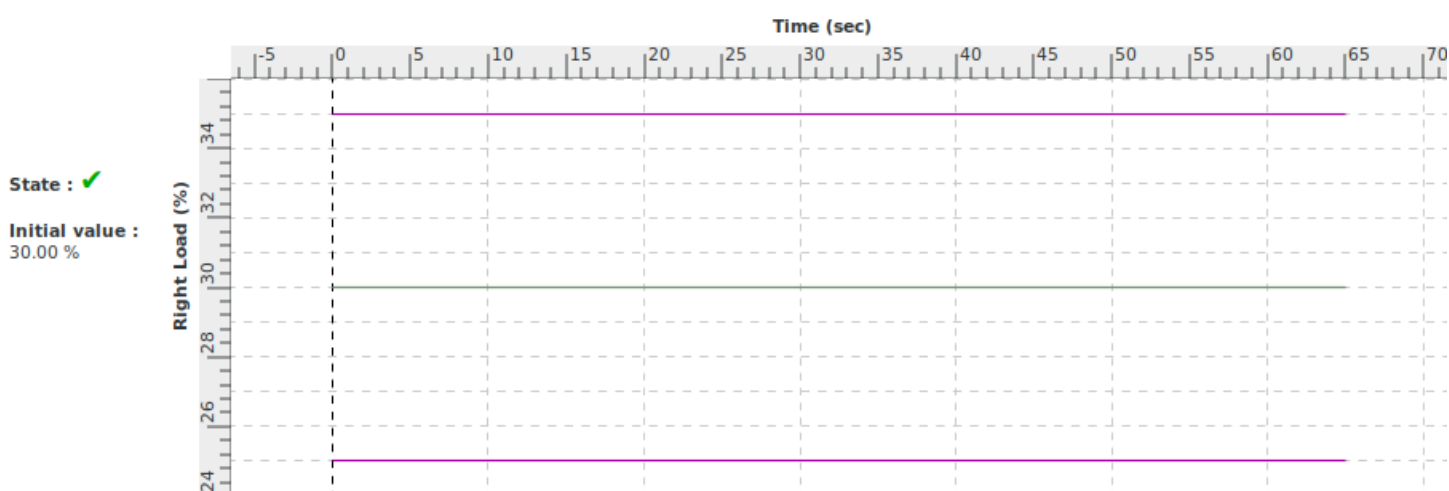
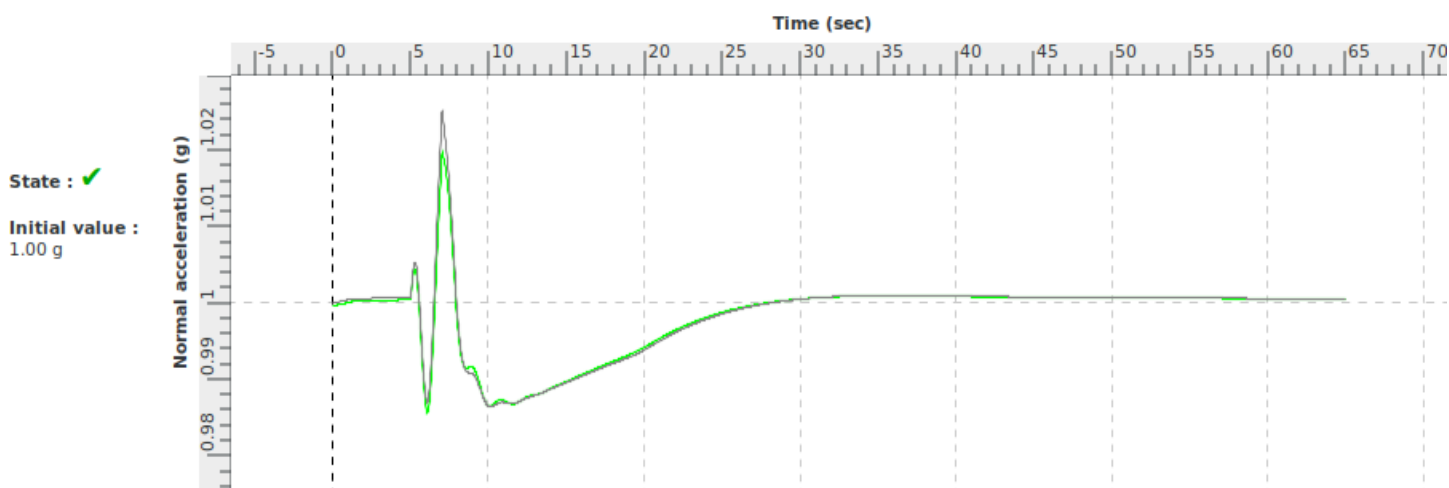
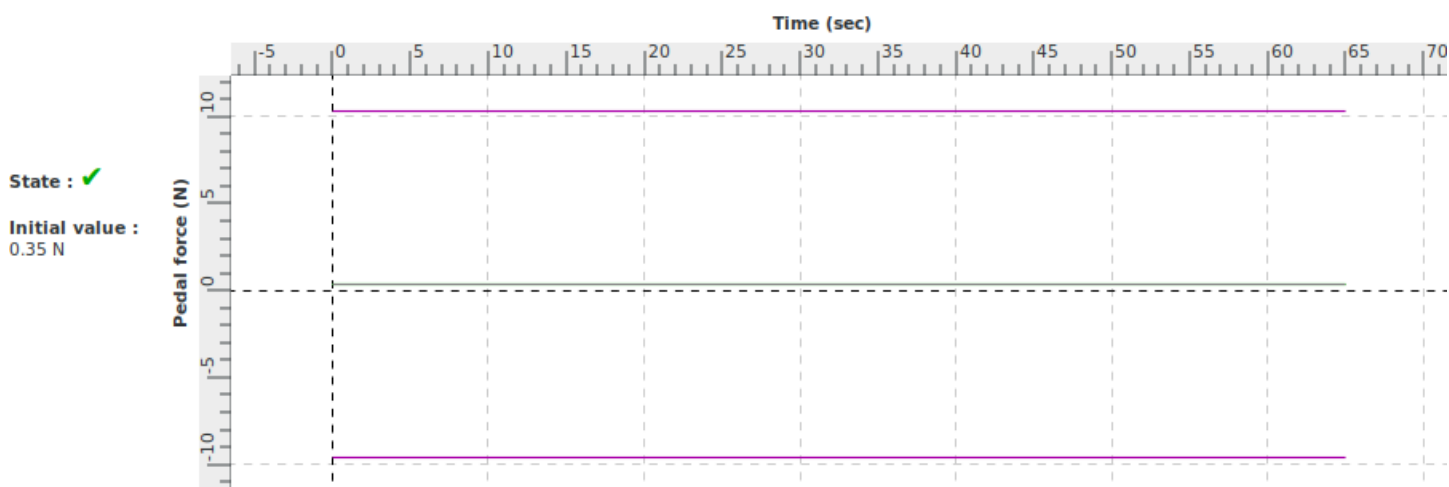
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Flaps change force during approach (extension)		
Id	2 c ii 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



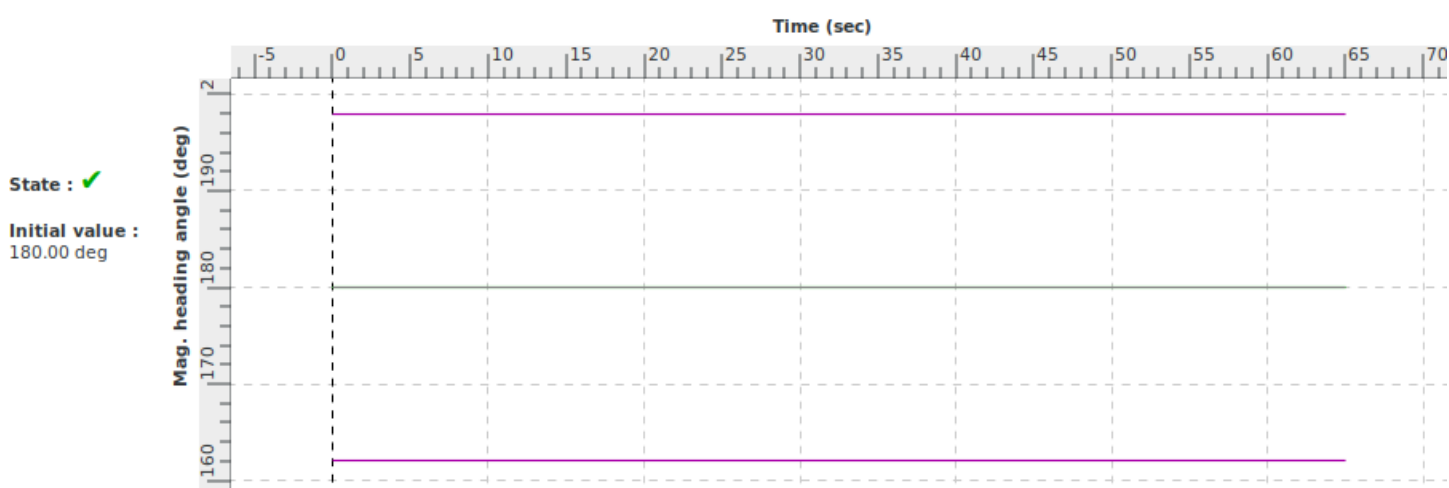
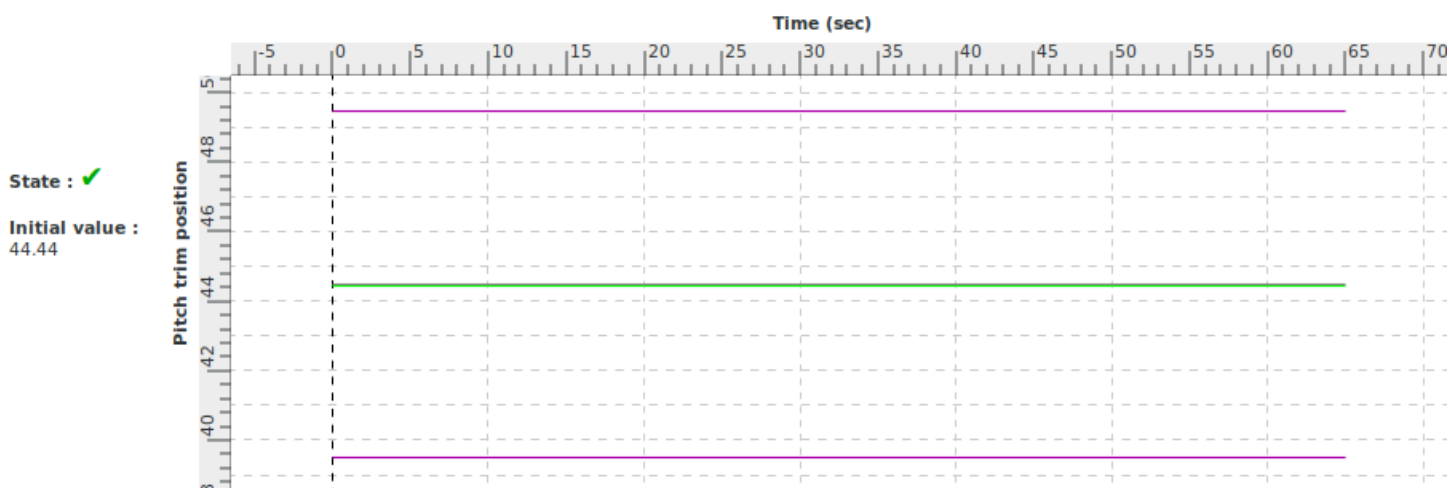
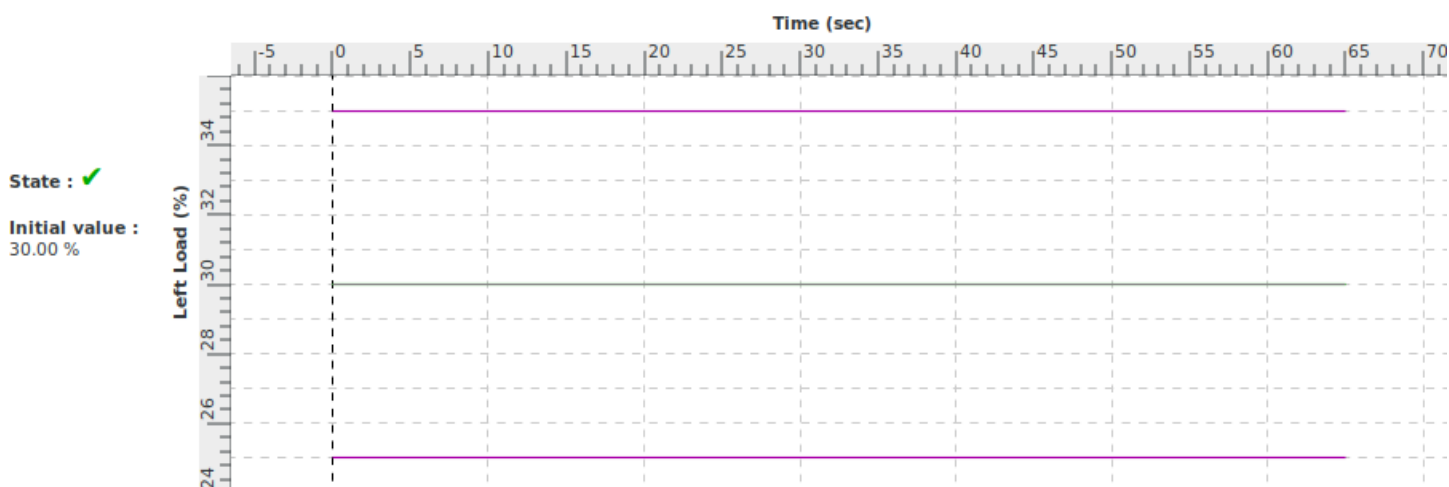
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Flaps change force during approach (extension)		
Id	2 c ii 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



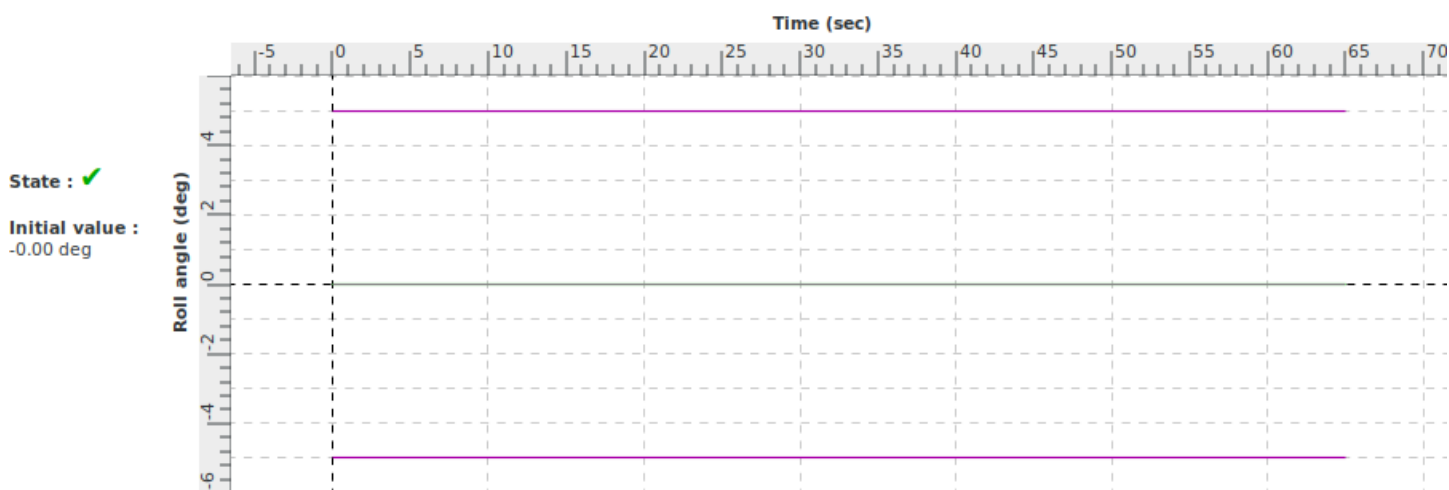
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Flaps change force during approach (extension)		
Id	2 c ii 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	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

Title	Gear change dynamics during take-off (retraction)		
Id	2 c iv 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

Objective	Expected Results
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>
Reference	Evaluation Criteria
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>

Demonstration procedure	From steady take-off initial conditions, gear is retracted.
Manual test procedure	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.
Automatic test procedure	2 c iv 1 a

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Gear change dynamics during take-off (retraction)		
Id	2 c iv 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
<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>	

Initial parameters	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

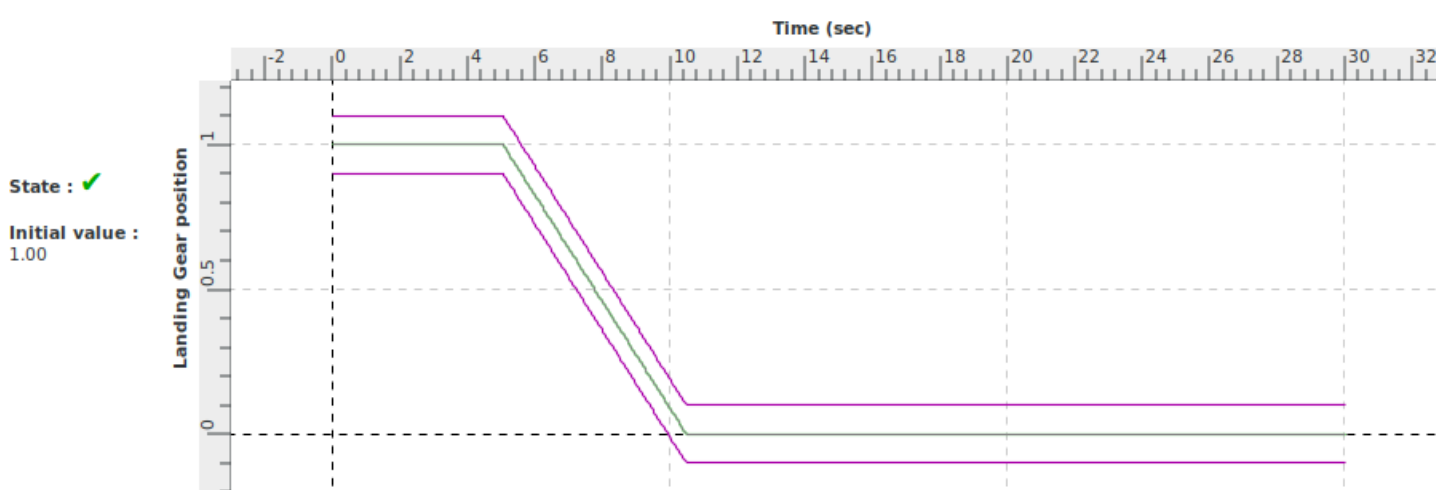
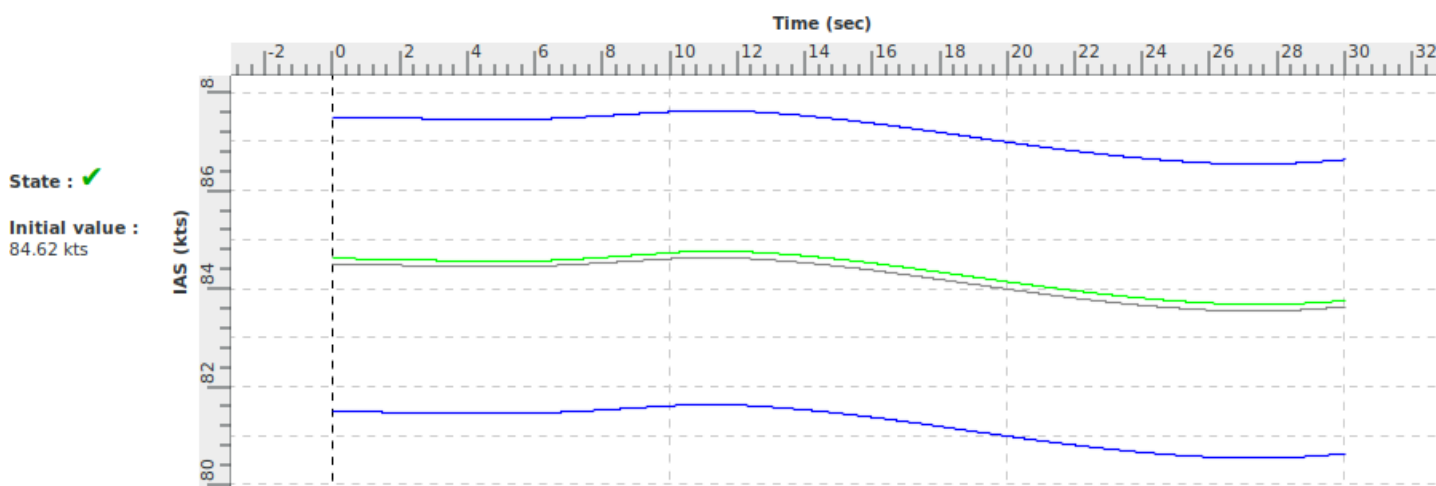
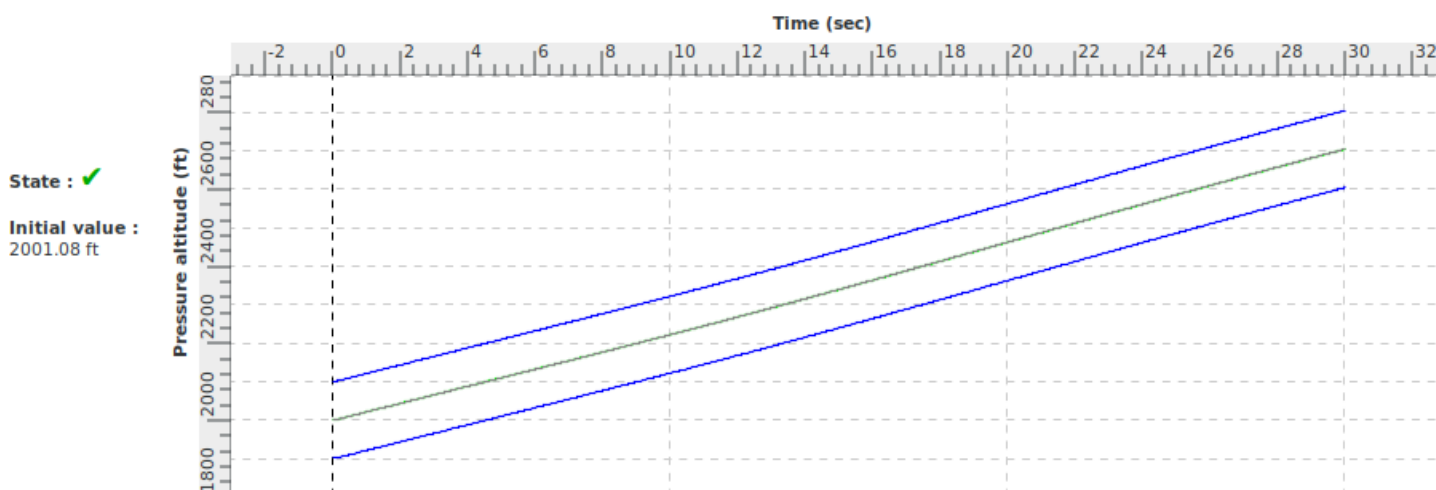
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
0.0	deconnectionPA_roll	0.0	disable QTG Autopilot in roll axis
0.0	deconnectionPA_rudder	0.0	disable QTG Autopilot in yaw axis
5.0	Gear	0.0	Move the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

Title	Gear change dynamics during take-off (retraction)		
Id	2 c iv 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

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



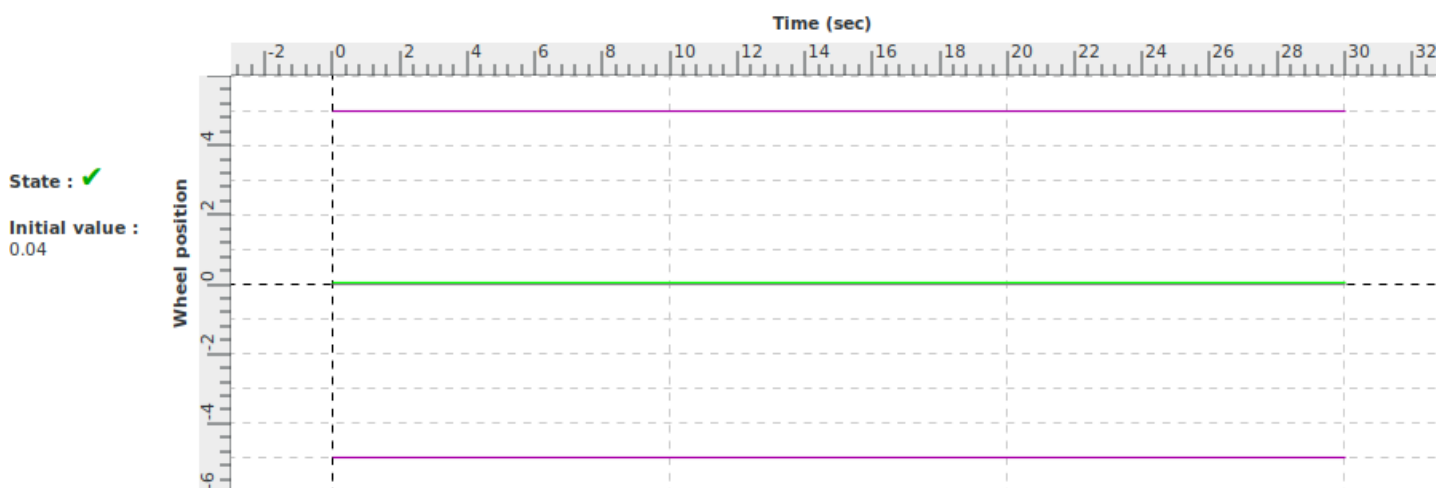
Legend :

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



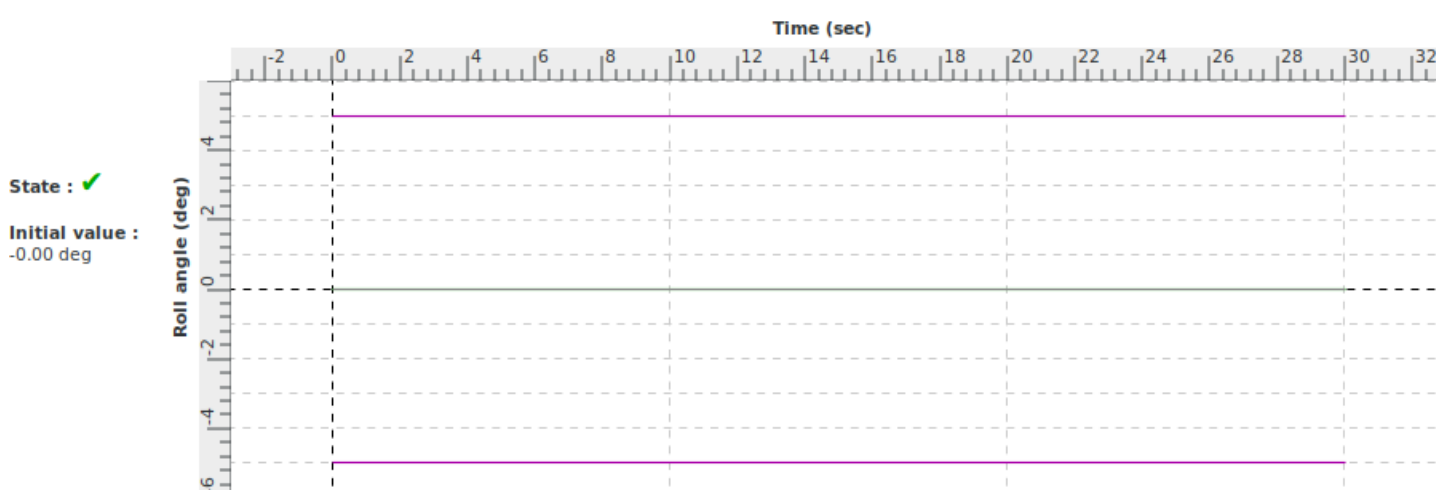
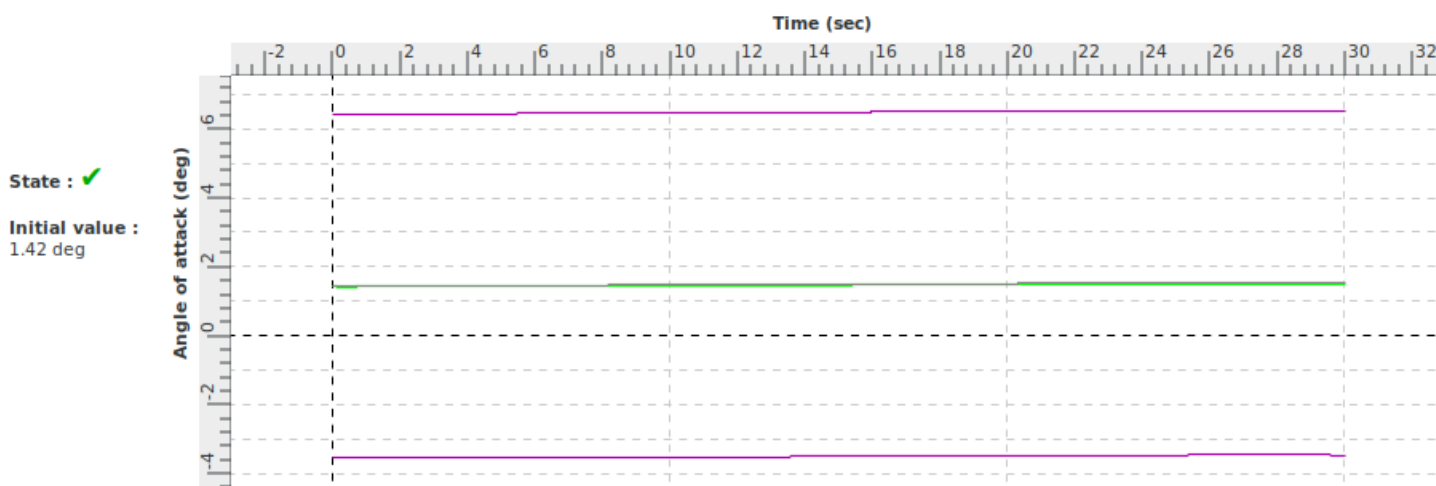
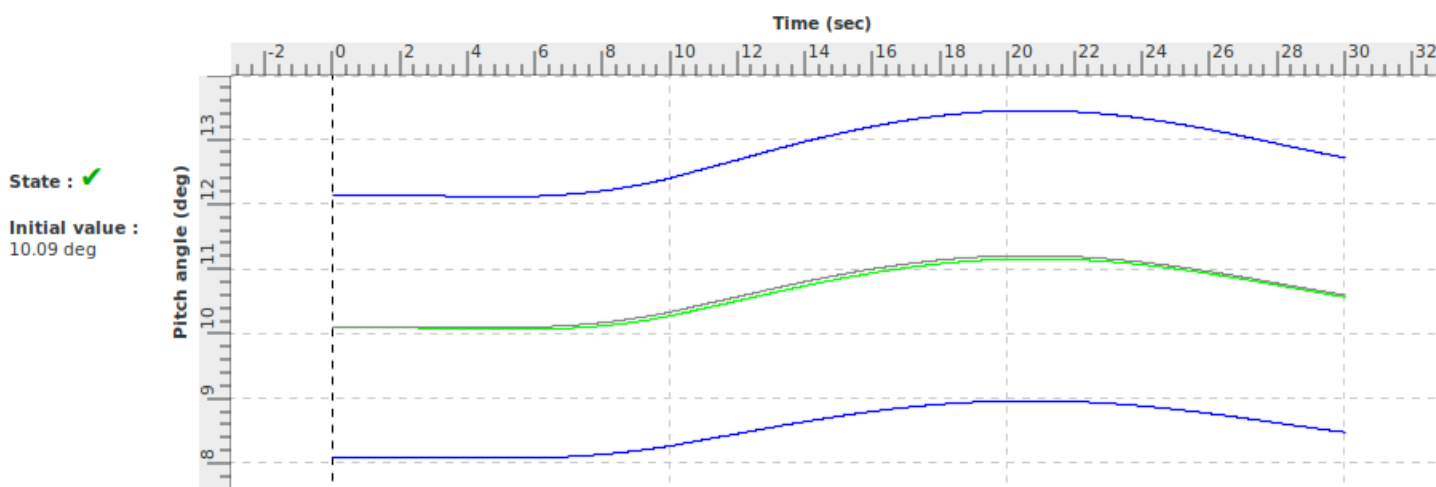
Legend :

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



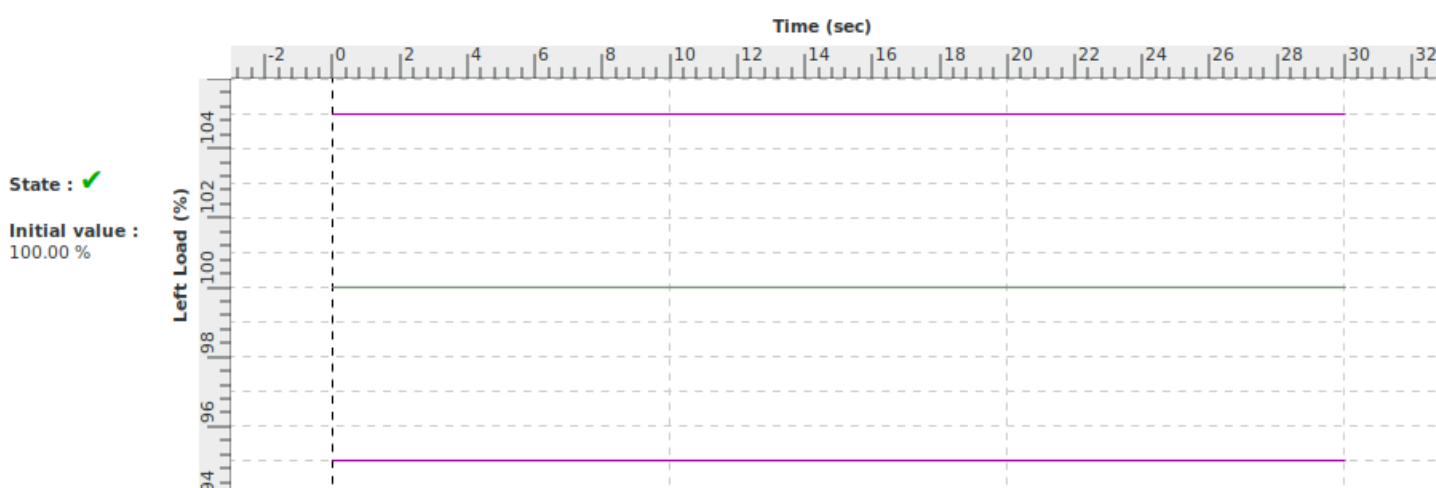
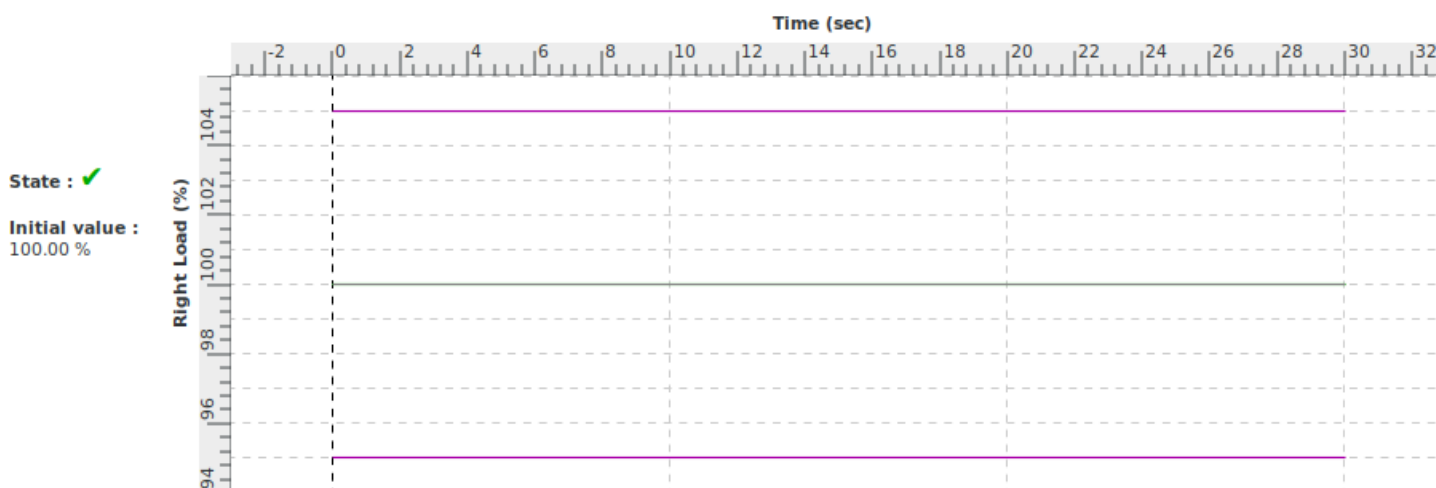
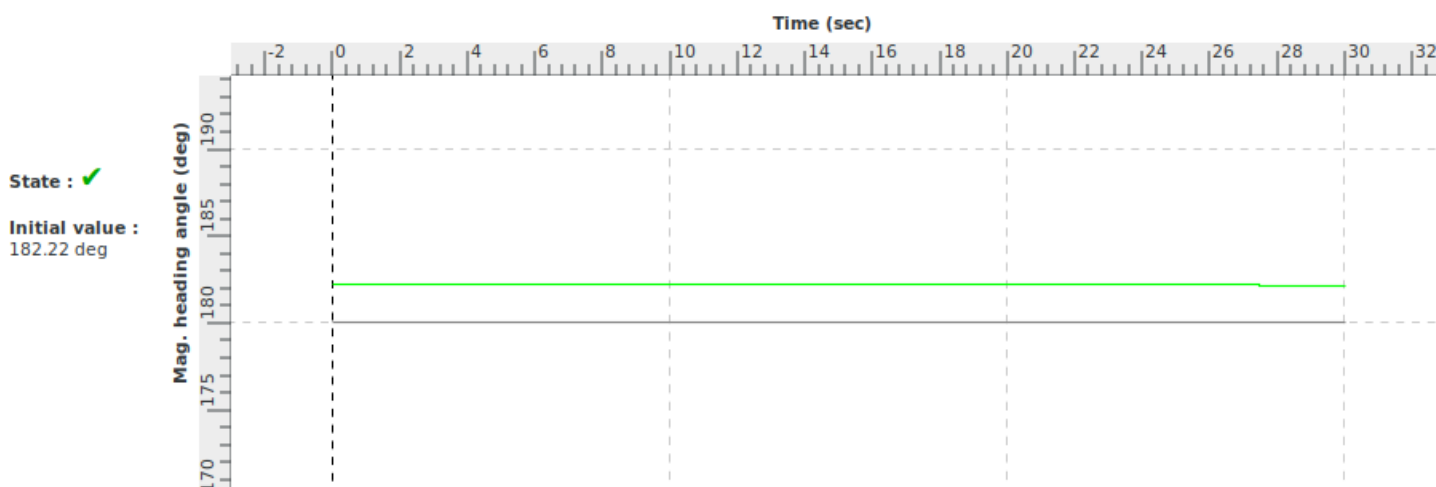
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsimg

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



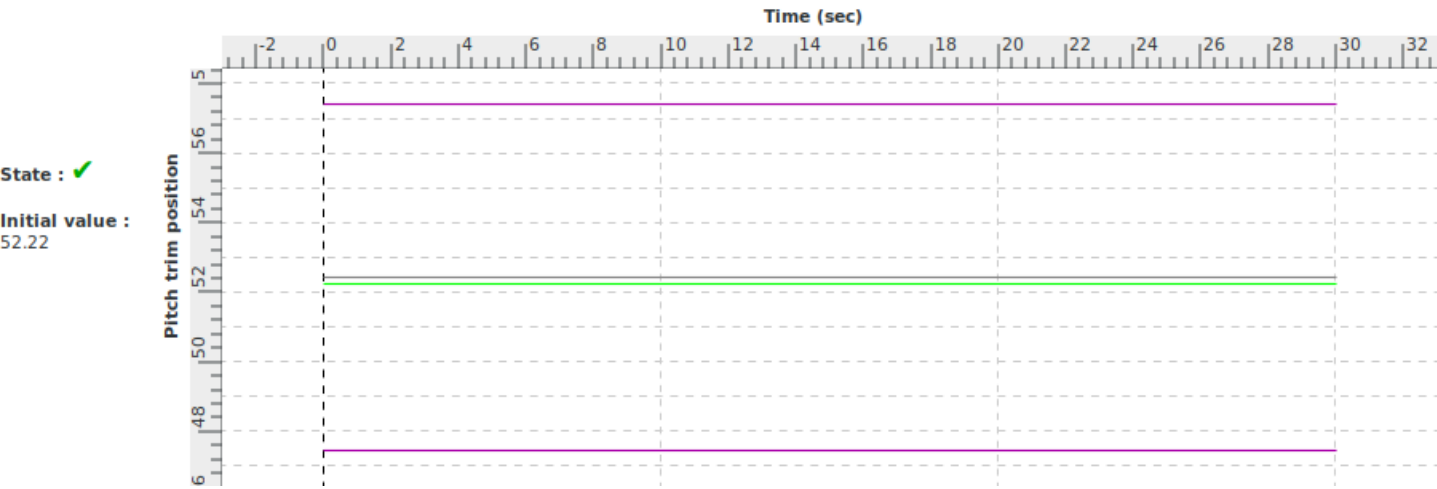
Legend :

green : results within tolerances
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



Legend :

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

VALIDATION TEST

Title	Gear change dynamics during approach (extension)		
Id	2 c iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that the dynamics response to a landing gear extension during approach conforms to the class of aeroplanes	<p>Increments (from configuration change to 20s after):</p> <p>Airspeed: +2 Kts</p> <p>Pitch Angle: -0.3 deg</p> <p>Altitude: -60 ft</p>
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.iv.1.b	<p>Airspeed +/- 3 kt</p> <p>Altitude +/- 100 ft</p> <p>Pitch +/- 2° or +/- 20%</p>

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

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Gear change dynamics during approach (extension)		
Id	2 c iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Autopilot mode	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>	

Initial parameters	HOLD_FLAPS_APP
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : 0 (free) IAS (kt) : 96 Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : 0 Pedal Position (%) : 0 Column Position (%) : 37 Wheel Position (%) : 0	Flaps lever position : 1 Gear lever position : 0 Left Load (%) : 55 Right Load (%) : 55 Left RPM : 2040 Right RPM : 2040

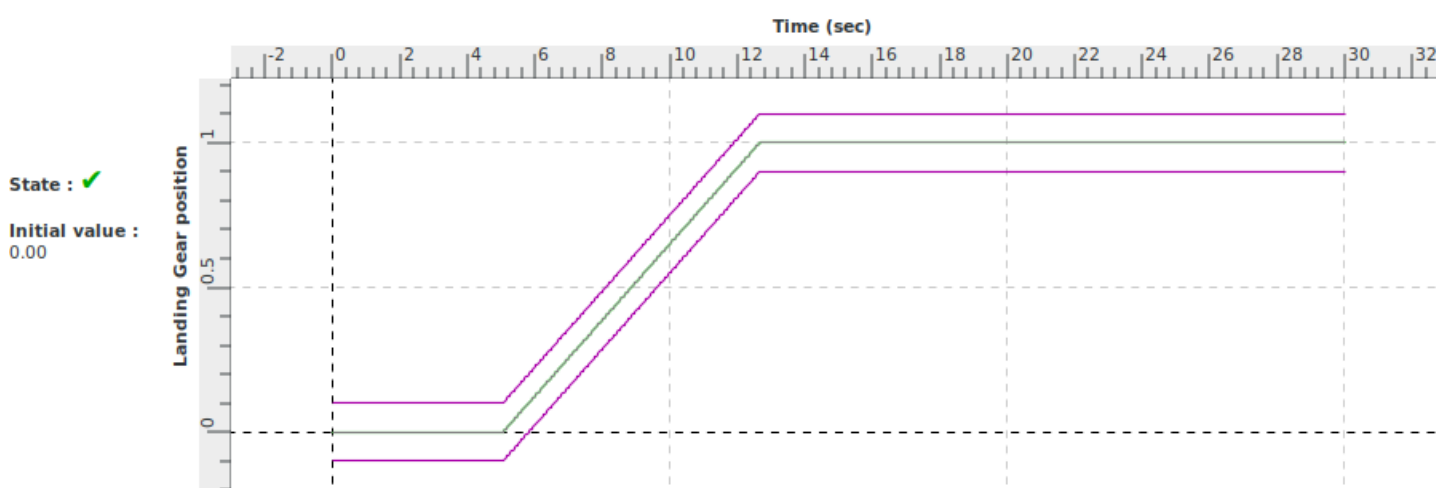
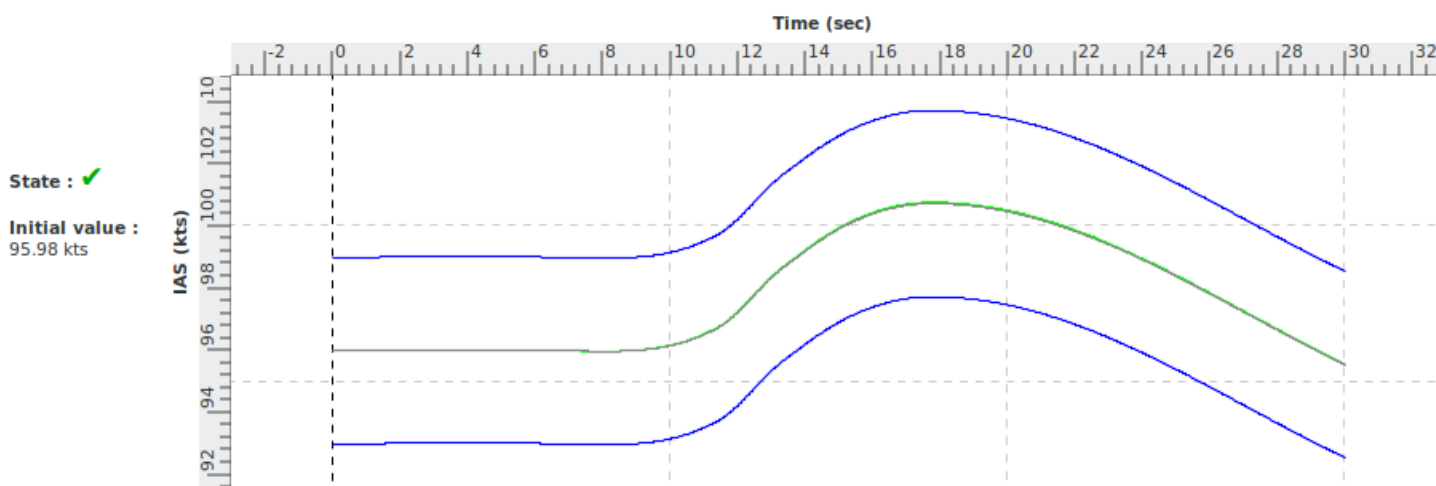
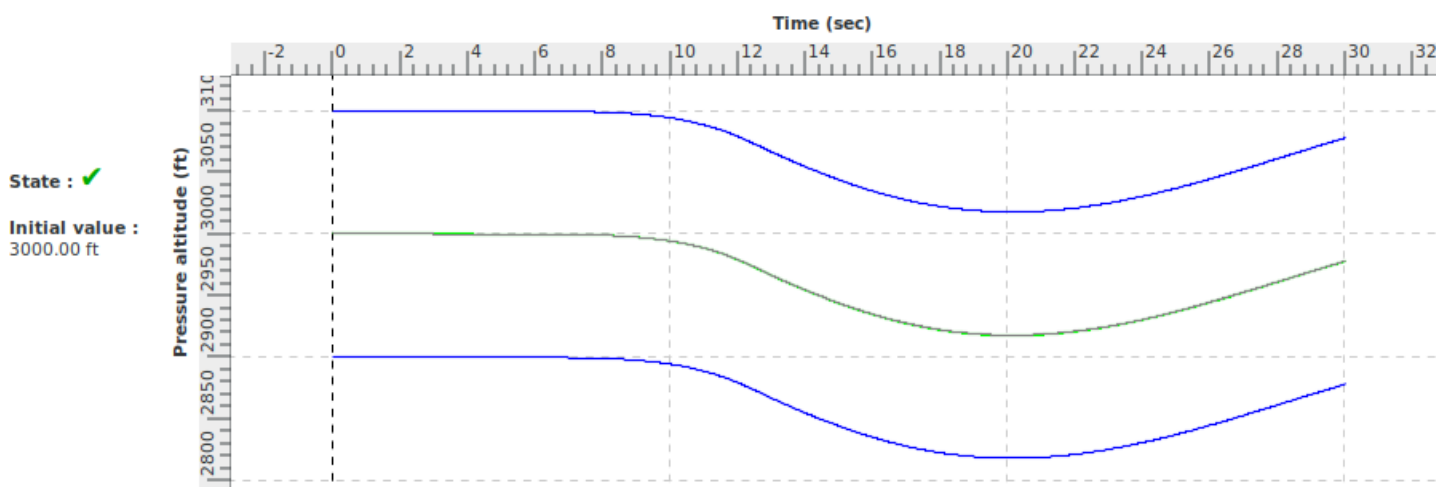
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
0.0	deconnectionPA_roll	0.0	disable QTG Autopilot in roll axis
0.0	deconnectionPA_rudder	0.0	disable QTG Autopilot in yaw axis
5.0	Gear	1.0	Move the gear lever to the desired position
30.0	Stop_Test	0.0	Stop the test procedure

Title	Gear change dynamics during approach (extension)		
Id	2 c iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Gear change dynamics during approach (extension)		
Id	2 c iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



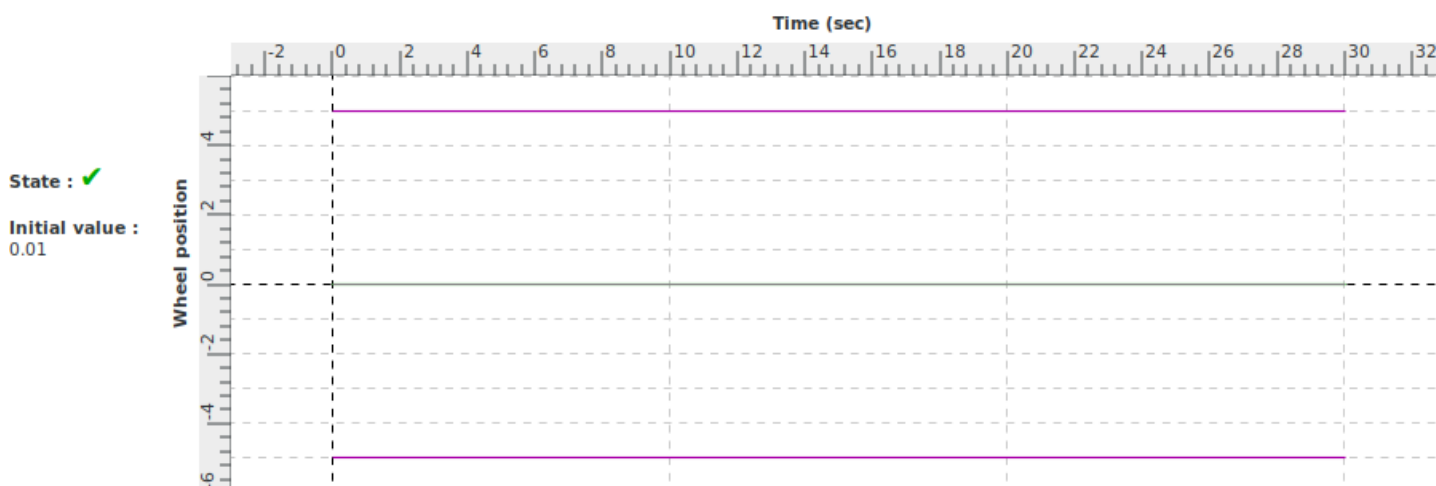
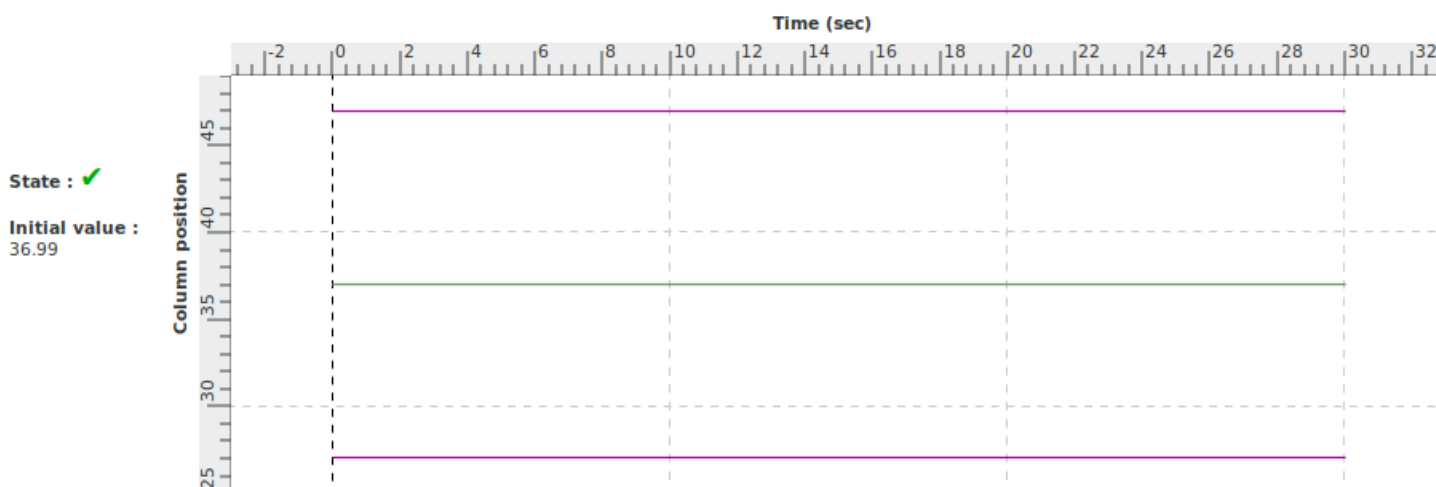
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Gear change dynamics during approach (extension)		
Id	2 c iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



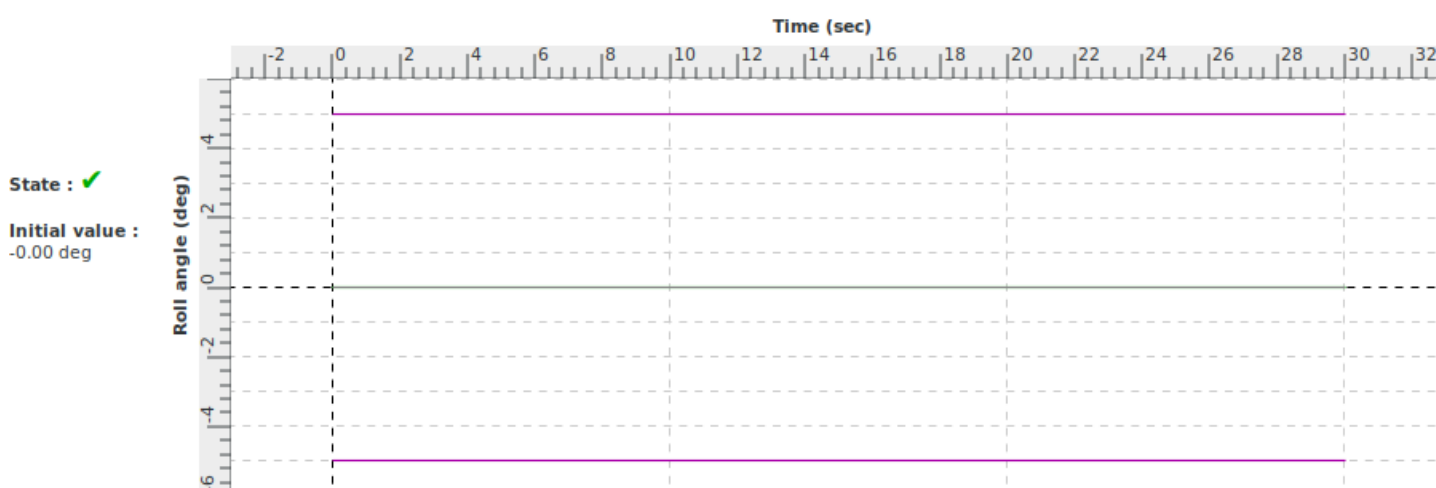
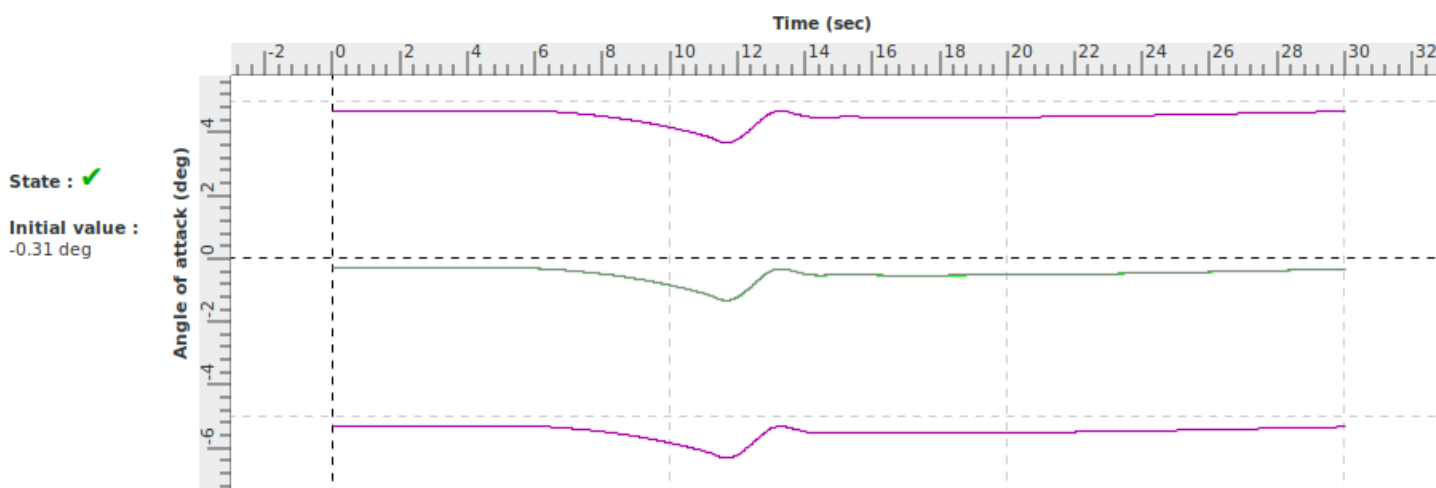
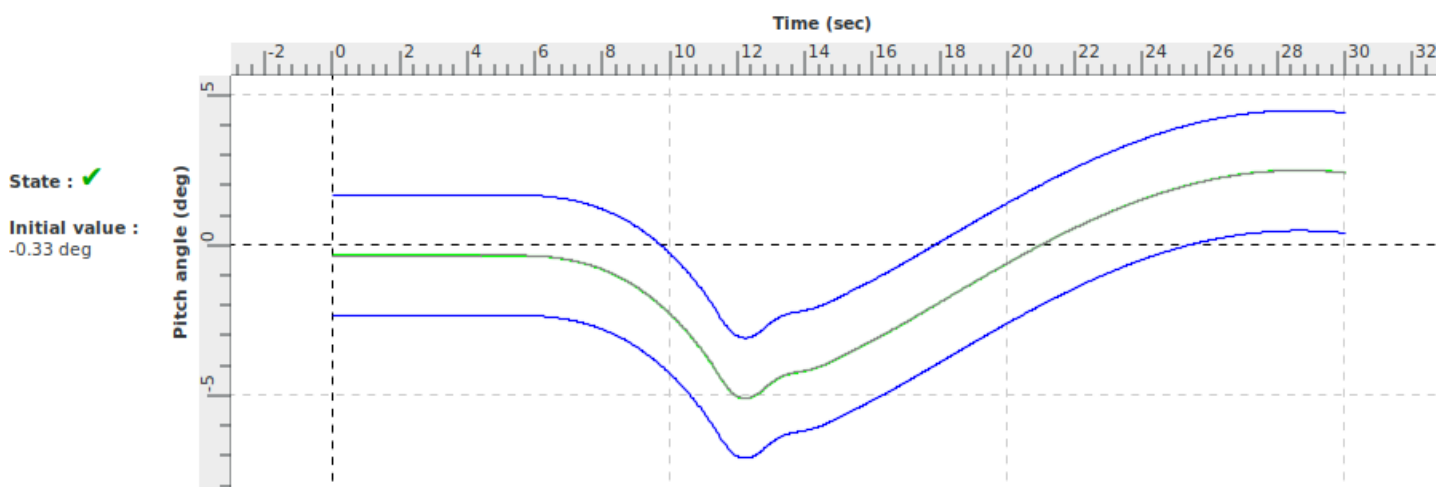
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Gear change dynamics during approach (extension)		
Id	2 c iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



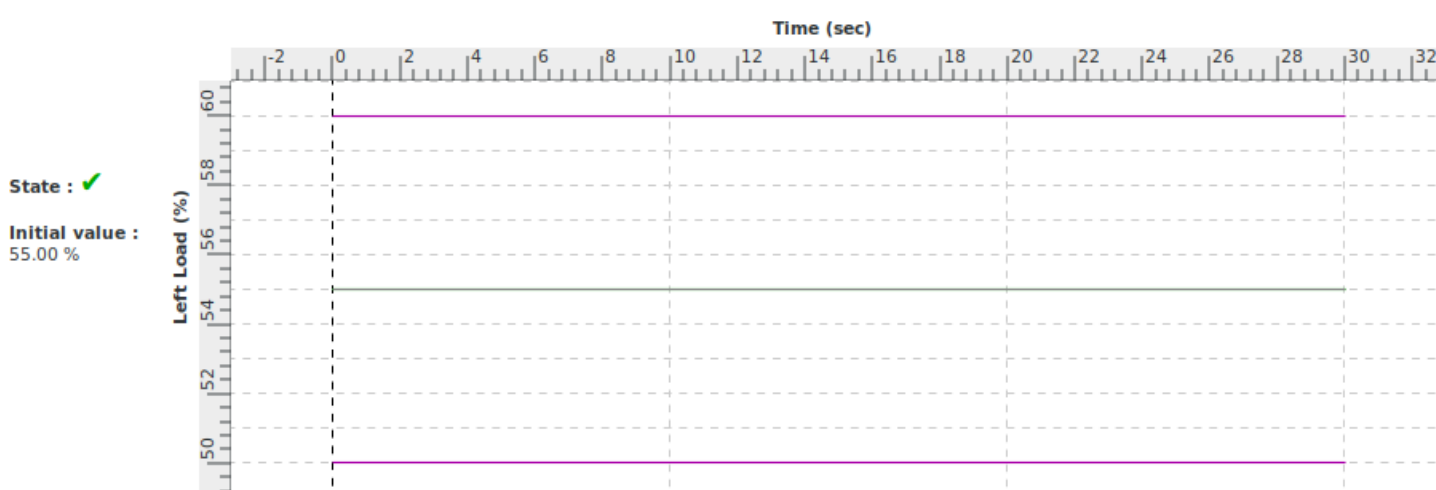
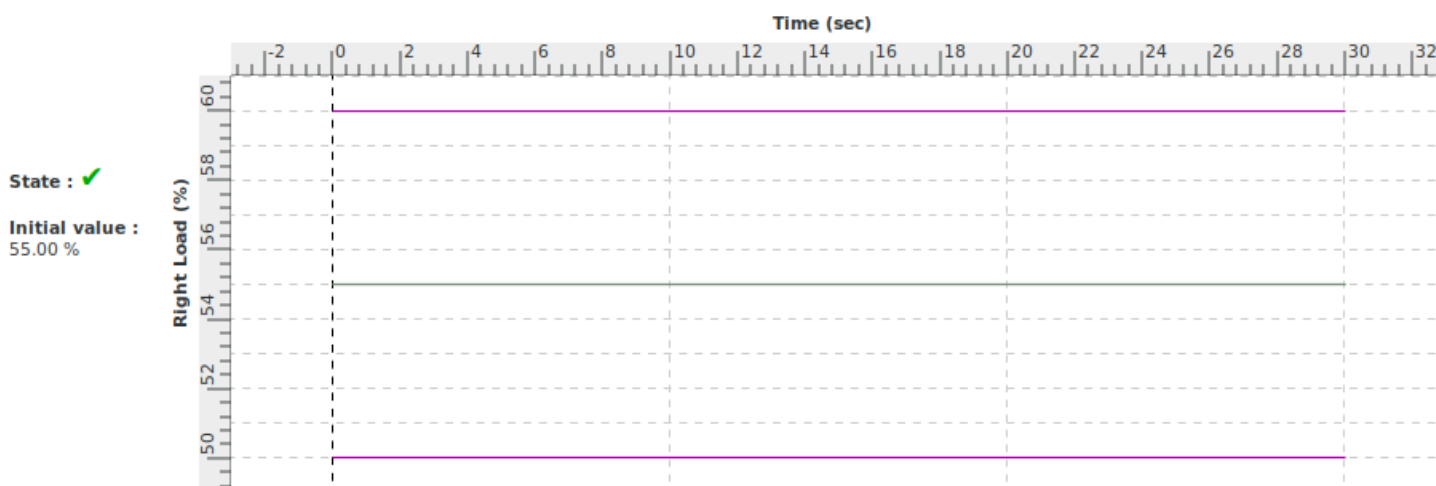
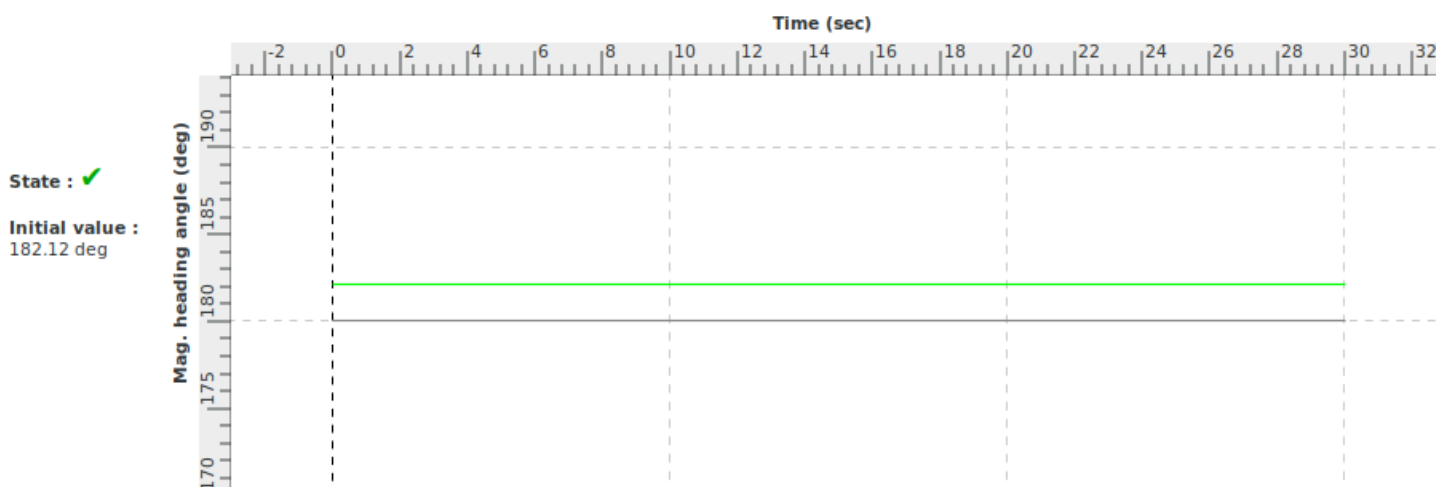
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Gear change dynamics during approach (extension)		
Id	2 c iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



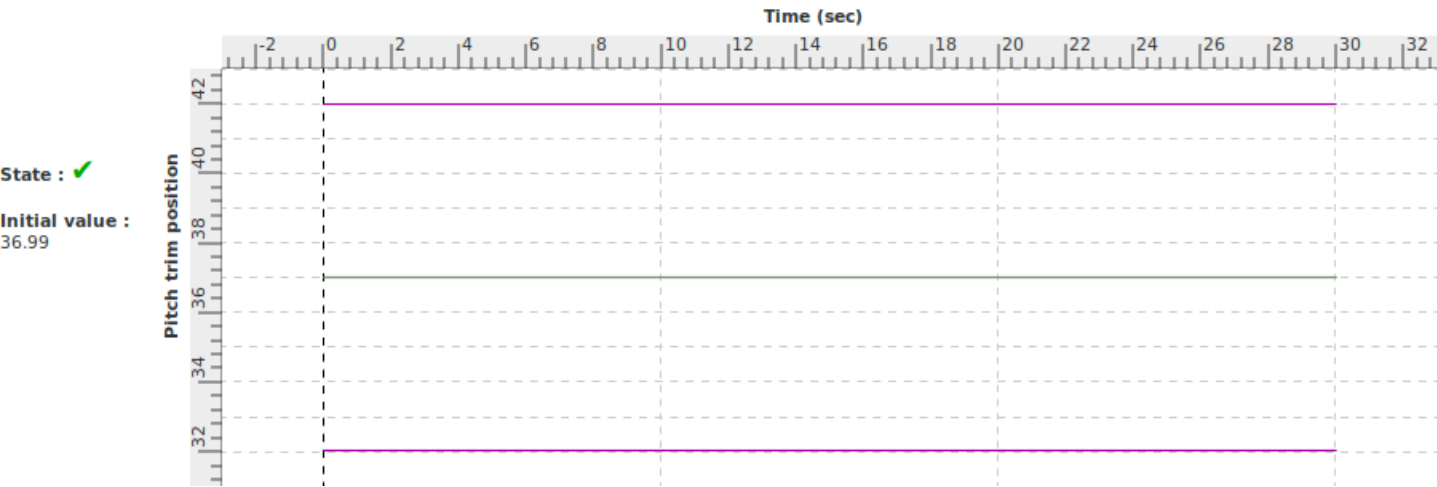
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Gear change dynamics during approach (extension)		
Id	2 c iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	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

Title	Gear change force during take-off (retraction)		
Id	2 c iv 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that the force response to a landing gear retraction during take-off conforms to the class of aeroplanes	Maximum Increments: -0.7 N of Control force
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.iv.2.a	+/- 2,2 daN (5Lbs) +/- or 20% Force

Demonstration procedure	From steady take-off initial conditions, gear is retracted.
Manual test procedure	The aircraft is trimmed at take-off flight condition. Then, the pilot sets the gear from down (1) to up (0), maintaining the same rate of climb using control column.
Automatic test procedure	2 c iv 2 a

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Gear change force during take-off (retraction)		
Id	2 c iv 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	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_GEARDWN
Gross weight (kg) : 1900	Flaps lever position : 1
Balance (%) : 50	Gear lever position : 1
Altitude (ft) : 2000	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	

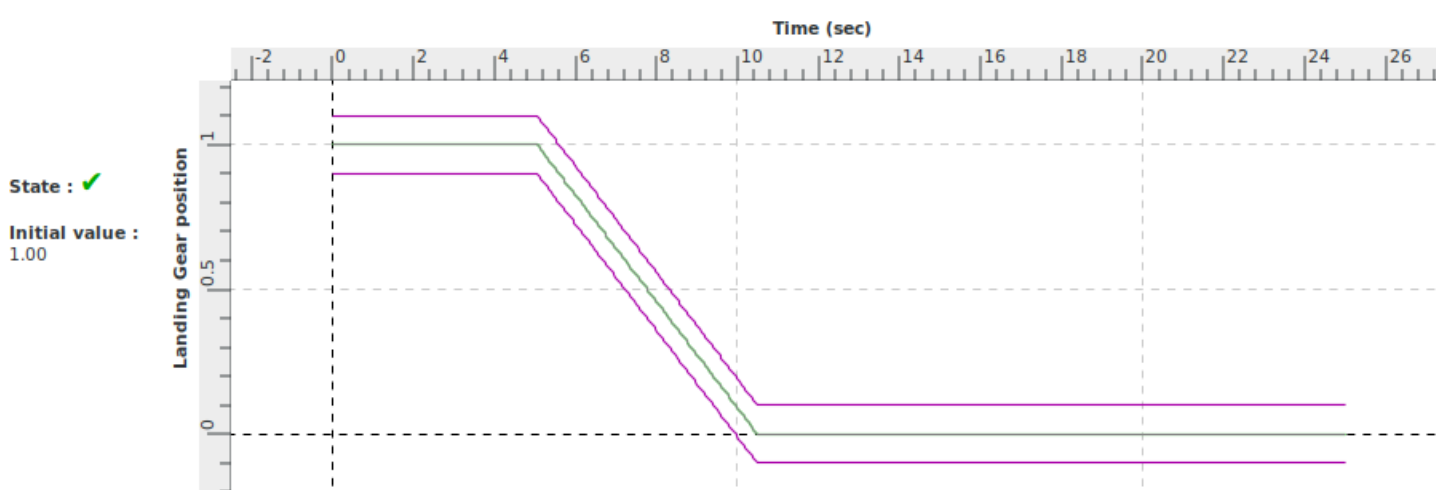
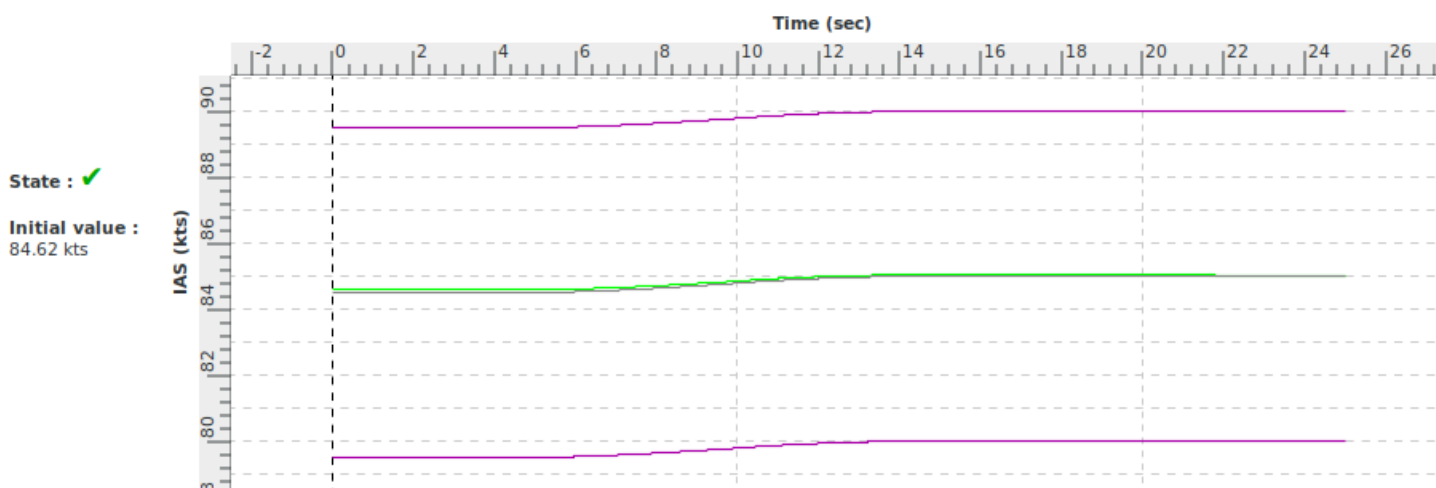
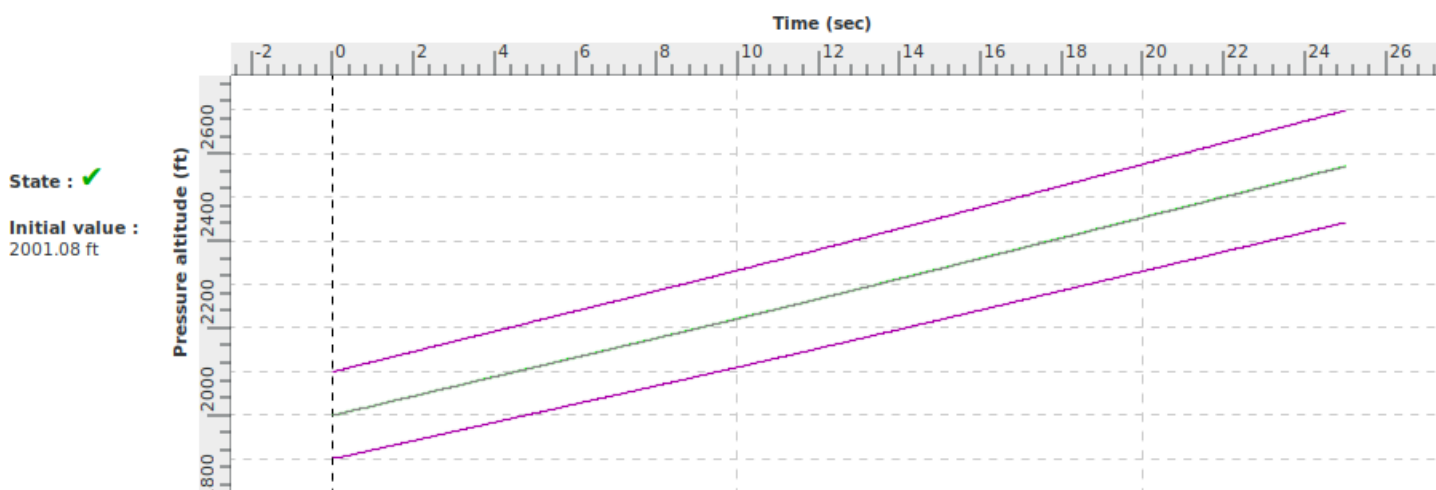
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
5.0	Gear	0.0	Move the gear lever to the desired position
25.0	Stop_Test	0.0	Stop the test procedure

Title	Gear change force during take-off (retraction)		
Id	2 c iv 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Gear change force during take-off (retraction)		
Id	2 c iv 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



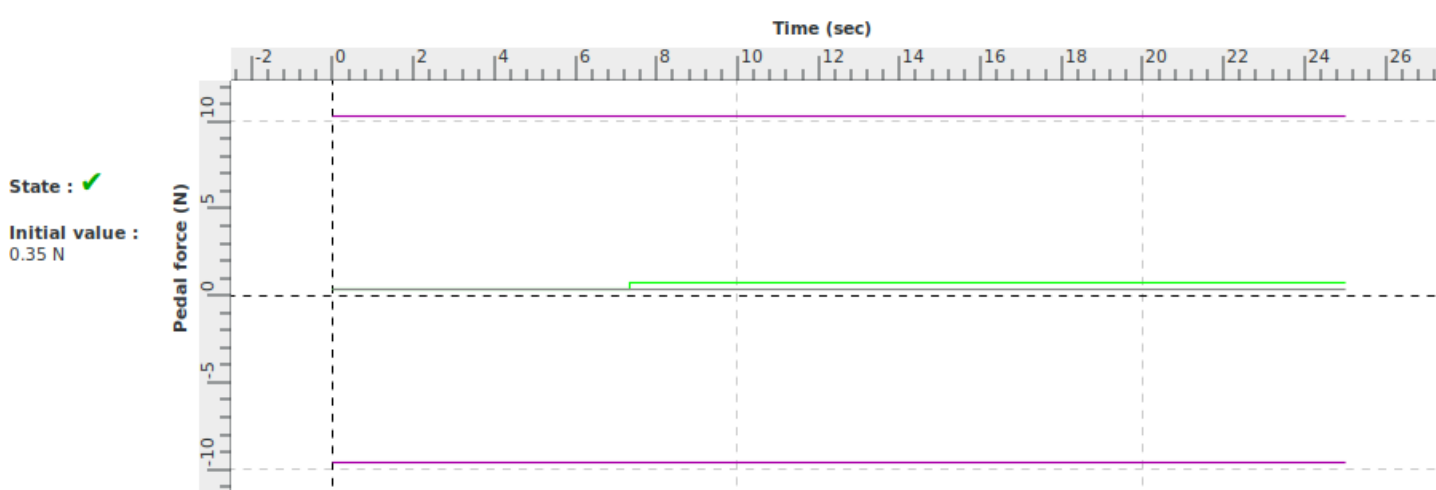
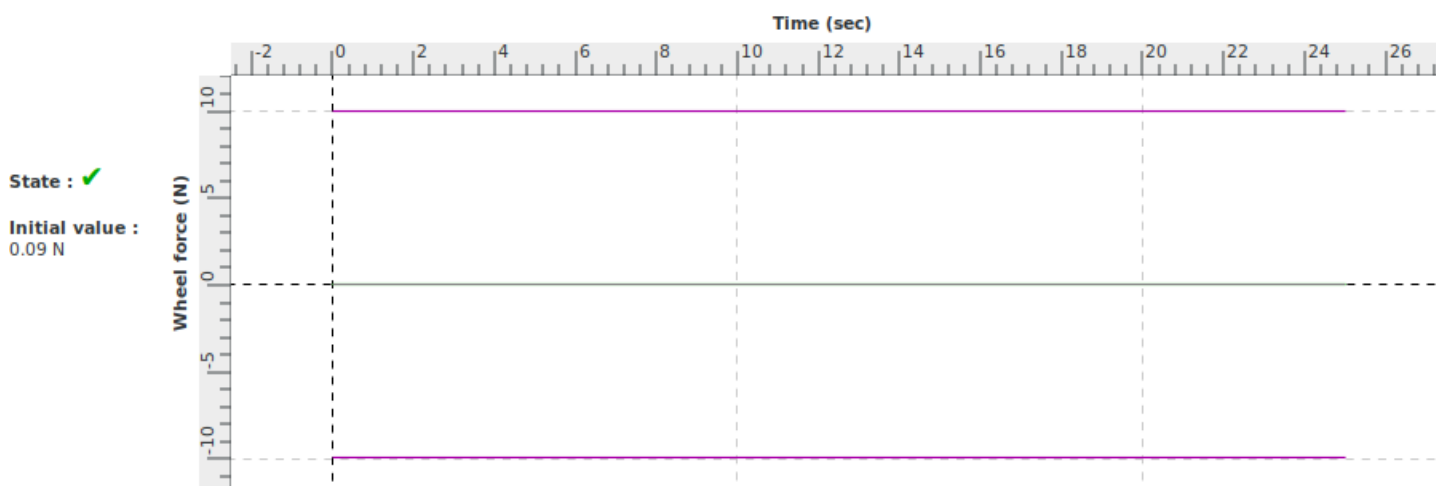
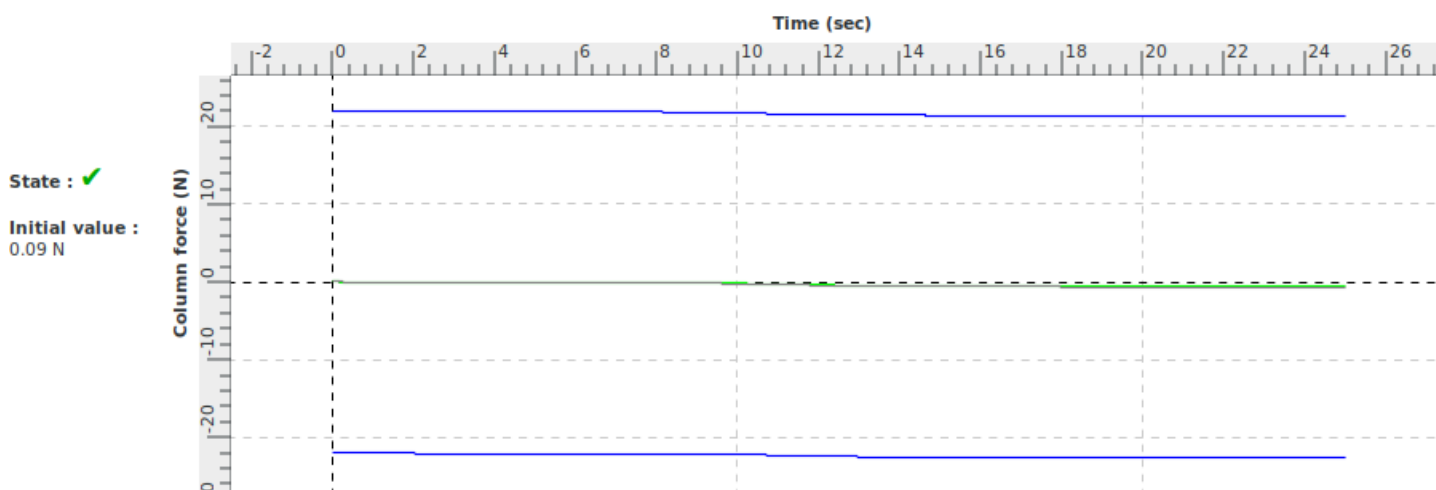
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Gear change force during take-off (retraction)		
Id	2 c iv 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



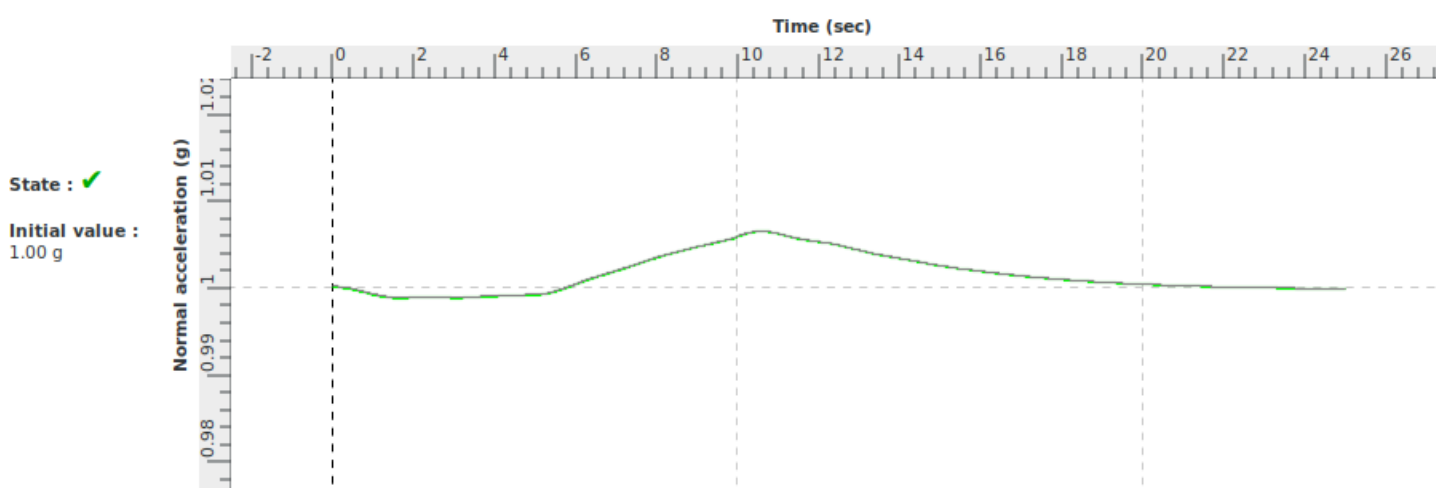
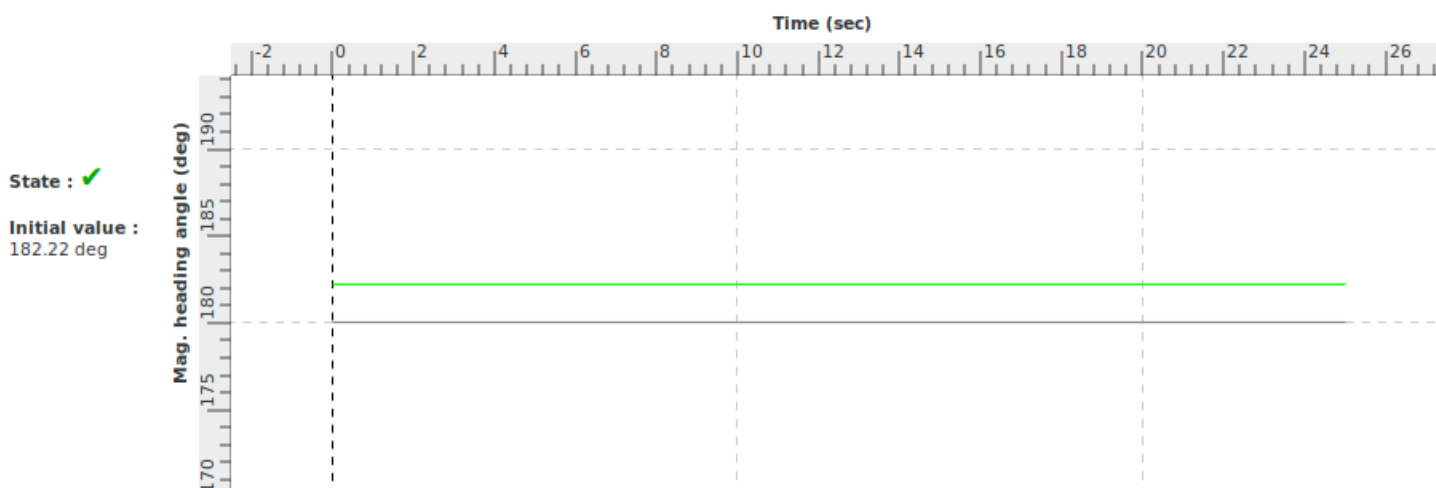
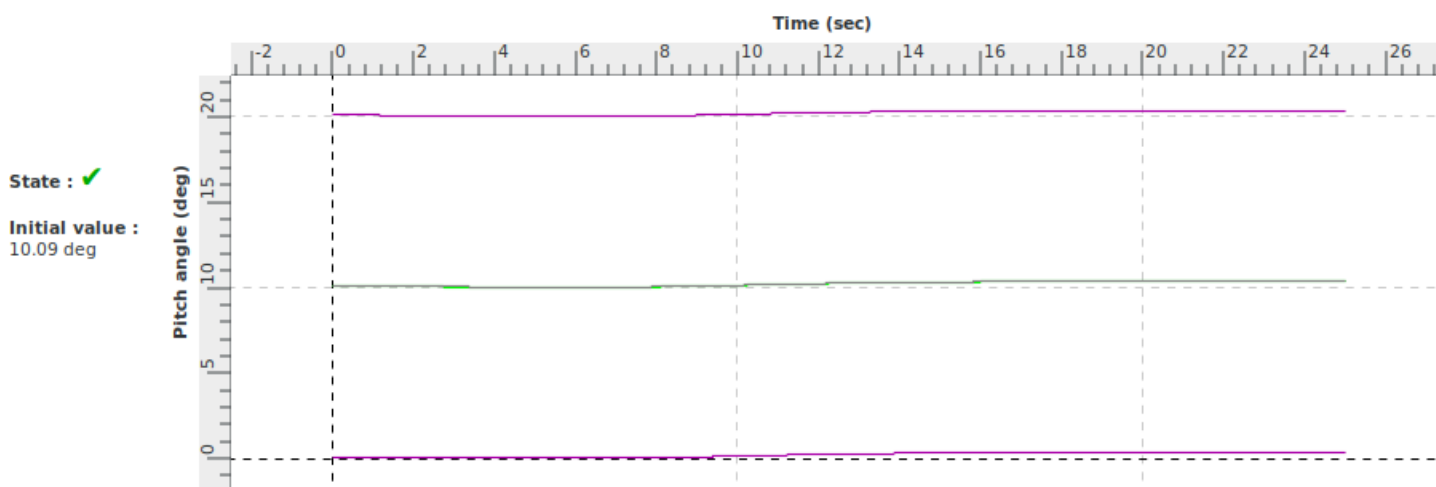
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Gear change force during take-off (retraction)		
Id	2 c iv 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



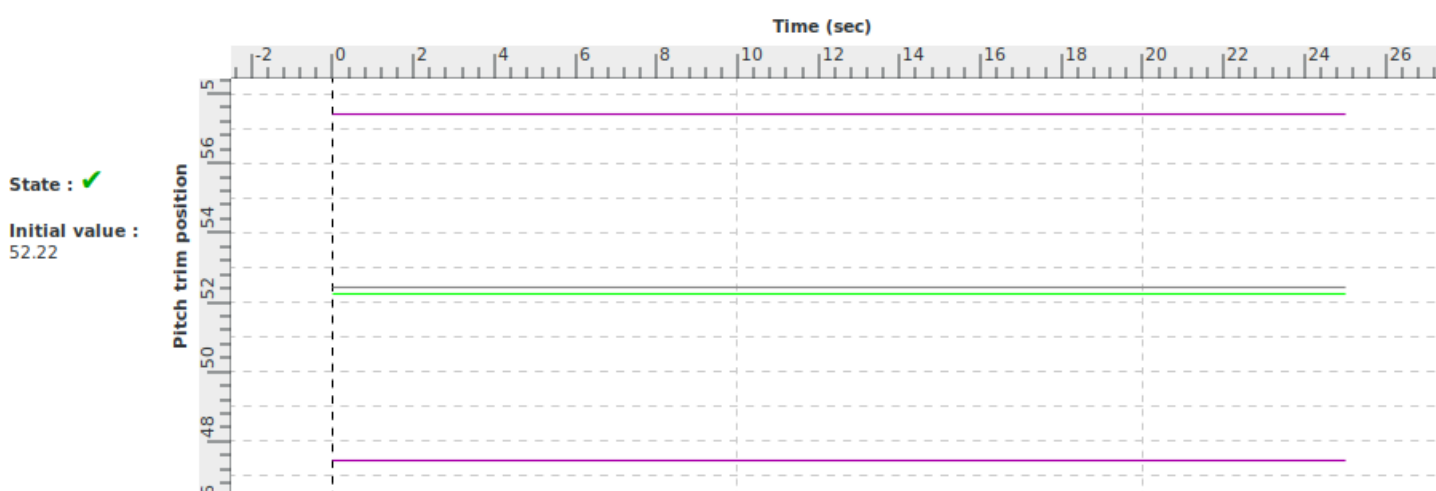
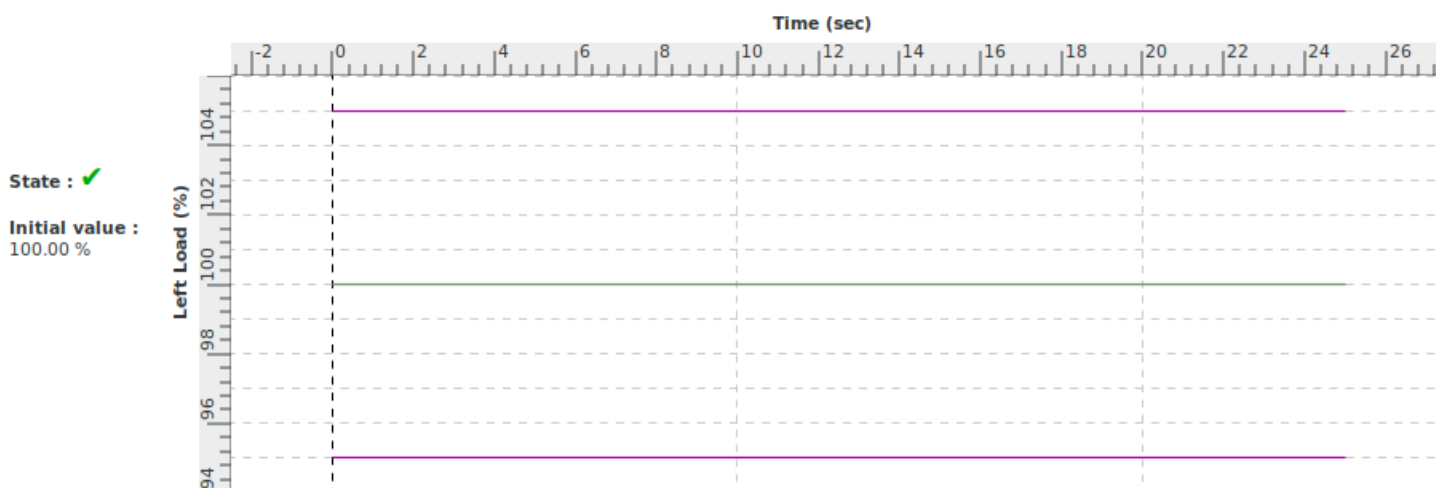
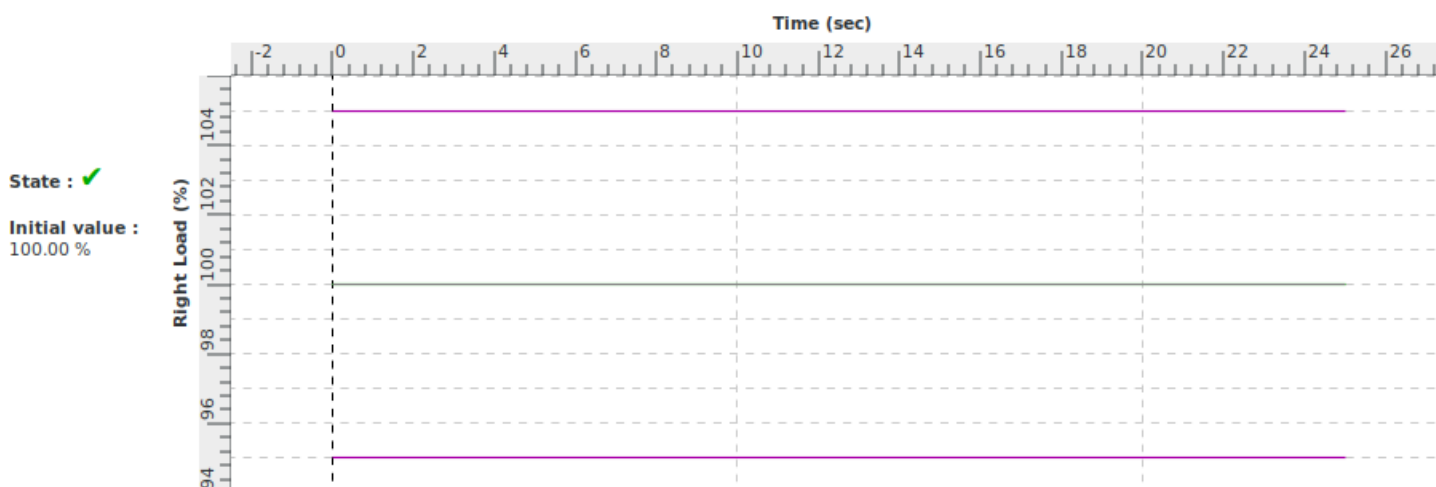
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Gear change force during take-off (retraction)		
Id	2 c iv 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



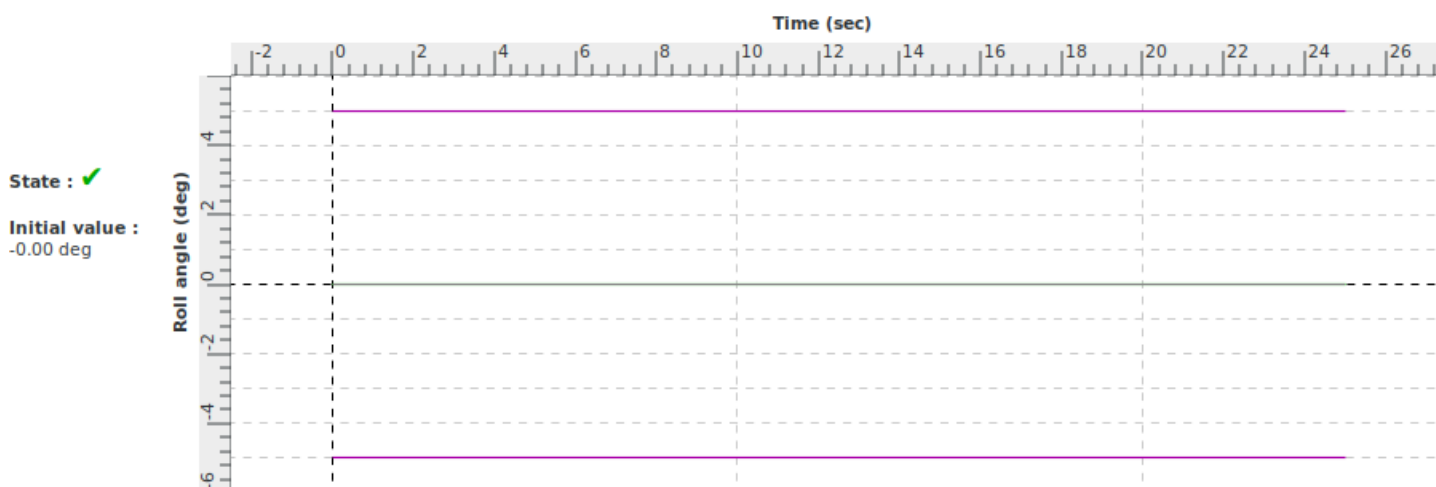
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsimg

grey : master

Title	Gear change force during take-off (retraction)		
Id	2 c iv 2 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/02/24	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

Title	Gear change force during approach (extension)		
Id	2 c iv 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that the force response to a landing gear extension during approach conforms to the class of aeroplanes	Maximum Increments : 5 N of Control force
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.iv.2.b	+/- 2,2 daN (5Lbs) +/- or 20% Force

Demonstration procedure	From steady approach initial conditions, gear is extended.
Manual test procedure	The aircraft is trimmed at approach flight condition. Then, the pilot sets the gear from up (0) to down (1), maintaining the same rate of descent using control column.
Automatic test procedure	2 c iv 2 b

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Gear change force during approach (extension)		
Id	2 c iv 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	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	HOLD_FLAPS_APP
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : 0 (free) IAS (kt) : 96 Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : 0 Pedal Position (%) : 0 Column Position (%) : 37 Wheel Position (%) : 0	Flaps lever position : 1 Gear lever position : 0 Left Load (%) : 55 Right Load (%) : 55 Left RPM : 2040 Right RPM : 2040

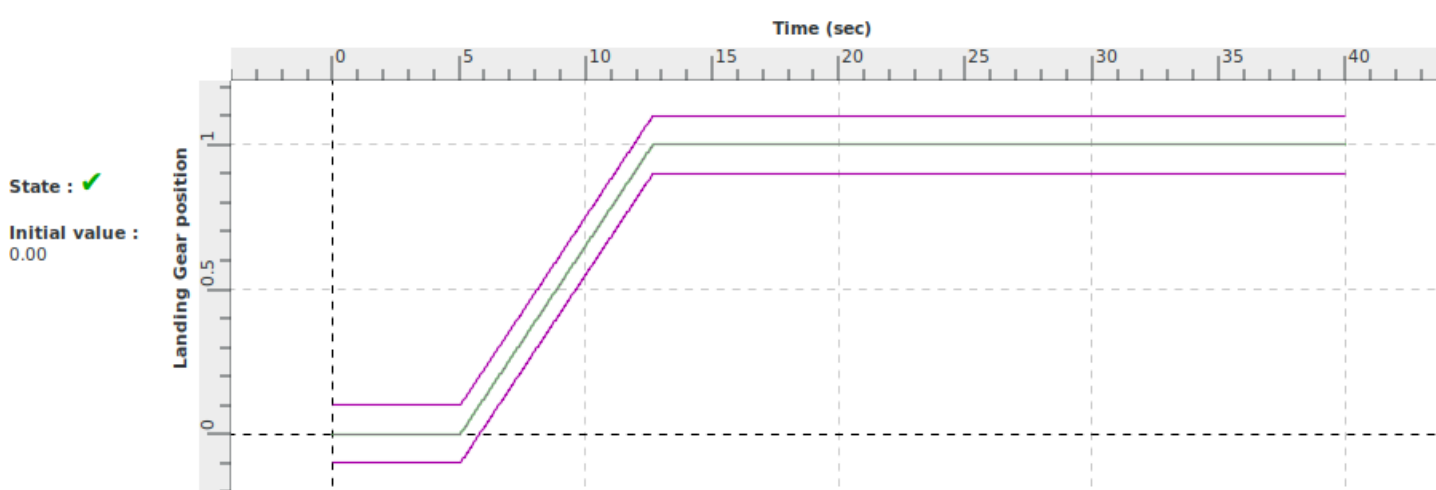
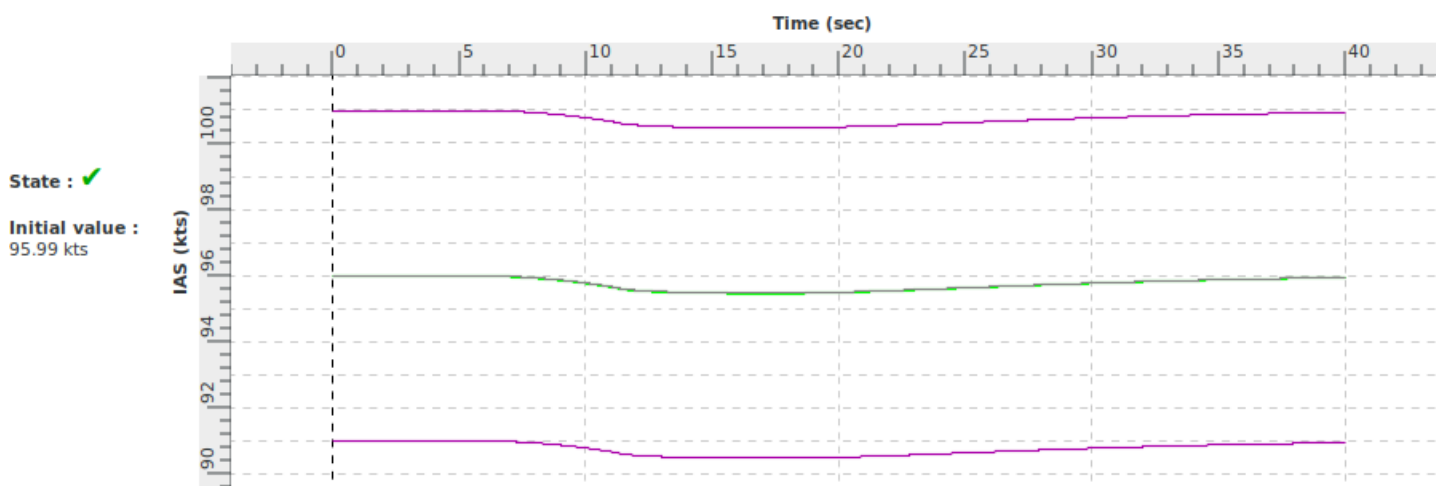
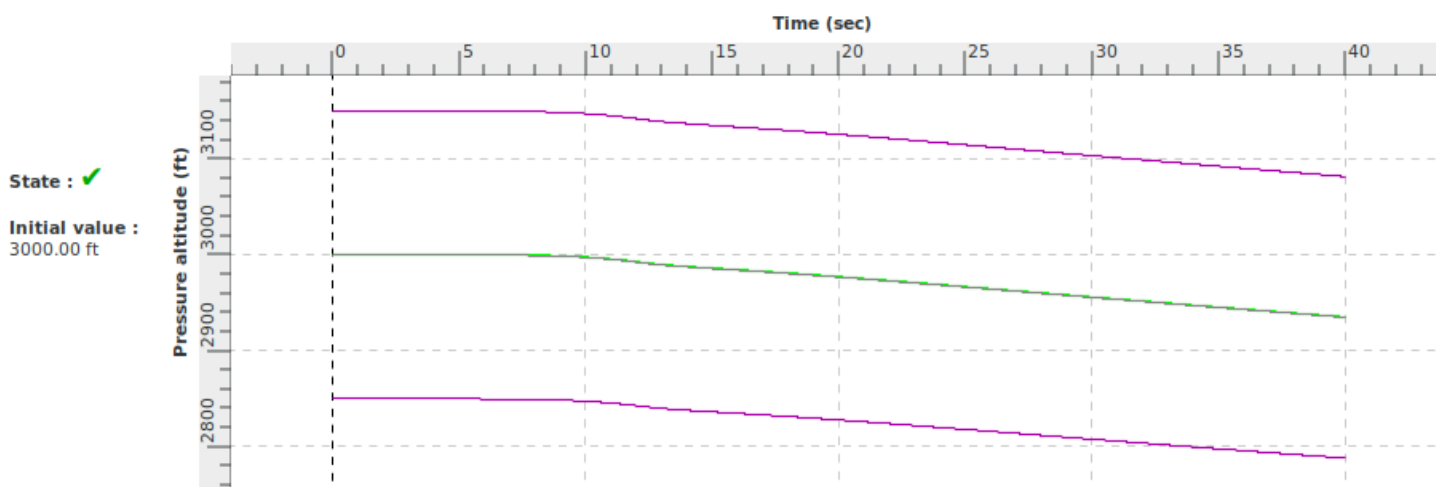
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
5.0	Gear	1.0	Move the gear lever to the desired position
40.0	Stop_Test	0.0	Stop the test procedure

Title	Gear change force during approach (extension)		
Id	2 c iv 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Gear change force during approach (extension)		
Id	2 c iv 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



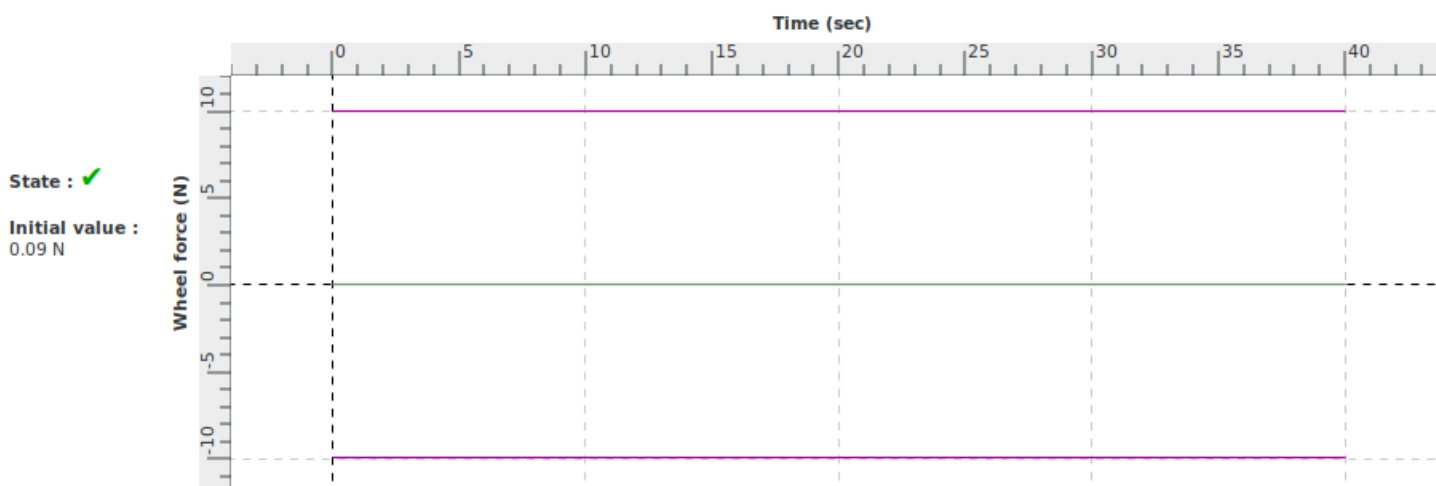
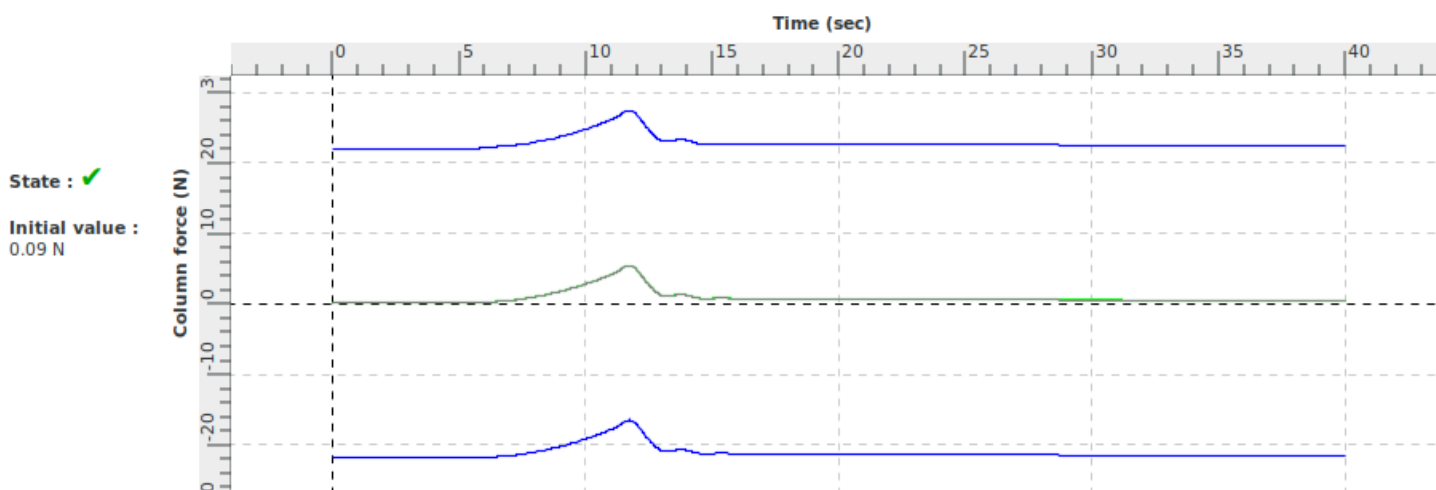
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Gear change force during approach (extension)		
Id	2 c iv 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



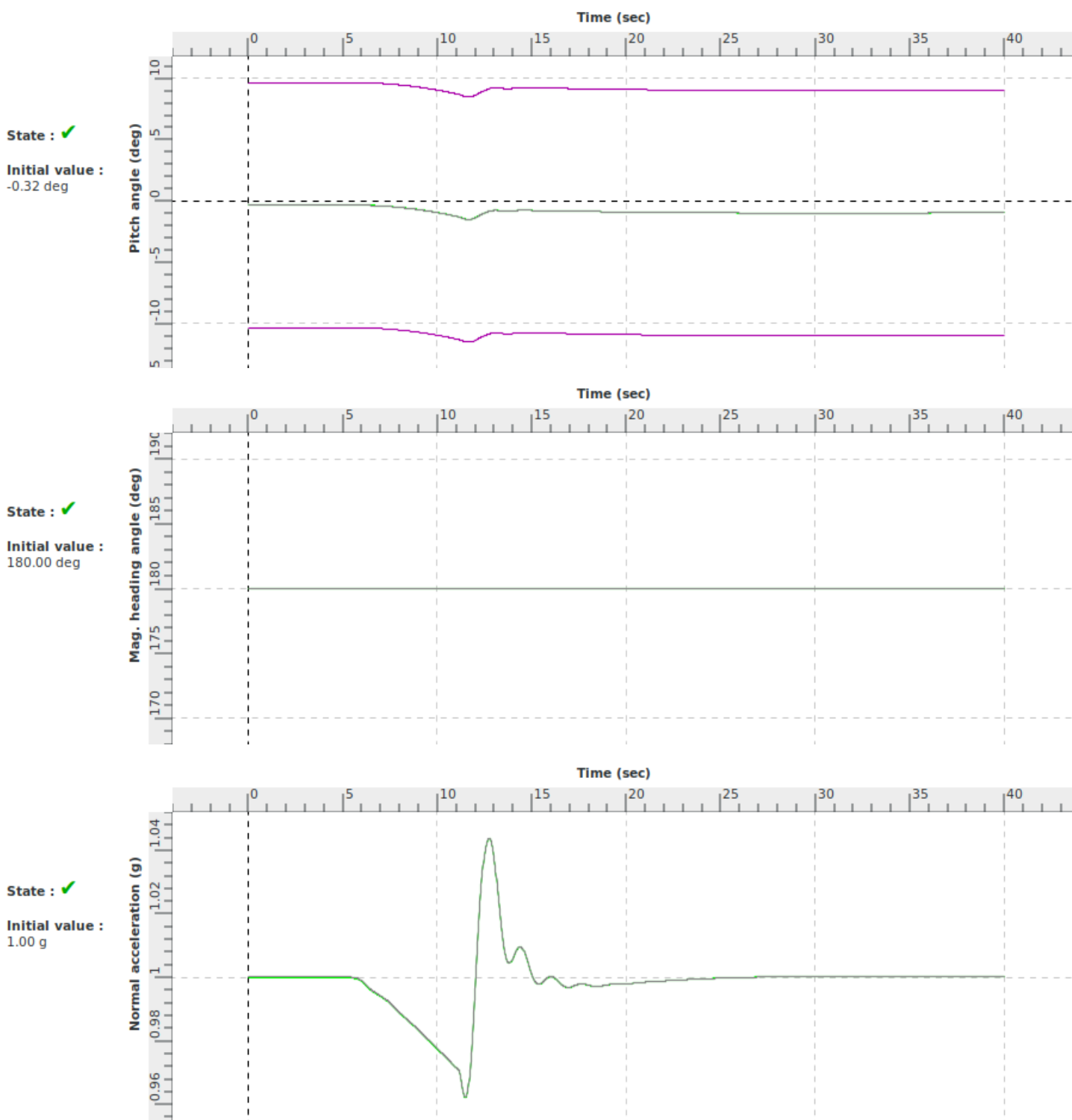
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Gear change force during approach (extension)		
Id	2 c iv 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



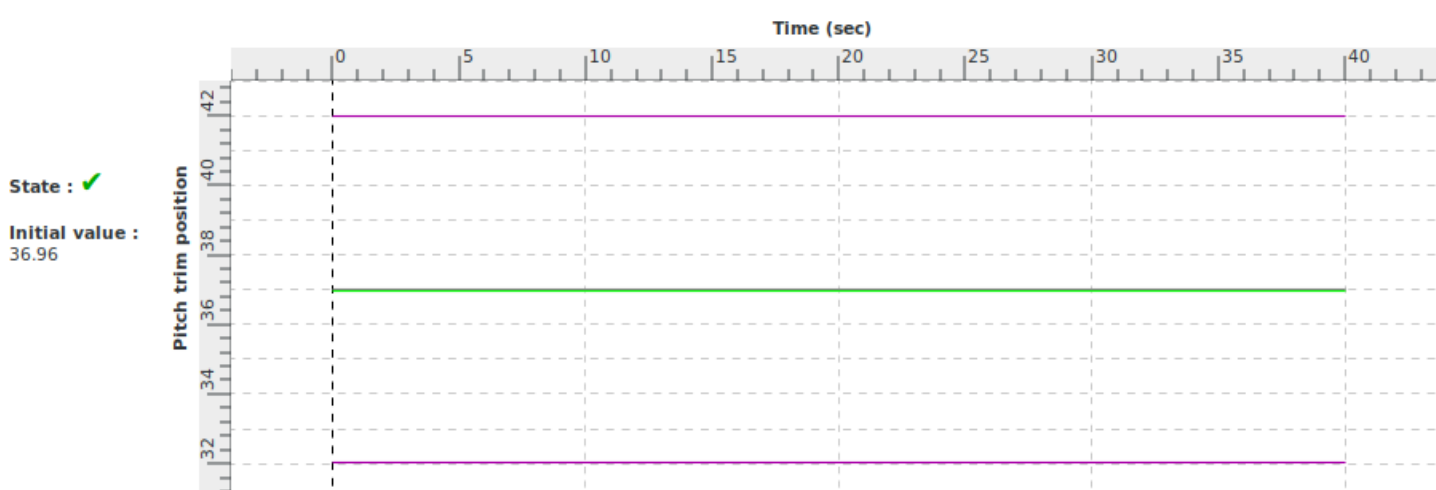
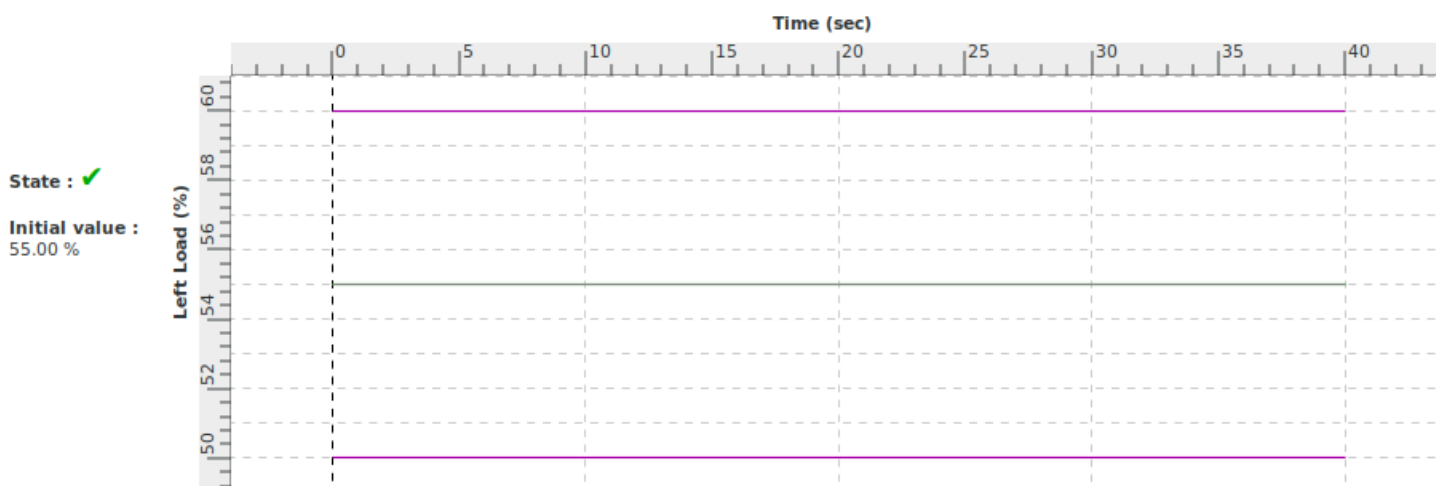
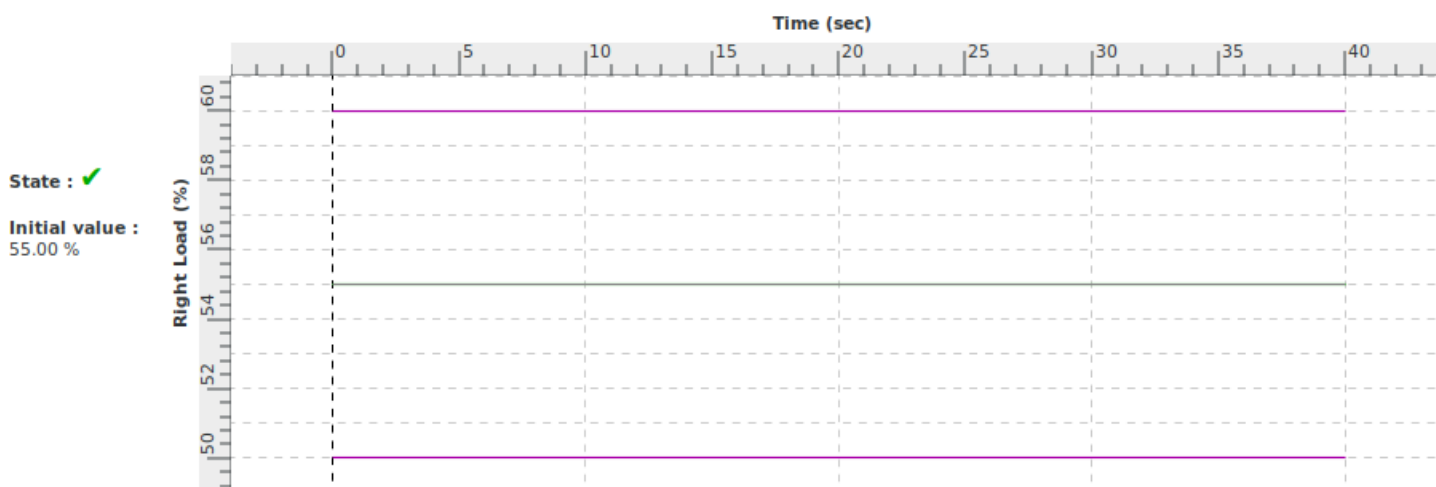
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Gear change force during approach (extension)		
Id	2 c iv 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	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 force during approach (extension)		
Id	2 c iv 2 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	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

Title	Longitudinal trim during cruise		
Id	2 c v 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

Objective	Expected Results
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 %
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.v.a	+/- 2° Pitch Control (equivalent 16%) +/- 2° Pitch angle +/- 5% Power

Demonstration procedure	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.
Manual test procedure	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.
Automatic test procedure	2 c v a

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Longitudinal trim during cruise		
Id	2 c v 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_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>	

Initial parameters	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

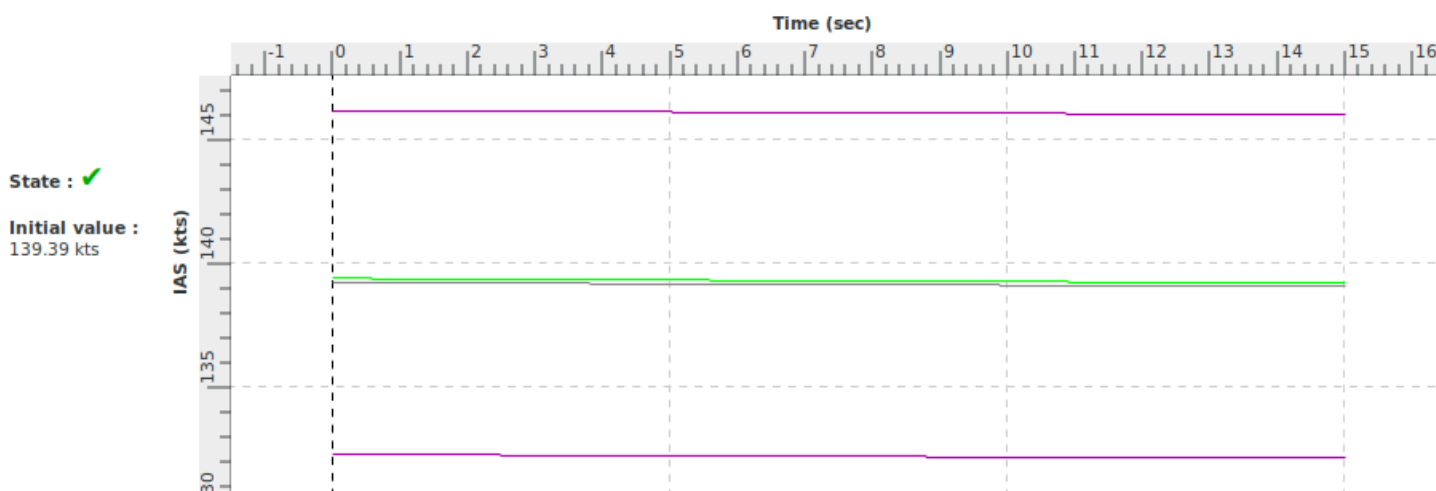
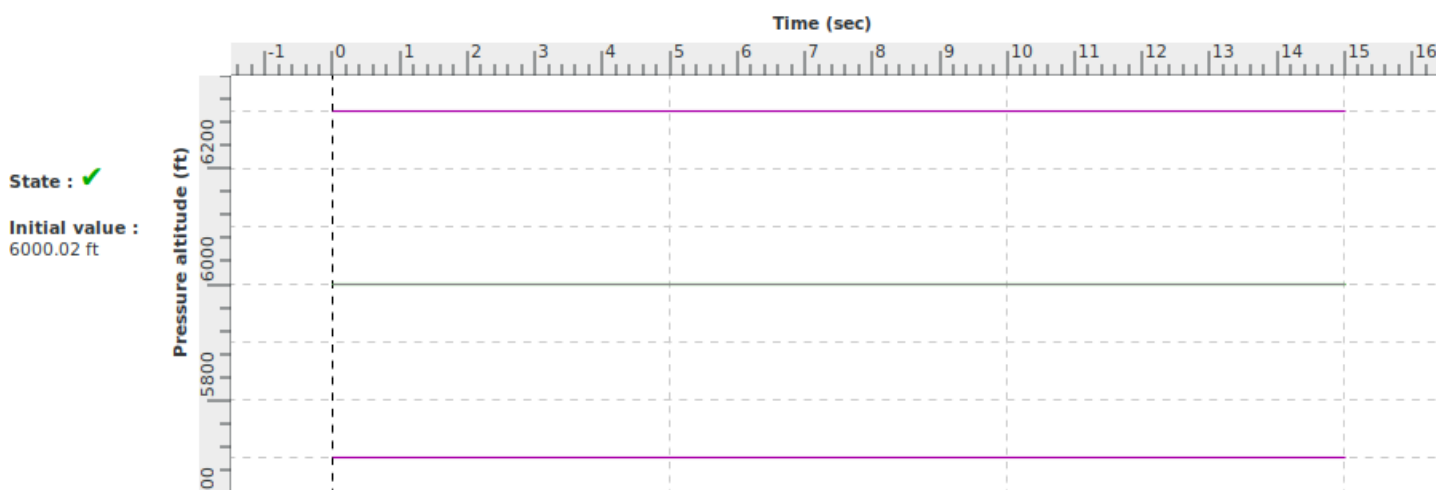
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
15.0	Stop_Test	0.0	Stop the test procedure

Title	Longitudinal trim during cruise		
Id	2 c v 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

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



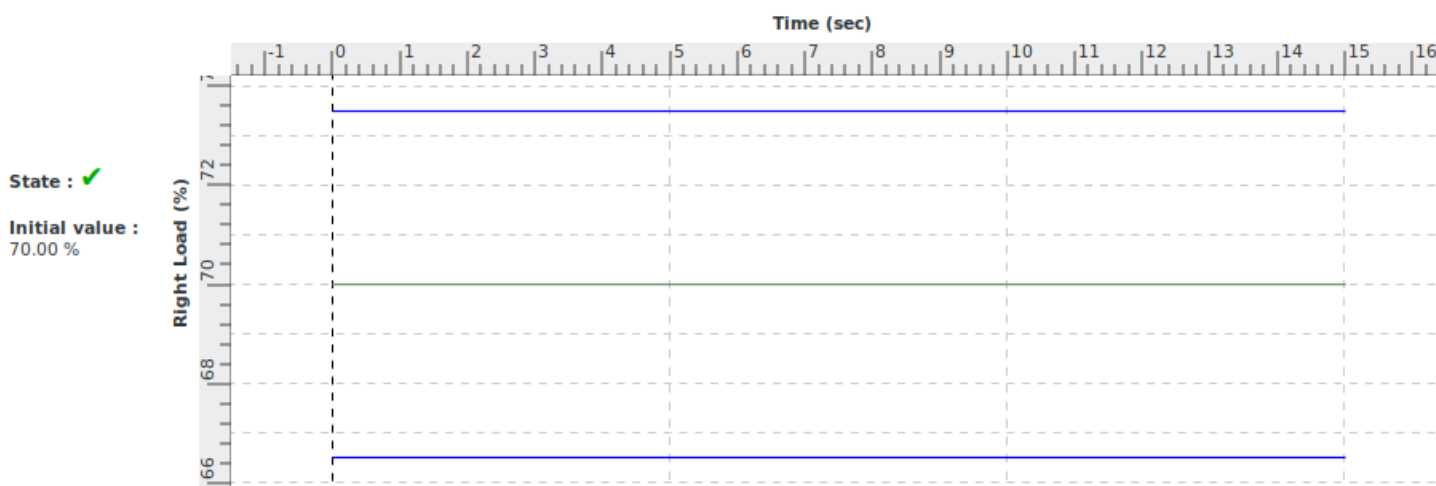
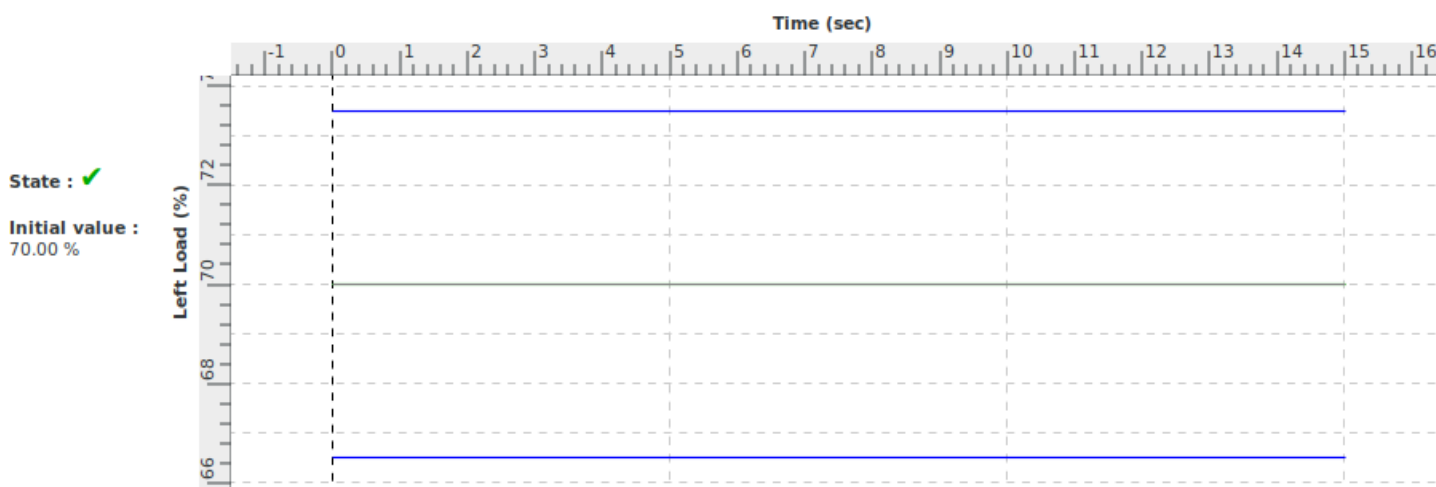
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsimg

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



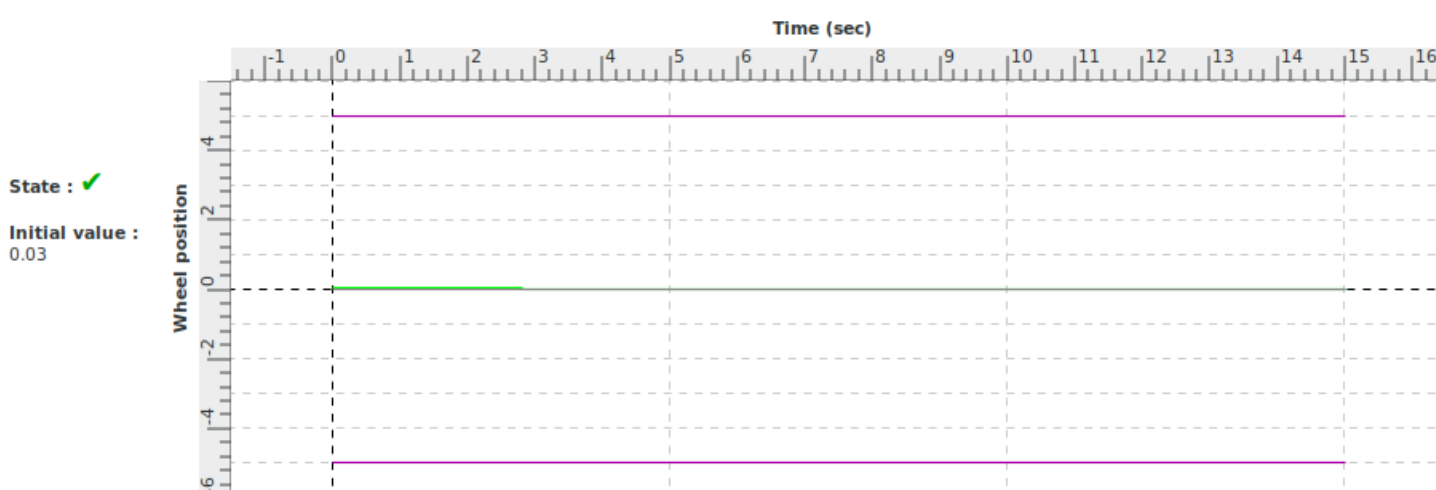
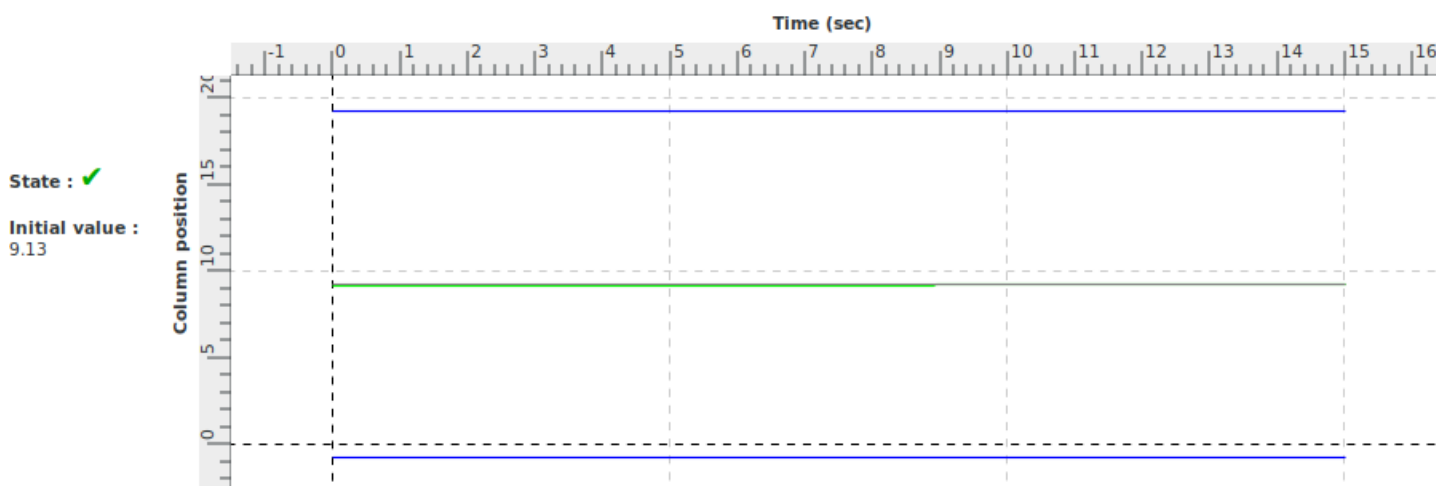
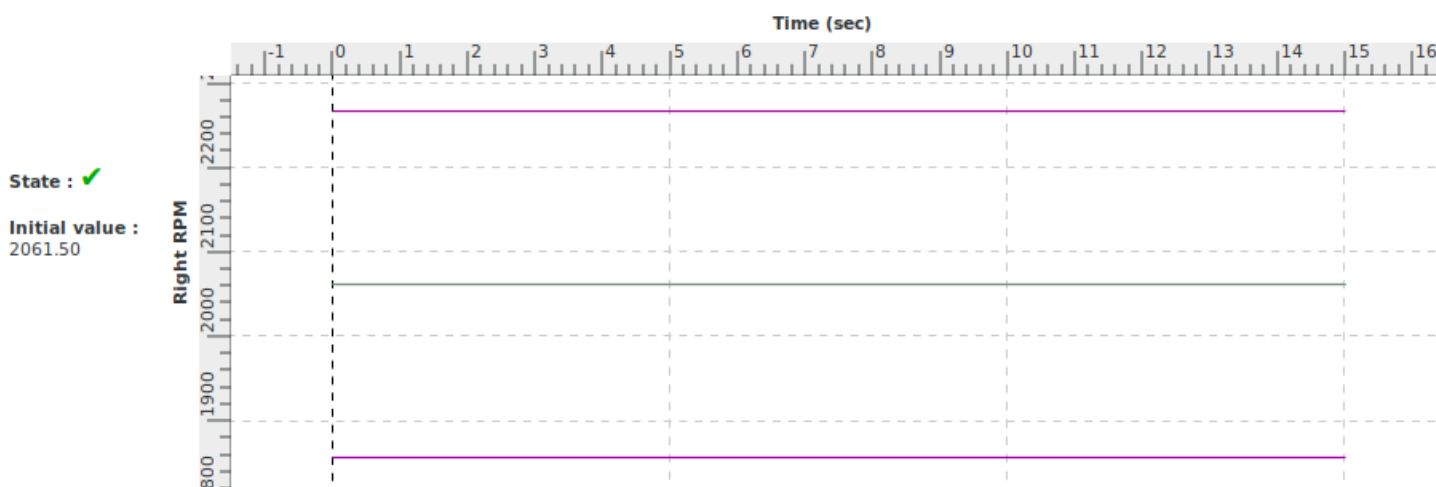
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

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



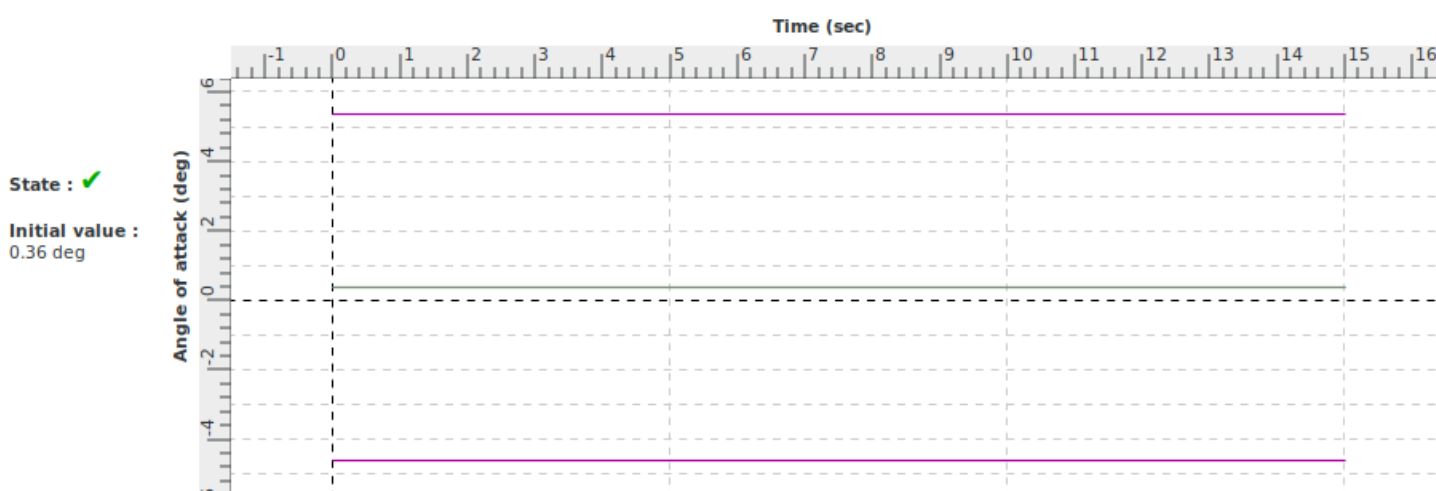
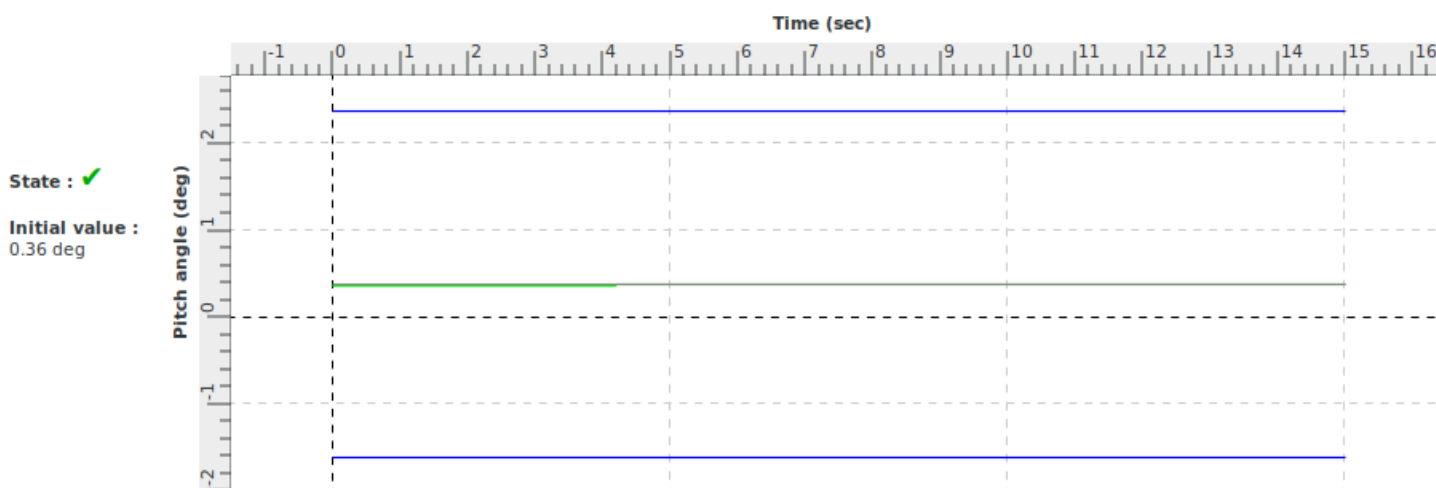
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances 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



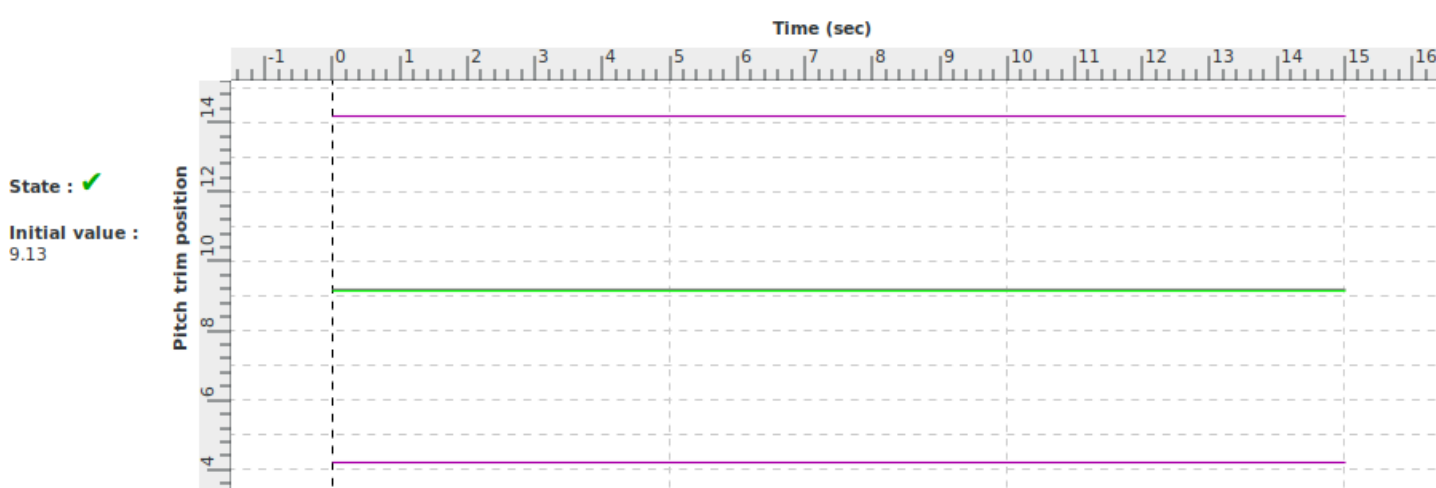
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances 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

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

Objective	Expected Results
Demonstrate that the simulator inter-relationships of lift, drag, thrust and longitudinal trim during approach conforms to the class of aeroplanes	Pitch control: +44 % Pitch angle: -2 deg Load: 30 %
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.v.b	+/- 2° Pitch control (equivalent 16%) +/- 2° Pitch angle +/- 5% Power

Demonstration procedure	The aeroplane is established in steady approach. 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.
Manual test procedure	In ISA and approach conditions, the pilot trims the airplane for the approach, records the pitch control position, pitch angle, airspeed and power.
Automatic test procedure	2 c v b

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

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

Autopilot mode	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>	

Initial parameters	DESCENT_FLAPS_APP
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : -450 IAS (kt) : 90 (free) Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : -2 Pedal Position (%) : 0 Column Position (%) : 44 Wheel Position (%) : 0	Flaps lever position : 1 Gear lever position : 1 Left Load (%) : 30 Right Load (%) : 30 Left RPM : 1930 Right RPM : 1930

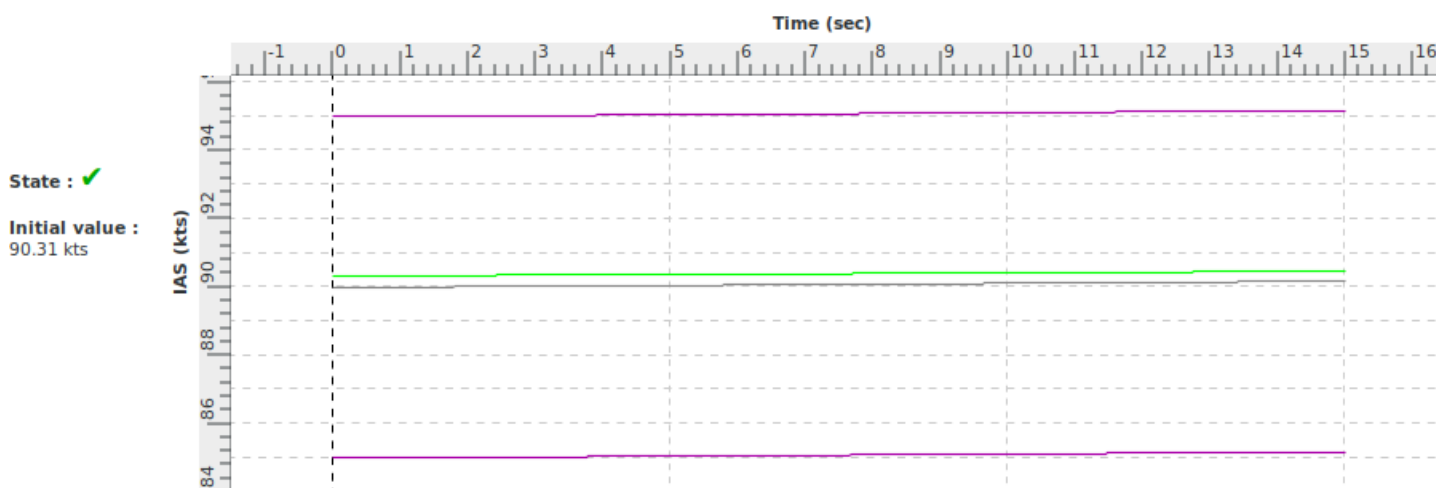
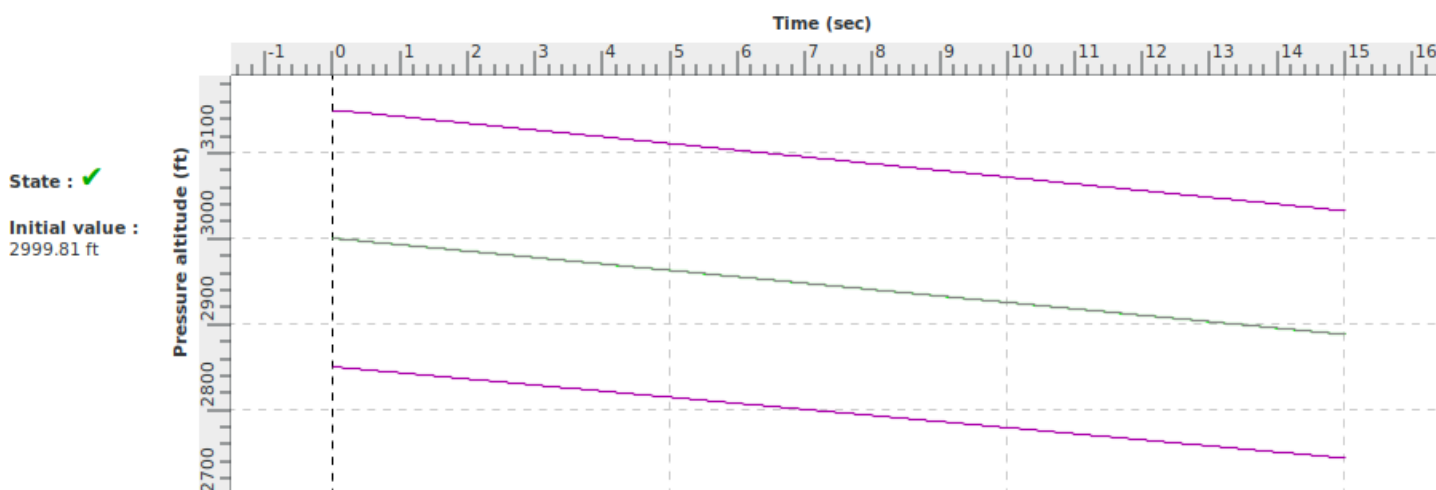
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
15.0	Stop_Test	0.0	Stop the test procedure

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

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

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



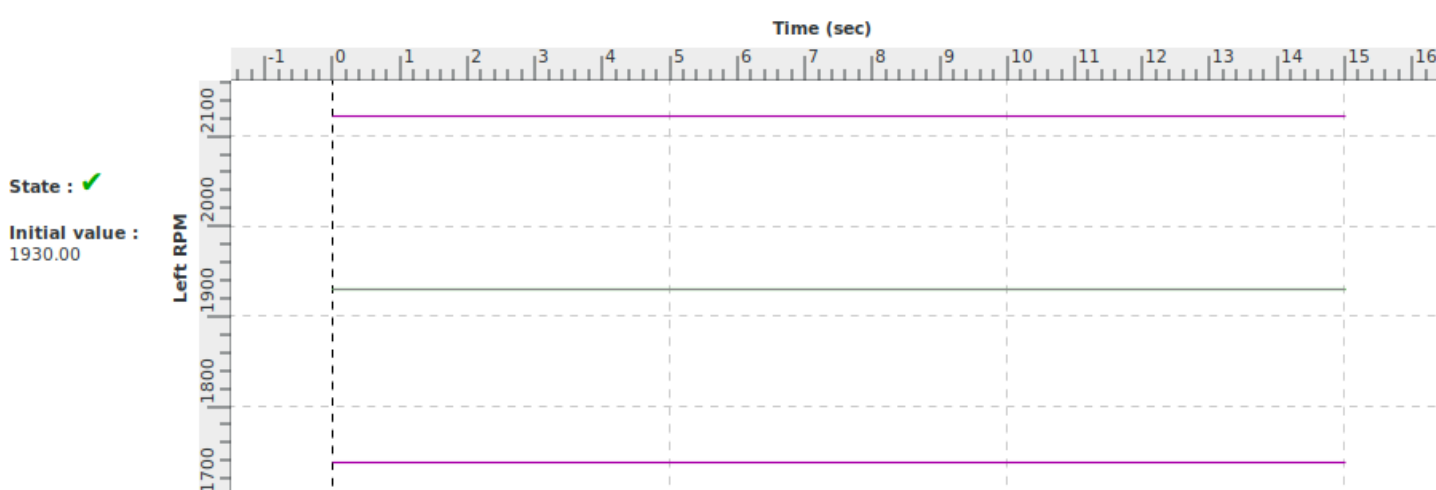
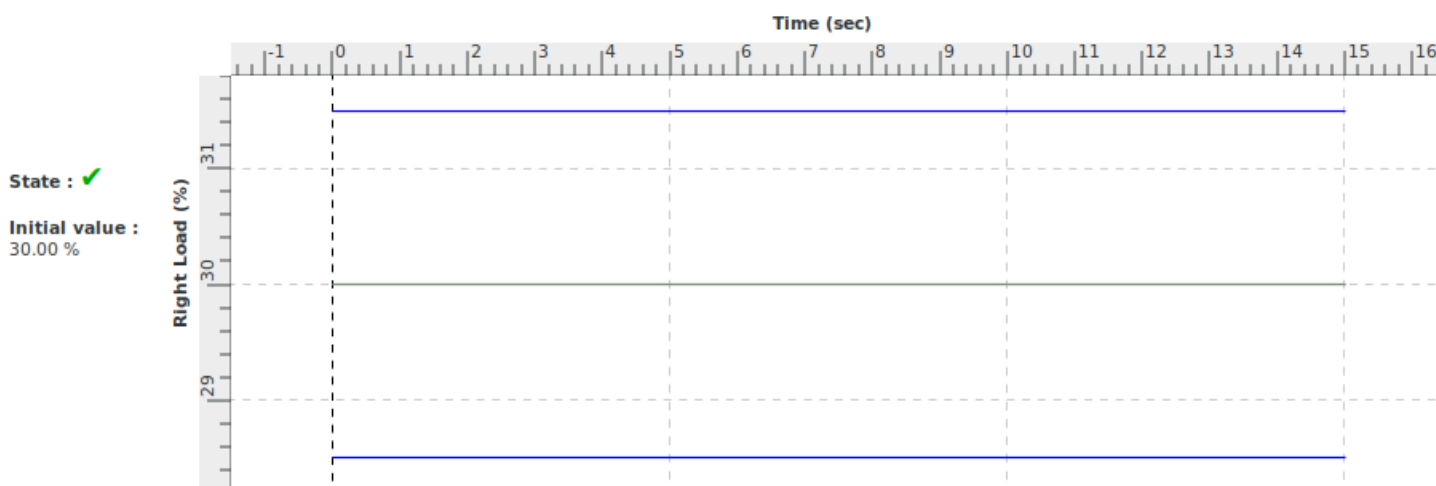
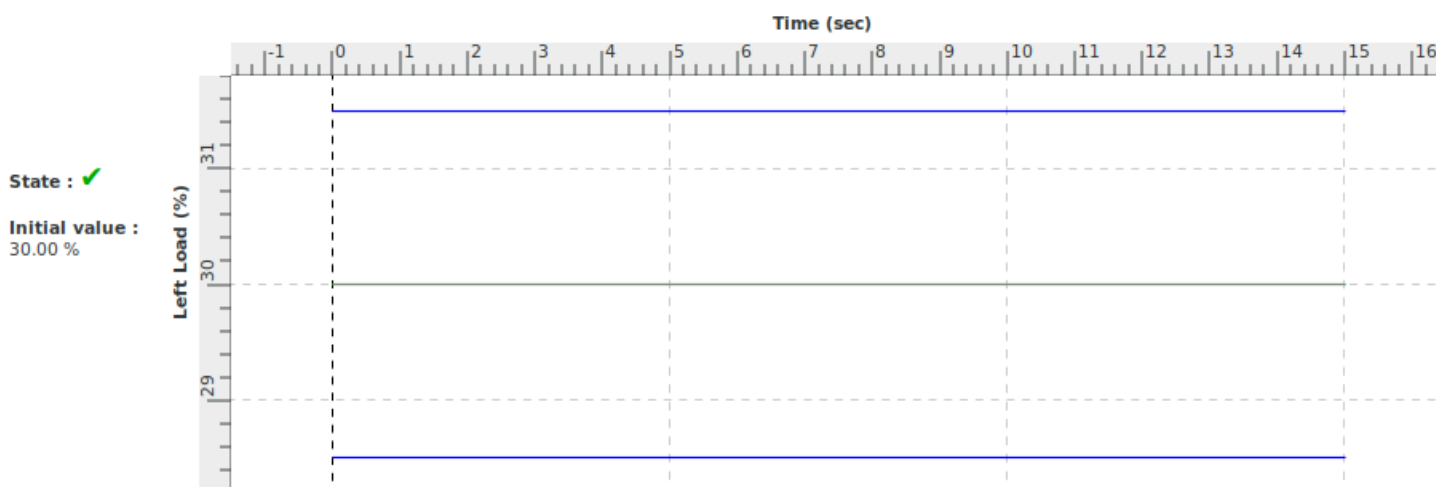
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

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



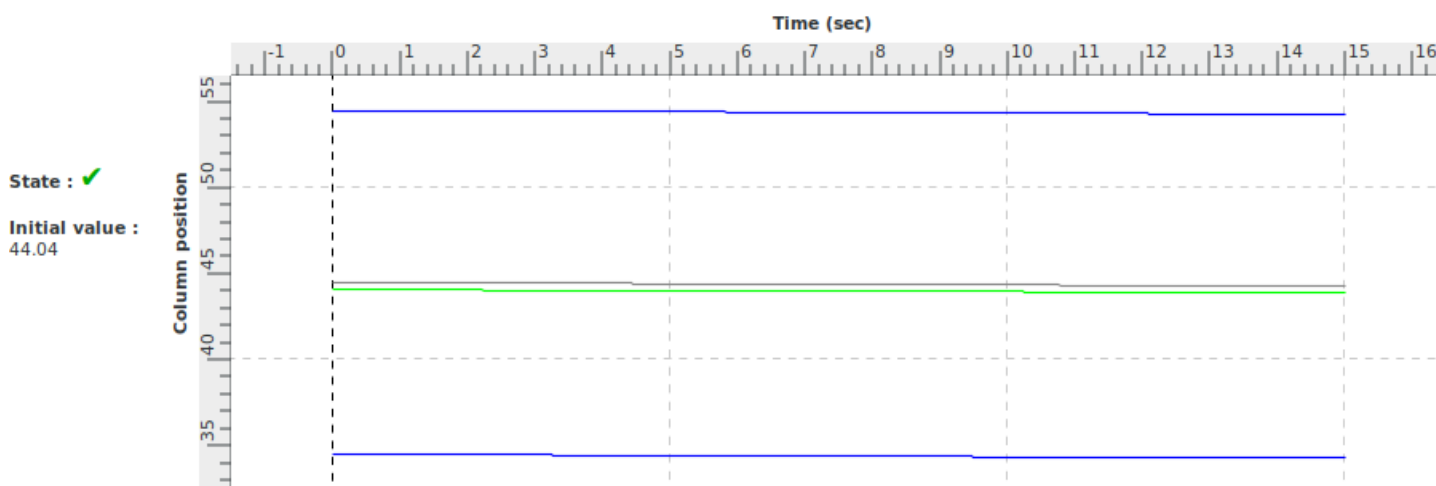
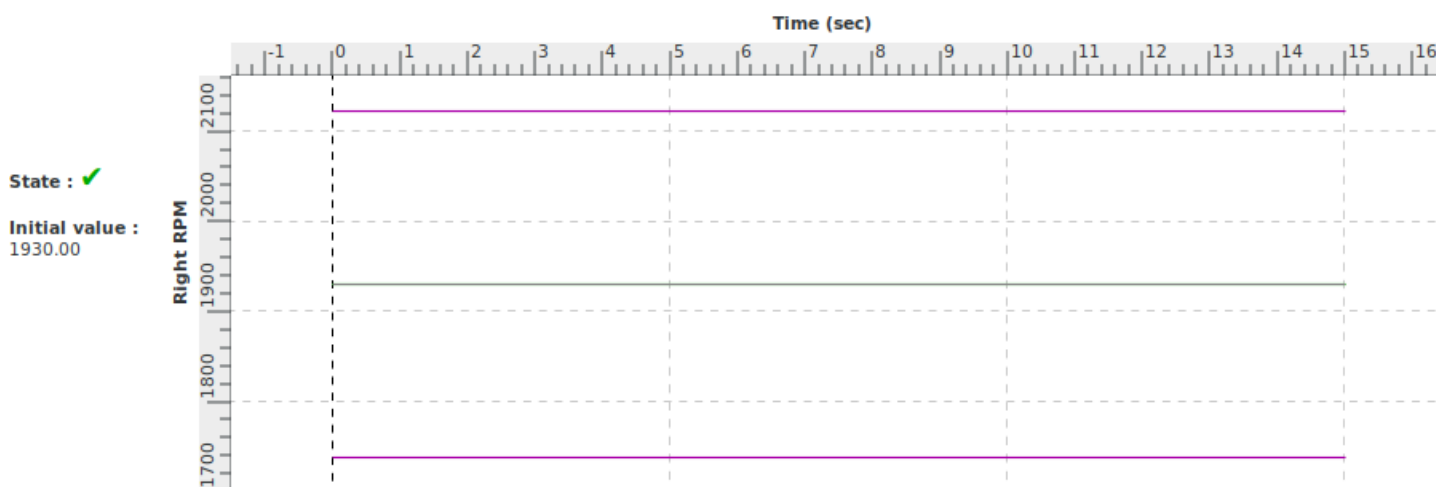
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

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



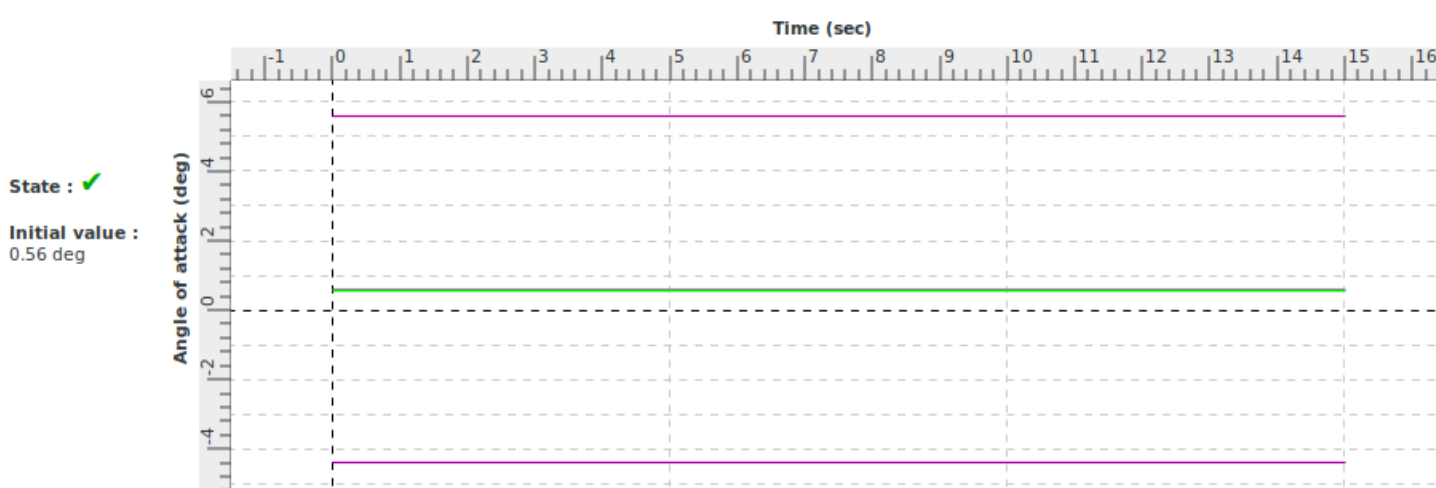
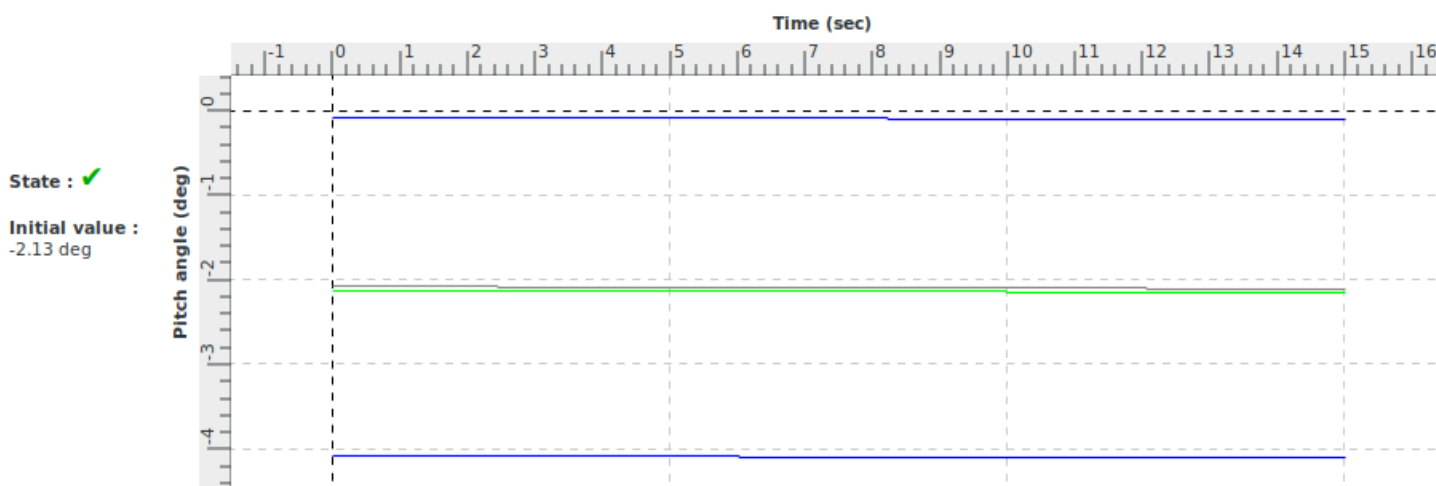
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

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



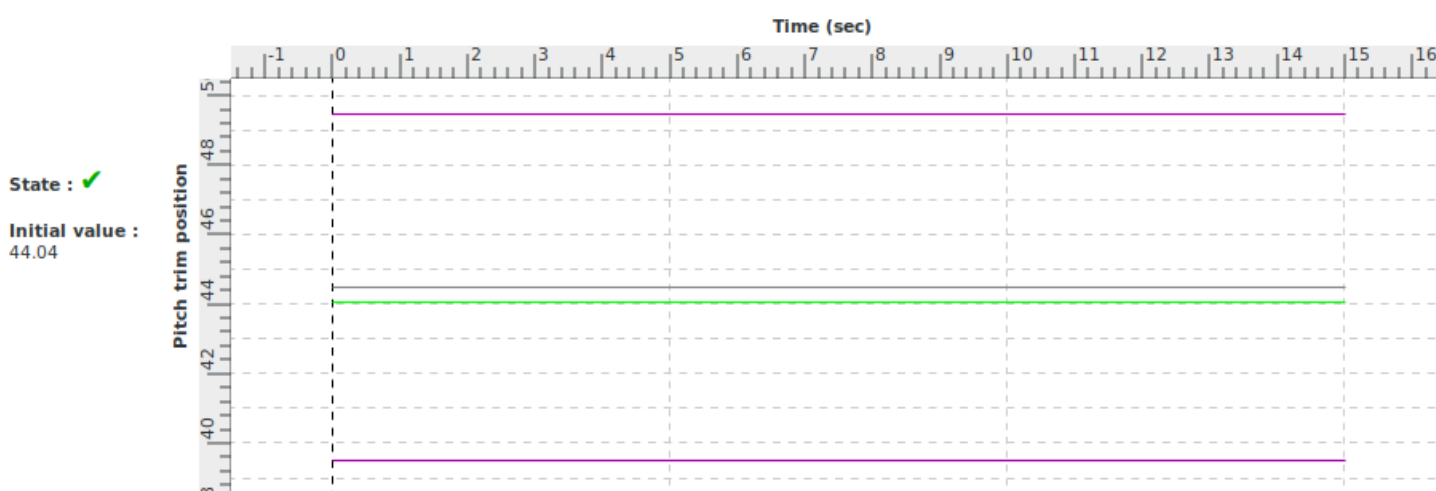
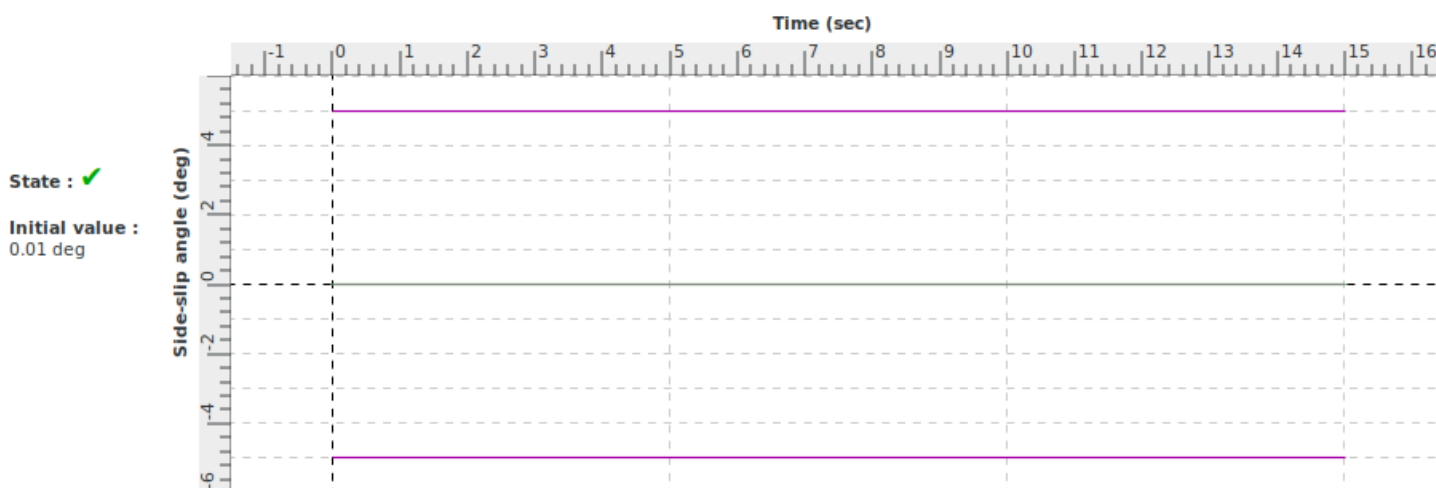
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Longitudinal trim during approach		
Id	2 c v b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	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

Title	Longitudinal manoeuvring stability during cruise		
Id	2 c vi a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Objective	Expected Results
Demonstrate that the simulation of manoeuvring stability during cruise, conforms to the class of aeroplanes	Column force +13.5 N approx. for 45° of bank angle
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.vi.a	+/- 2.2 daN (5lbs) or +/- 10% column force.

Demonstration procedure	From steady cruise initial conditions, a right steady turn of 45° is performed.
Manual test procedure	The aeroplane is trimmed in cruise condition. The pilot sets the aircraft bank angle to the right to 45° using the control column, the rudder and the engine load as required, while attempting to maintain the trim airspeed.
Automatic test procedure	2 c vi a

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Longitudinal manoeuvring stability during cruise		
Id	2 c v i a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Autopilot mode	AUTO_PWR
Automatic AUTO_POWER mode : Vertical Speed and IAS (airspeed) are maintained through pitch trim and engine parameters changes.	

Initial parameters	CRUISE
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 6000 Vertical speed (ft/min) : 0 IAS (kt) : 139 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 (free) Right Load (%) : 70 (free) Left RPM : 2060 (free) Right RPM : 2060 (free)

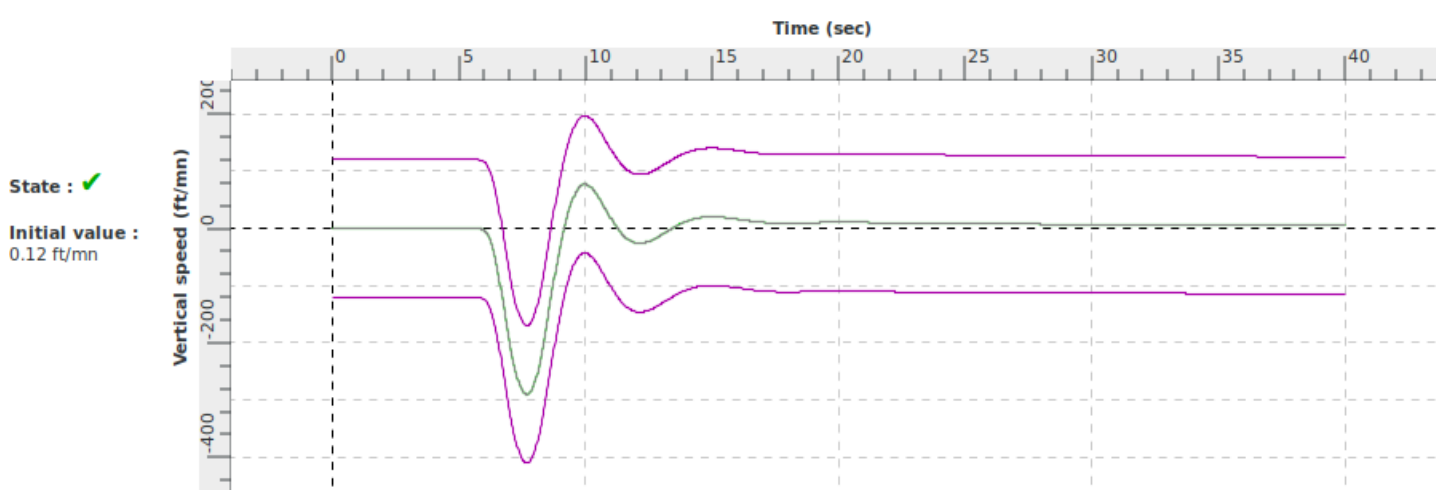
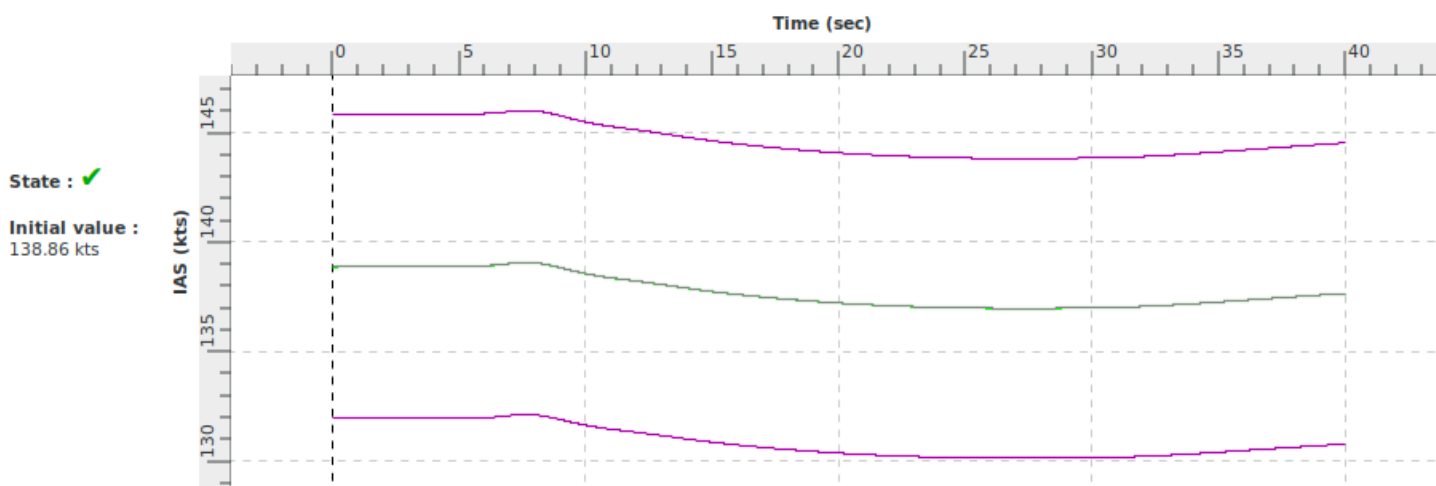
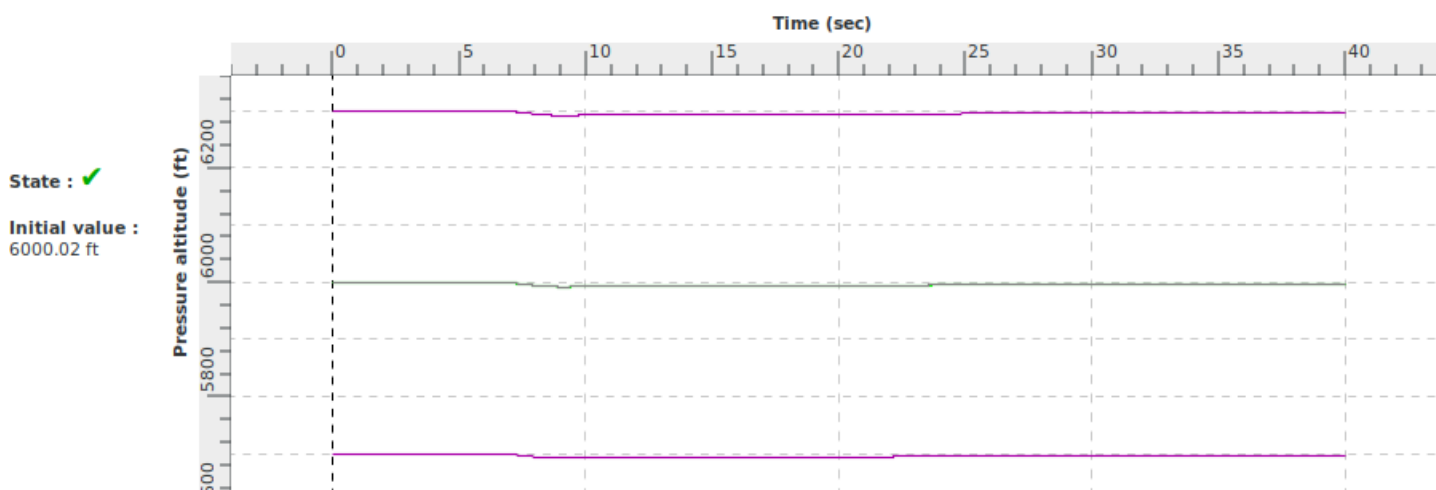
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
5.0	set_bank_angle	45.0	Ask the Qtg Autopilot to maintain the desired bank angle
40.0	Stop_Test	0.0	Stop the test procedure

Title	Longitudinal manoeuvring stability during cruise		
Id	2 c v i a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	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.
1.03	05/04/22	Tolerance of Mag Heading Angle Removed.

Notes

Title	Longitudinal manoeuvring stability during cruise		
Id	2 c v i a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



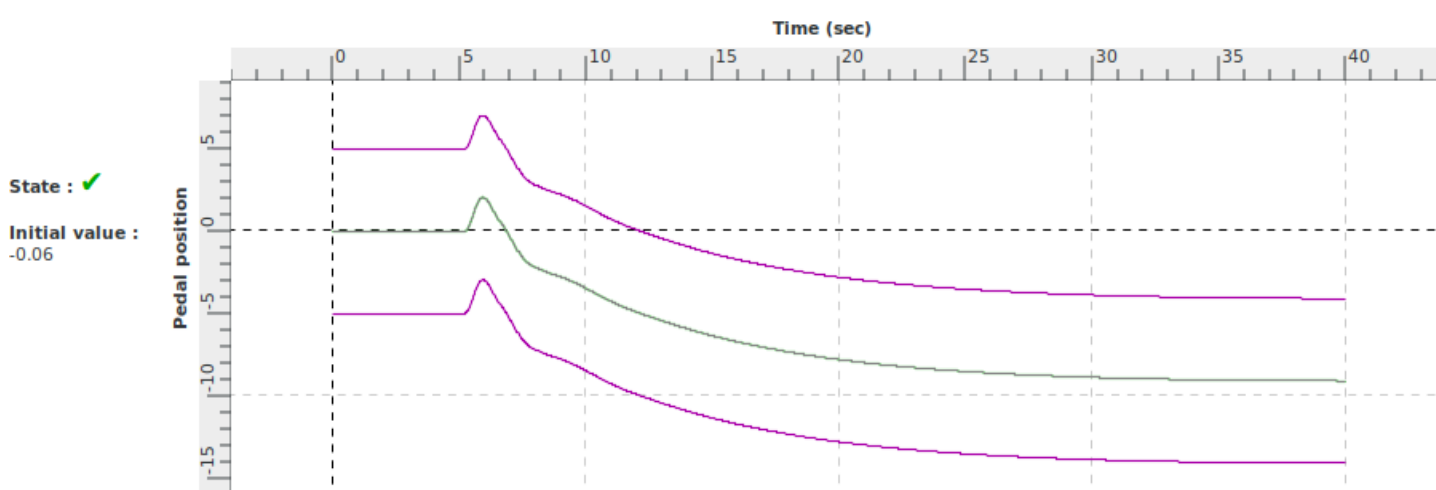
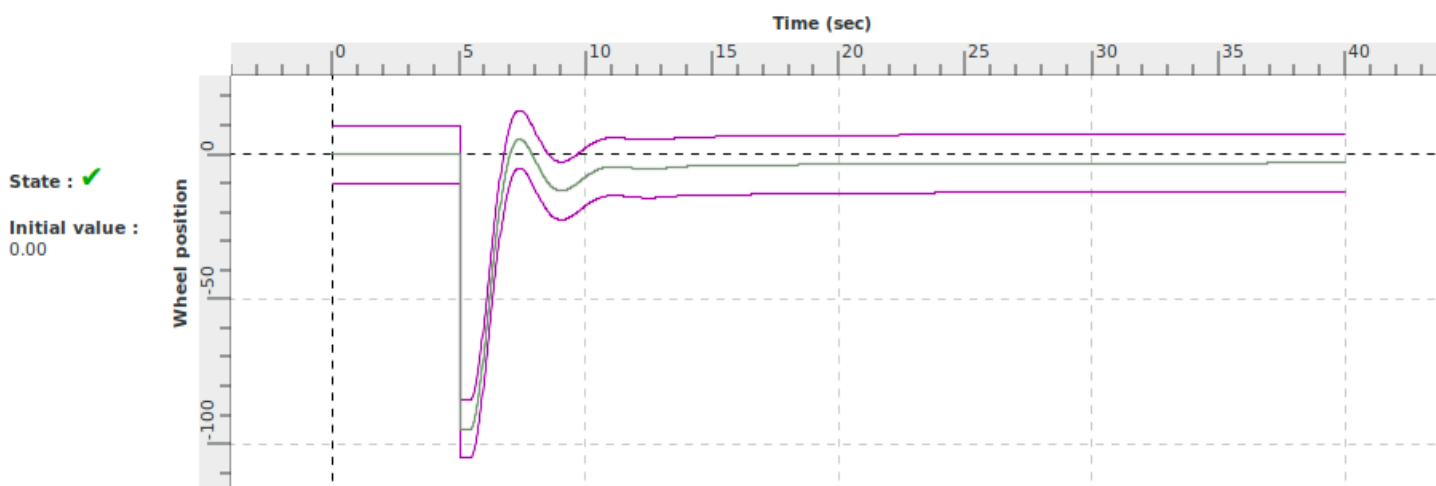
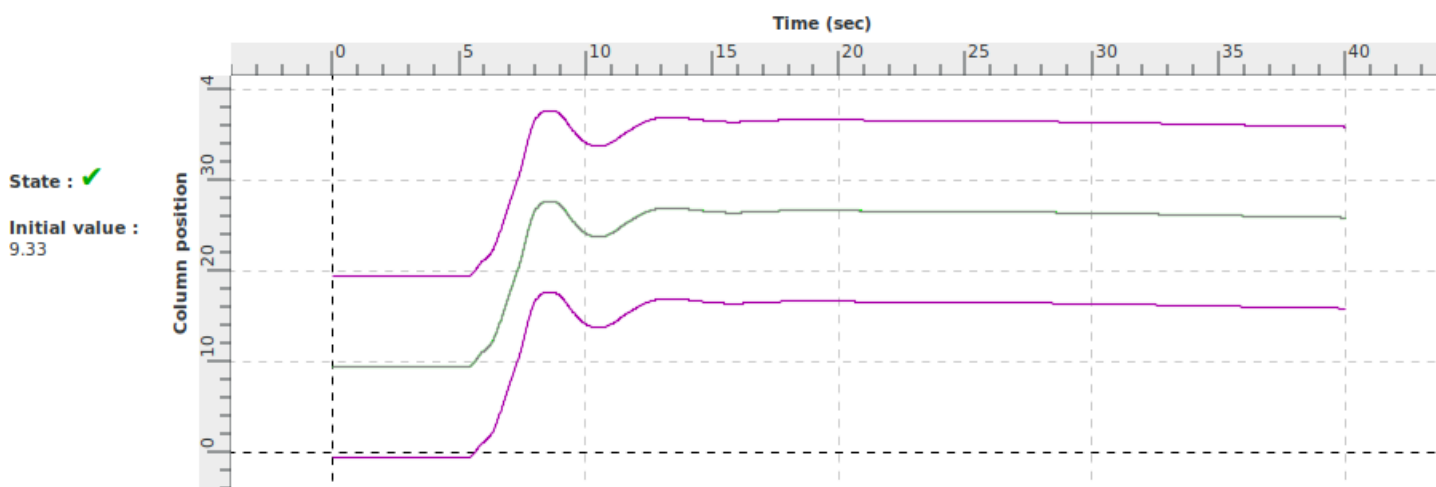
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Longitudinal manoeuvring stability during cruise		
Id	2 c v i a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



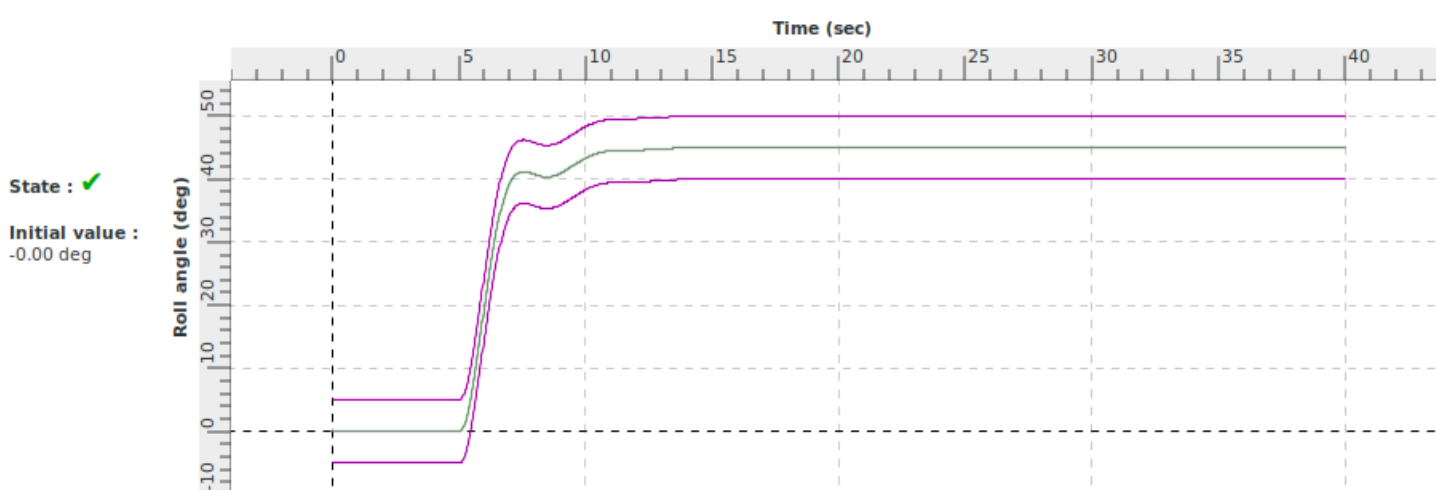
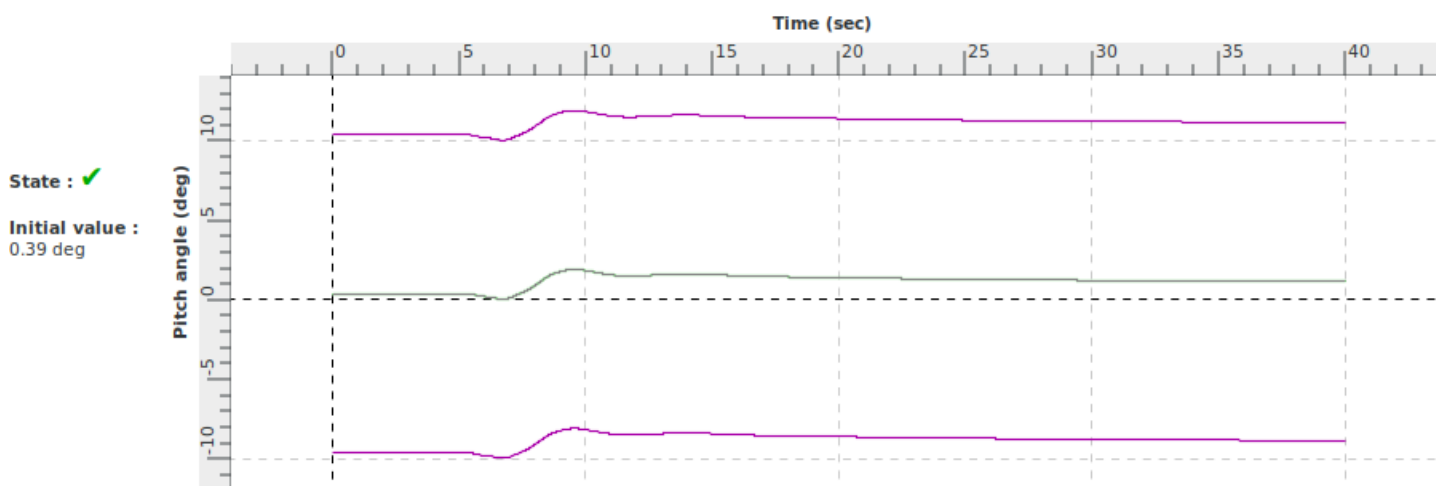
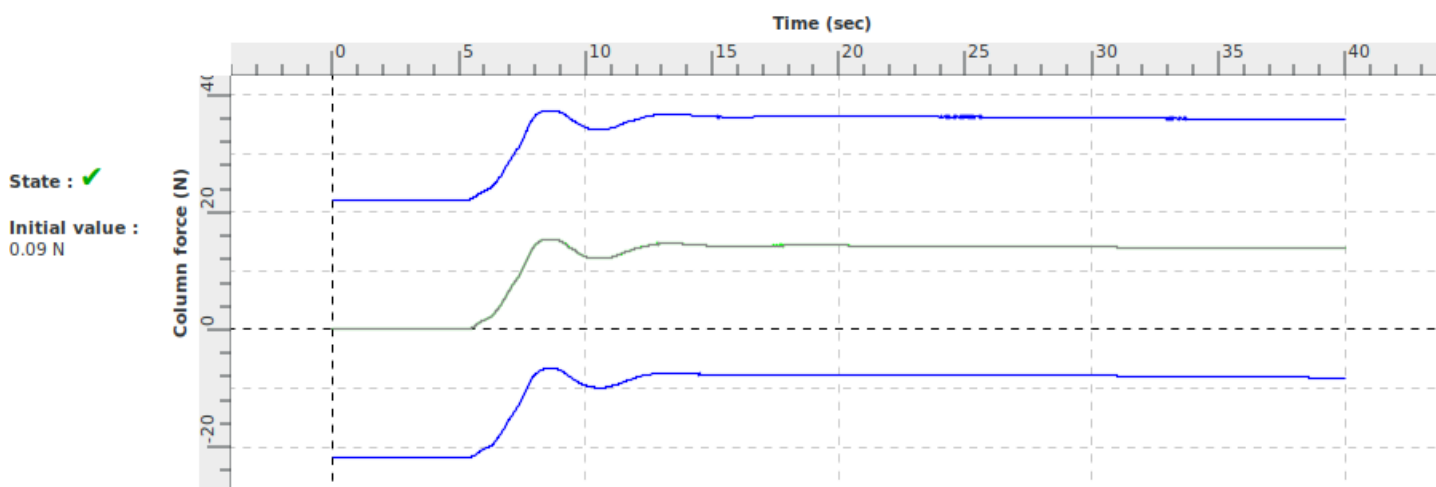
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Longitudinal manoeuvring stability during cruise		
Id	2 c v i a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



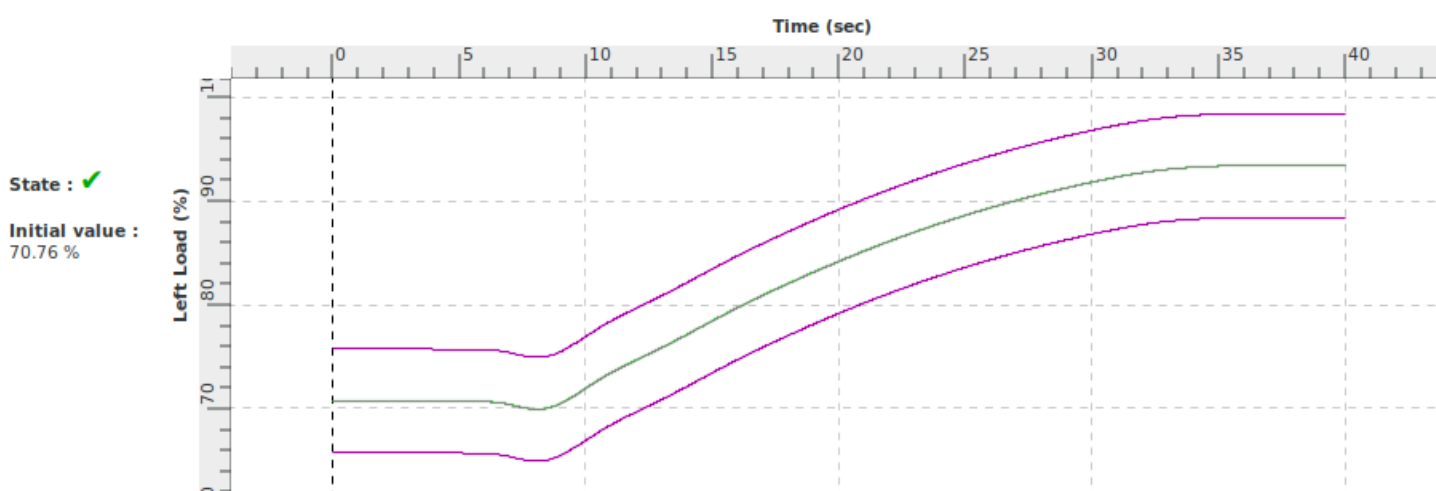
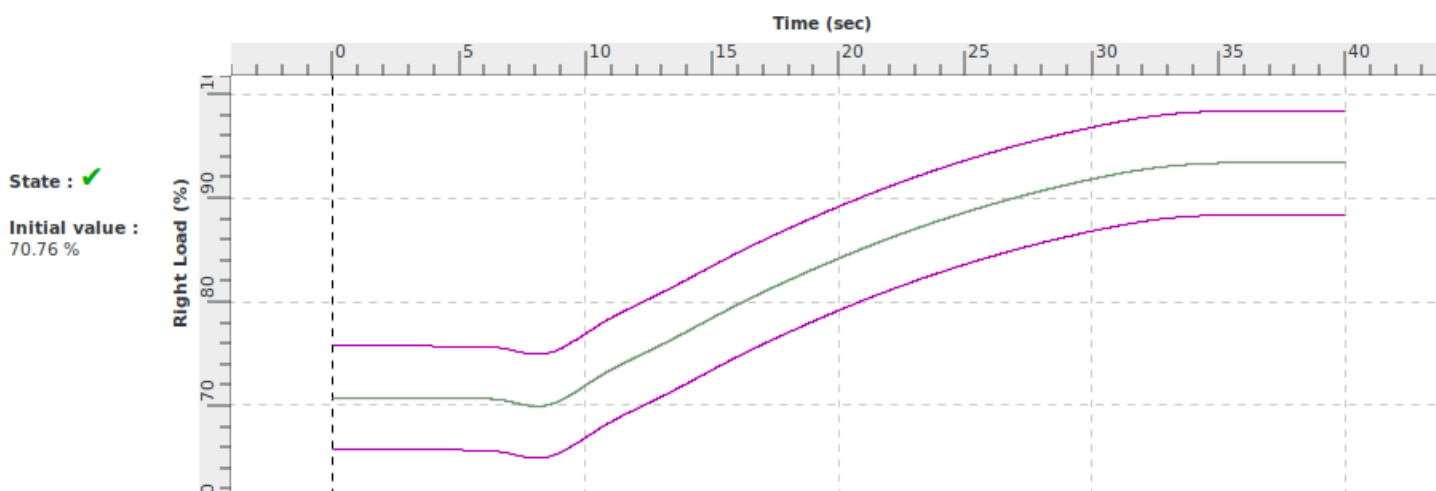
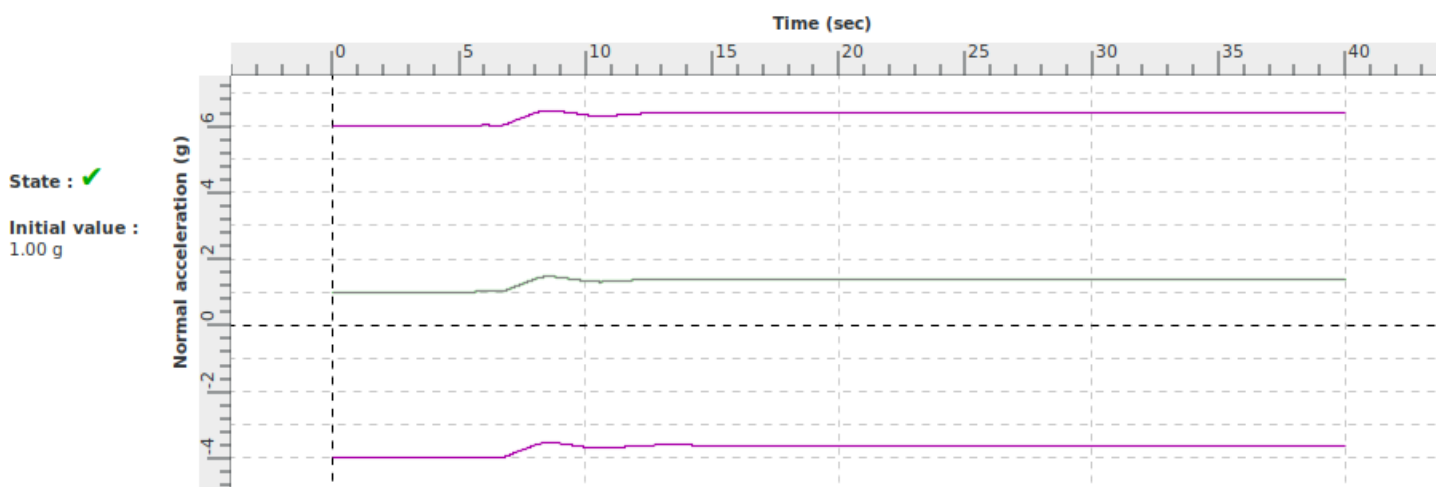
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Longitudinal manoeuvring stability during cruise		
Id	2 c vi a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



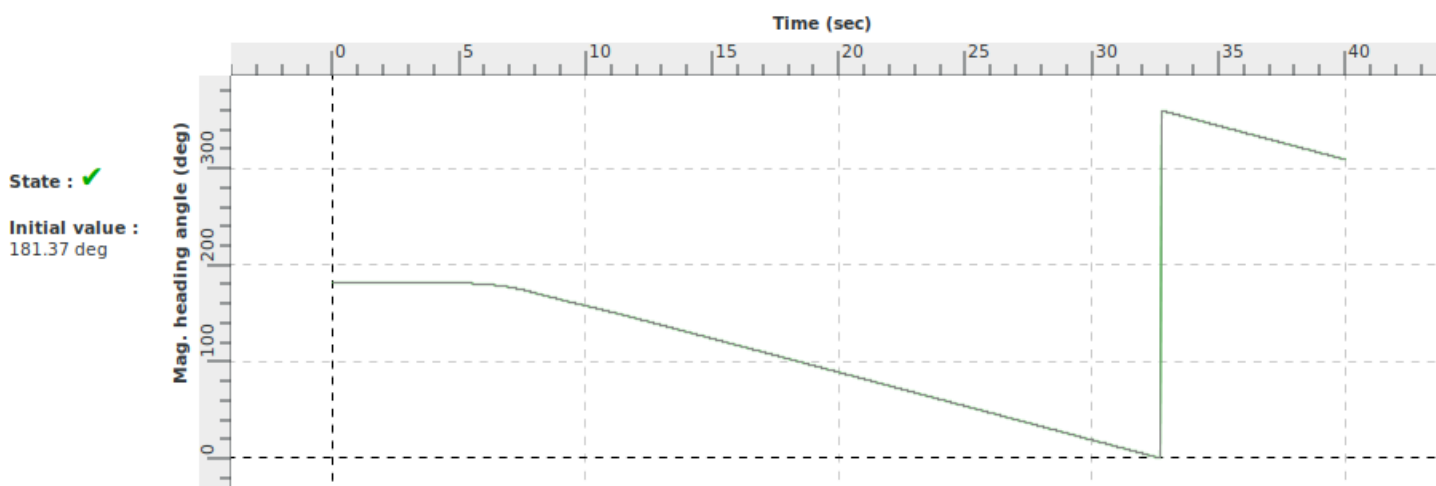
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Longitudinal manoeuvring stability during cruise		
Id	2 c v i a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Result Date	04/02/24	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

Title	Longitudinal manoeuvring stability during approach		
Id	2 c vi b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Objective	Expected Results
Demonstrate that the simulation of manoeuvring stability during approach, conforms to the class of aeroplanes	Column force +7 N approx. for 30° of bank angle
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.vi.b	+/- 2.2 daN (5lbs) or +/- 10% column force.

Demonstration procedure	From steady approach initial conditions, a right steady turn of 30° is performed.
Manual test procedure	Trim the aeroplane in approach condition (see initial parameters in the next page). Use the column and pedals to set the aircraft bank angle to 30° to the right while maintaining the initial airspeed using the engine power (load). At the end of the test, check the column force value and compare it to the master value.
Automatic test procedure	2 c vi b

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Longitudinal manoeuvring stability during approach		
Id	2 c vi b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Autopilot mode	AUTO_PWR
Automatic AUTO_POWER mode : Vertical Speed and IAS (airspeed) are maintained through pitch trim and engine parameters changes.	

Initial parameters	HOLD_FLAPS_APP_GEAR
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : 0 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 (free) Right Load (%) : 70 (free) Left RPM : 2060 (free) Right RPM : 2060 (free)

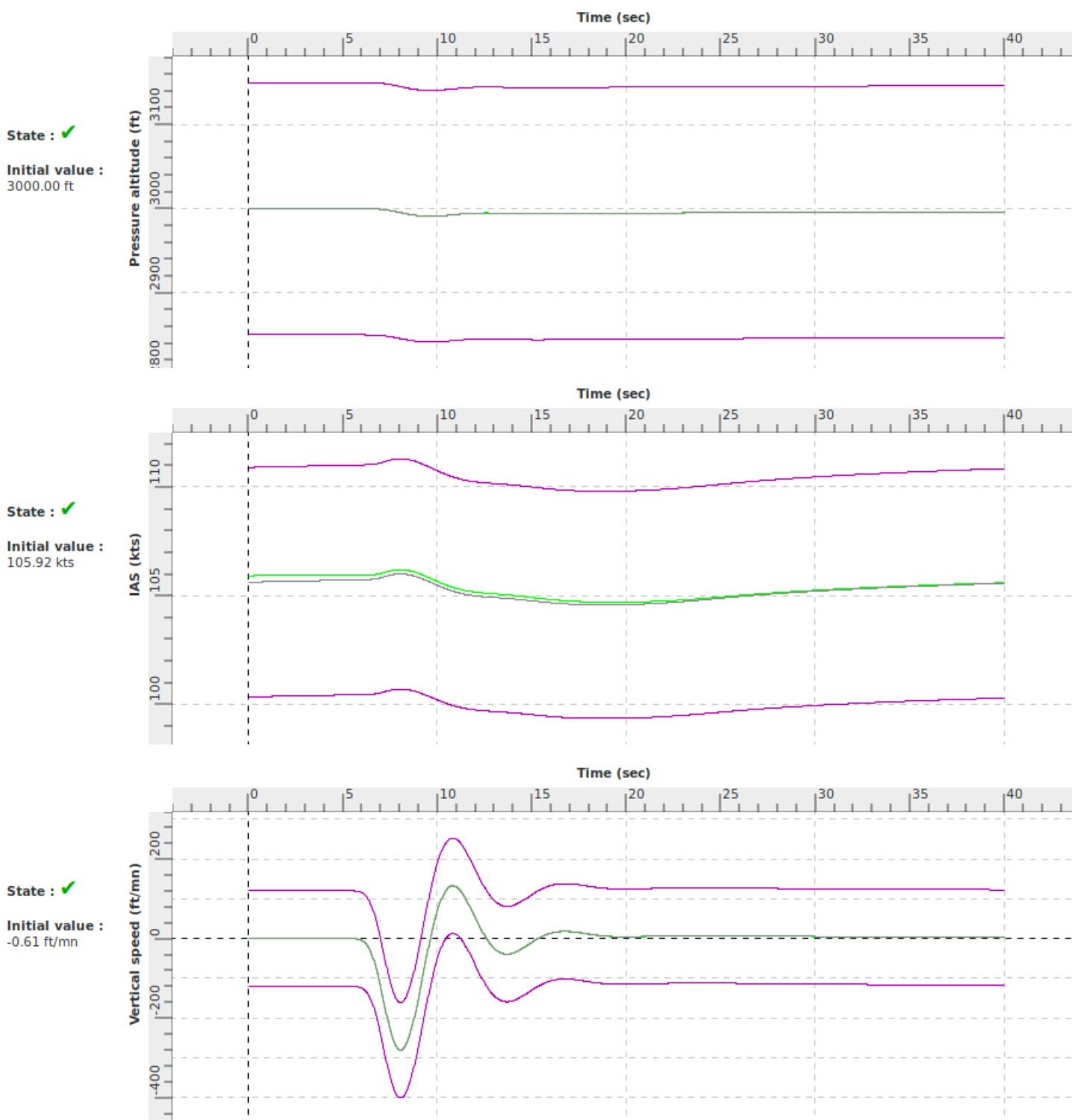
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
5.0	set_bank_angle	30.0	Ask the Qtg Autopilot to maintain the desired bank angle
40.0	Stop_Test	0.0	Stop the test procedure

Title	Longitudinal manoeuvring stability during approach		
Id	2 c vi b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	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

Title	Longitudinal manoeuvring stability during approach		
Id	2 c vi b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



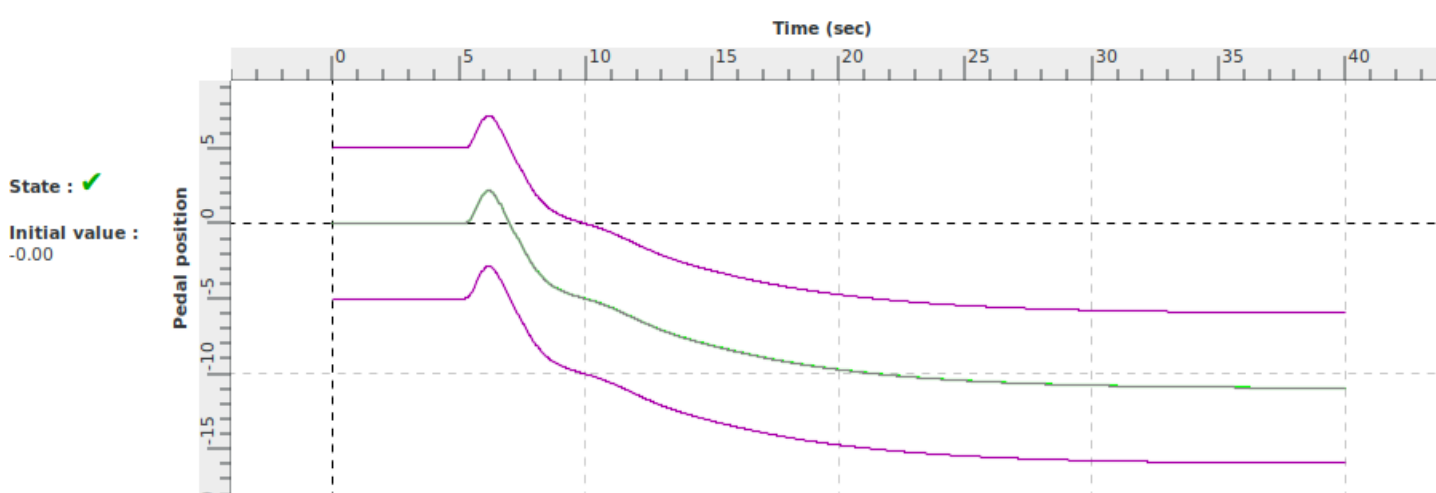
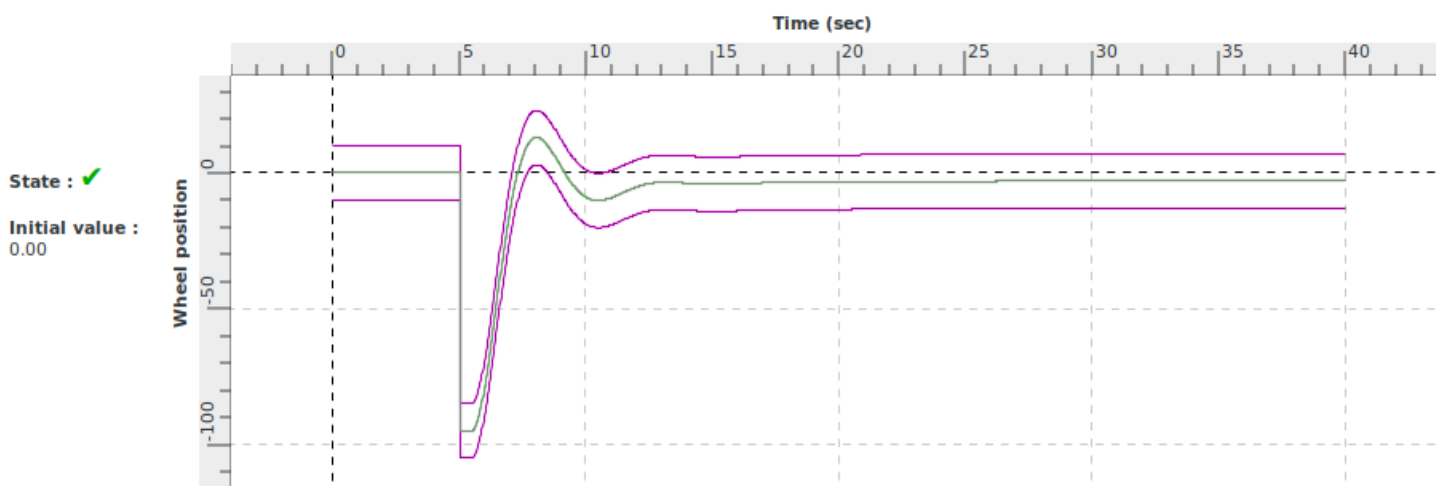
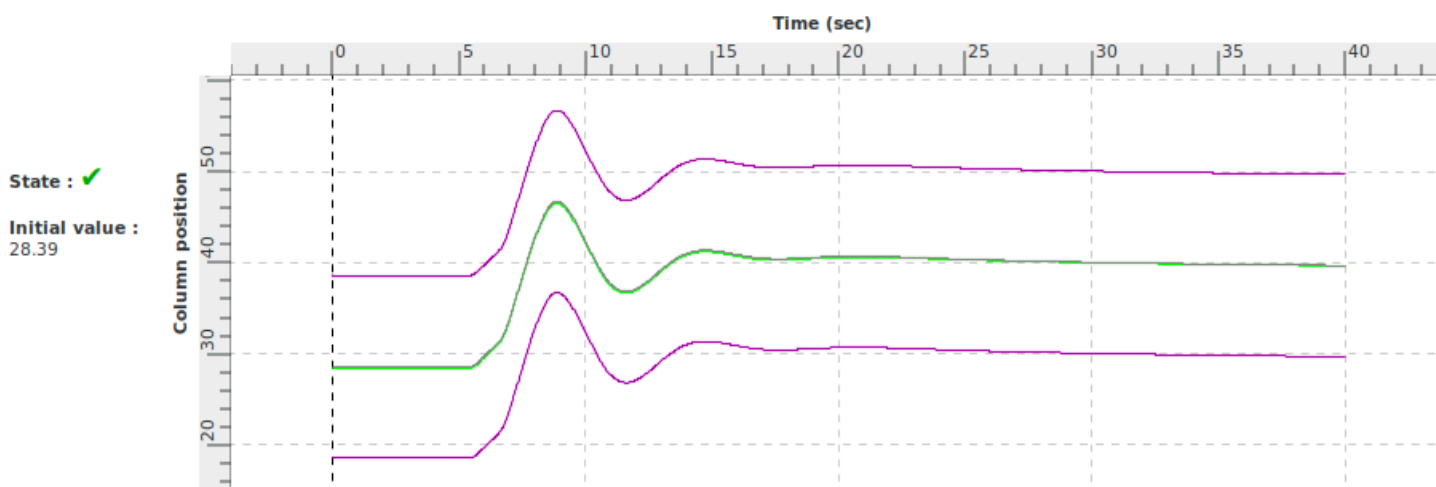
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Longitudinal manoeuvring stability during approach		
Id	2 c vi b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



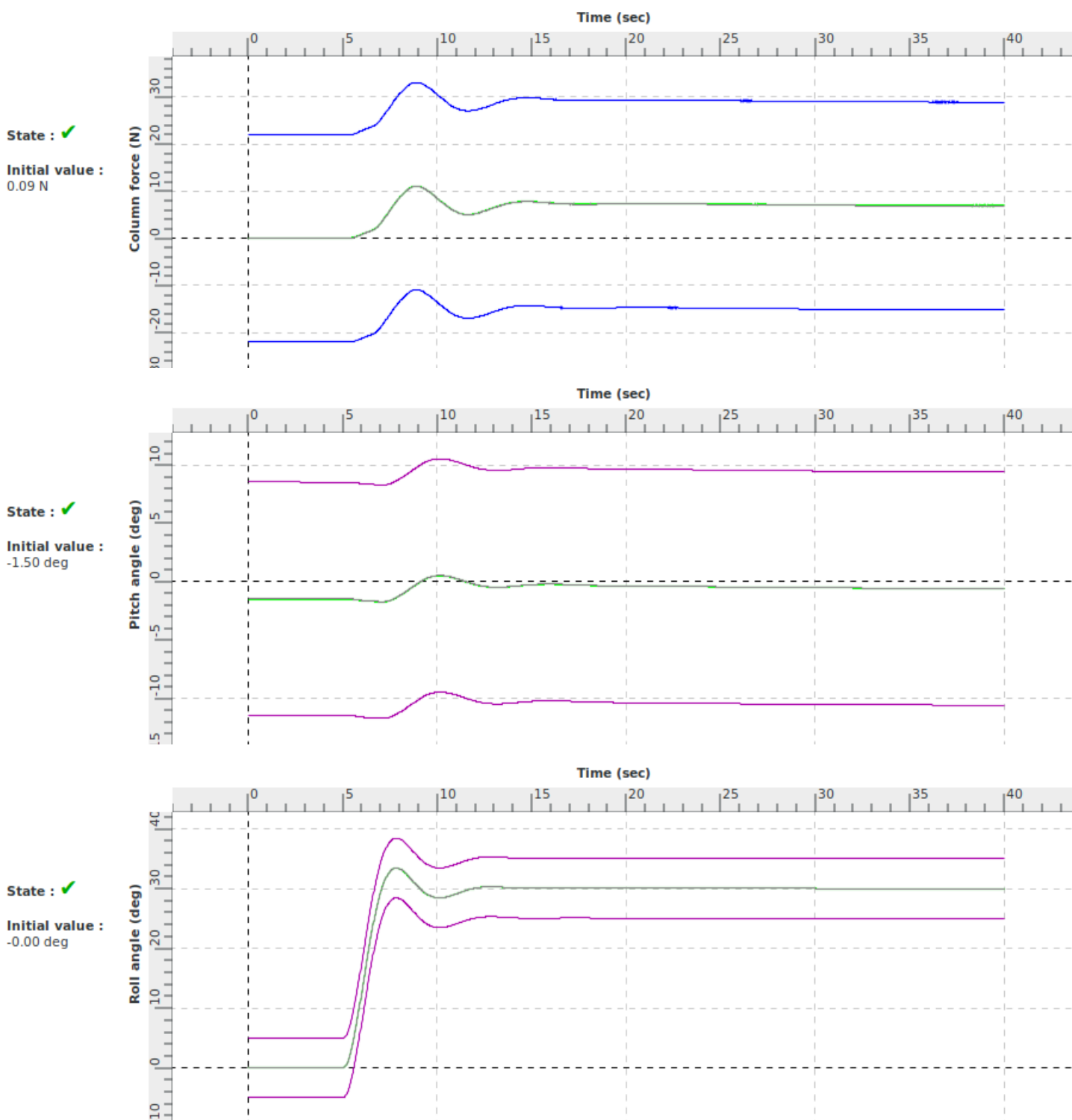
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Longitudinal manoeuvring stability during approach		
Id	2 c vi b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



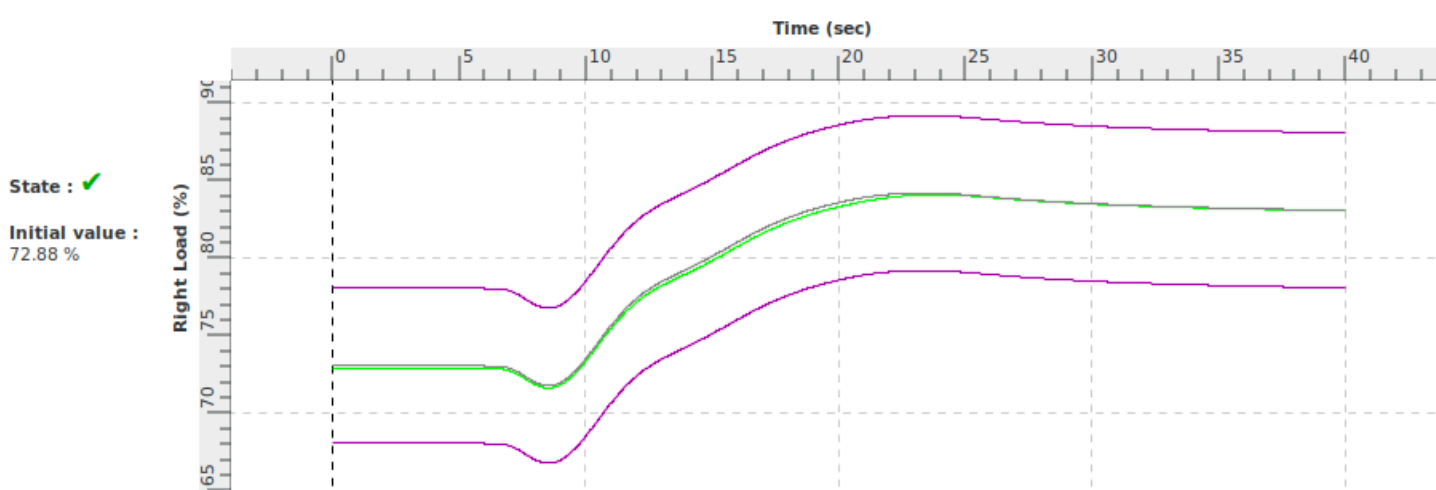
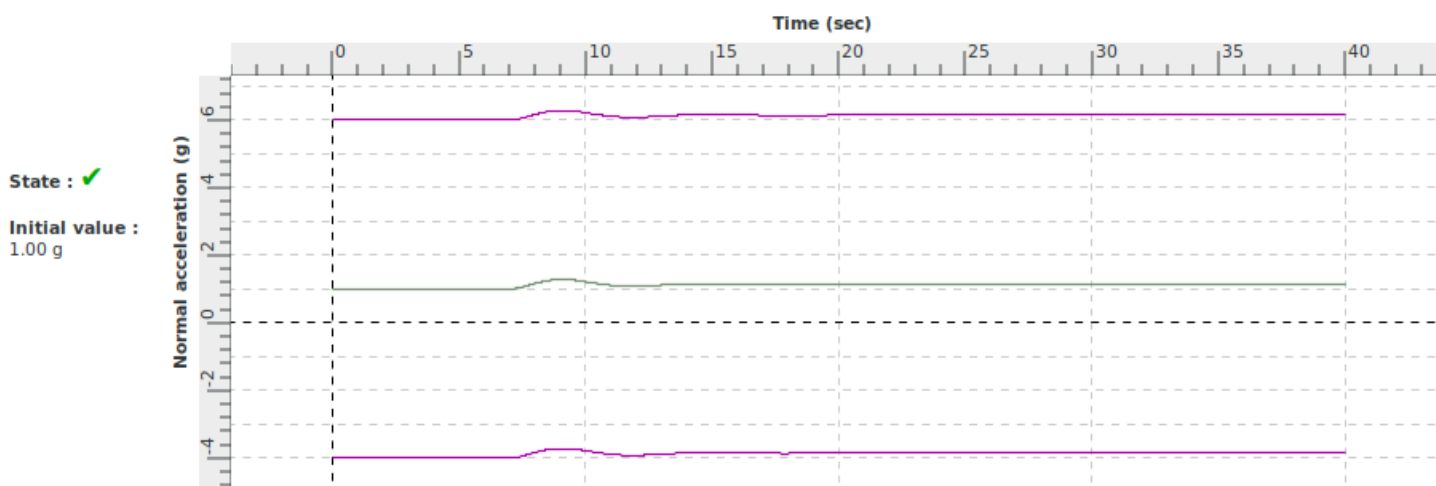
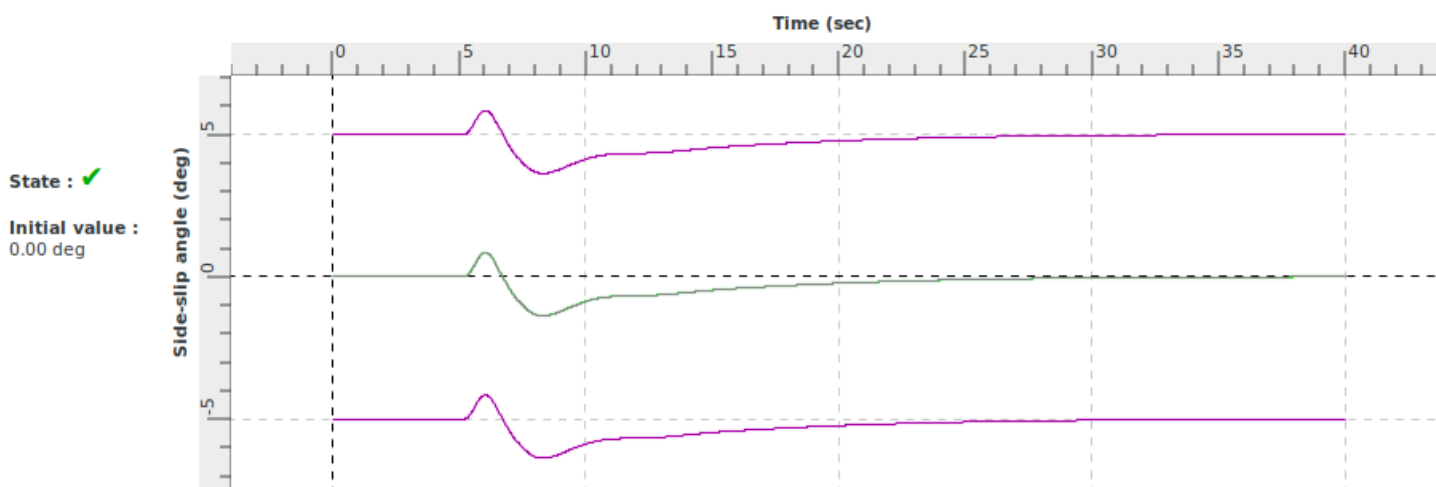
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Longitudinal manoeuvring stability during approach		
Id	2 c vi b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



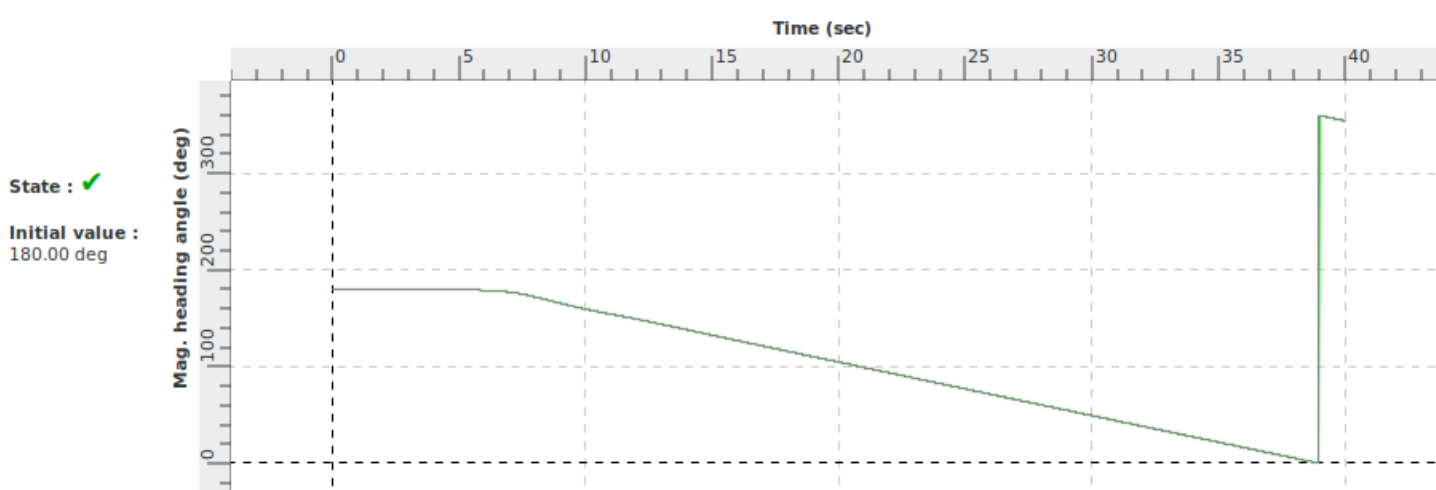
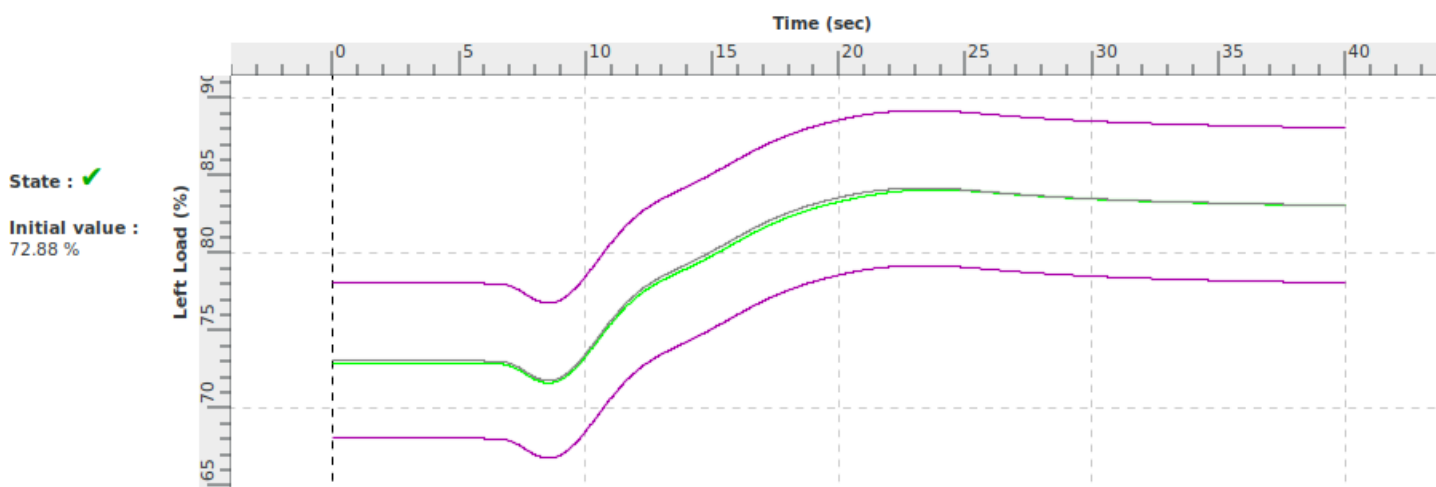
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Longitudinal manoeuvring stability during approach		
Id	2 c vi b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	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 Alsım

grey : master

VALIDATION TEST

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

Objective	Expected Results
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
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.vii	+/- 2.2 daN (5Lbs) or +/- 10% Force

Demonstration procedure	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.
Manual test procedure	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.
Automatic test procedure	2 c v ii

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

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	

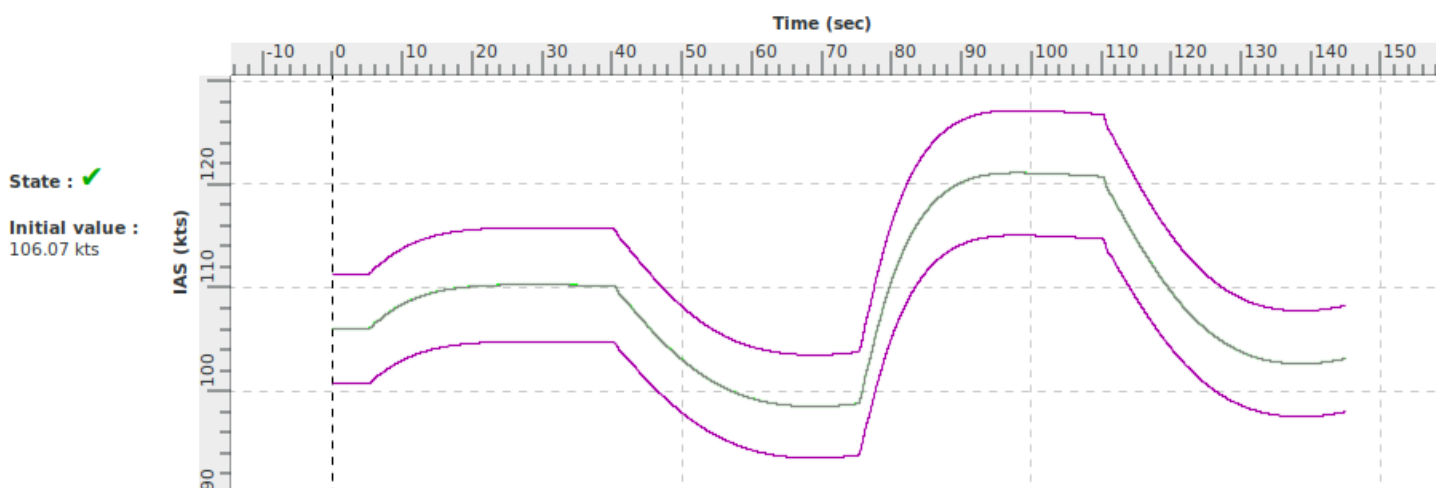
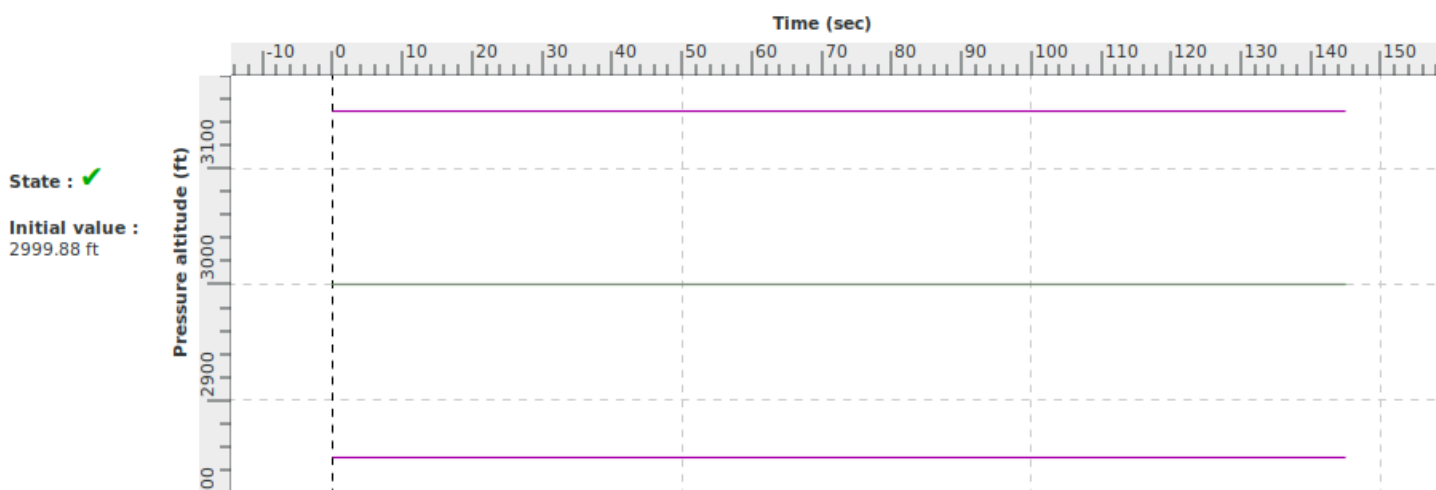
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	mode_freeze	1.0	Set the aircraft to freeze mode
5.0	SetSpeed	110.0	Ask the QTG Autopilot to maintain the desired speed
40.0	SetSpeed	100.0	Ask the QTG Autopilot to maintain the desired speed
75.0	SetSpeed	120.0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

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

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



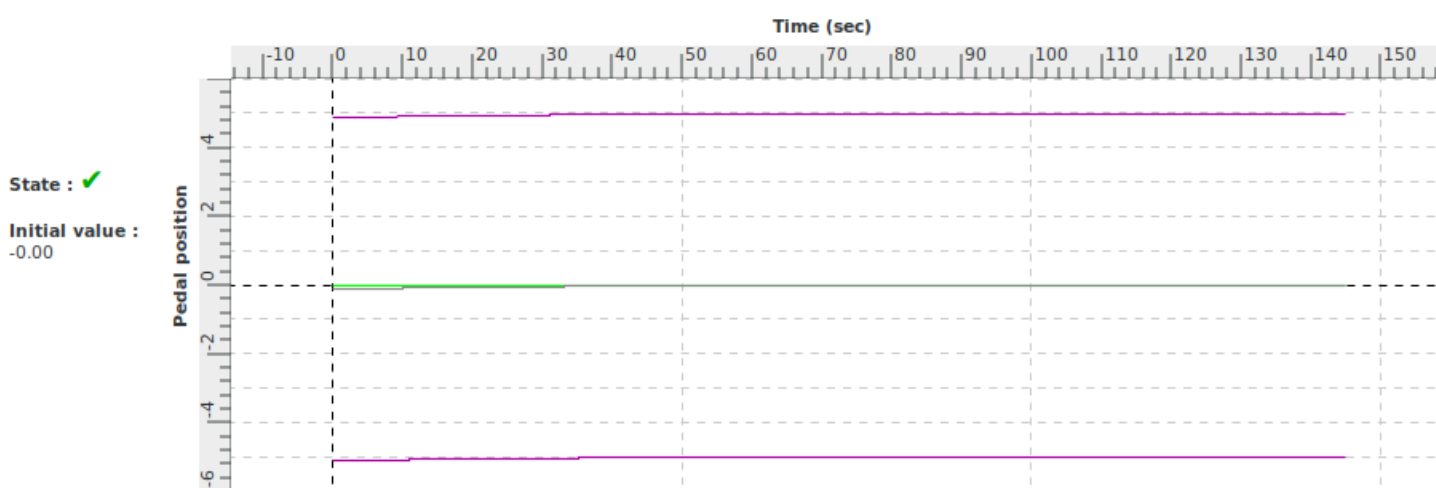
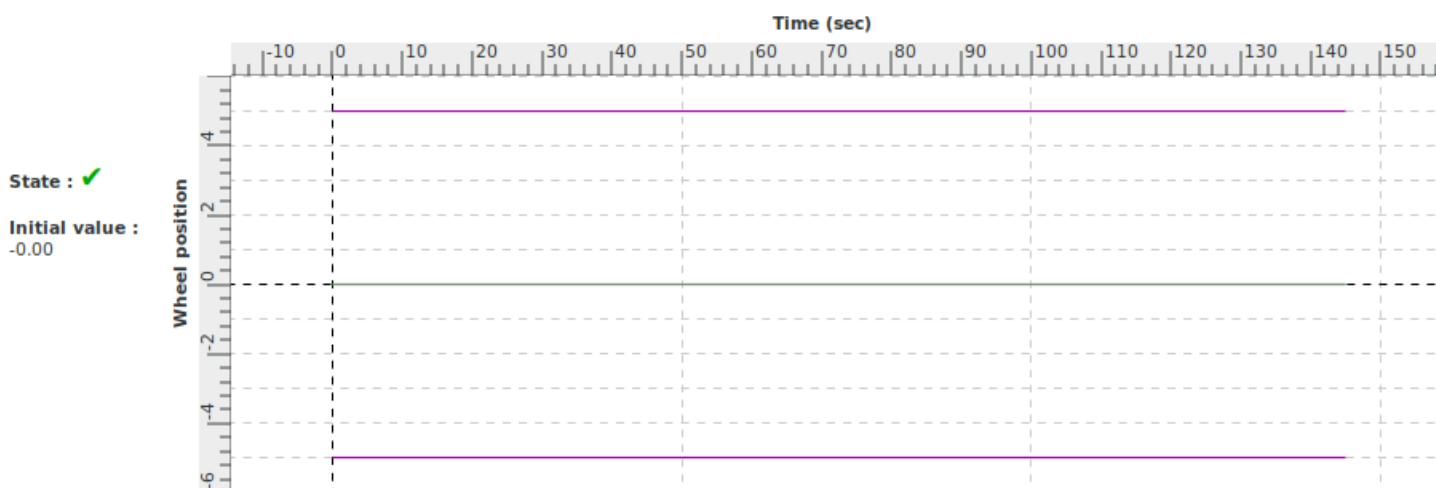
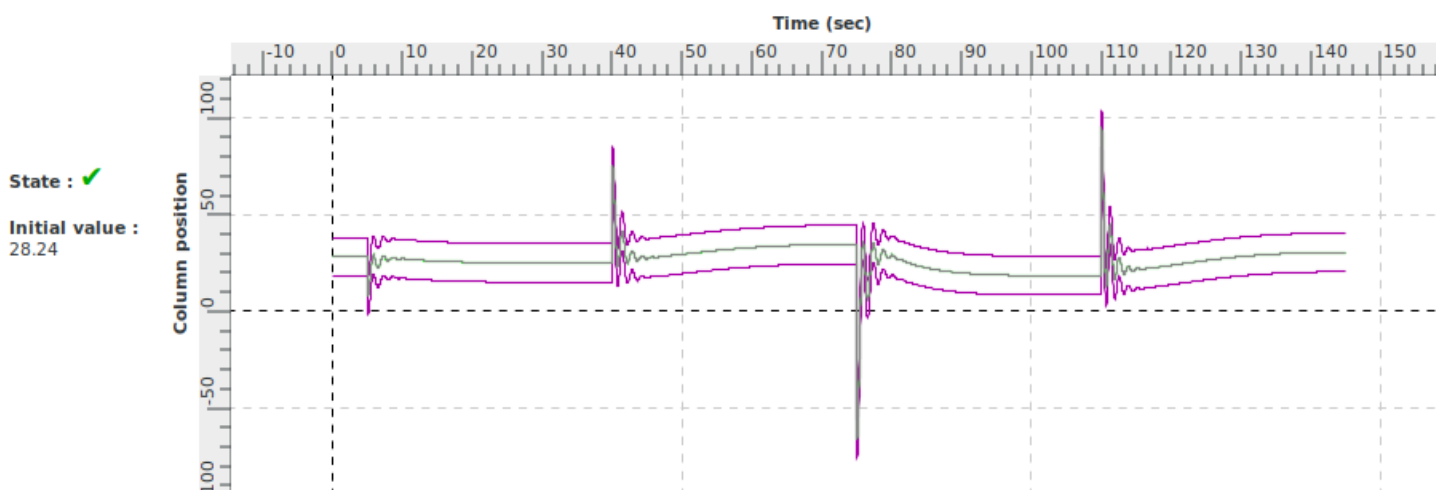
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
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



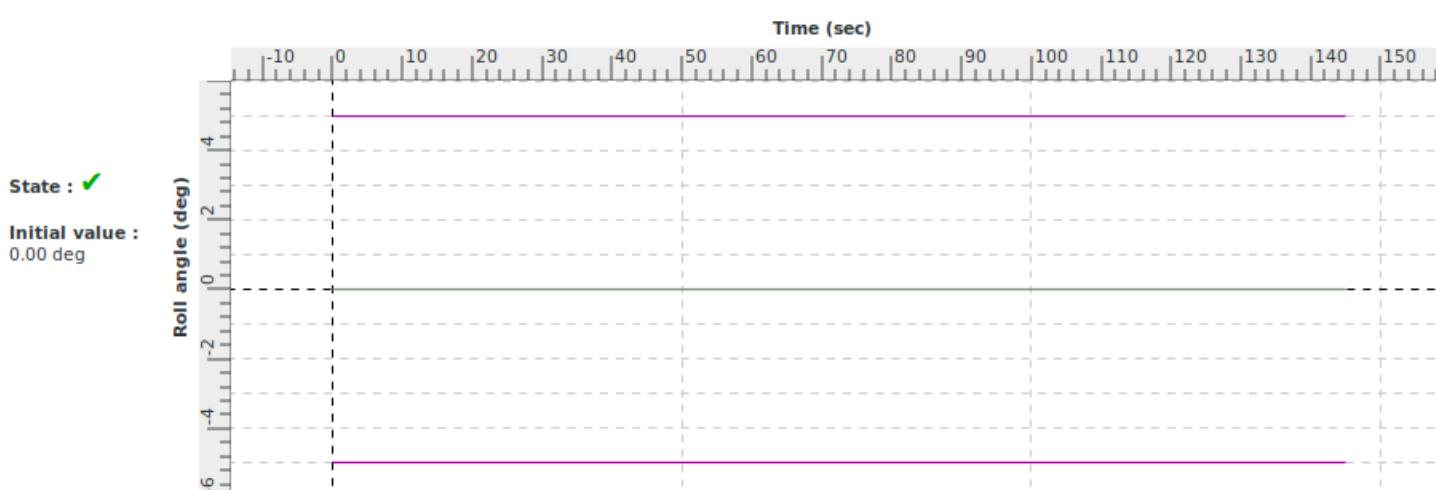
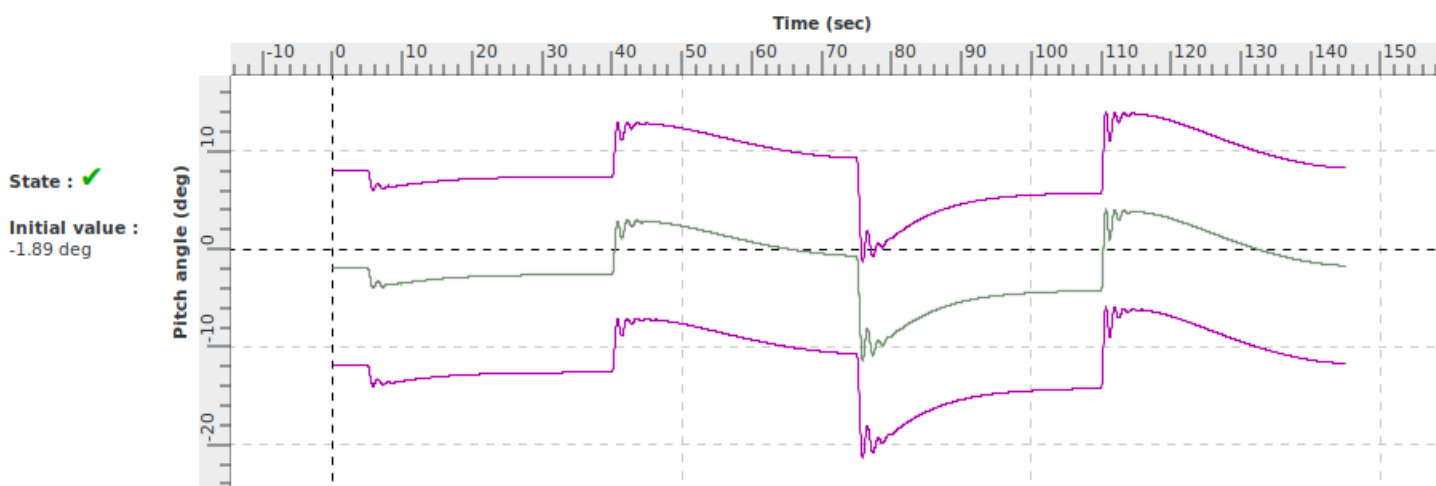
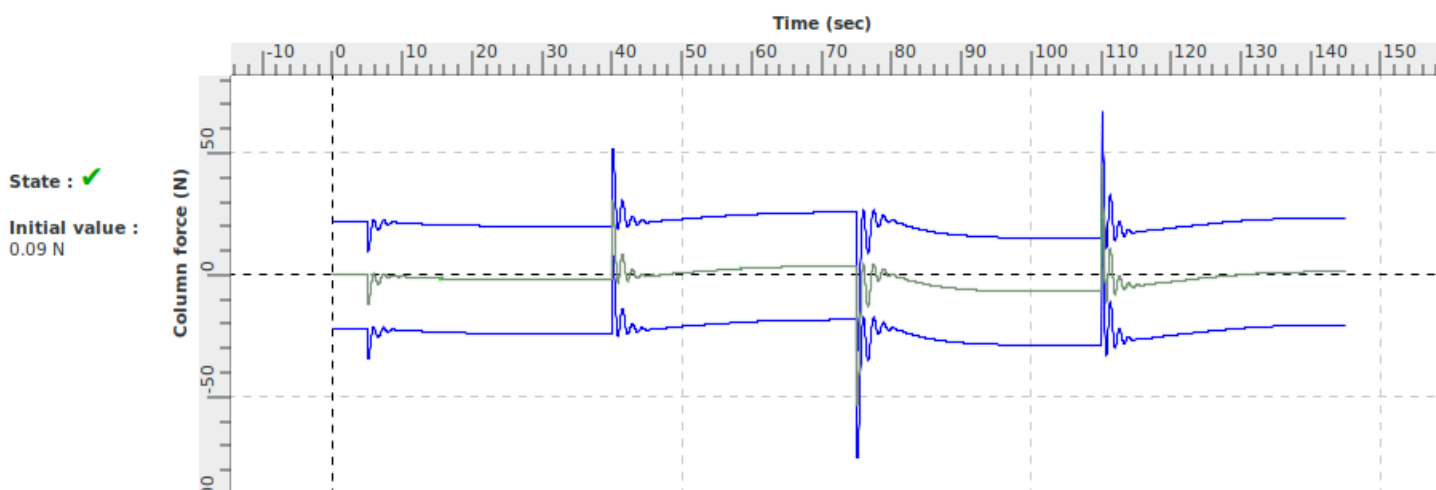
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsım

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



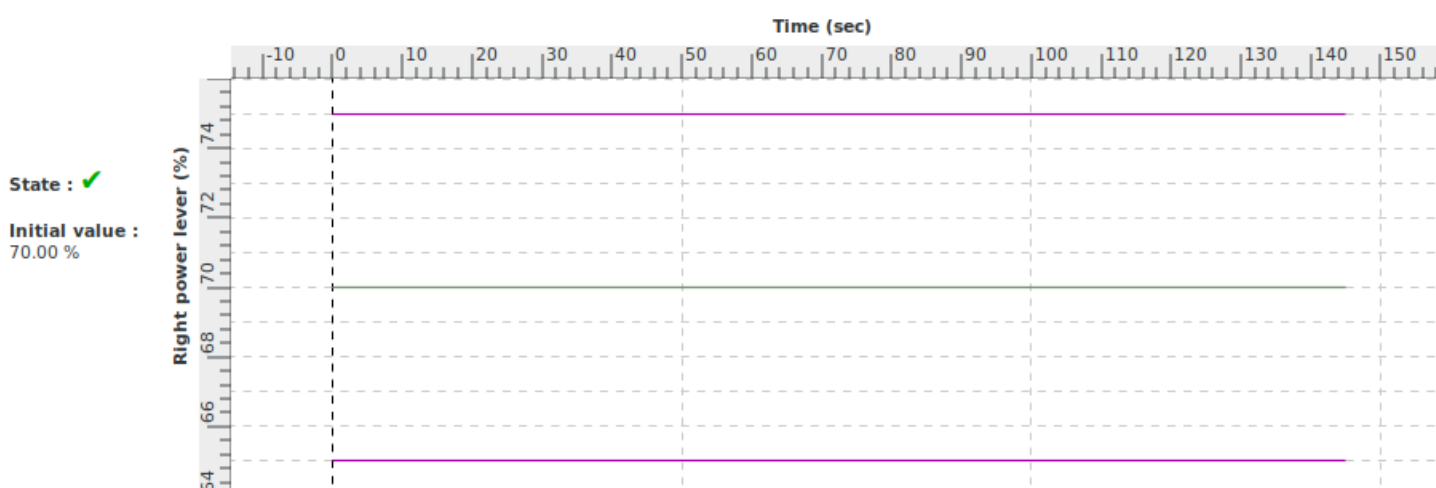
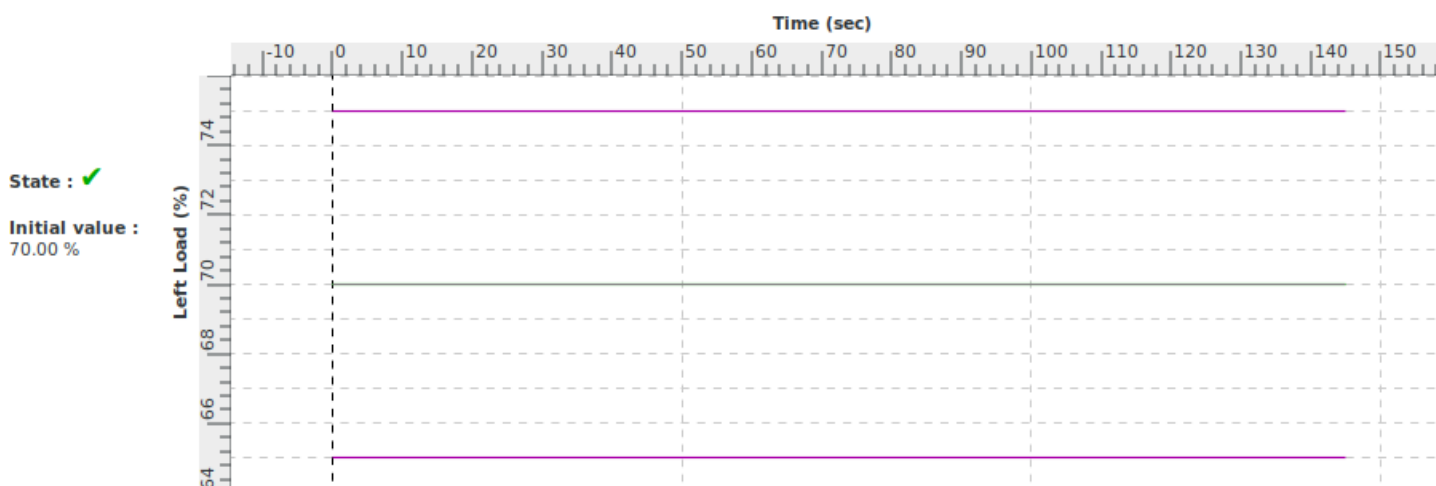
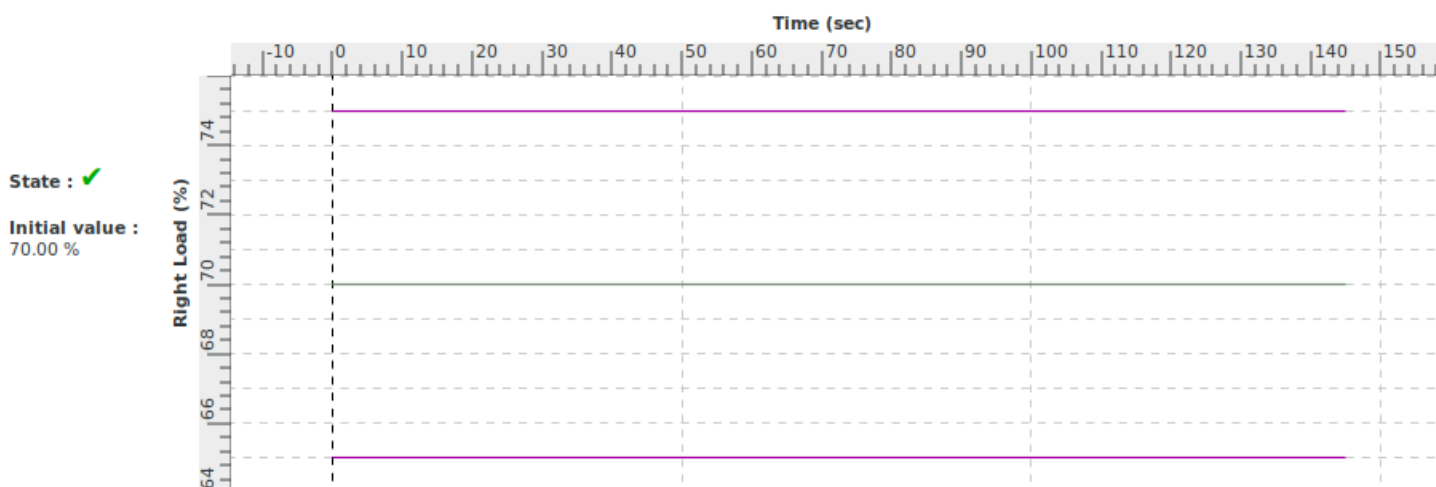
Legend :

green : results within tolerances
blue : tolerances

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



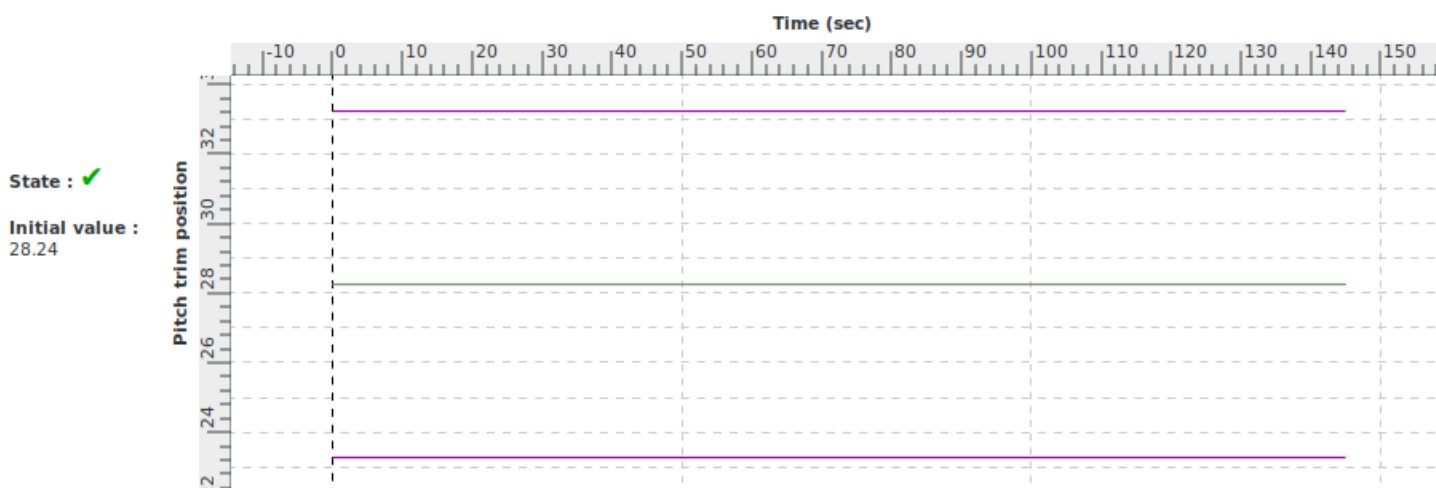
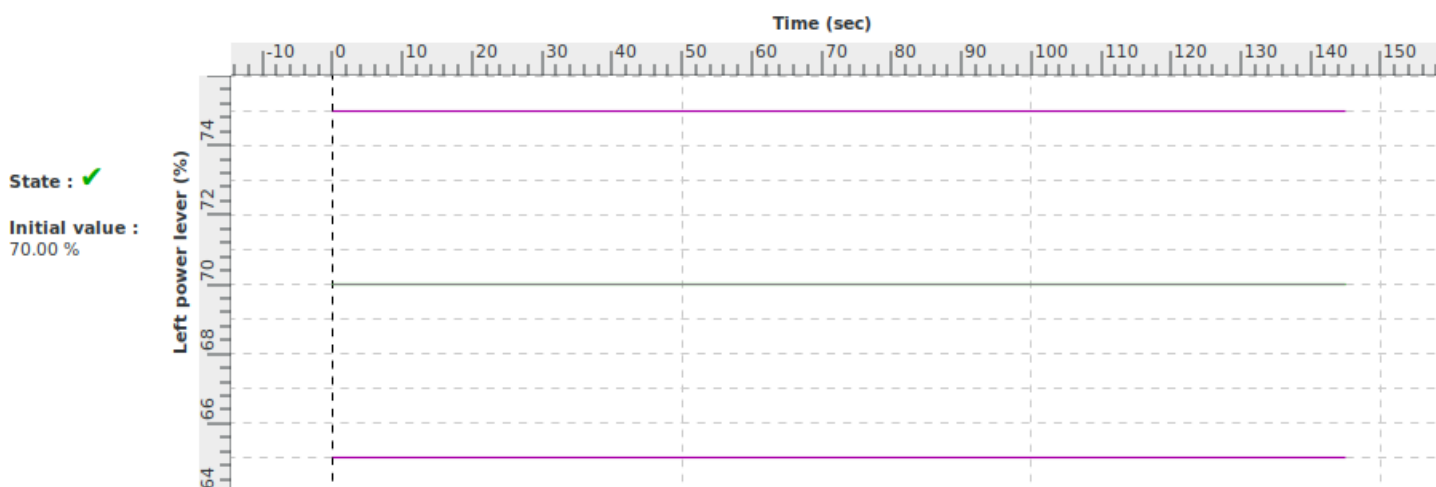
Legend :

green : results within tolerances
blue : tolerances

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 :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

VALIDATION TEST

Title	Stall characteristics second segment climb		
Id	2 c viii b 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Objective	Expected Results
Demonstrate that the simulation of stall warning indication during second segment climb conforms to the class of aeroplanes	Stall warning expected at 76 kts
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.viii.b.1	+/- 3 kts Airspeed

Demonstration procedure	From steady second segment climb initial conditions power is set to idle.
Manual test procedure	Setting the aircraft initial parameters given next page, the pilot performs a standard climb profile maintaining vertical speed and constant power setting. When climb is stabilized, the pilot reduces the power to idle and maintains the vertical speed such as to increase the pitch attitude and one knot per second deceleration allowing the aeroplane to stall. (Do not trim below 1.4 vs).
Automatic test procedure	2 c viii b 1

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Stall characteristics second segment climb		
Id	2 c viii b 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Autopilot mode	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>	

Initial parameters	CLIMB
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : 1200 IAS (kt) : 90 (free) Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : 12 Pedal Position (%) : 0 Column Position (%) : 44 Wheel Position (%) : 0	Flaps lever position : 0 Gear lever position : 0 Left Load (%) : 92 Right Load (%) : 92 Left RPM : 2090 Right RPM : 2090

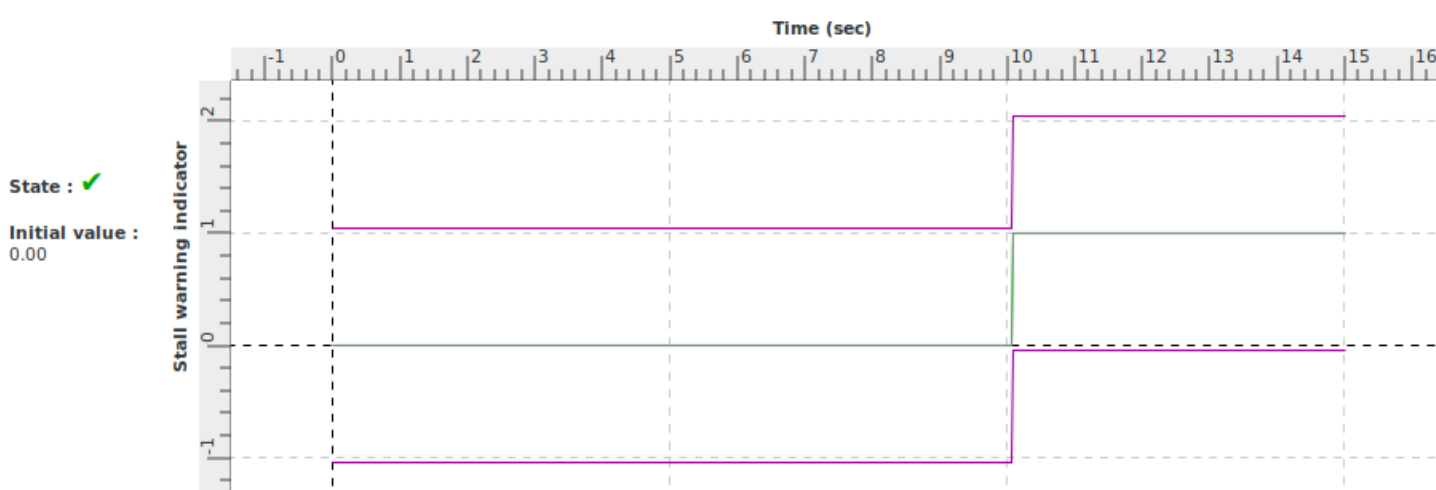
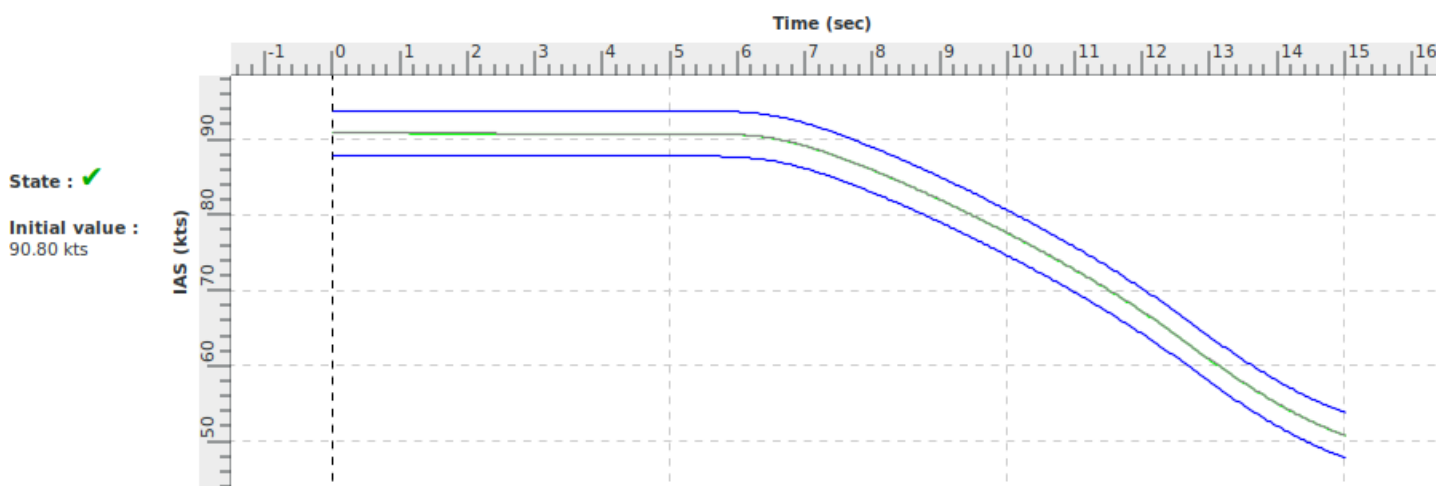
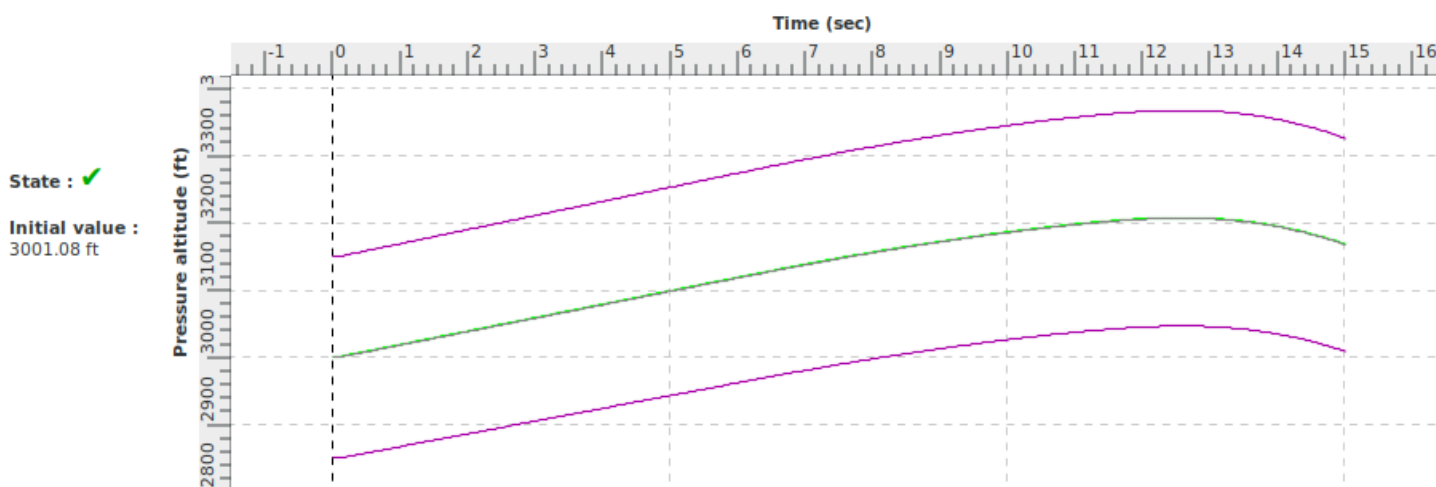
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
5.0	power_FLIGHT_IDLE	0.0	Set engine parameters to flight iddle power
15.0	Stop_Test	0.0	Stop the test procedure

Title	Stall characteristics second segment climb		
Id	2 c viii b 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Log of Revision		
Rev. Nbr	Date	Reason for revision
1.01	29/03/21	1909 Master. Expected results unchanged. Time reduction to 15s
1.01	27/07/21	2012-R1 Master. Expected results unchanged.

Notes

Title	Stall characteristics second segment climb		
Id	2 c viii b 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



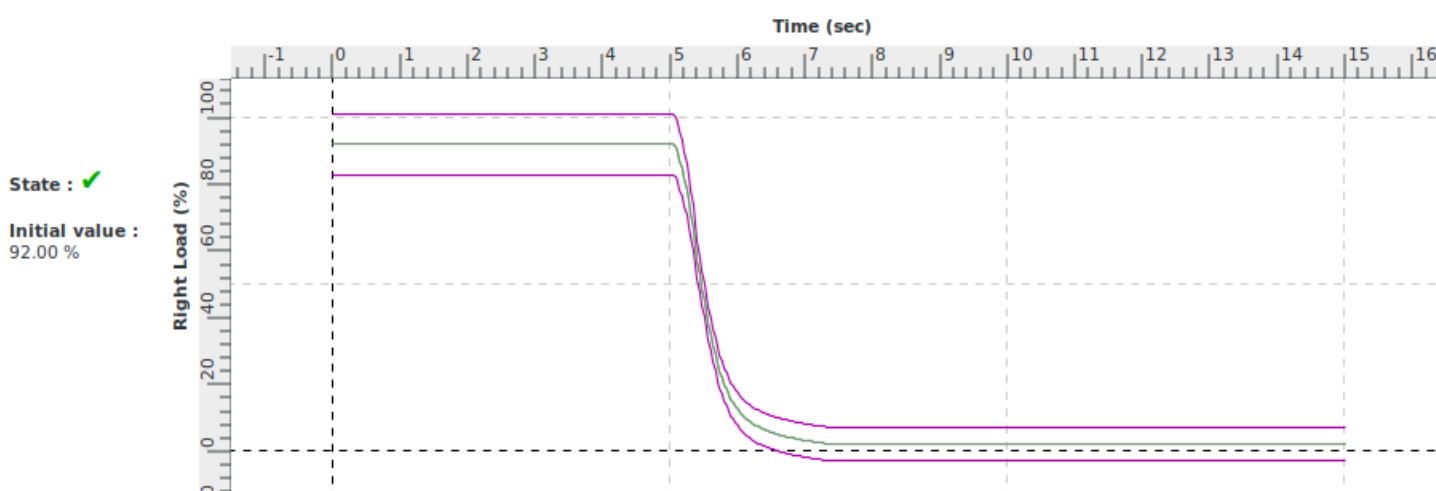
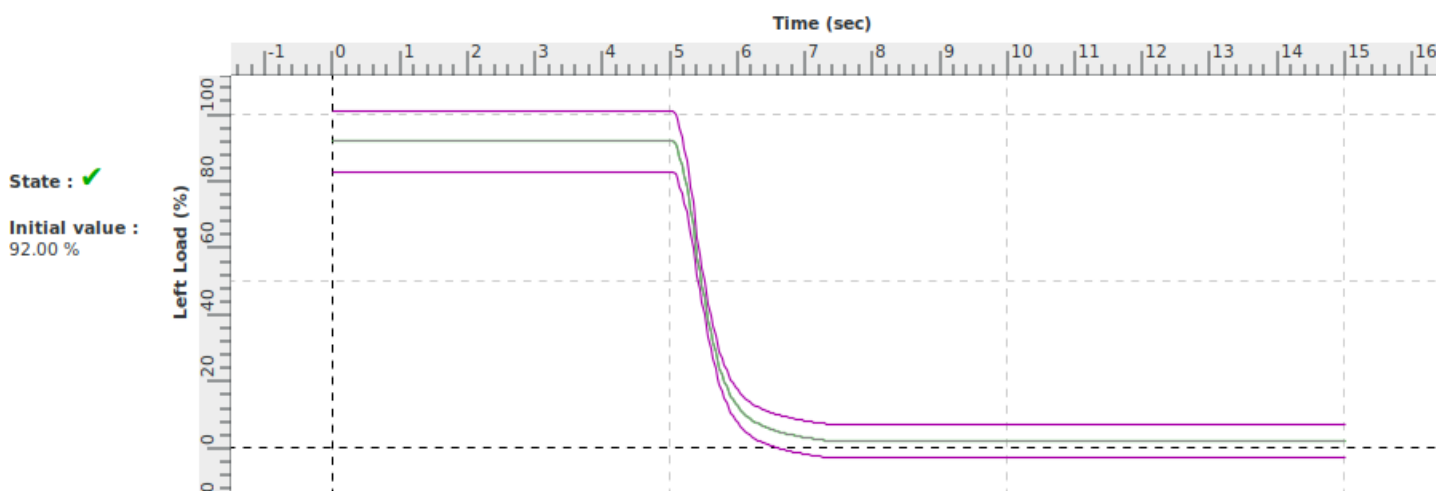
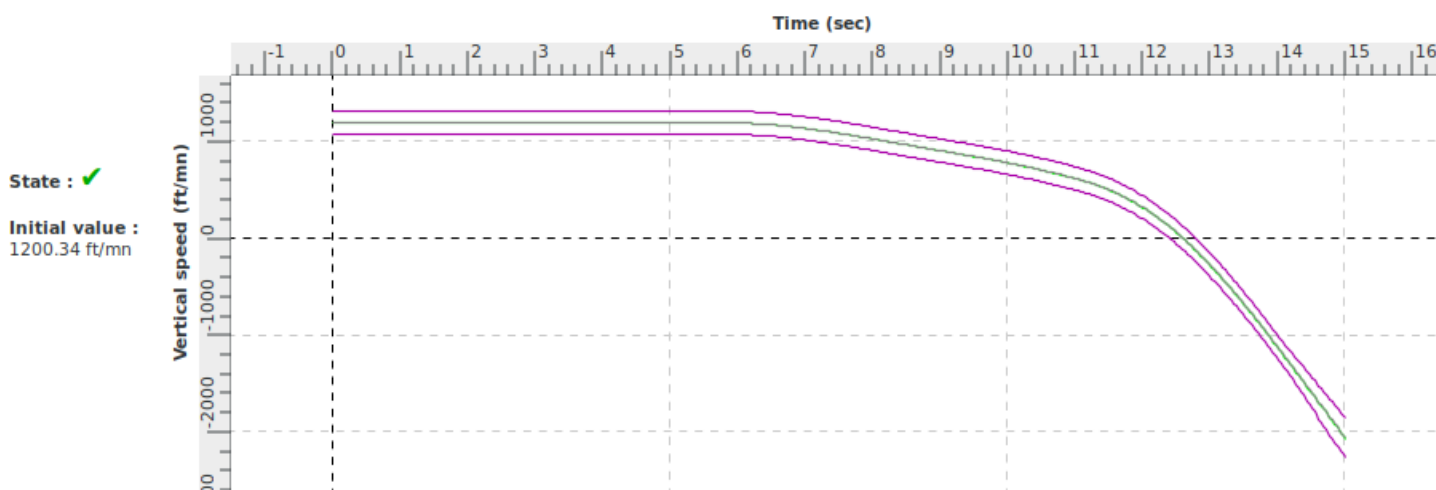
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Stall characteristics second segment climb		
Id	2 c viii b 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



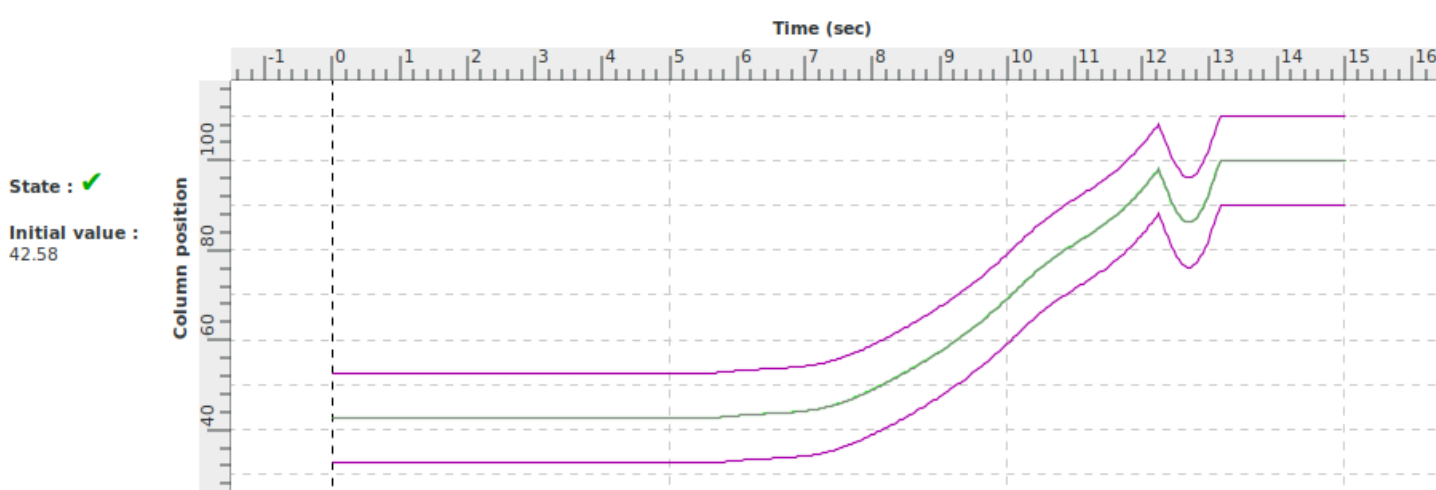
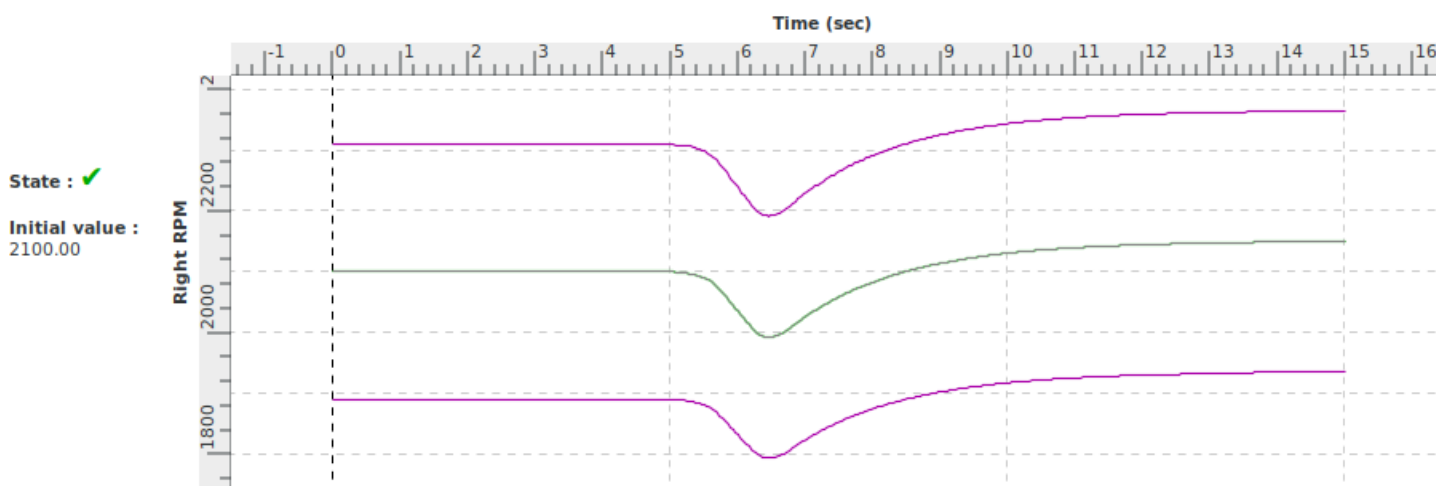
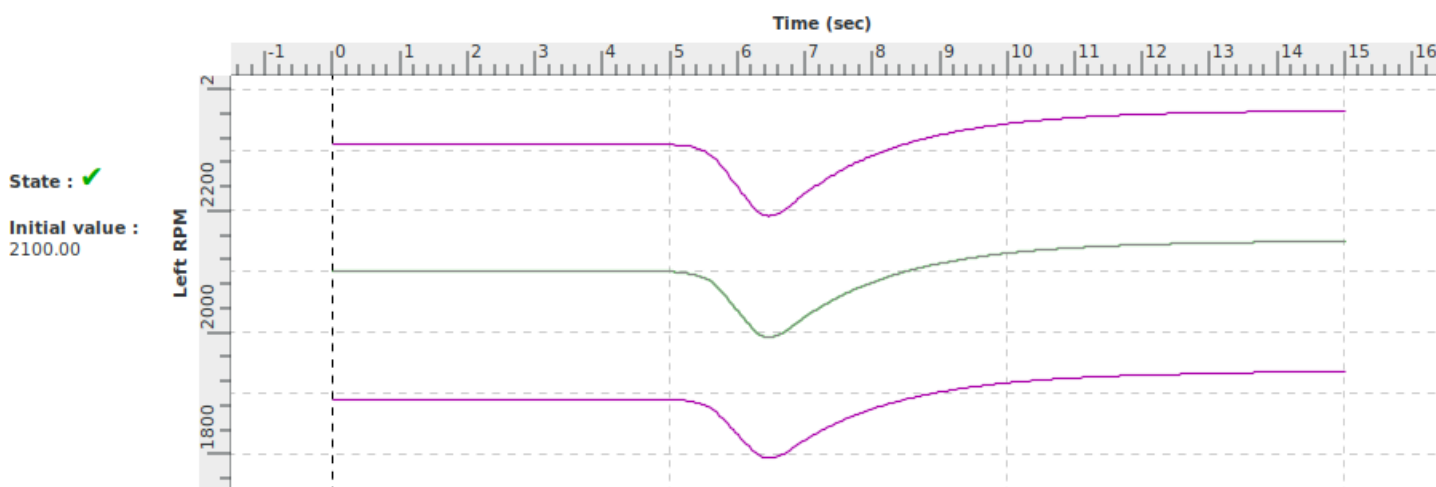
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Stall characteristics second segment climb		
Id	2 c viii b 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



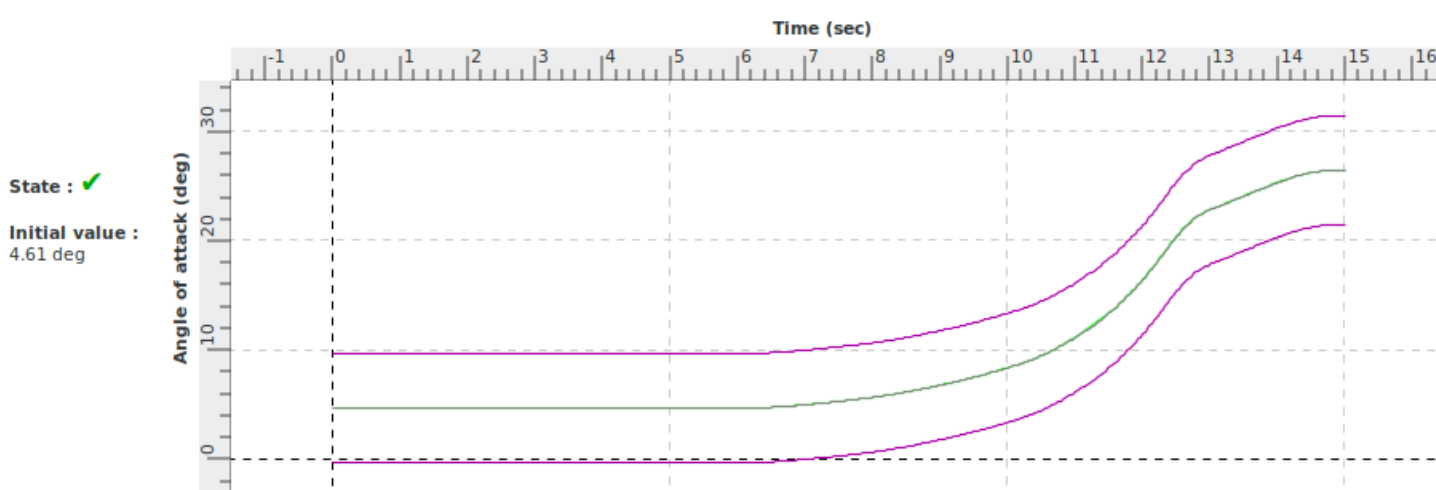
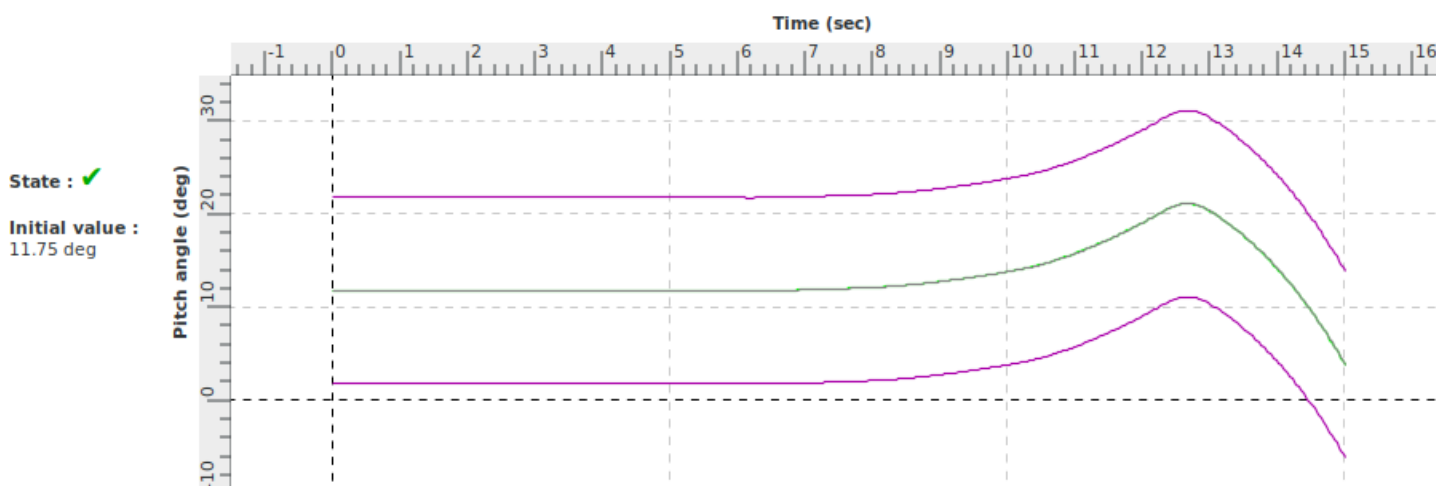
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsimg

grey : master

Title	Stall characteristics second segment climb		
Id	2 c viii b 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



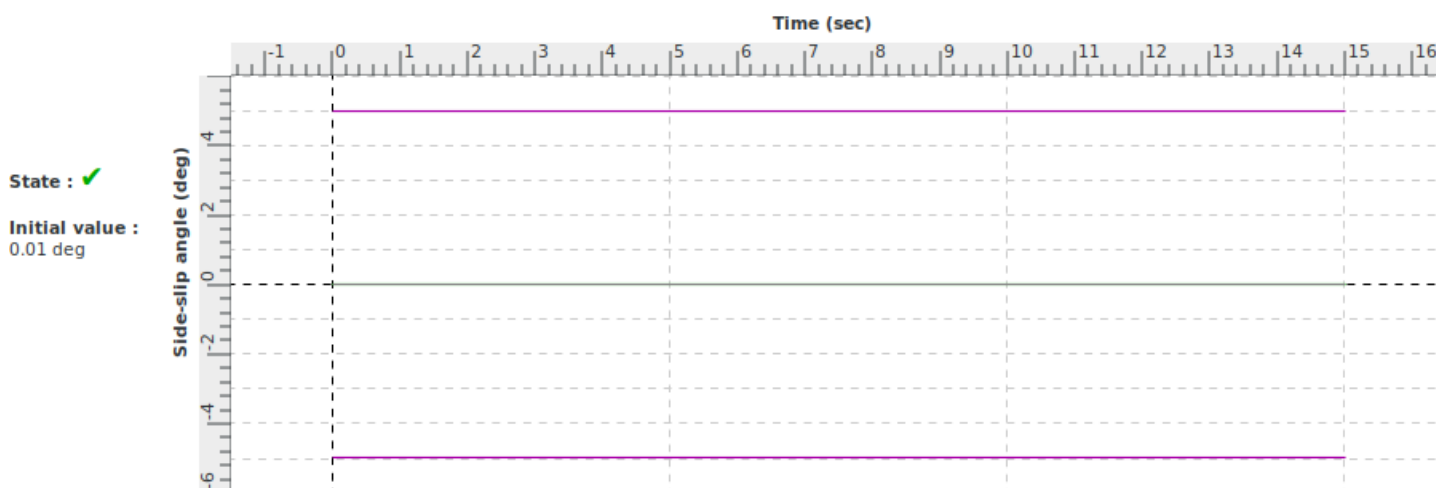
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsimg

grey : master

Title	Stall characteristics second segment climb		
Id	2 c viii b 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



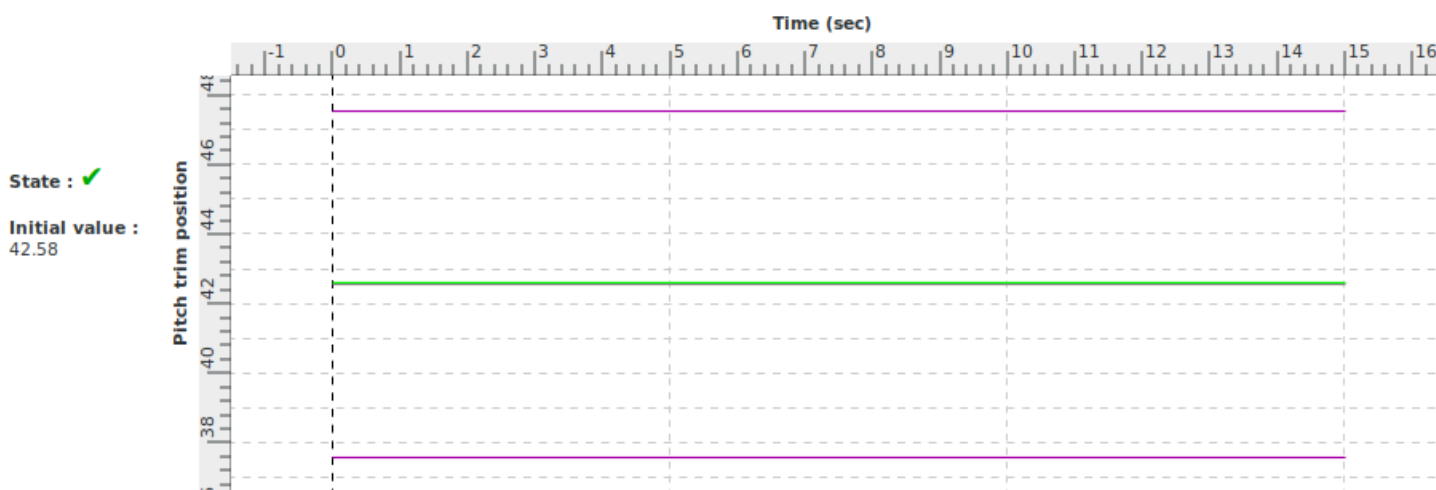
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsims

grey : master

Title	Stall characteristics second segment climb		
Id	2 c viii b 1	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	03/12/23	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

Title	Stall characteristics during high altitude cruise		
Id	2 c viii b 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Objective	Expected Results
Demonstrate that the simulation of stall warning indication during cruise conforms to the class of aeroplanes	Stall warning expected at 74 kts
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.viii.b.2	+/- 3 kts Airspeed

Demonstration procedure	From high altitude cruise initial conditions power is set to idle.
Manual test procedure	Setting the aircraft initial parameters given next page, the pilot performs a standard high altitude cruise maintaining vertical speed and constant power setting. When high altitude cruise is stabilized, the pilot reduces the power to idle and maintains the vertical speed such as to increase the pitch attitude and one knot per second deceleration allowing the aeroplane to stall. (Do not trim below 1.4 vs).
Automatic test procedure	2 c viii b 2

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Stall characteristics during high altitude cruise		
Id	2 c viii b 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Autopilot mode	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>	

Initial parameters	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

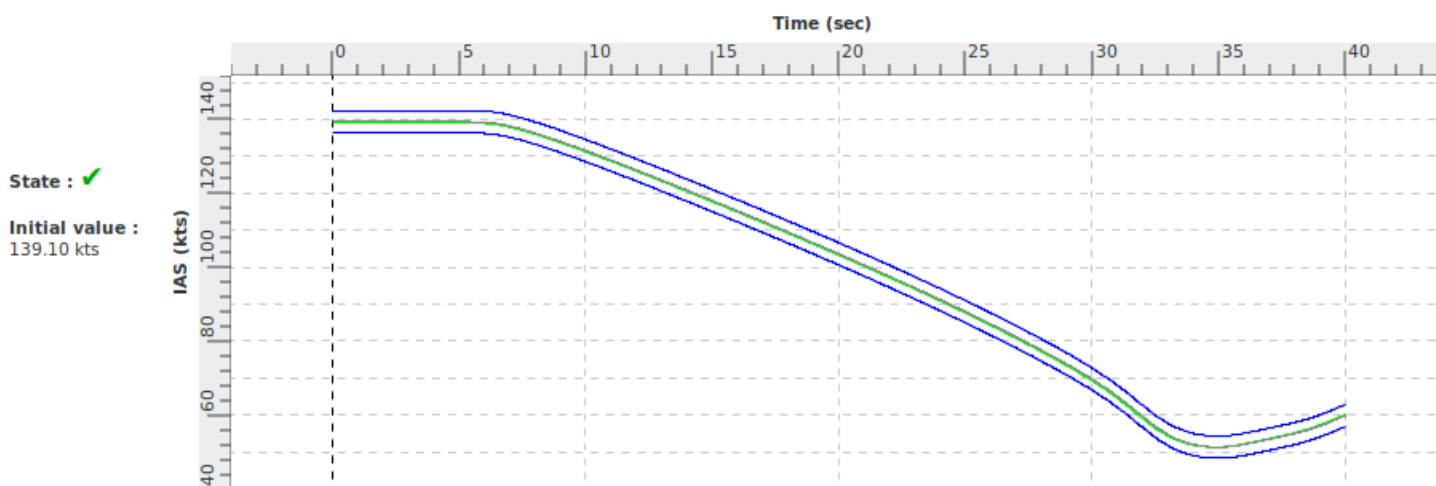
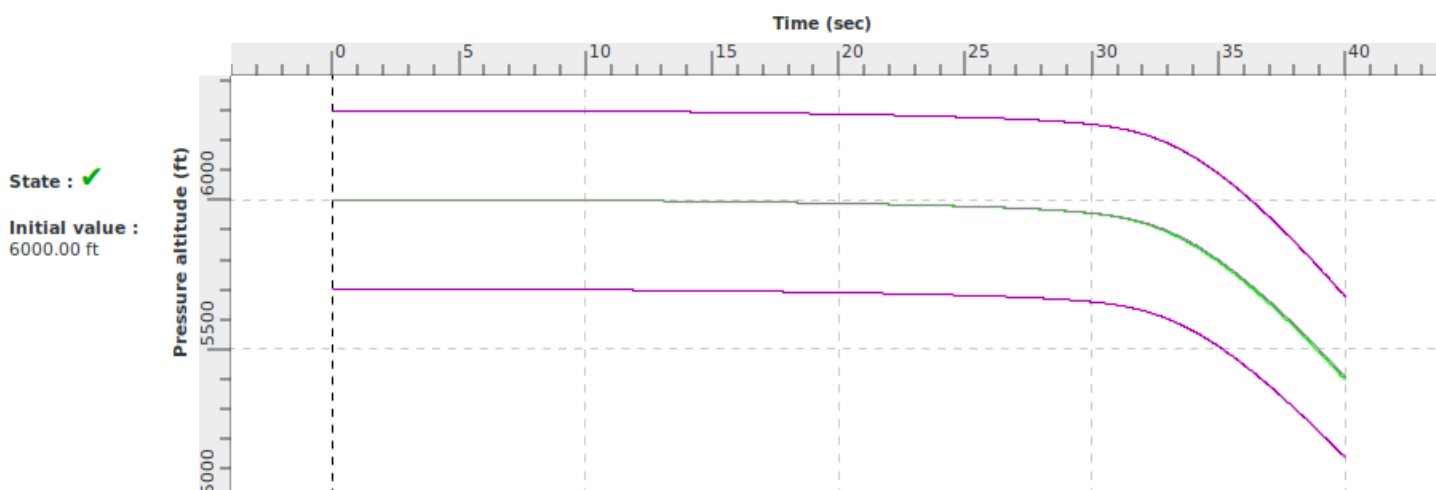
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
5.0	power_FLIGHT_IDLE	0.0	Set engine parameters to flight iddle power
40.0	Stop_Test	0.0	Stop the test procedure

Title	Stall characteristics during high altitude cruise		
Id	2 c viii b 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Log of Revision		
Rev. Nbr	Date	Reason for revision
1.01	29/03/21	1909 Master. Expected results unchanged. Time reduction to 40s
1.02	27/07/21	2012-R1 Master. Expected results unchanged.

Notes

Title	Stall characteristics during high altitude cruise		
Id	2 c viii b 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



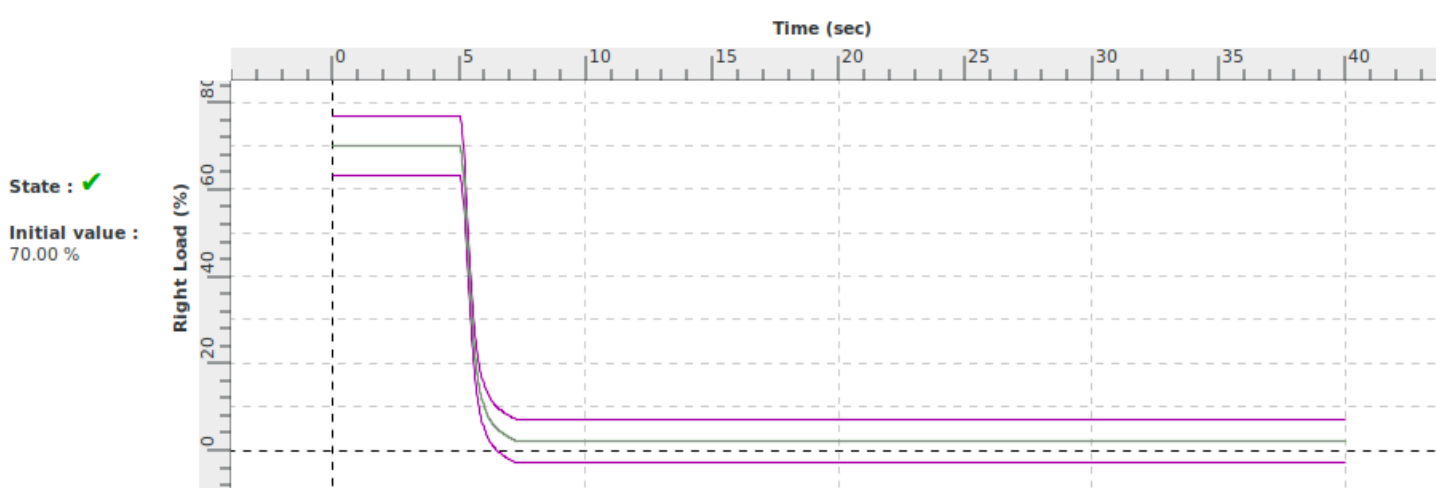
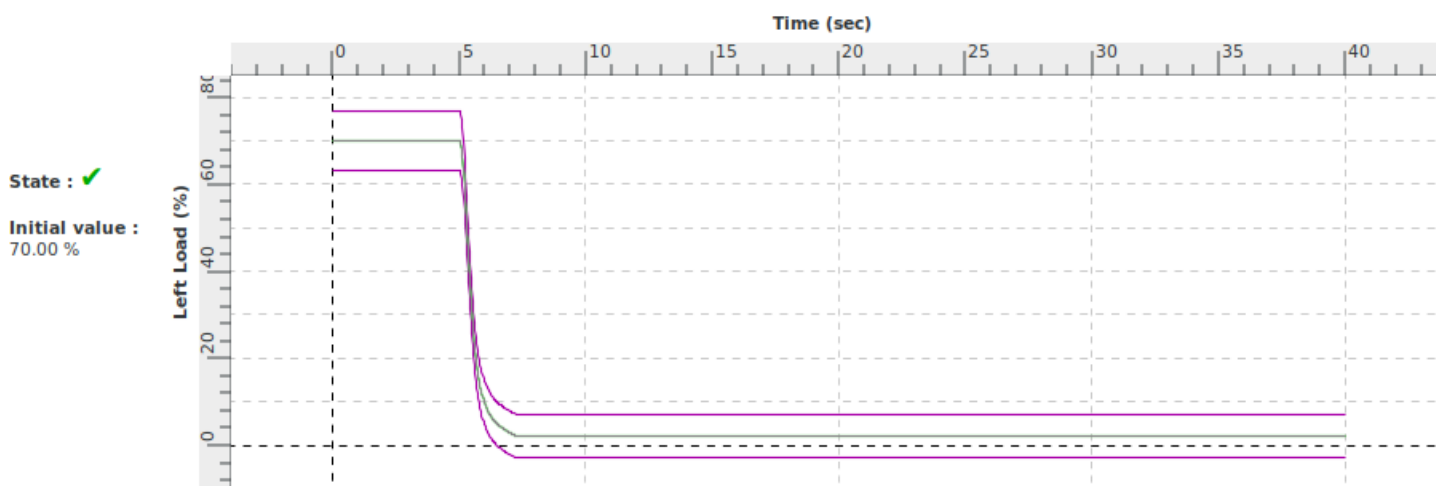
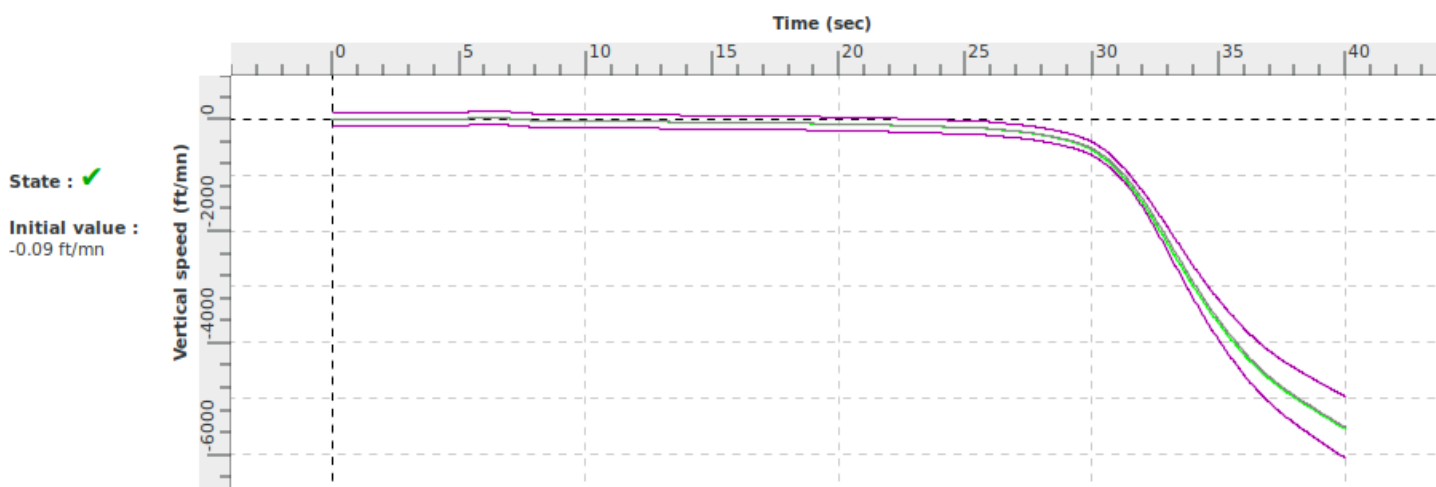
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Stall characteristics during high altitude cruise		
Id	2 c viii b 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



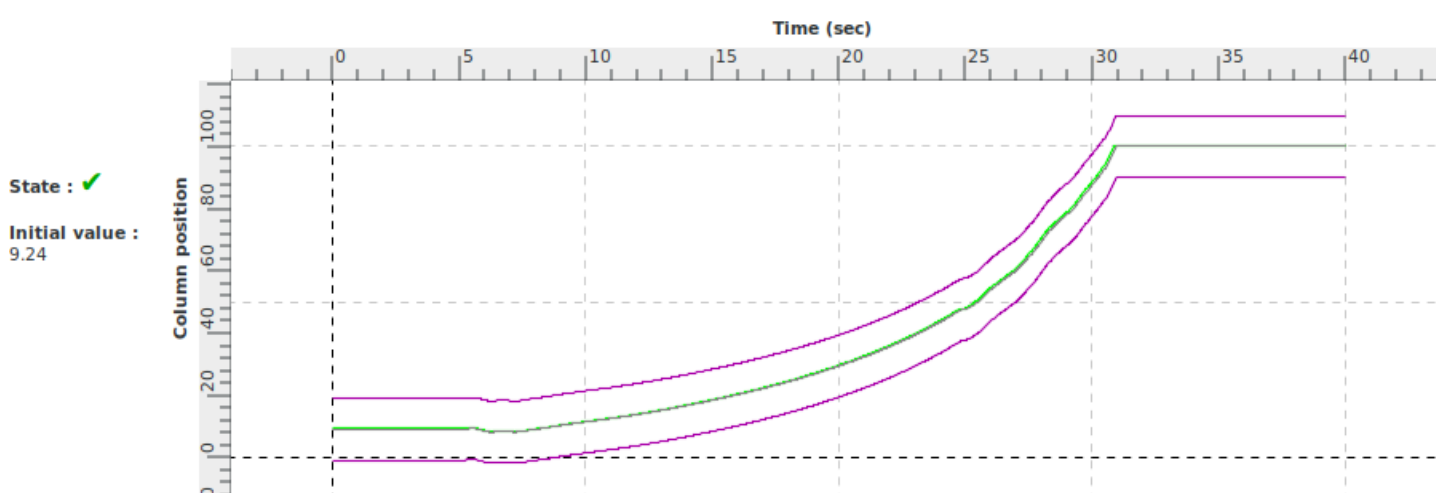
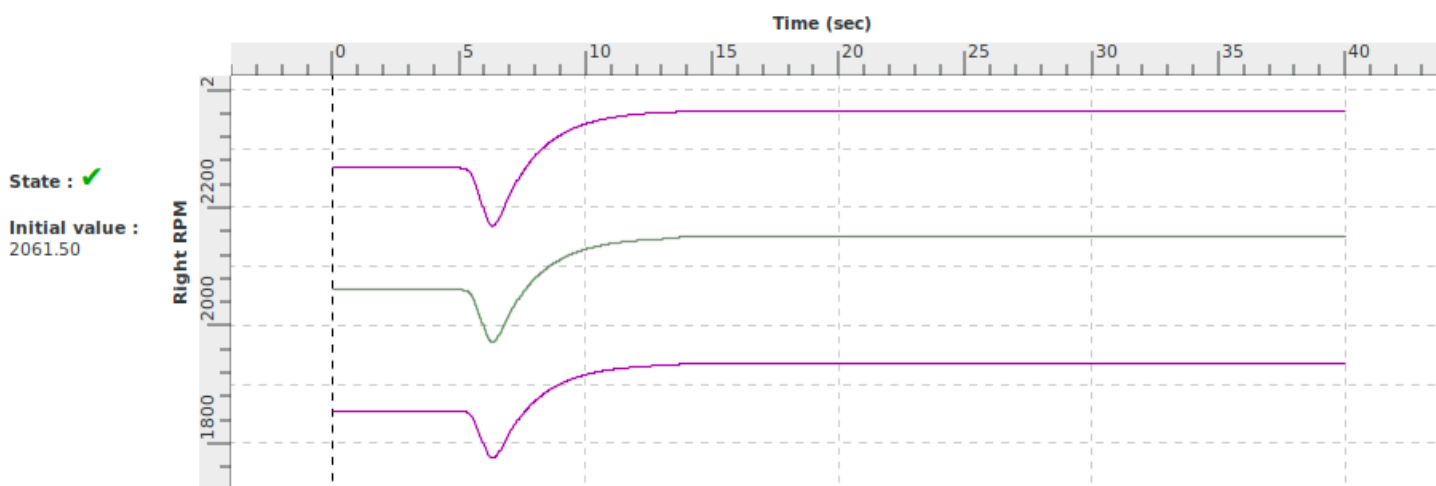
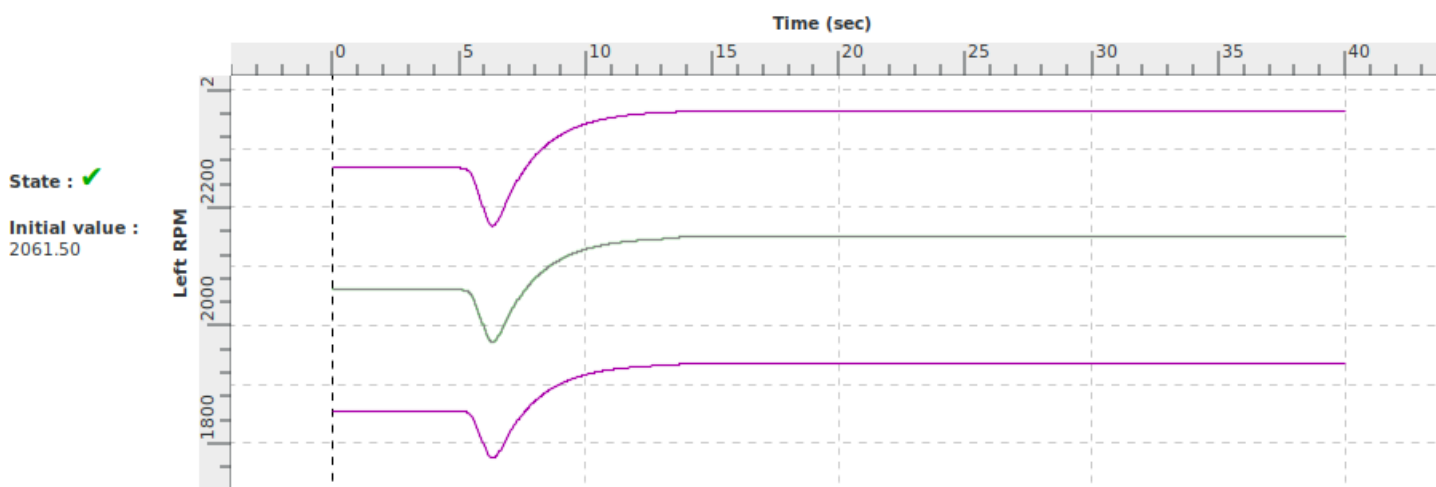
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Stall characteristics during high altitude cruise		
Id	2 c viii b 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



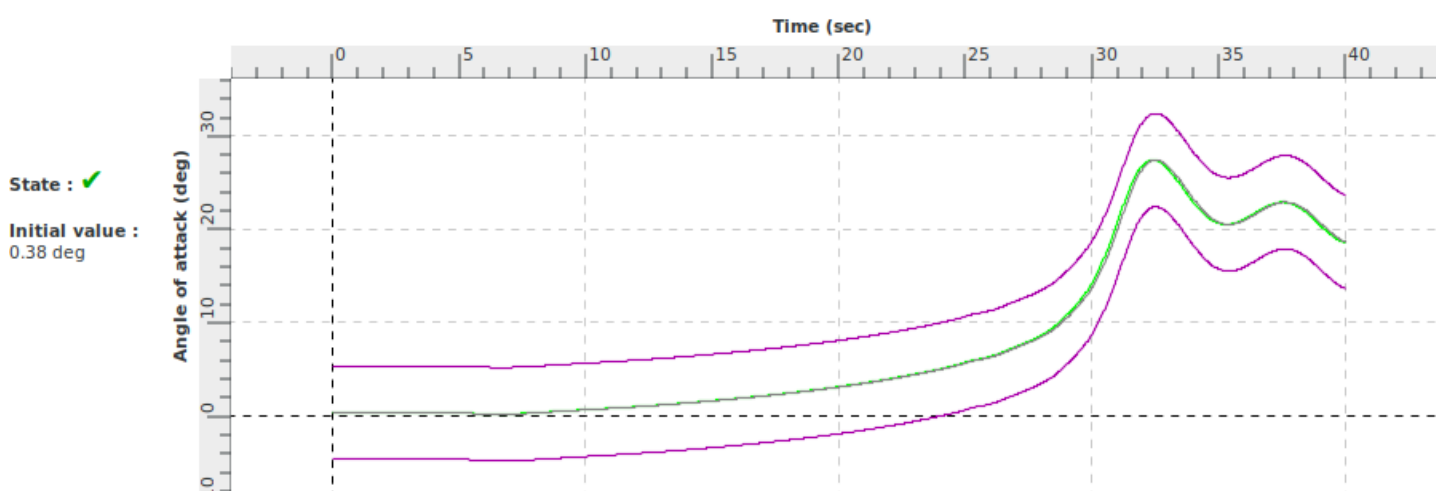
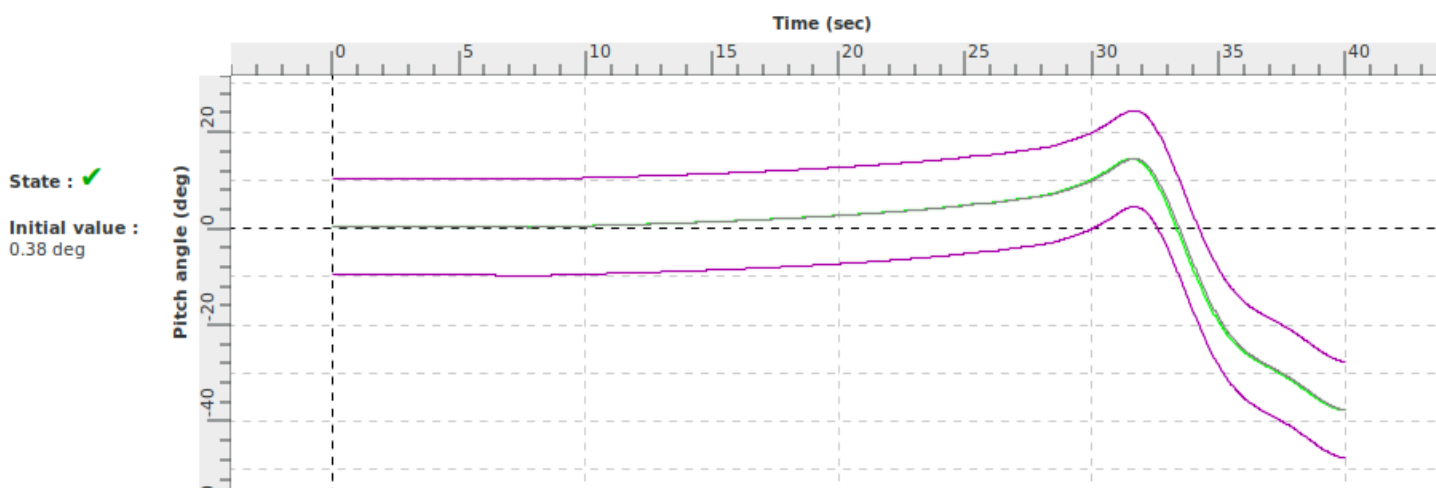
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Stall characteristics during high altitude cruise		
Id	2 c viii b 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



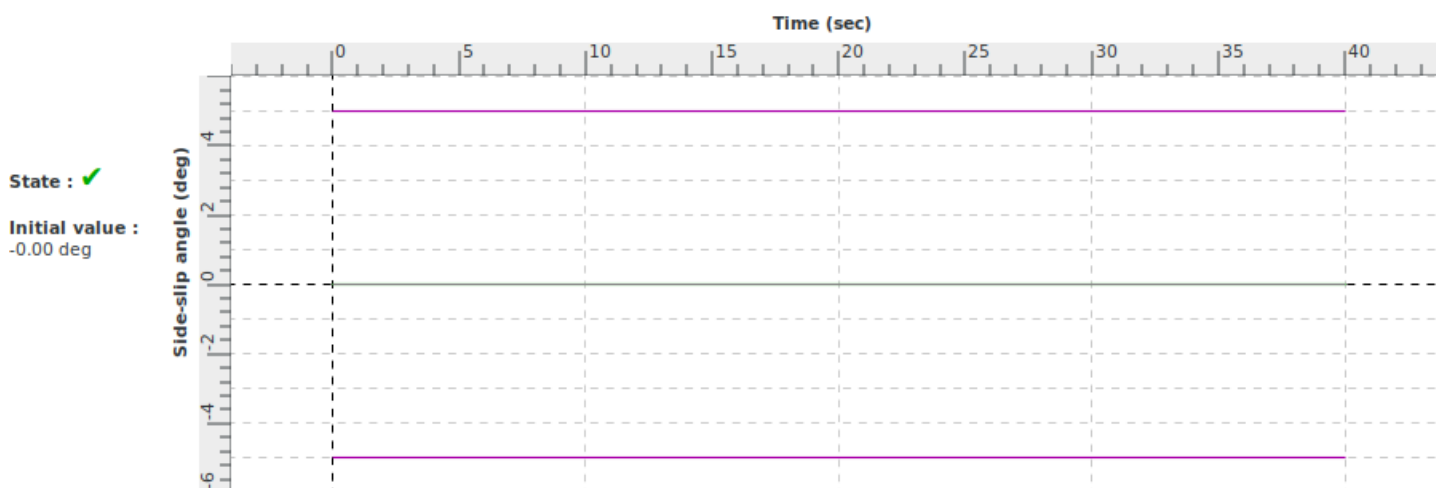
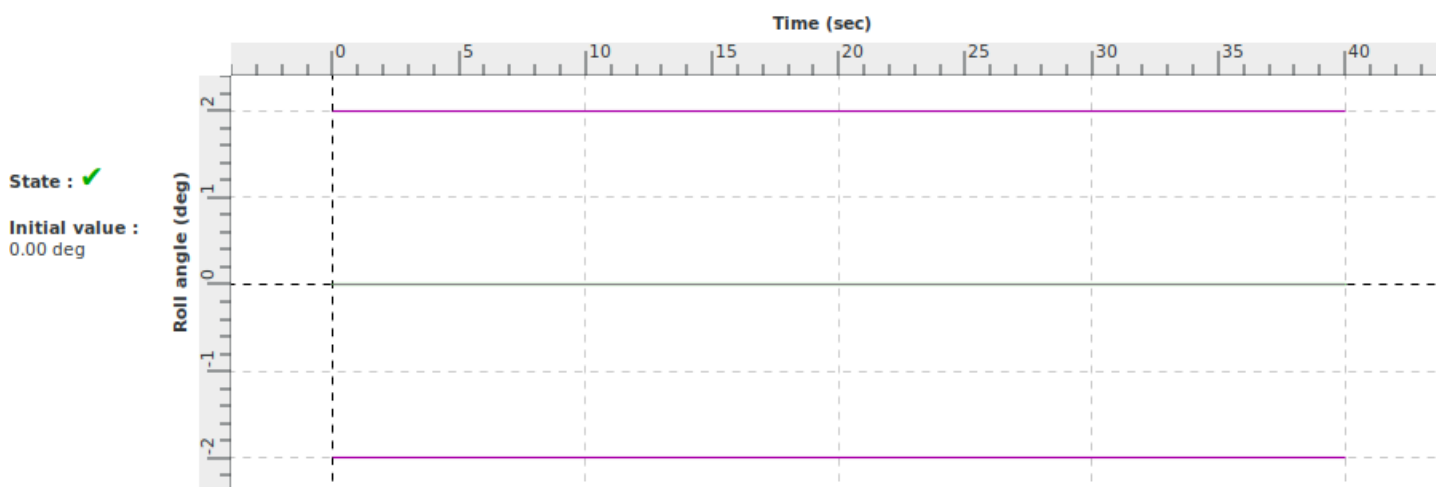
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Stall characteristics during high altitude cruise		
Id	2 c viii b 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



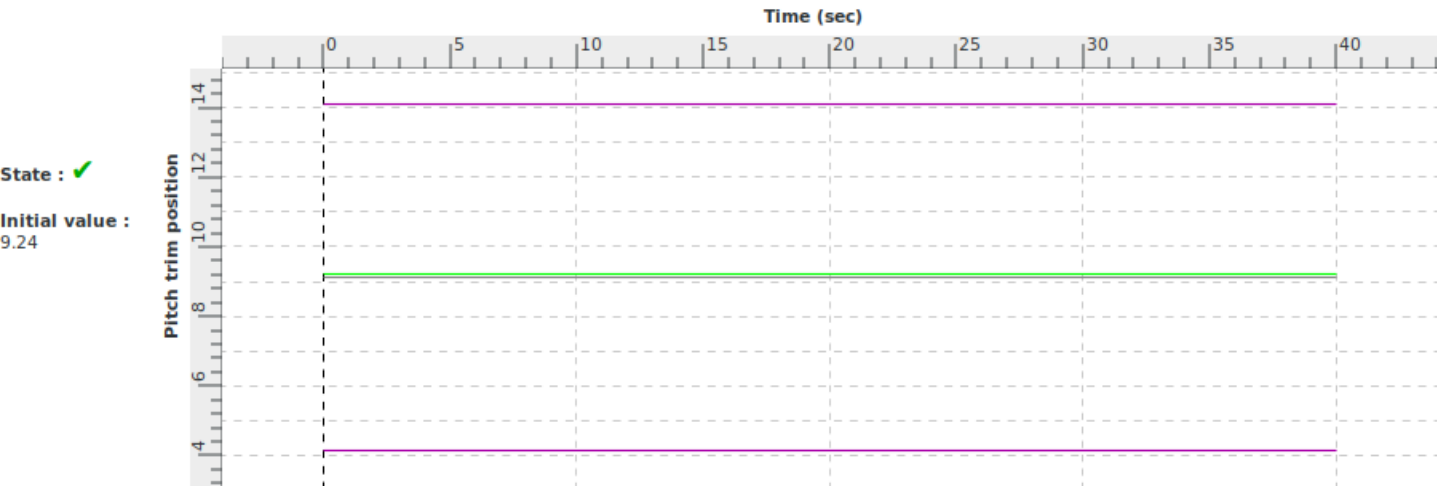
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Stall characteristics during high altitude cruise		
Id	2 c viii b 2	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



Legend :

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

VALIDATION TEST

Title	Stall characteristics during approach		
Id	2 c viii b 3	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Objective	Expected Results
Demonstrate that the simulation of stall warning indication during approach conforms to the class of aeroplanes	Stall warning expected at 74 kts
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.viii.b	+/- 3 kts Airspeed

Demonstration procedure	From steady approach initial conditions power is set to idle.
Manual test procedure	Setting the aircraft initial parameters given next page, the pilot performs a standard descent profile maintaining vertical speed and constant power setting. When descent is stabilized, the pilot reduces the power to idle and maintains the vertical speed such as to increase the pitch attitude and one knot per second deceleration allowing the aeroplane to stall. (Do not trim below 1.4 vs).
Automatic test procedure	2 c viii b 3

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Stall characteristics during approach		
Id	2 c viii b 3	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Autopilot mode	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>	

Initial parameters	STALL_FLAPS_APP
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : 0 IAS (kt) : 135 (free) Heading (°) : 0 (free) Bank (°) : 0 Attitude (°) : 10 Pedal Position (%) : 0 Column Position (%) : 9 Wheel Position (%) : 0	Flaps lever position : 1 Gear lever position : 1 Left Load (%) : 70 Right Load (%) : 70 Left RPM : 1950 Right RPM : 1950

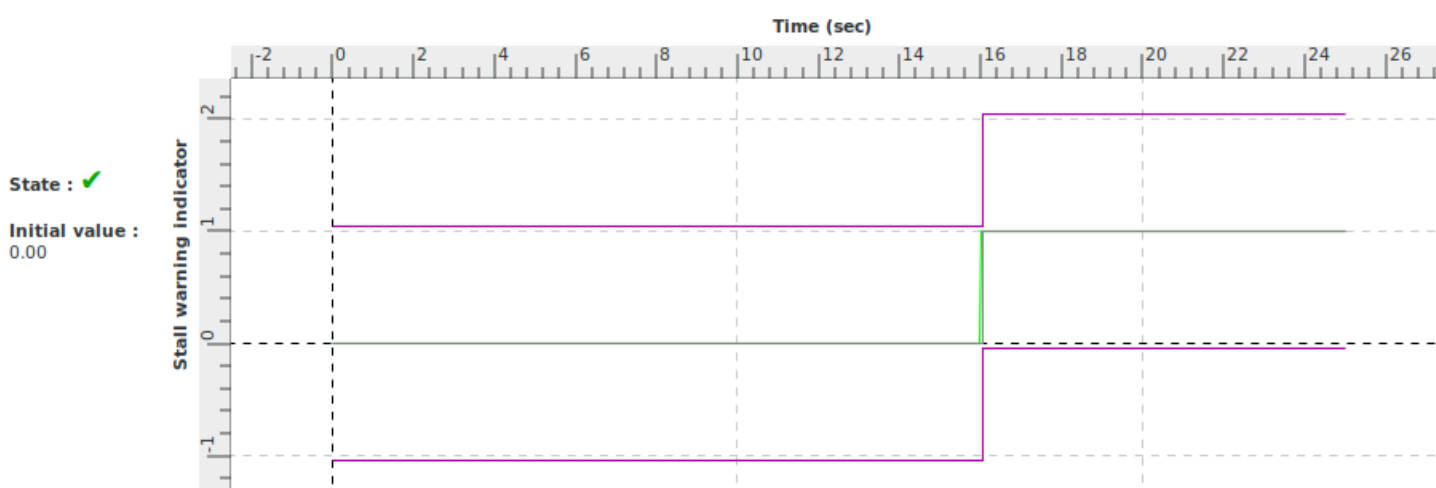
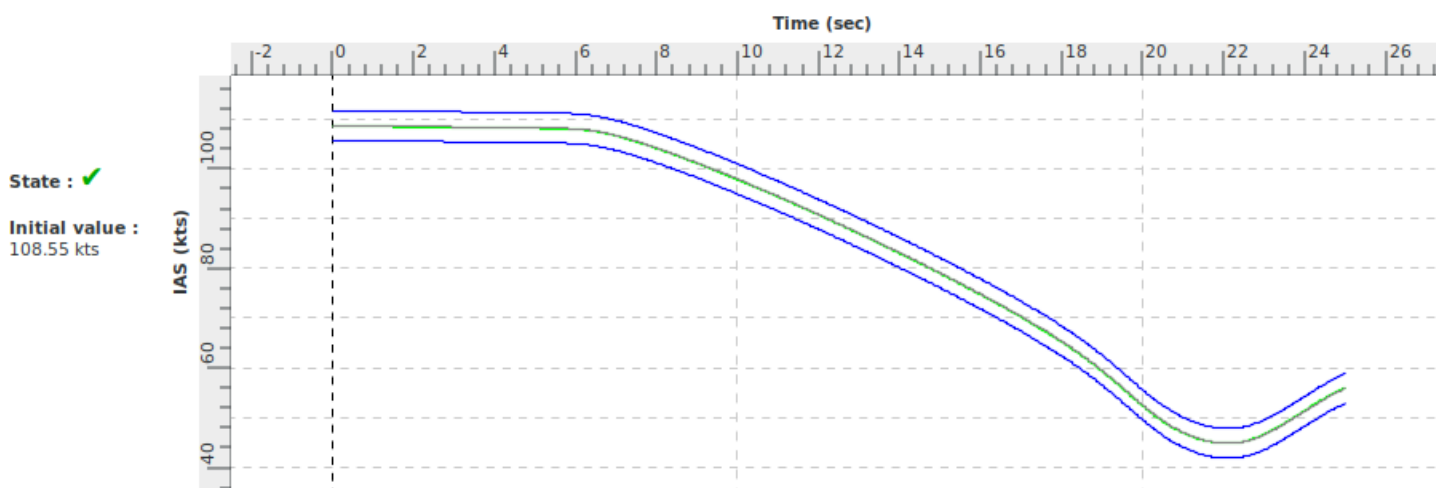
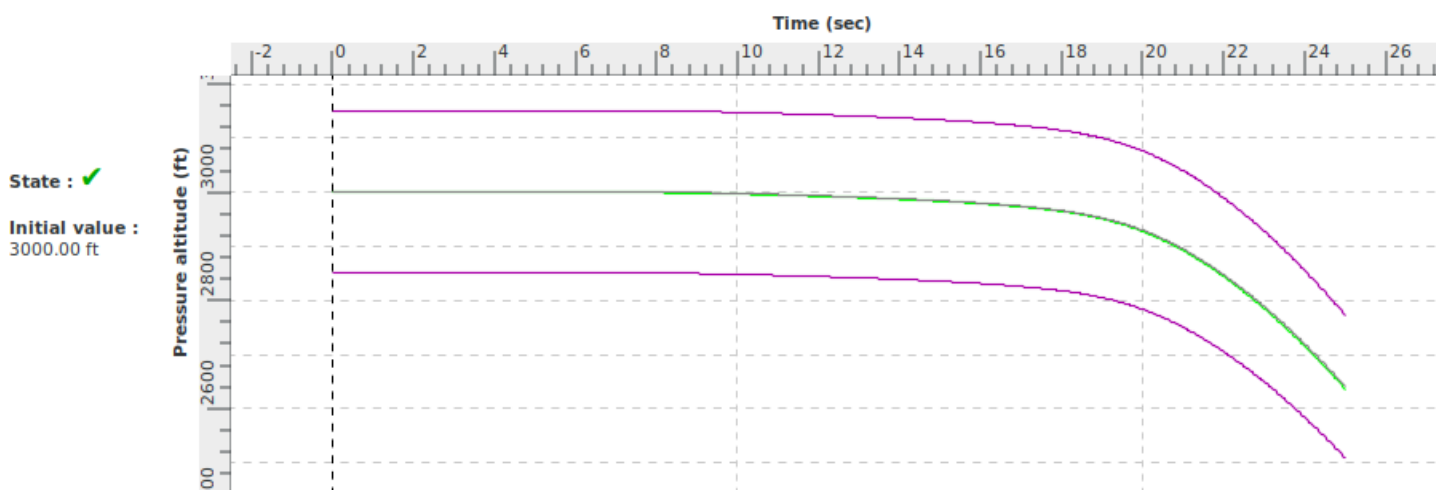
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
5.0	power_FLIGHT_IDLE	0.0	Set engine parameters to flight iddle power
25.0	Stop_Test	0.0	Stop the test procedure

Title	Stall characteristics during approach		
Id	2 c viii b 3	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Log of Revision		
Rev. Nbr	Date	Reason for revision
1.01	29/03/21	1909 Master. Expected results unchanged. Time reduction to 25s
1.02	27/07/21	2012-R1 Master. Expected results unchanged.

Notes

Title	Stall characteristics during approach		
Id	2 c viii b 3	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



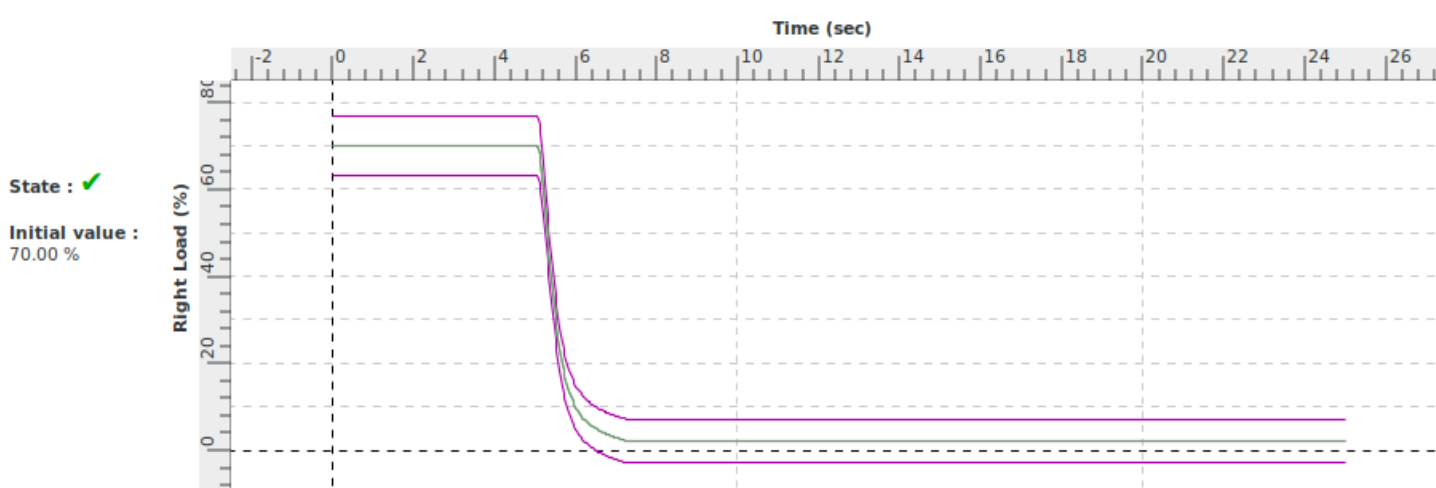
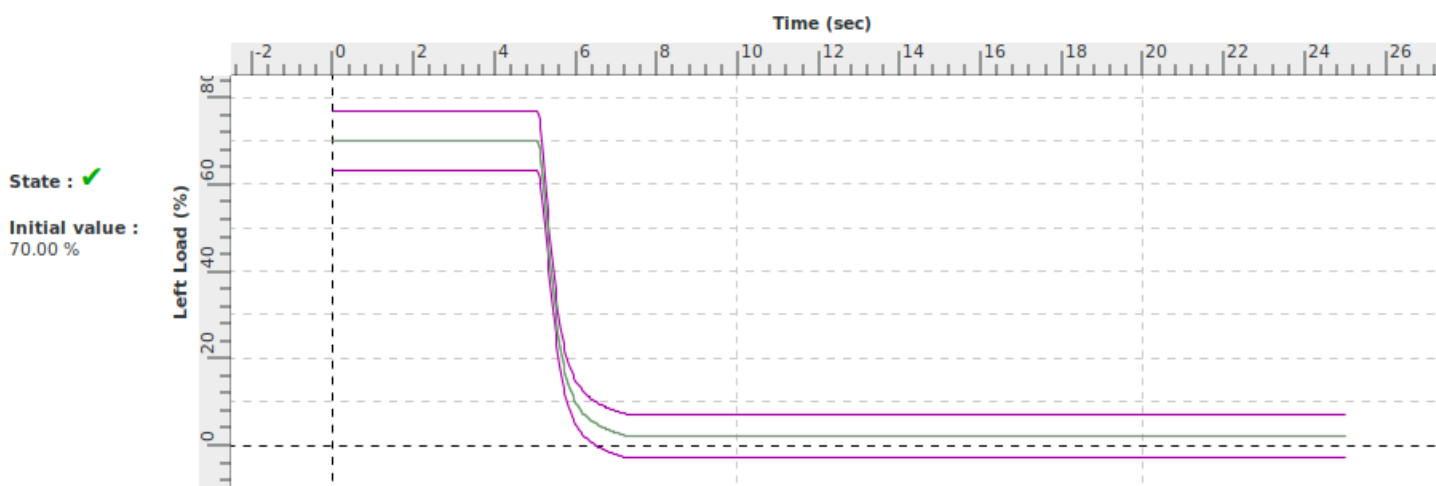
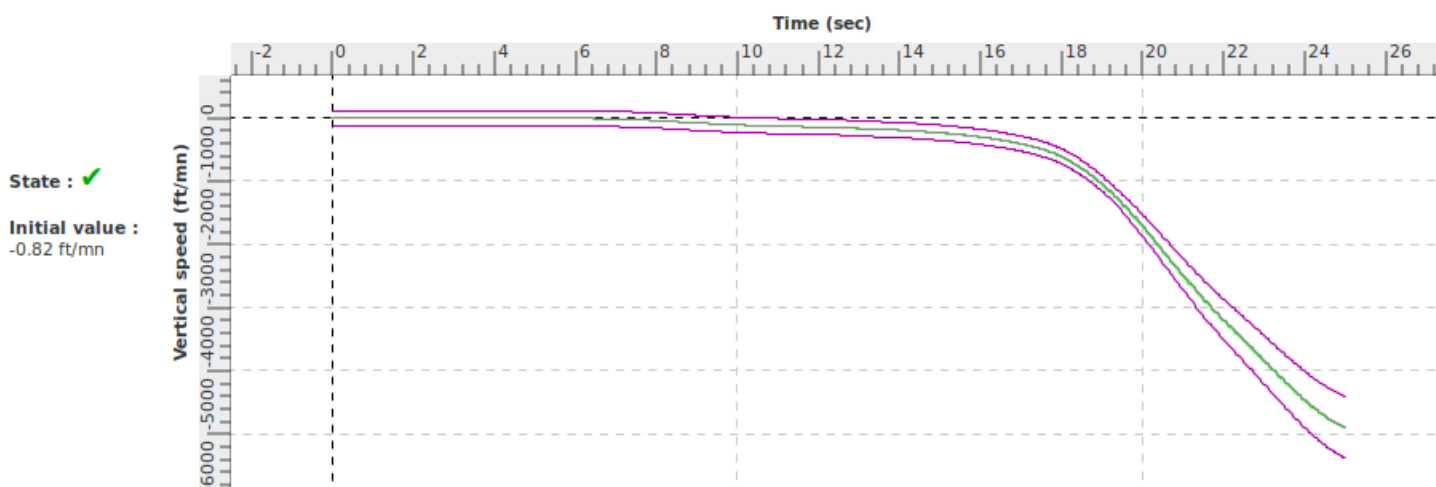
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Stall characteristics during approach		
Id	2 c viii b 3	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



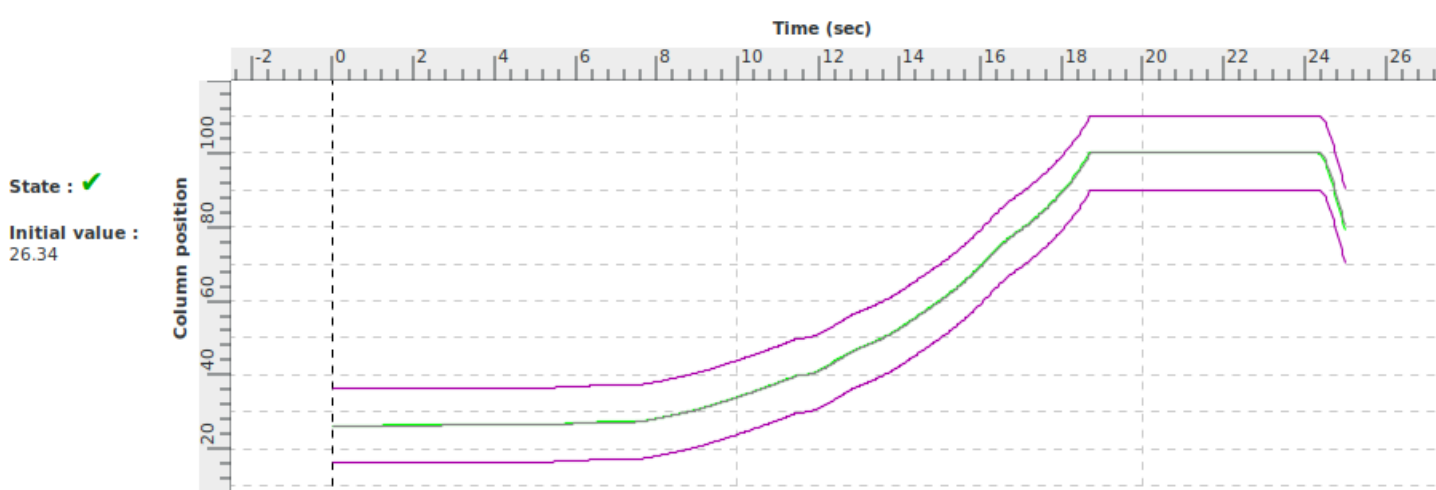
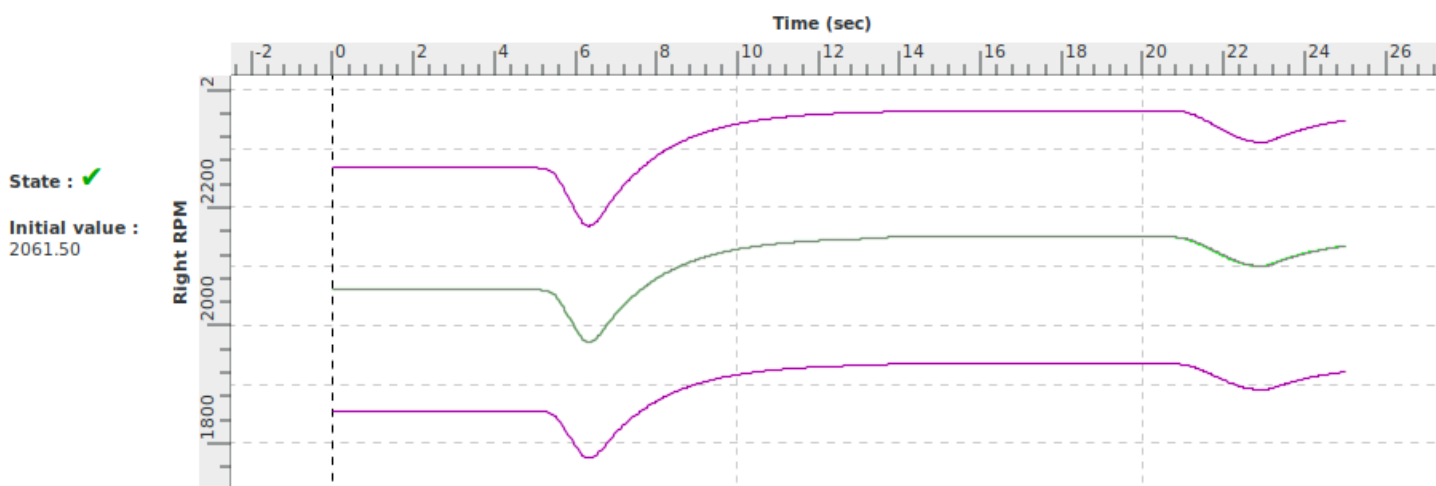
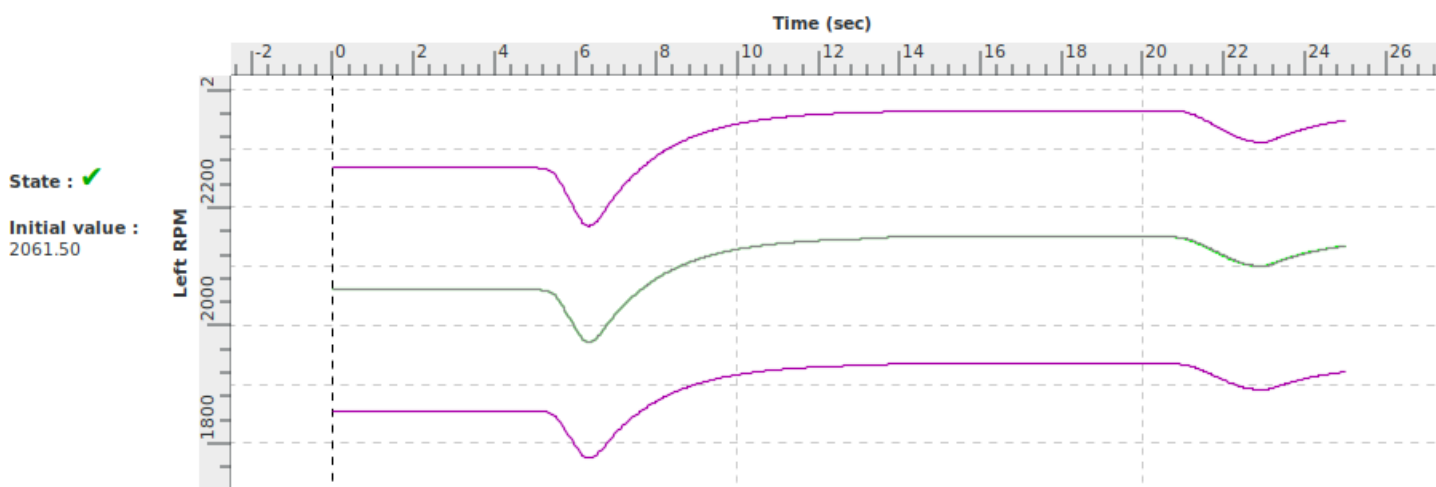
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Stall characteristics during approach		
Id	2 c viii b 3	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



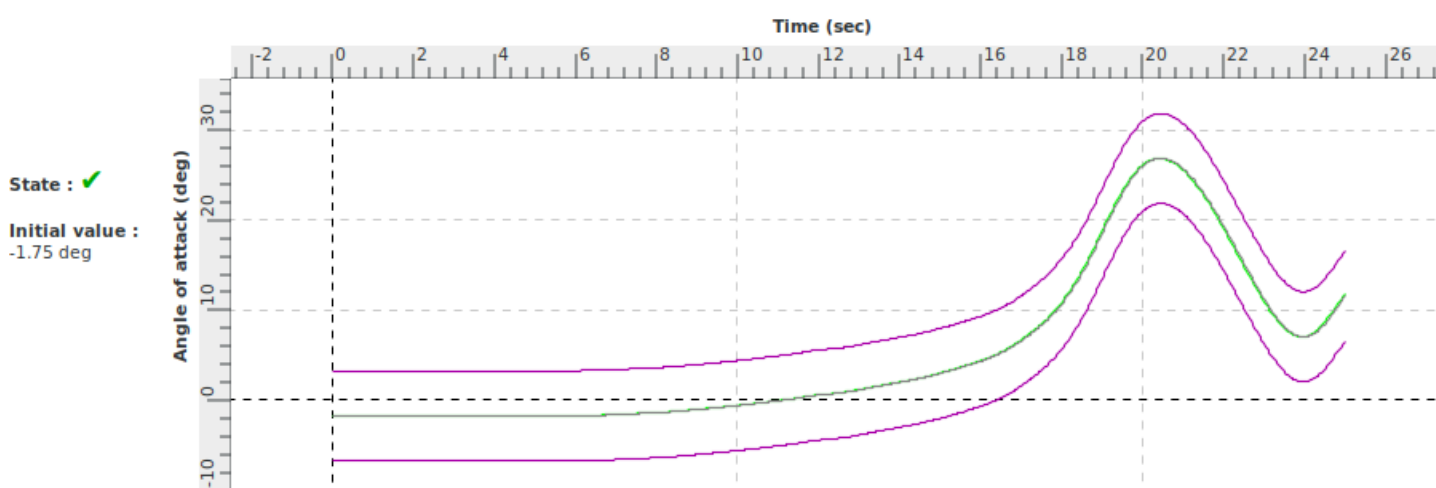
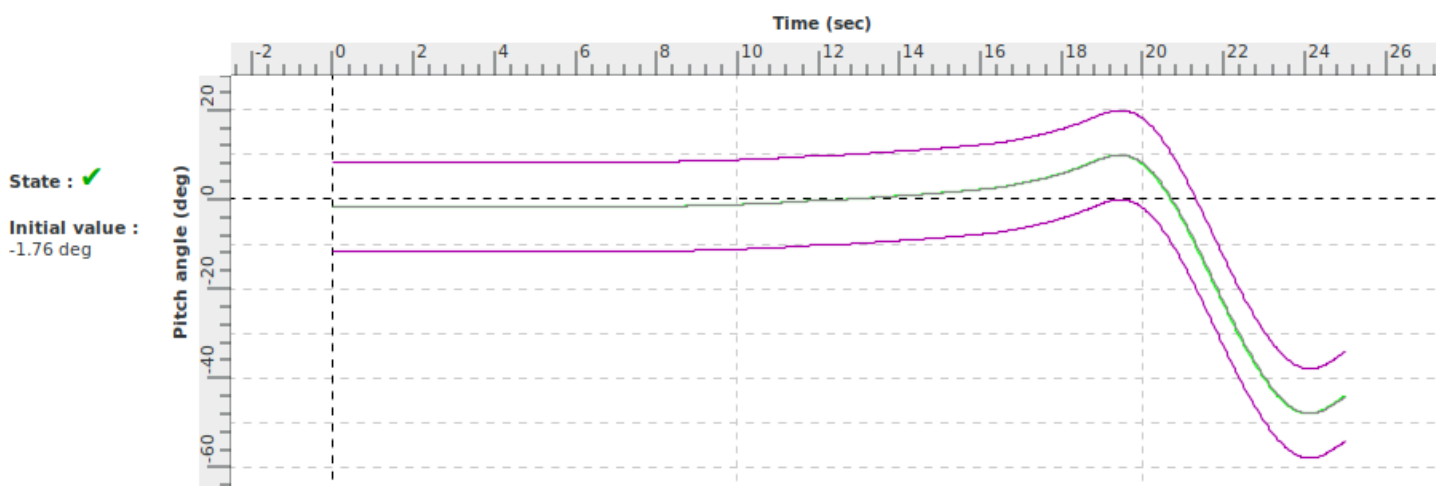
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Stall characteristics during approach		
Id	2 c viii b 3	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



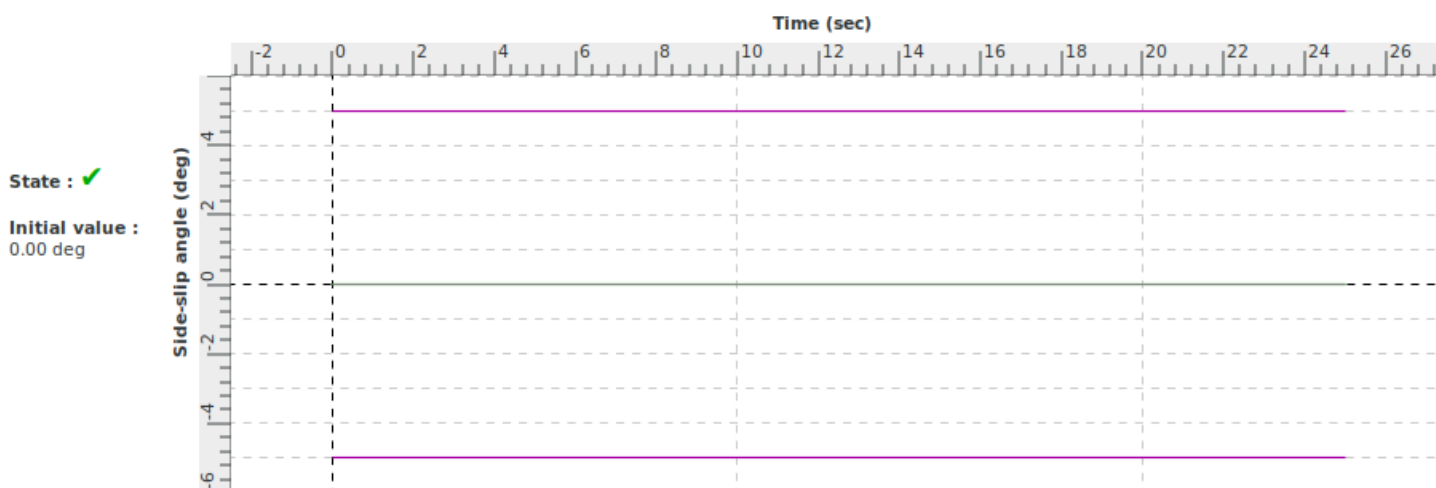
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Stall characteristics during approach		
Id	2 c viii b 3	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	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 Alsिम

grey : master

Title	Stall characteristics during approach		
Id	2 c viii b 3	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	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

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

Objective	Expected Results
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)
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.ix	+/- 10 % Period +/- 10 % Time to 1/2 amplitude or +/- .02 of Damping ratio

Demonstration procedure	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.
Manual test procedure	The pilot trims airplane at cruise. When transient disappeared, the pilot excites the longitudinal oscillations by the impulse on the control column.
Automatic test procedure	2 c ix

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

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	

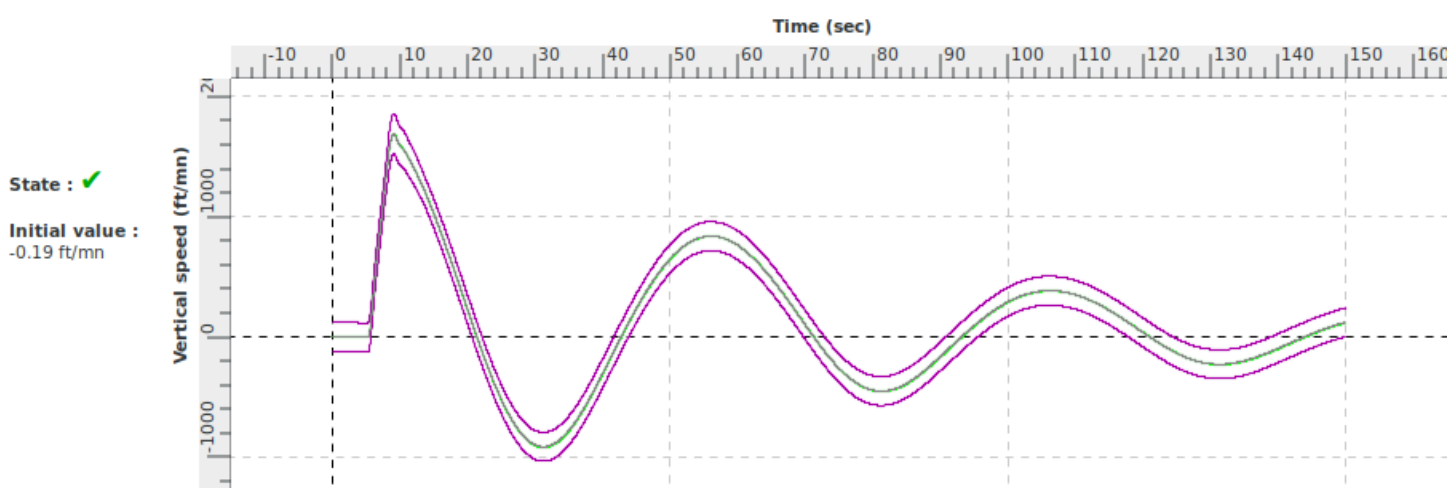
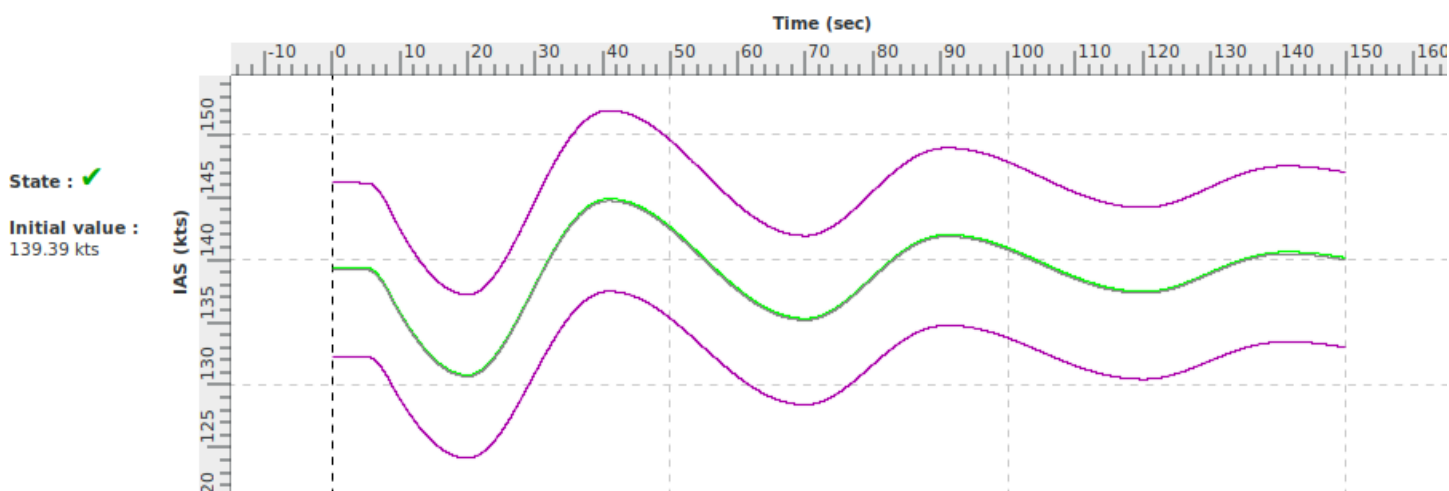
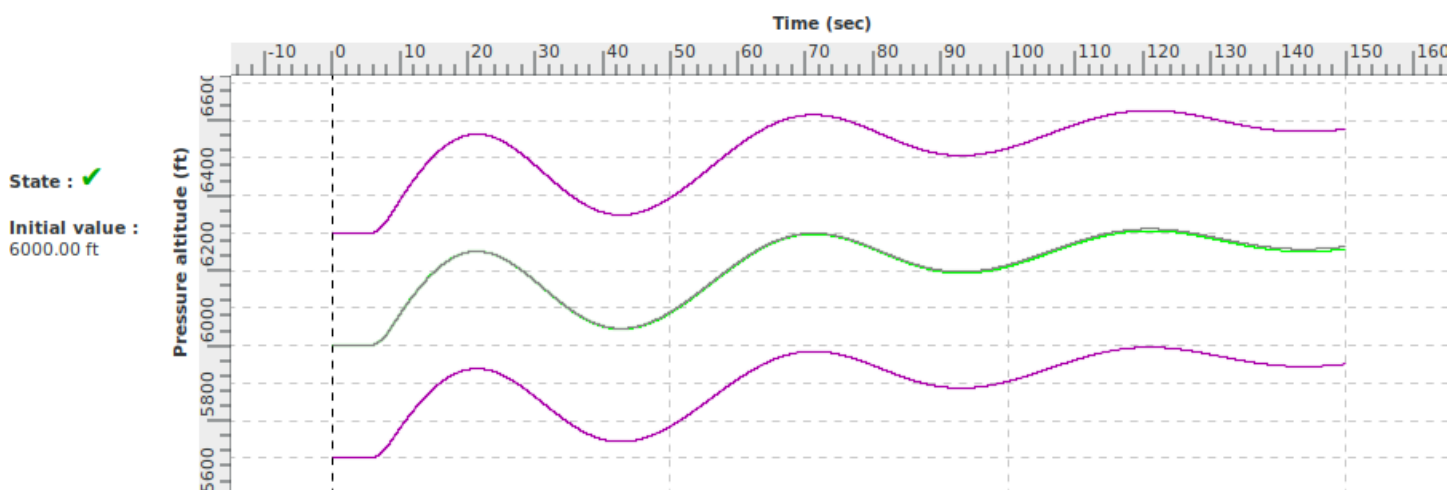
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
0.0	deconnectionPA_roll	0.0	disable QTG Autopilot in roll axis
0.0	deconnectionPA_rudder	0.0	disable QTG Autopilot in yaw axis
5.0	SetAttCmdPalier	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

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

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



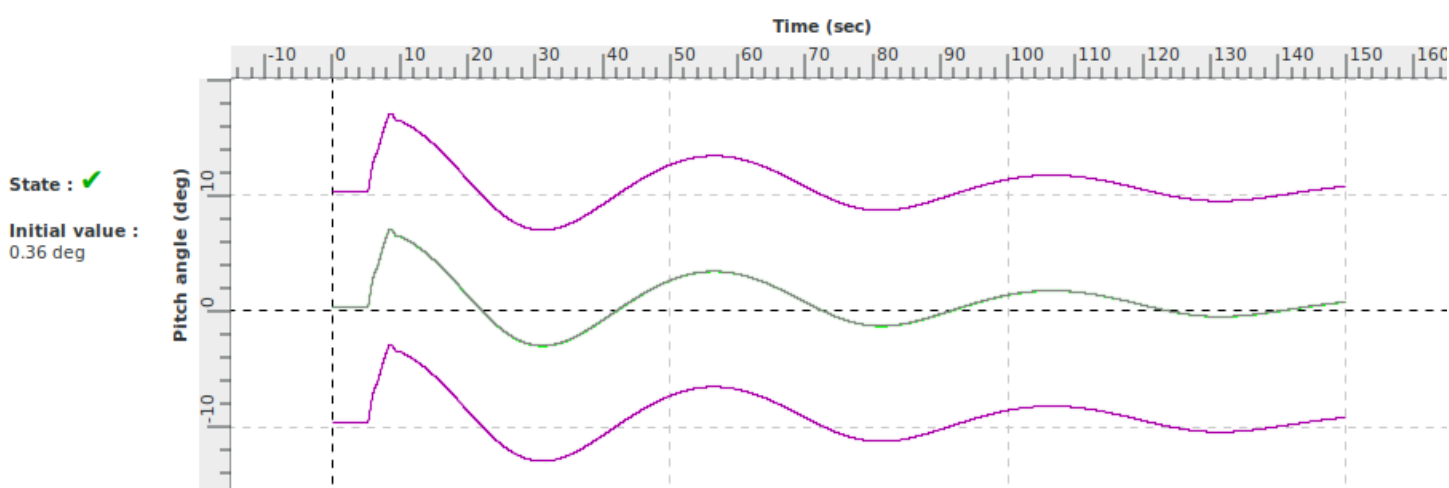
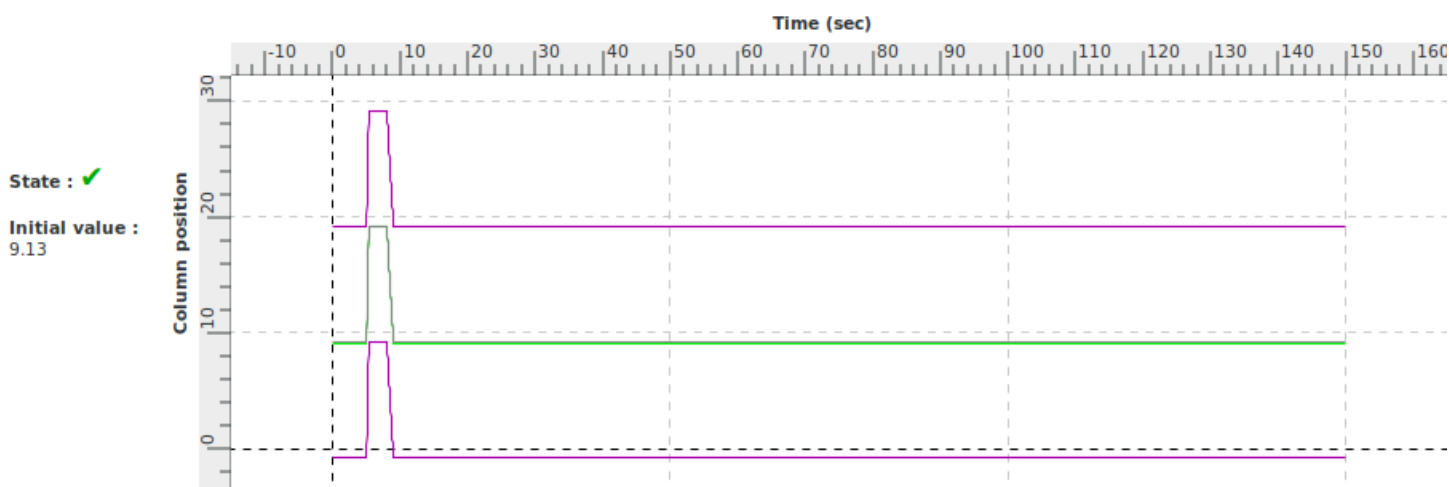
Legend :

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



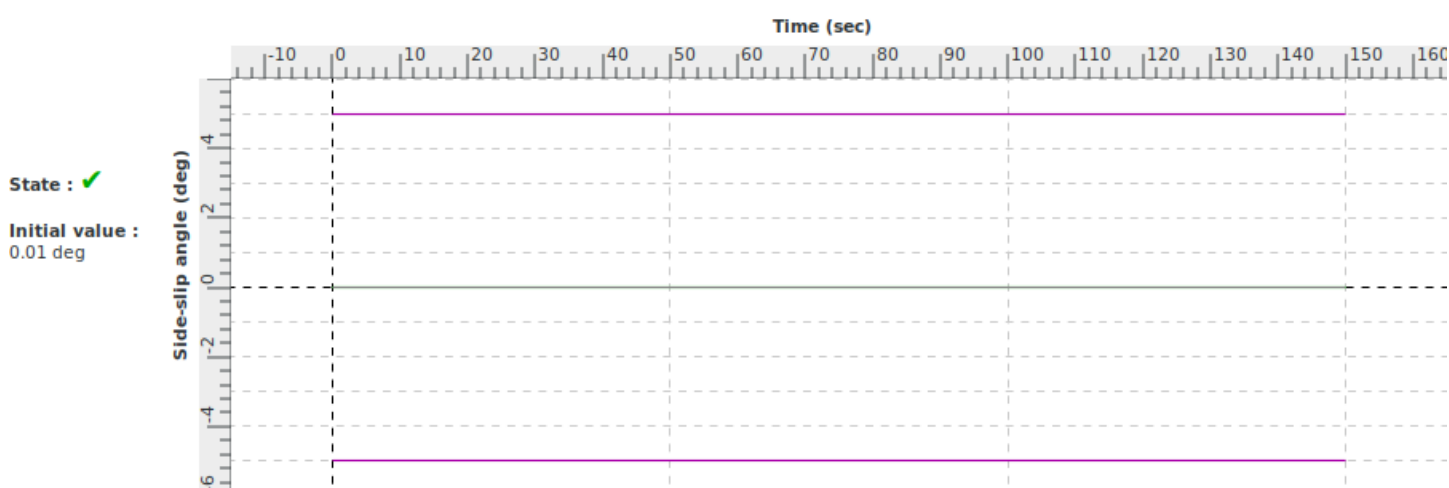
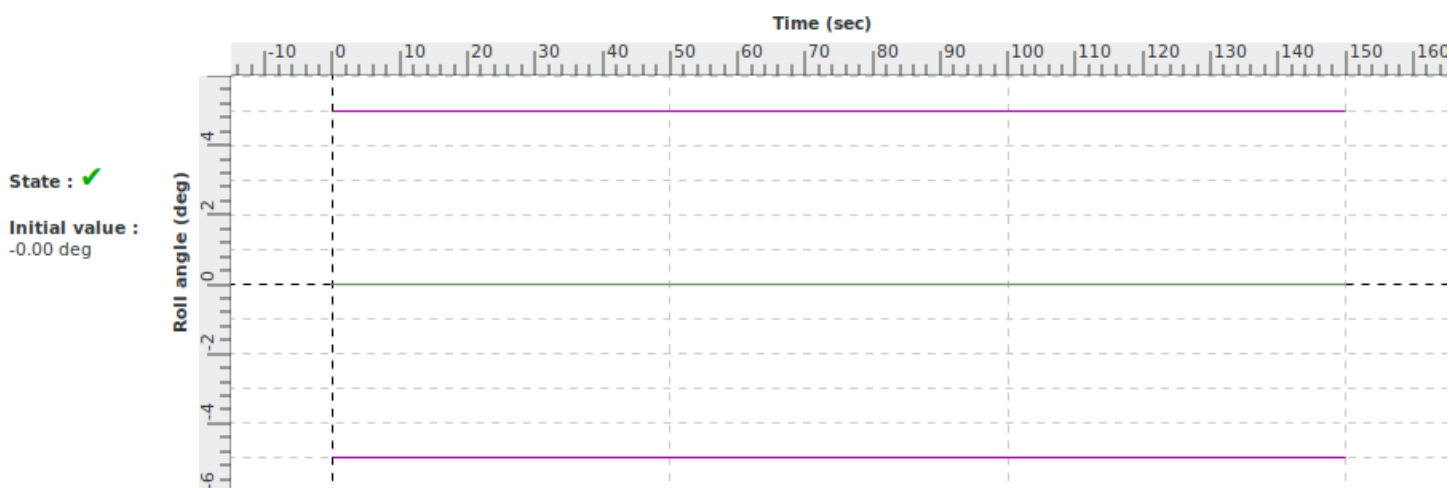
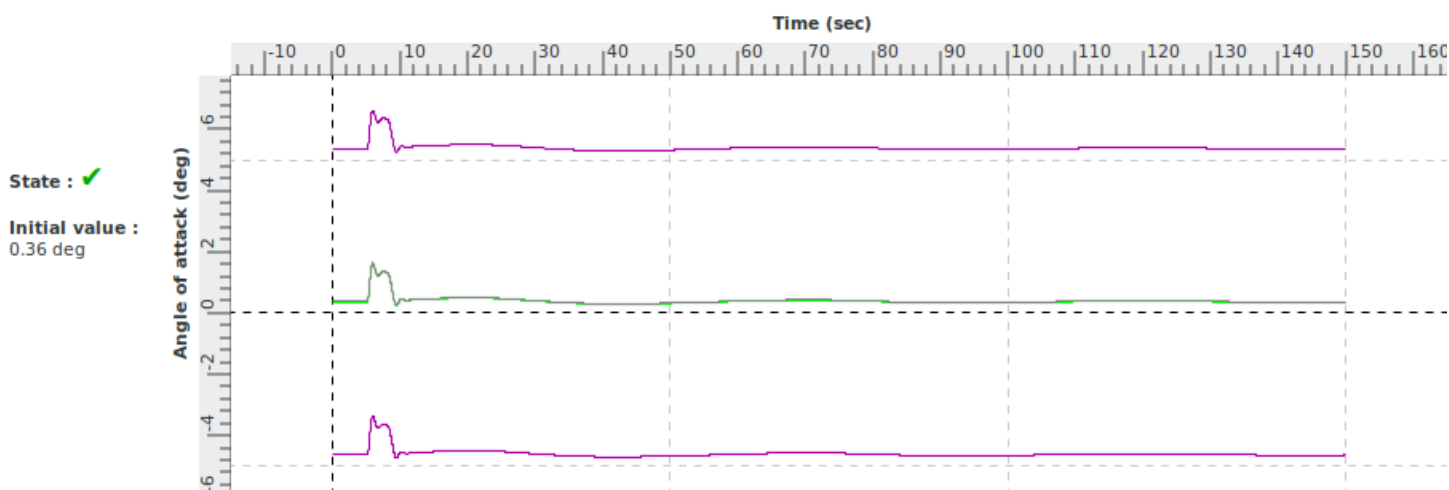
Legend :

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



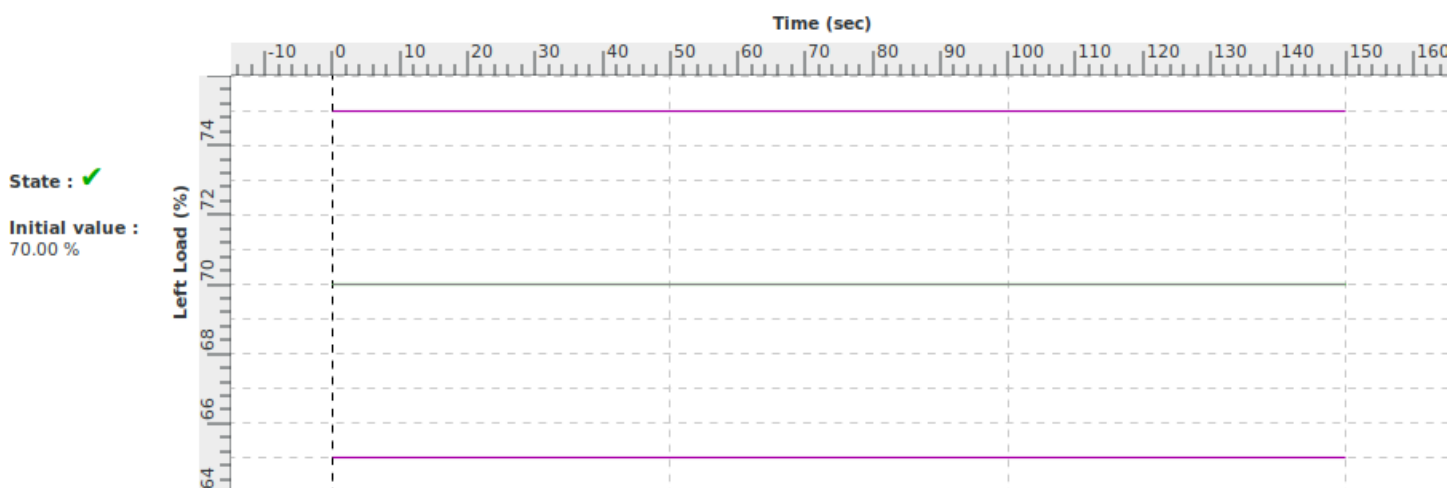
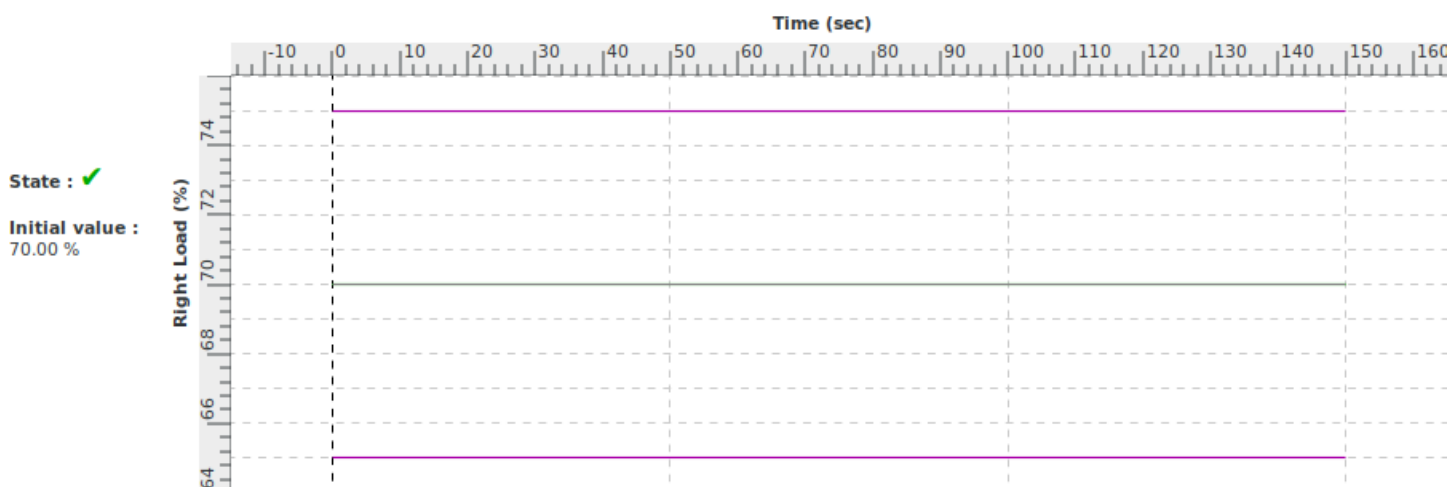
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

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

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

Objective	Expected Results
Demonstrate that the simulator short period dynamic characteristics conform to the class of aeroplanes	<p>Increments :</p> <p>Pitch rate = 1 deg/sec</p> <p>Pitch angle = 5°</p> <p>Normal acceleration = 1.3 g</p>
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.c.x	<p>+/- 1.5 deg Pitch or +/- 2 deg/sec Pitch Rate</p> <p>+/- .1g Normal Acceleration</p>

Demonstration procedure	From steady initial cruise conditions, a pitch up control impulse is applied in order to excite the short period mode.
Manual test procedure	The pilot trims aeroplane at cruise. Then, applies the inputs on the stick of approximately 10 cm and releases the controls.
Automatic test procedure	2 c x

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

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

Autopilot mode	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>	

Initial parameters	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

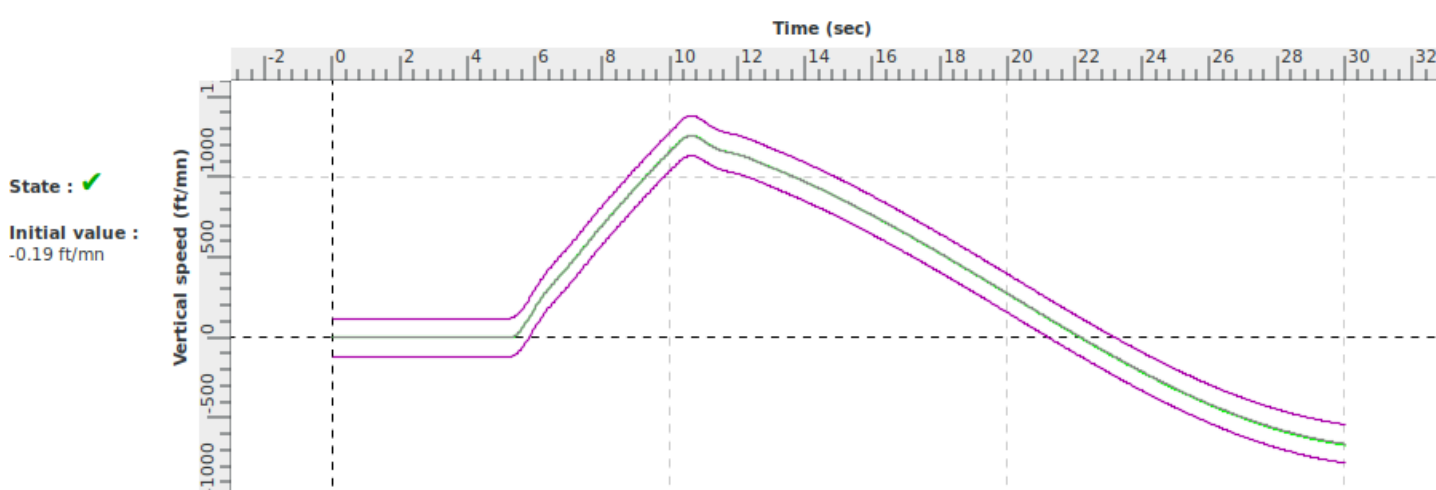
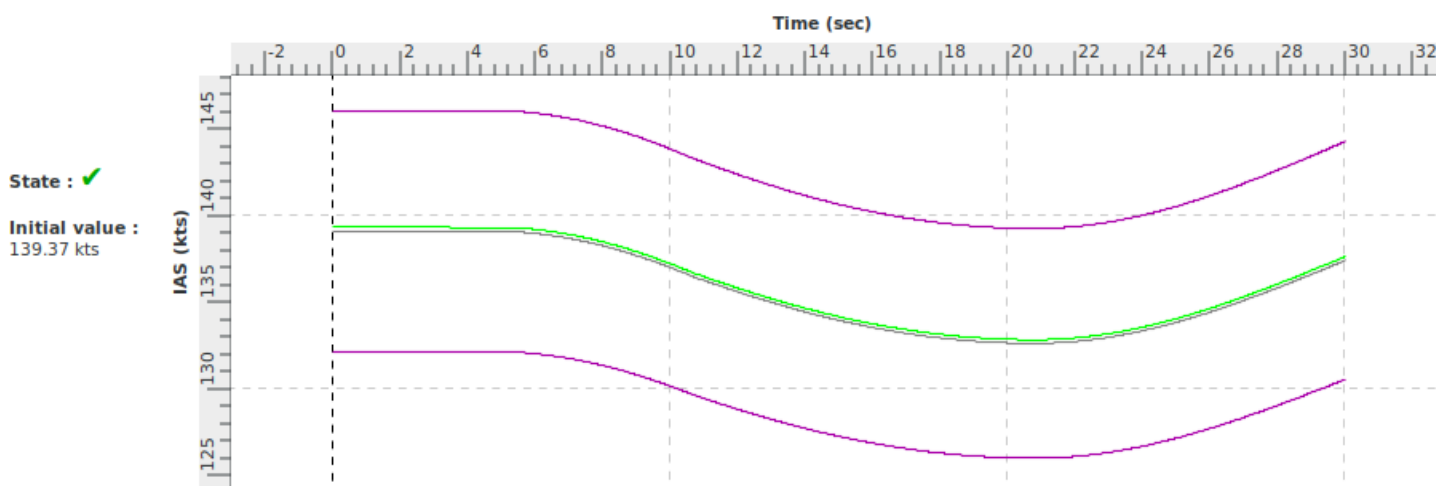
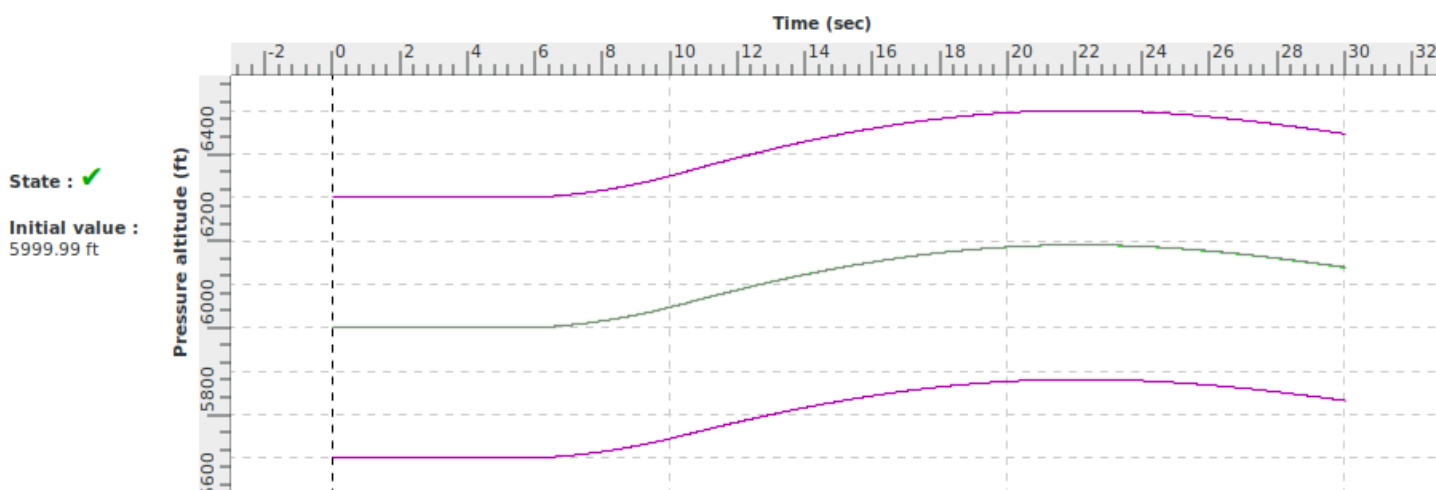
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
5.0	SetAttCmd	5.0	Send an impulse in the attitude govern
30.0	Stop_Test	0.0	Stop the test procedure

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

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Short period dynamics during cruise		
Id	2 c x	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



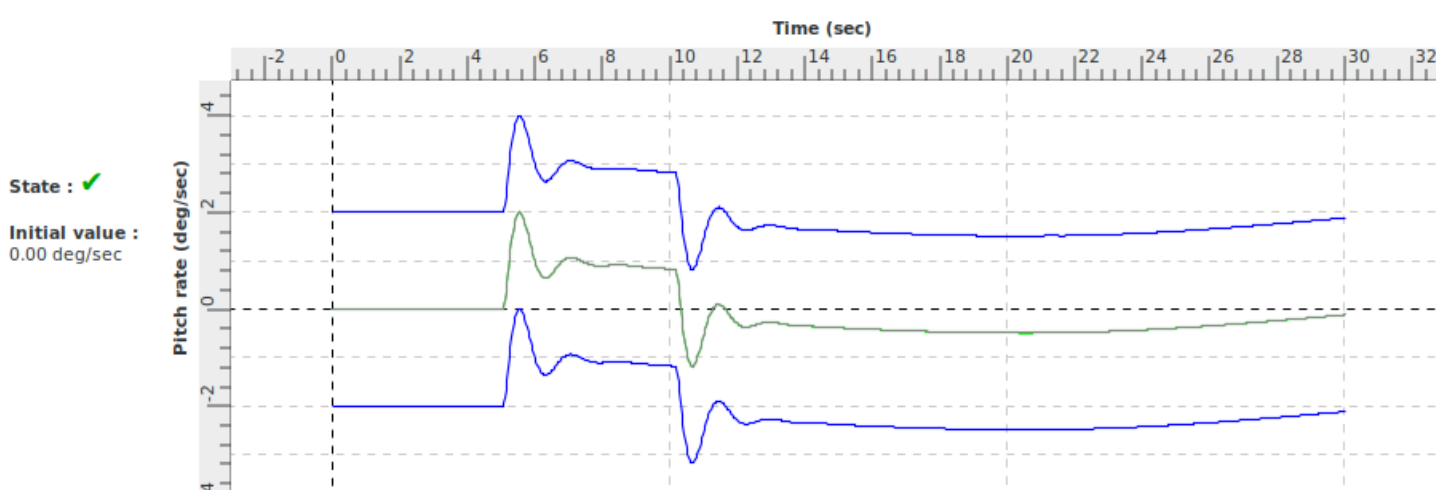
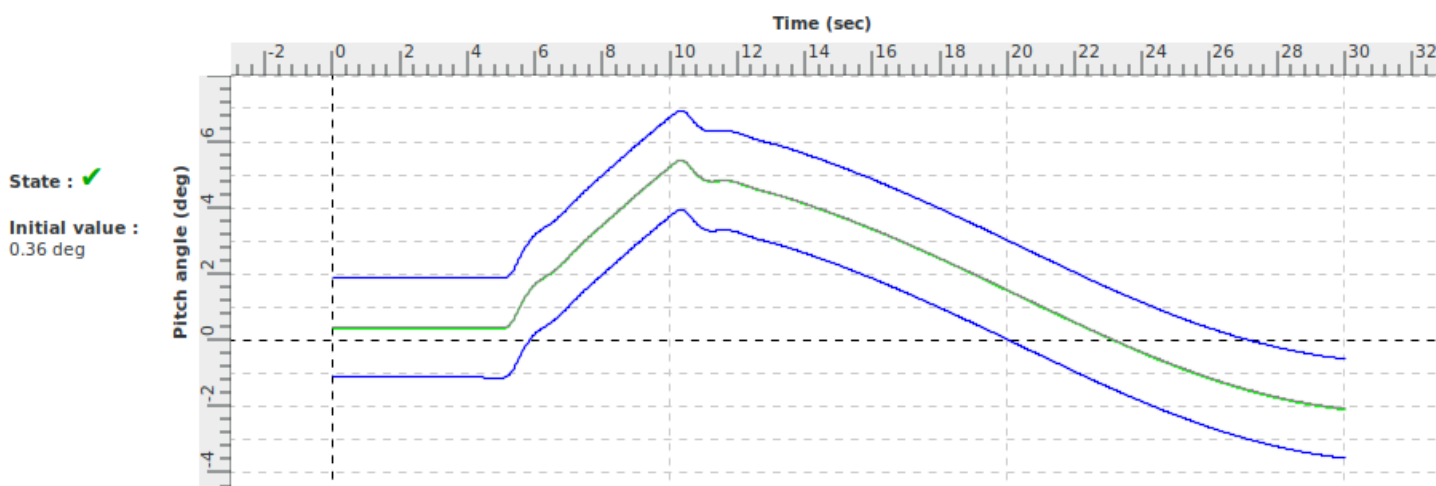
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Short period dynamics during cruise		
Id	2 c x	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



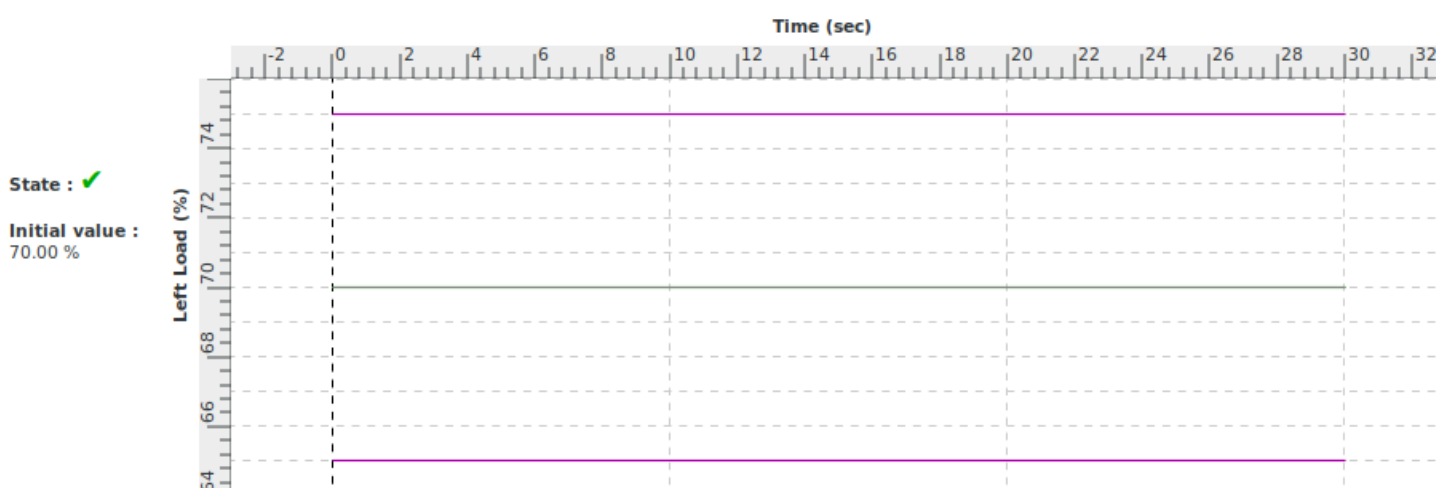
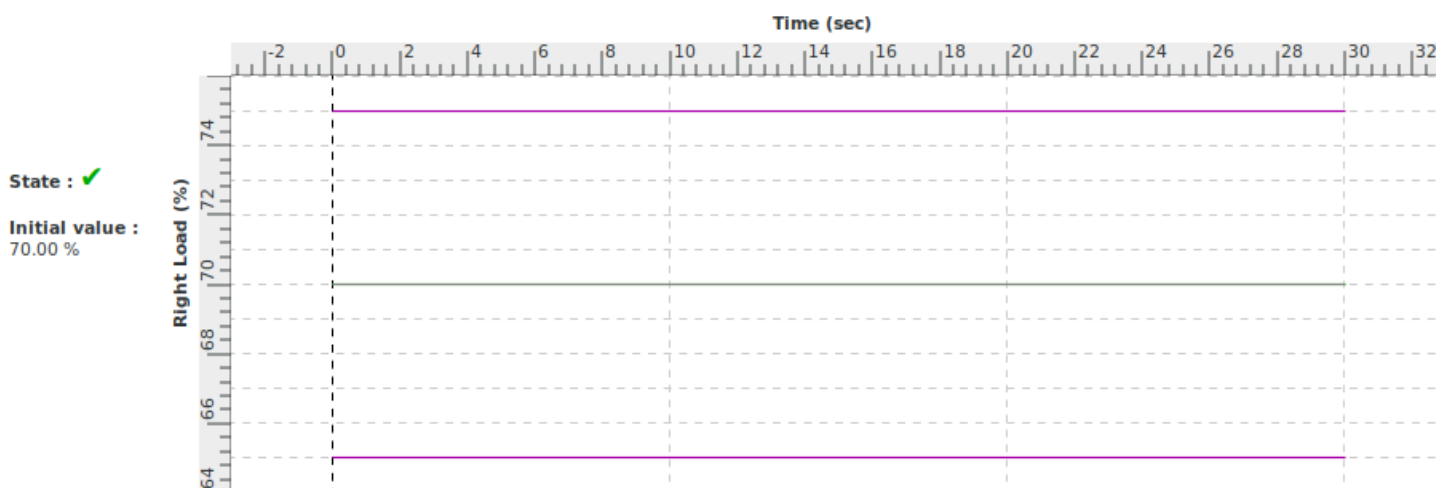
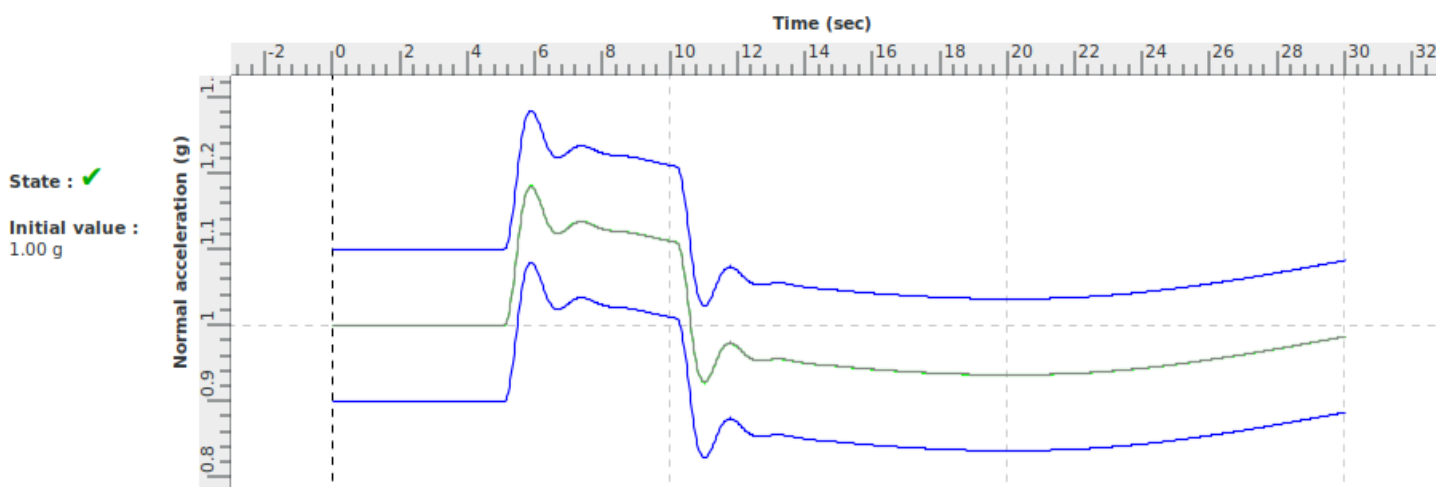
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Short period dynamics during cruise		
Id	2 c x	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	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	Short period dynamics during cruise		
Id	2 c x	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	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

Title	VMCA during take-off		
Id	2 d i auto	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	11/06/22
Result Load	2012.01	Master Load	2012.01

Objective	Expected Results
Demonstrate that the VMCA is conform to the similar types of airplanes.	VMCA: 71 kts
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.d.i	Airspeed +/- 3 kts

Demonstration procedure	See Manual test procedure
Manual test procedure	During take-off climb (gear UP and flaps CLEAN), the pilot fails the left engine (reduce to idle). Then, the pilot decreases the speed by 1kt / second using full rudder control and lateral control until constant heading and bank below 5deg can no longer be maintained using ailerons and rudder control.
Automatic test procedure	2 d 1

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	VMCA during take-off		
Id	2 d i auto	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	11/06/22
Result Load	2012.01	Master Load	2012.01

Autopilot mode	AUTO_VMCA

Initial parameters	VMCA_AUTO
Gross weight (kg) : 1700	Flaps lever position : 0
Balance (%) : 100	Gear lever position : 0
Altitude (ft) : 6000	Left Load (%) : 0 (free)
Vertical speed (ft/min) : 0 (free)	Right Load (%) : 100 (free)
IAS (kt) : 80 (free)	Left RPM : 2060 (free)
Heading (°) : 0 (free)	Right RPM : 2060 (free)
Bank (°) : -5 (free)	
Attitude (°) : 10	
Pedal Position (%) : 0	
Column Position (%) : 43	
Wheel Position (%) : 0	

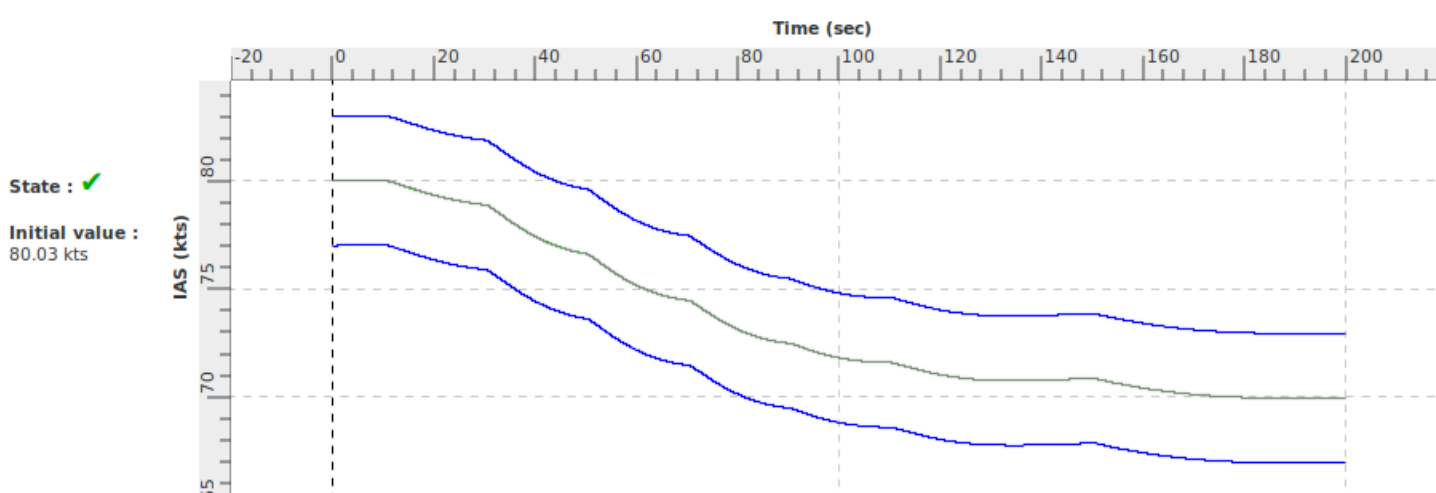
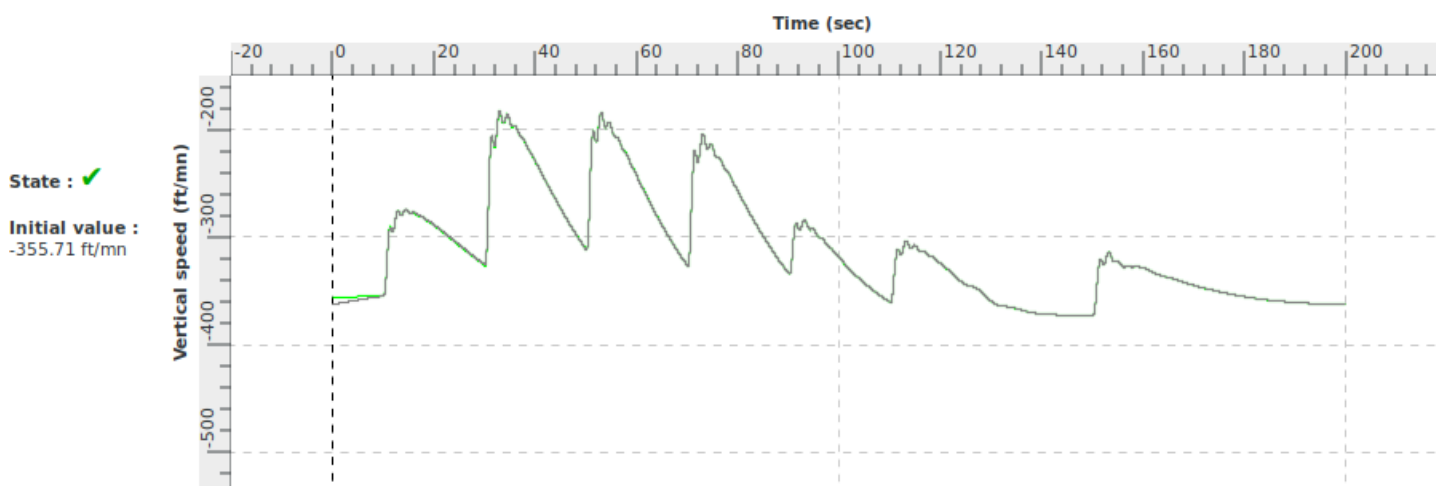
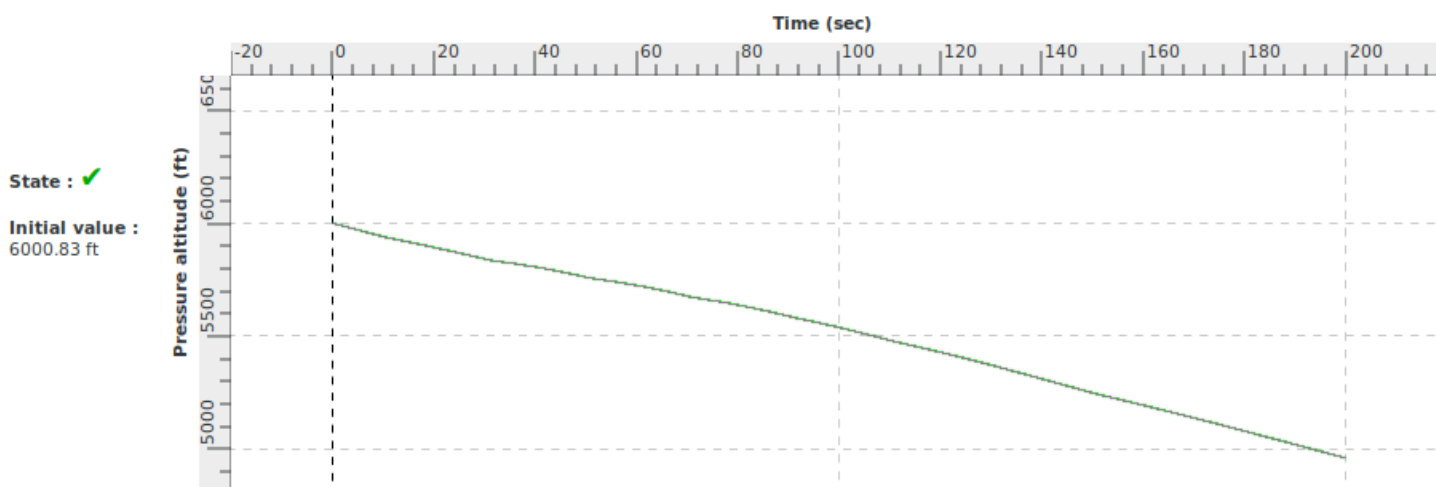
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
10.0	SetSpeed	79.0	Ask the QTG Autopilot to maintain the desired speed
30.0	SetSpeed	77.0	Ask the QTG Autopilot to maintain the desired speed
50.0	SetSpeed	75.0	Ask the QTG Autopilot to maintain the desired speed
70.0	SetSpeed	73.0	Ask the QTG Autopilot to maintain the desired speed
90.0	SetSpeed	72.0	Ask the QTG Autopilot to maintain the desired speed
110.0	SetSpeed	71.0	Ask the QTG Autopilot to maintain the desired speed
150.0	SetSpeed	70.0	Ask the QTG Autopilot to maintain the desired speed

Title	VMCA during take-off		
Id	2 d i auto	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	11/06/22
Result Load	2012.01	Master Load	2012.01

Log of Revision		
Rev. Nbr	Date	Reason for revision
1.01	29/03/21	Addition of tolerance to IAS graph
1.02	10/06/22	Remastered following 2012-R1 software update. No impact on expected results

Notes

Title	VMCA during take-off		
Id	2 d i auto	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	11/06/22
Result Load	2012.01	Master Load	2012.01



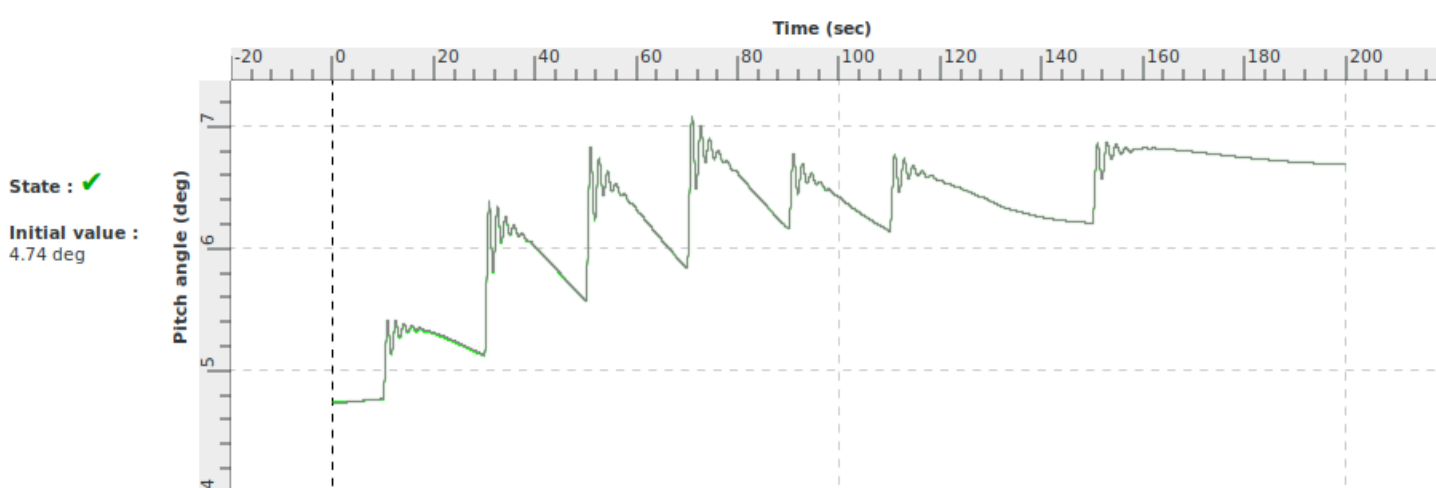
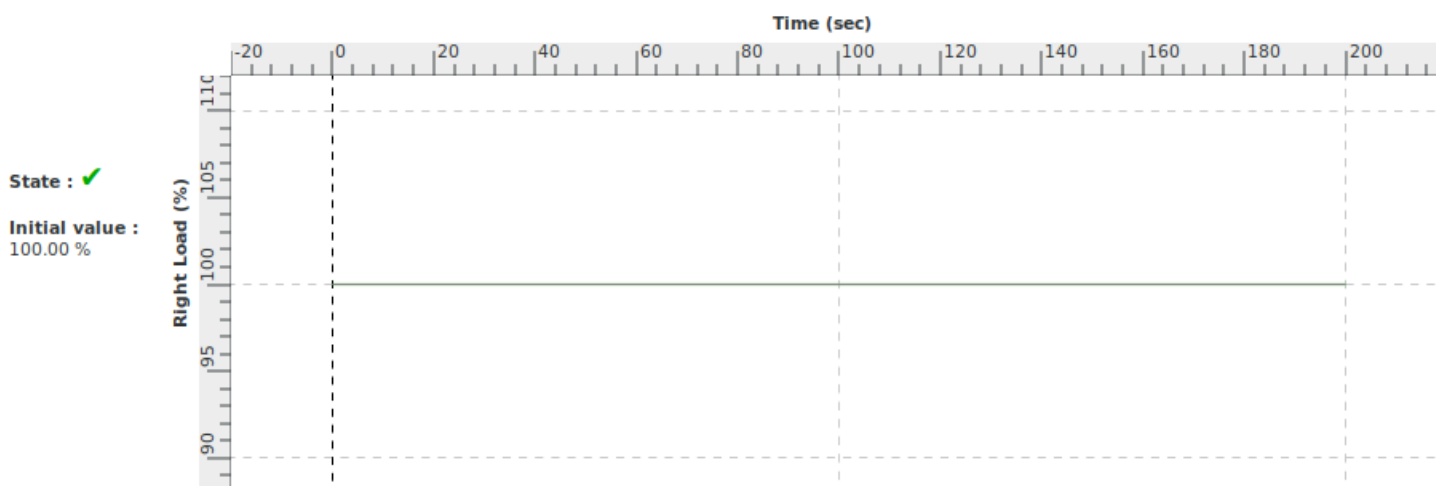
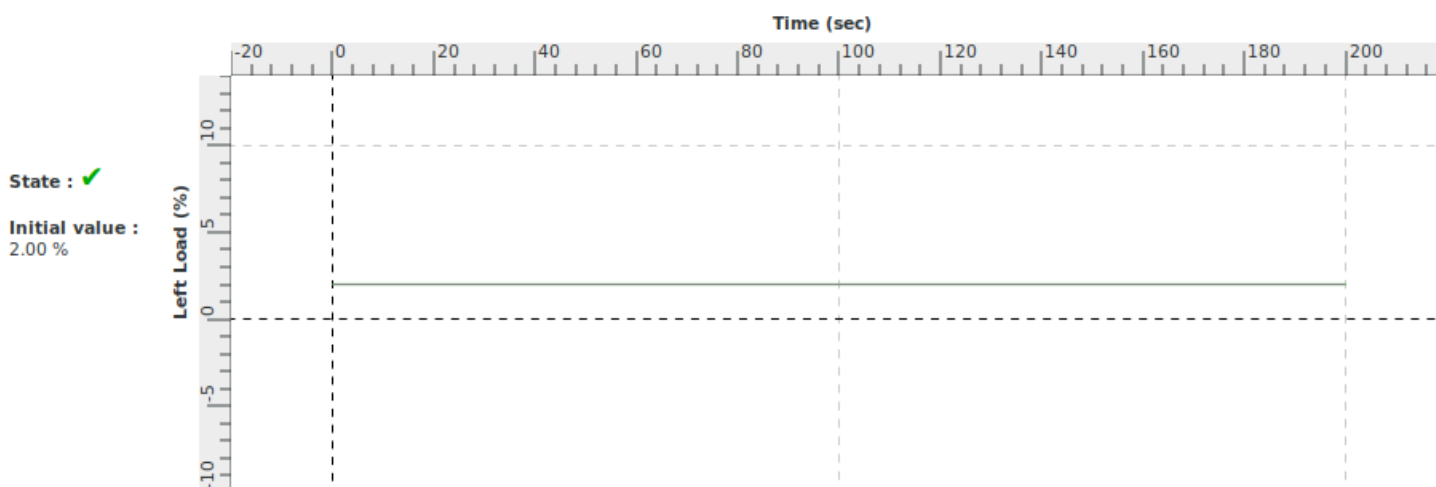
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	VMCA during take-off		
Id	2 d i auto	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	11/06/22
Result Load	2012.01	Master Load	2012.01



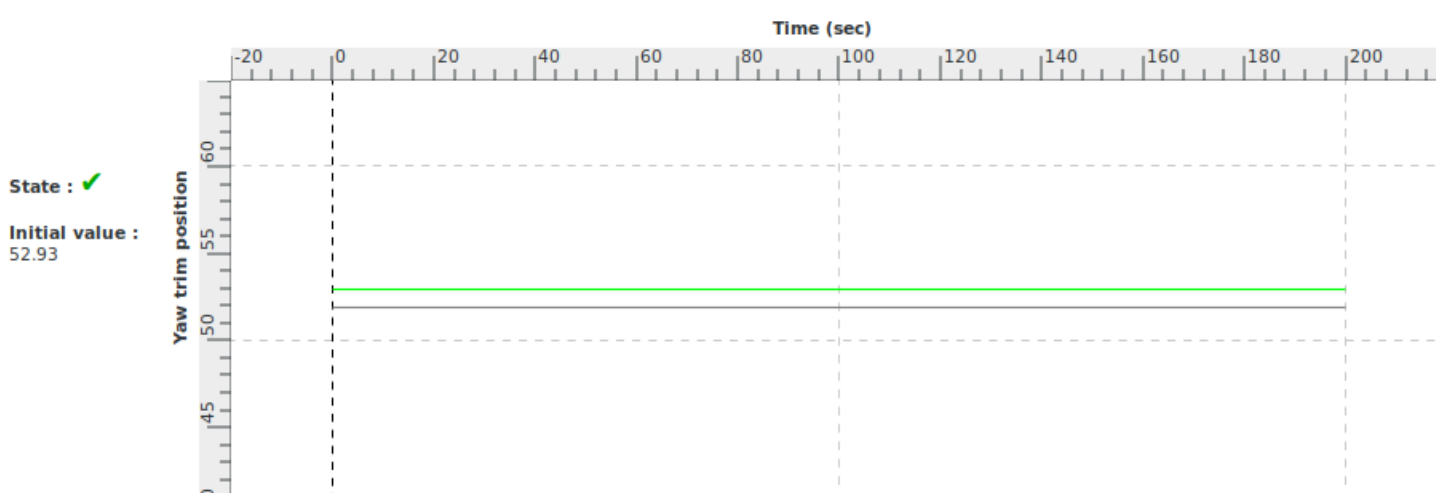
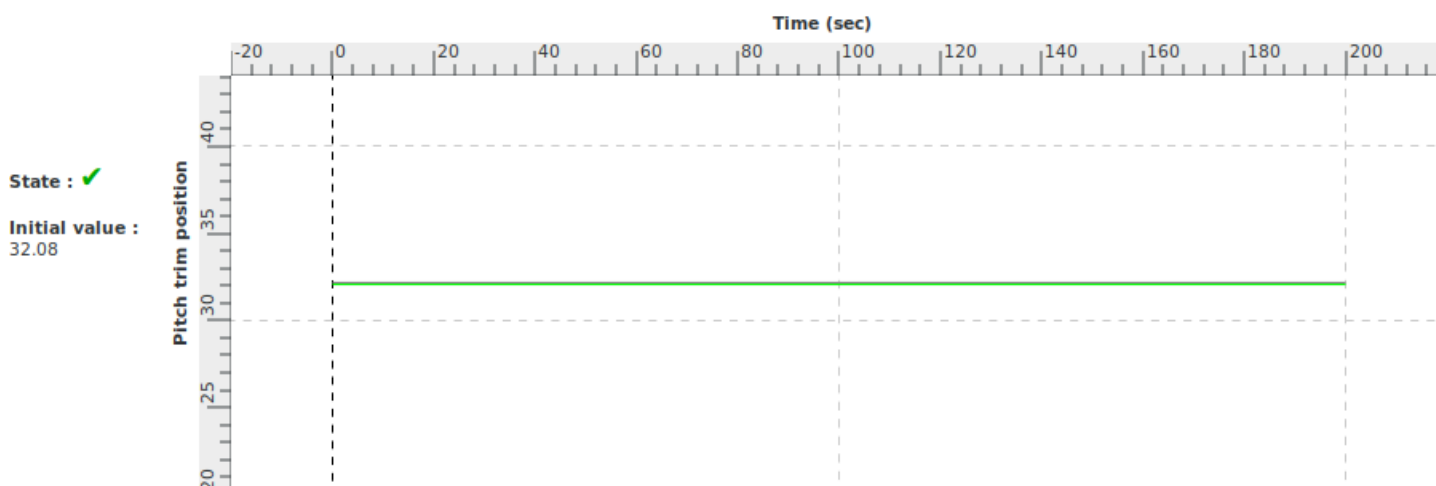
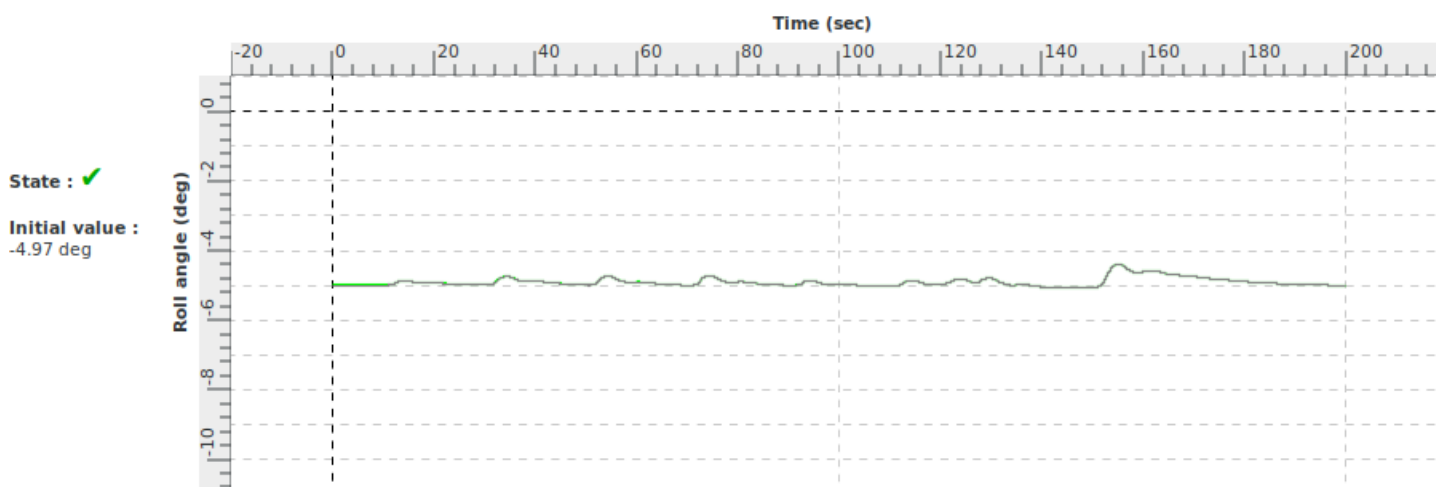
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	VMCA during take-off		
Id	2 d i auto	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	11/06/22
Result Load	2012.01	Master Load	2012.01



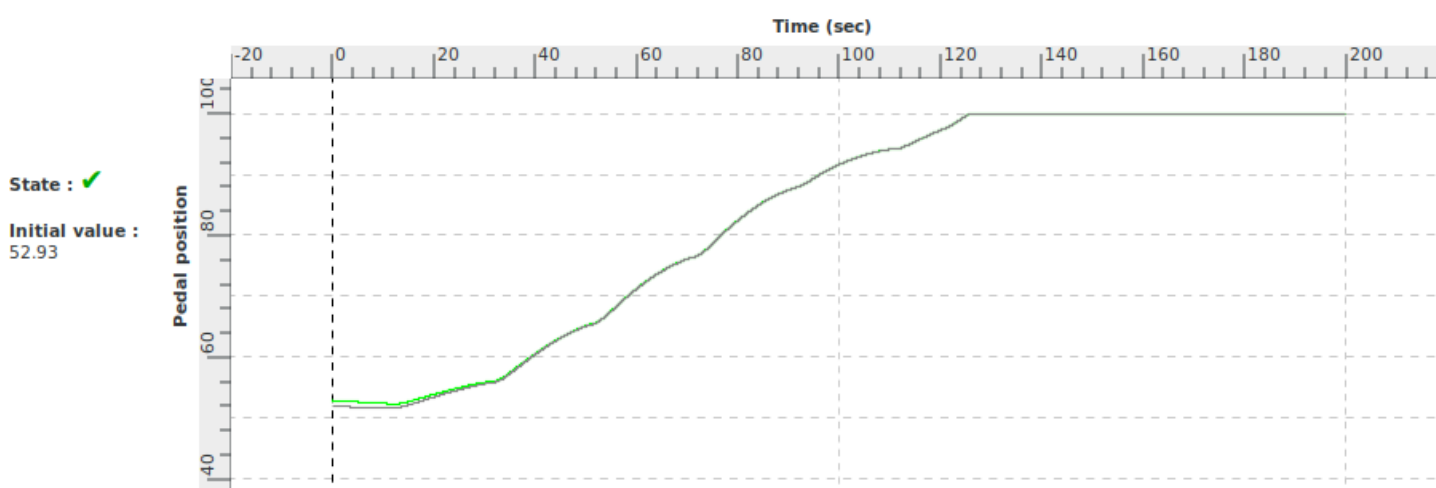
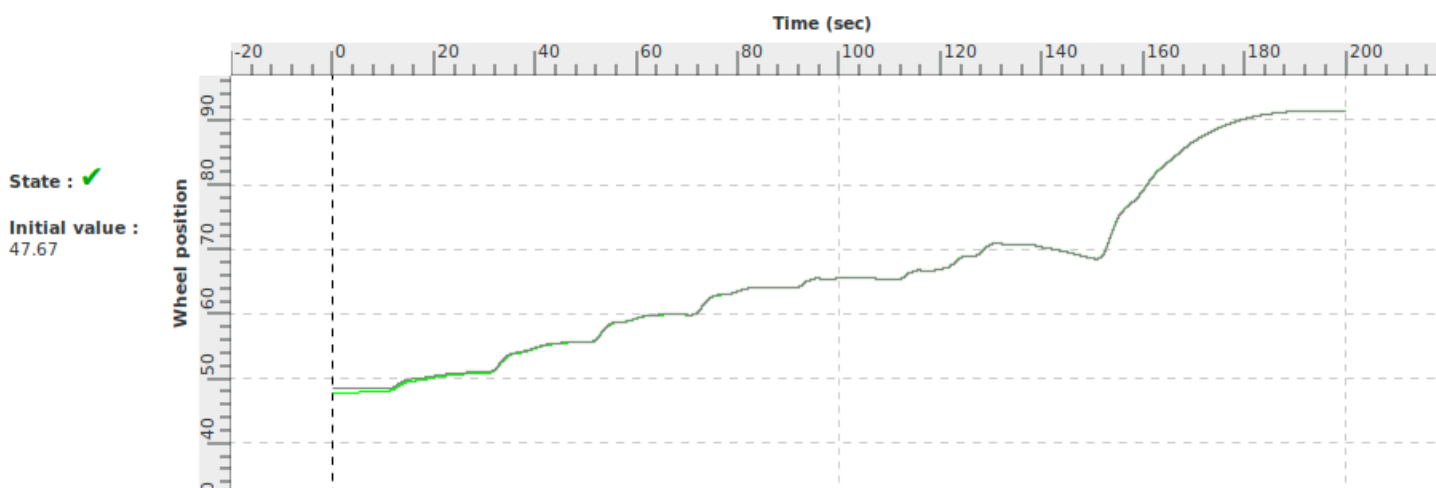
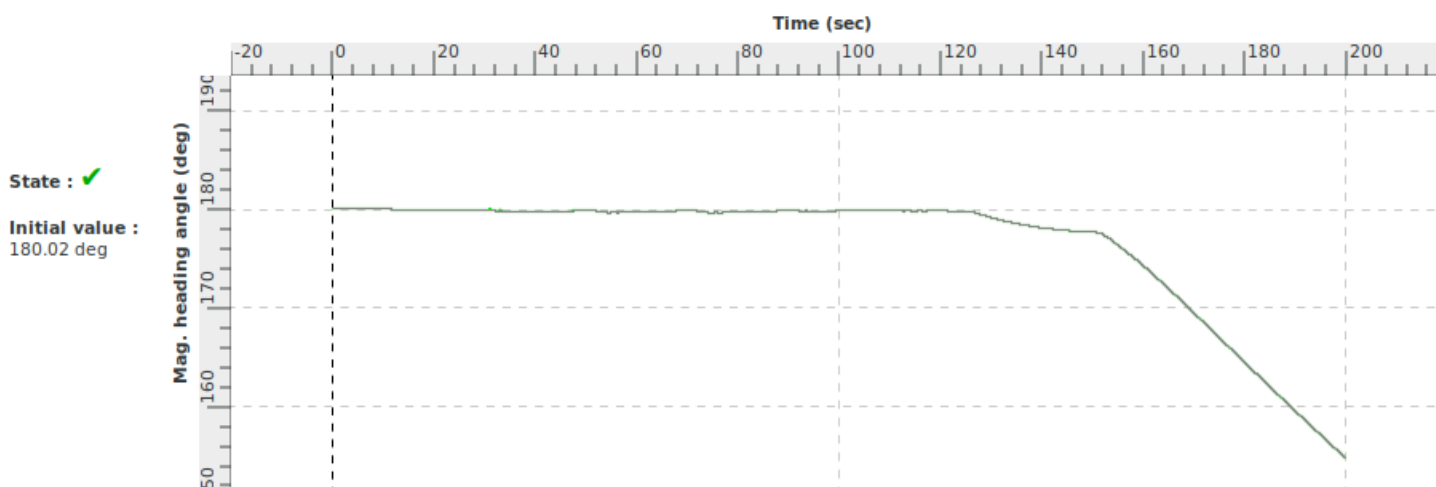
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	VMCA during take-off		
Id	2 d i auto	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	11/06/22
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

Title	Roll response rate during cruise		
Id	2 d ii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that the simulator roll rate response to roll control input conforms to the class of aeroplanes	+/-15 deg/sec Roll rate 45 % Wheel deflection
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.d.ii.a	+/- 2°/s or +/-10% Roll Rate

Demonstration procedure	From steady cruise initial conditions, a wheel deflection step input of about 45% of maximum is applied for the two directions left then right.
Manual test procedure	In ISA conditions and cruise condition, the pilot trims the airplane to level flight. When cruise is stabilised, the pilot moves the wheel 45% of total travel keeping constant control deflection until about 30° 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.
Automatic test procedure	2 d ii a

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Roll response rate during cruise		
Id	2 d ii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Autopilot mode	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>	

Initial parameters	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

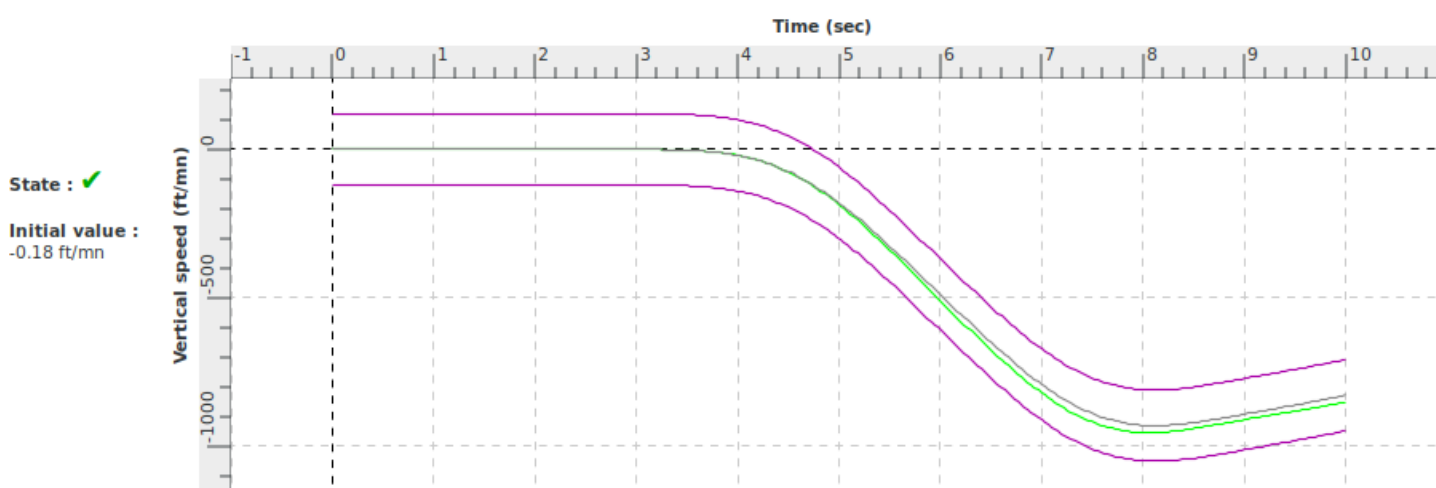
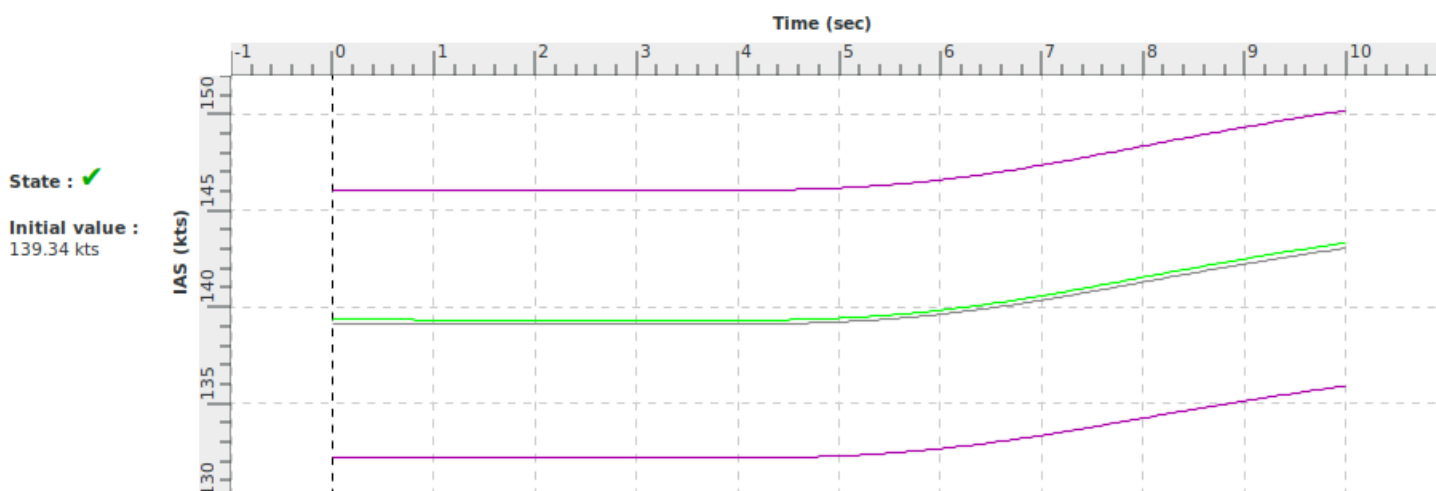
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
0.0	deconnectionPA_rudder	0.0	disable QTG Autopilot in yaw axis
1.0	SetRollCmdPalier	0.0	Send a step in the roll govern
2.0	SetRollCmdPalier	45.0	Send a step in the roll govern
4.0	SetRollCmdPalier	0.0	Send a step in the roll govern
6.0	SetRollCmdPalier	-45.0	Send a step in the roll govern
8.0	SetRollCmdPalier	0.0	Send a step in the roll govern

Title	Roll response rate during cruise		
Id	2 d ii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Roll response rate during cruise		
Id	2 d ii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



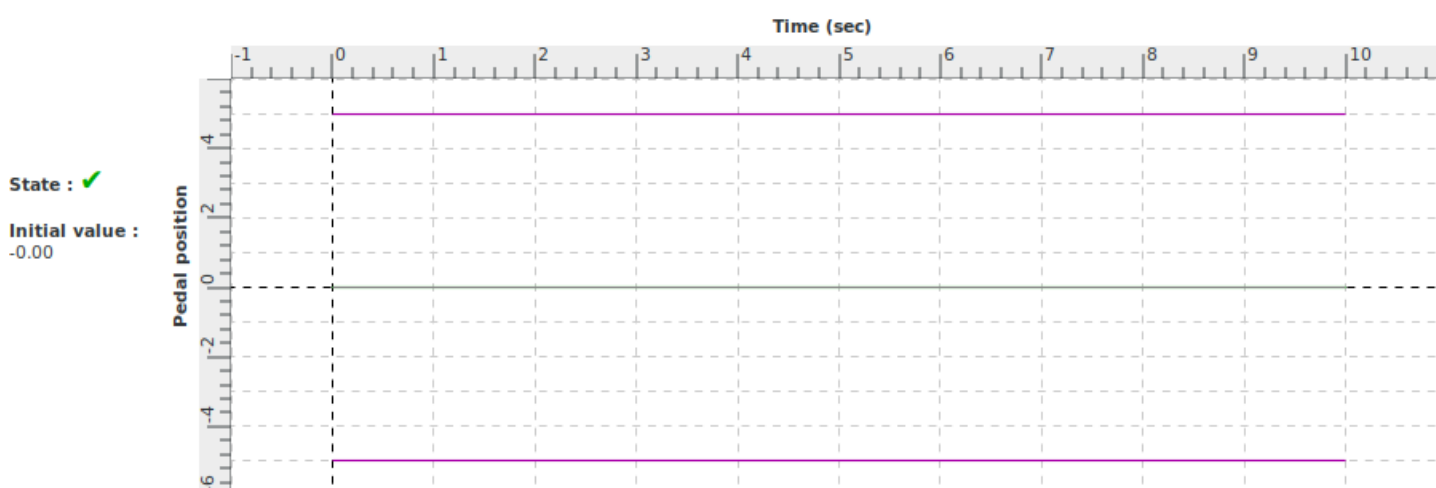
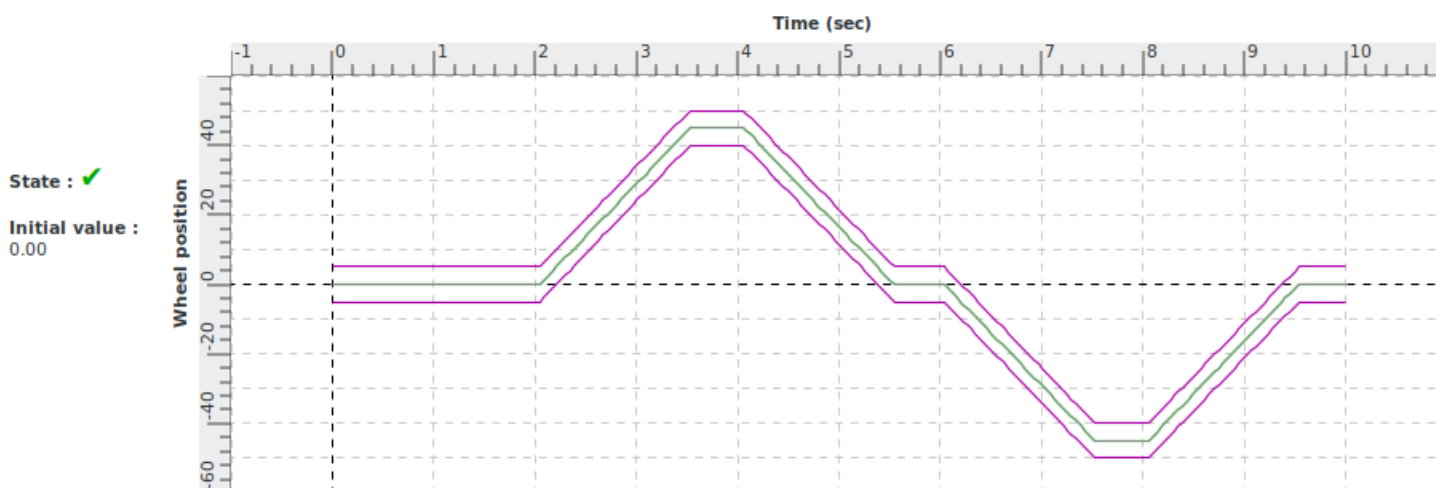
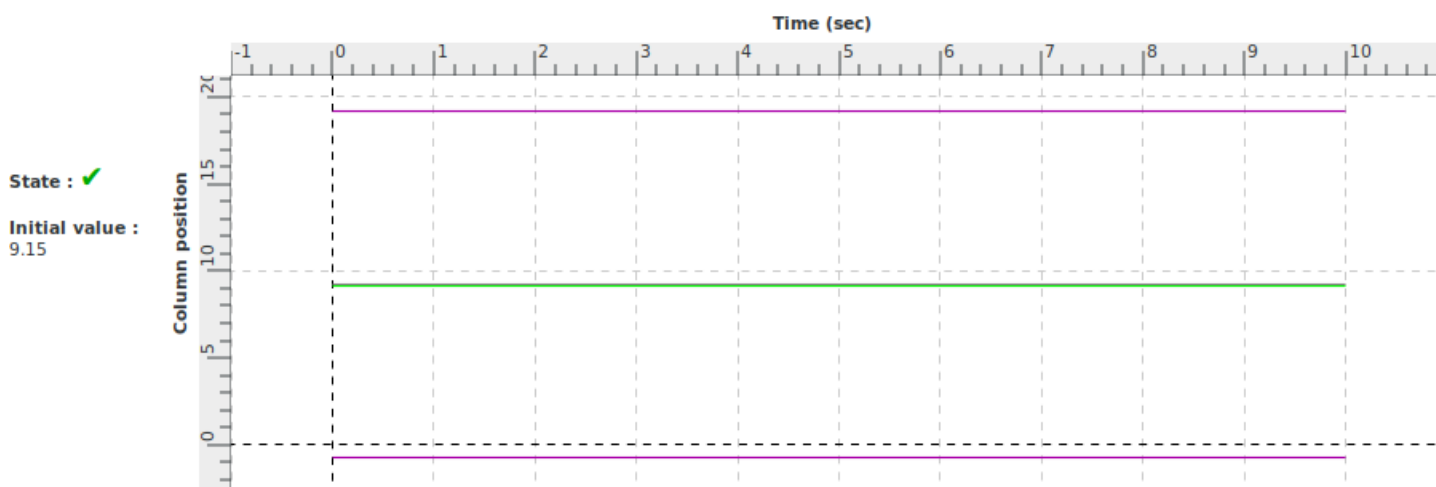
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Roll response rate during cruise		
Id	2 d ii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



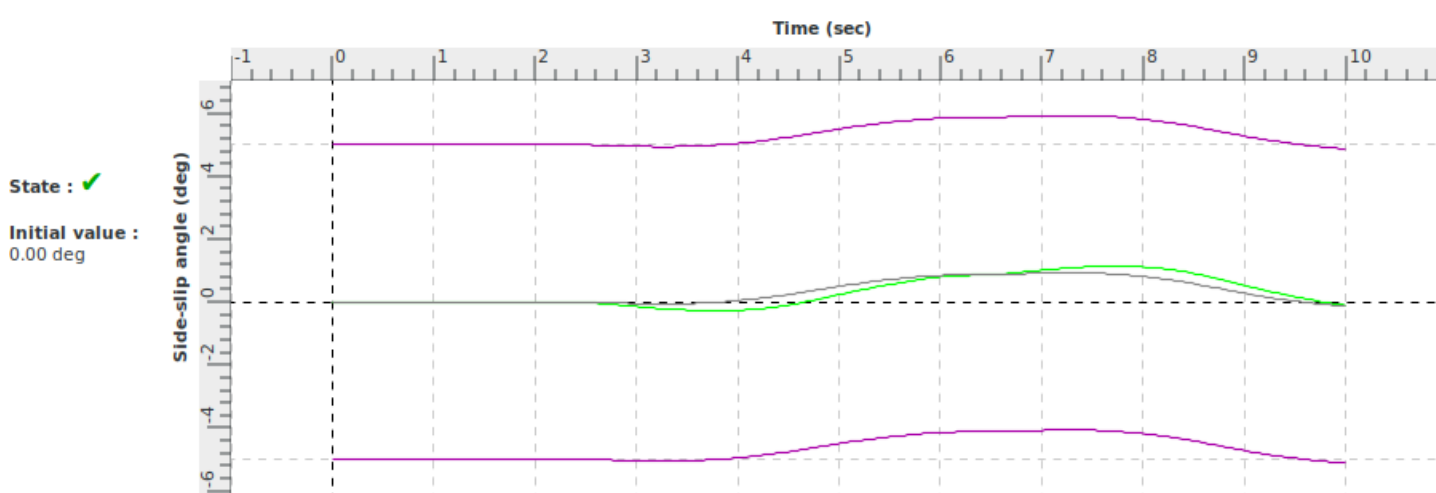
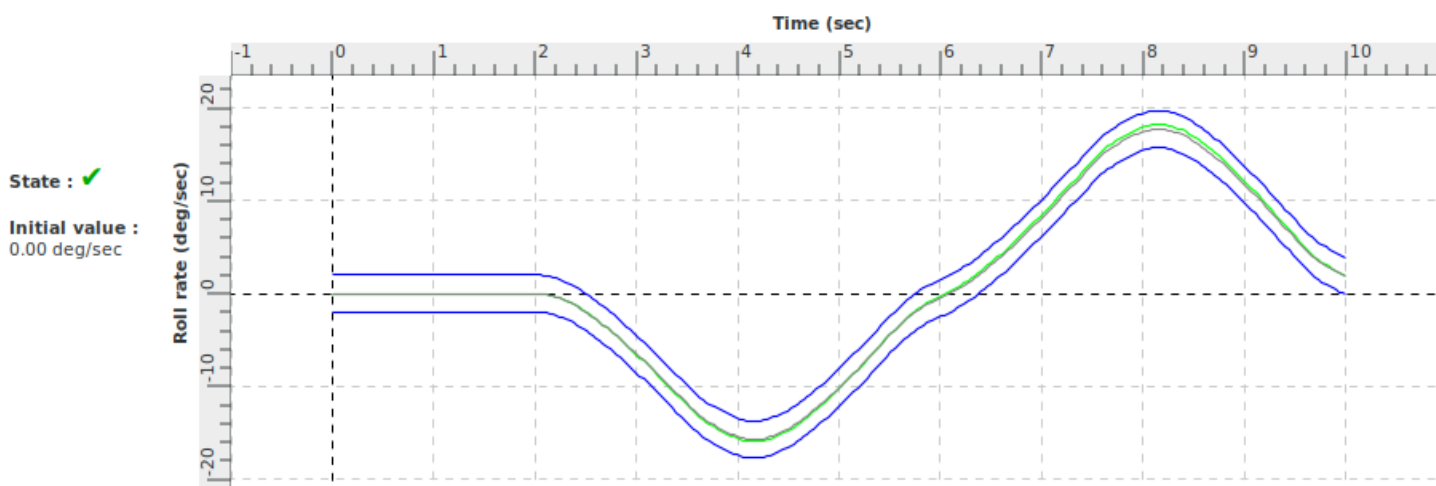
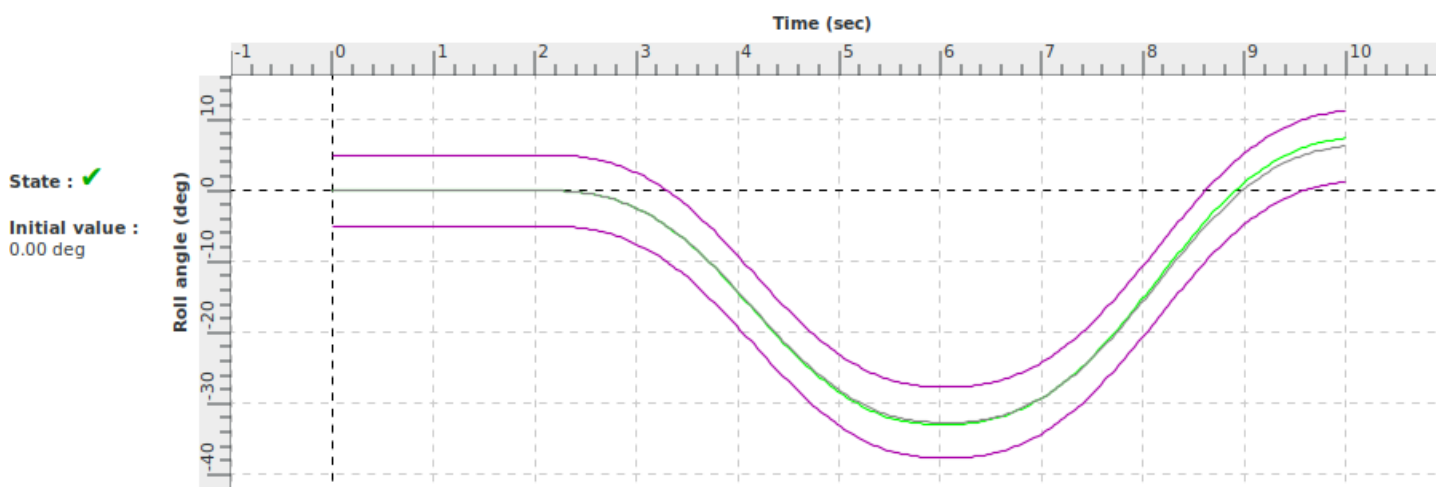
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsimg

grey : master

Title	Roll response rate during cruise		
Id	2 d ii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



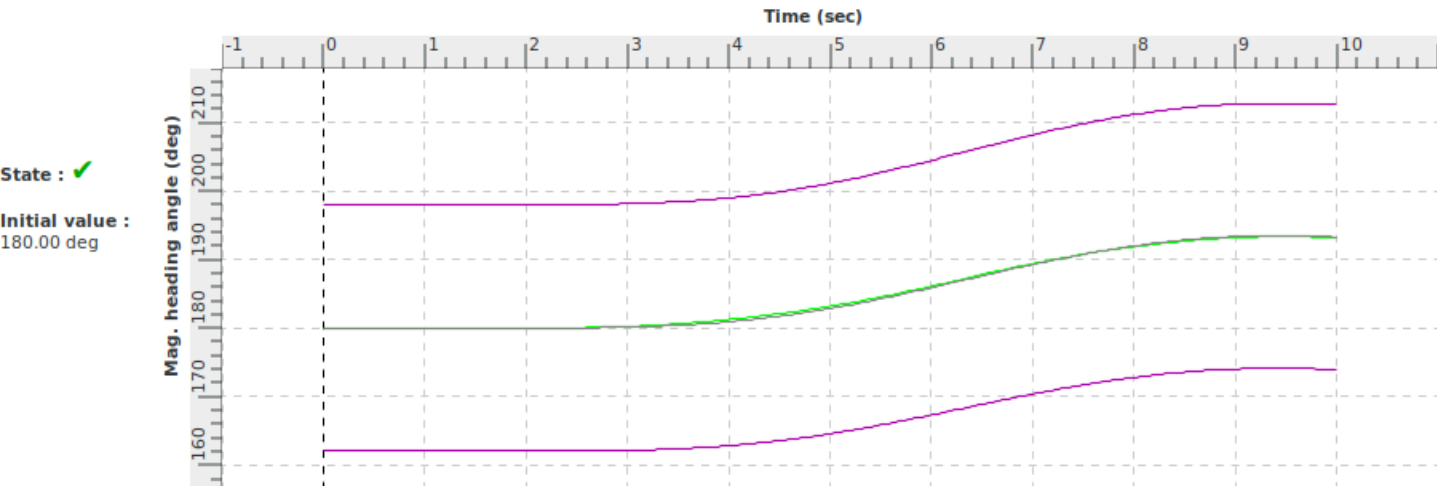
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Roll response rate during cruise		
Id	2 d ii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



Legend :

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

VALIDATION TEST

Title	Roll response rate during approach		
Id	2 d ii b	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

Objective	Expected Results
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
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.d.ii.b	+/- 2°/s or +/-10% Roll Rate

Demonstration procedure	From steady approach initial conditions, a wheel deflection step input of about 20% of maximum is applied for the two directions left then right.
Manual test procedure	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.
Automatic test procedure	2 d ii b

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Roll response rate during approach		
Id	2 d ii b	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
<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>	

Initial parameters	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

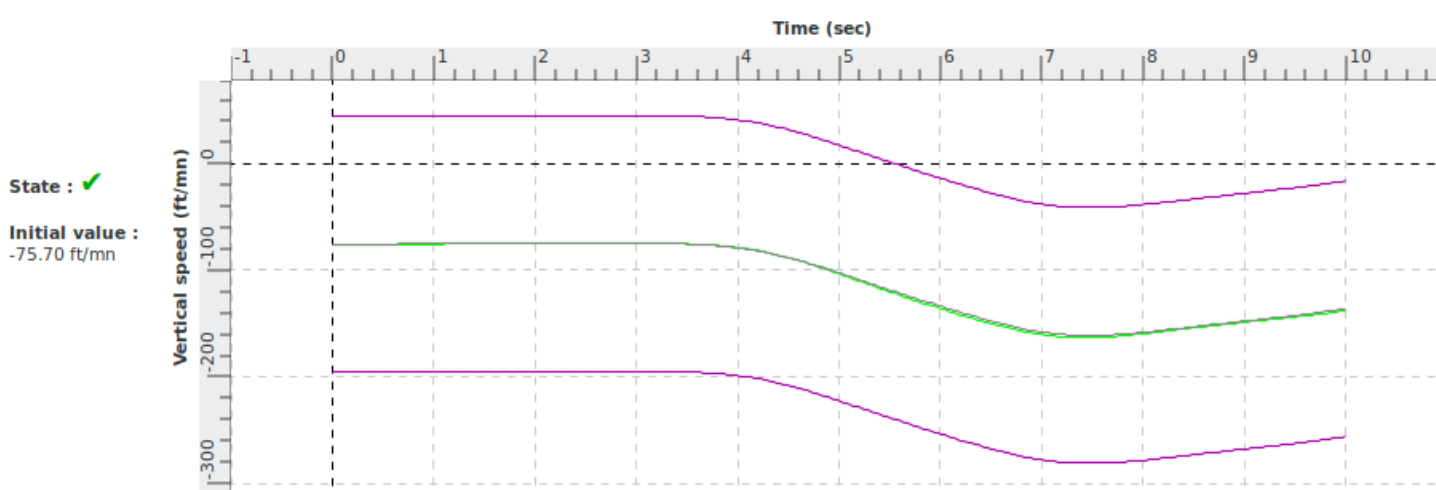
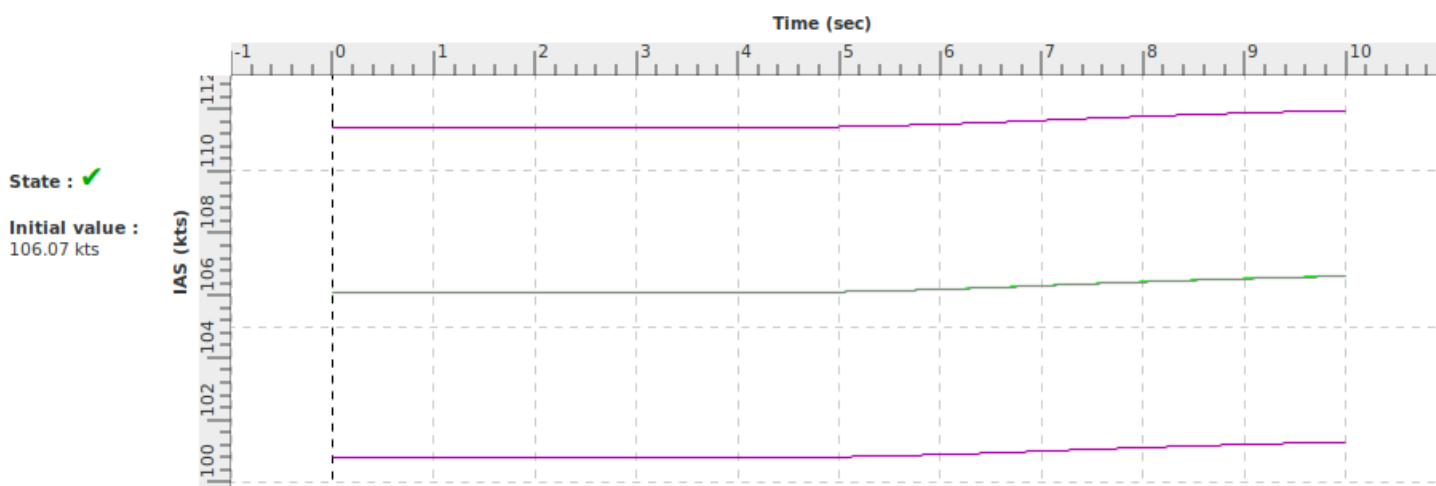
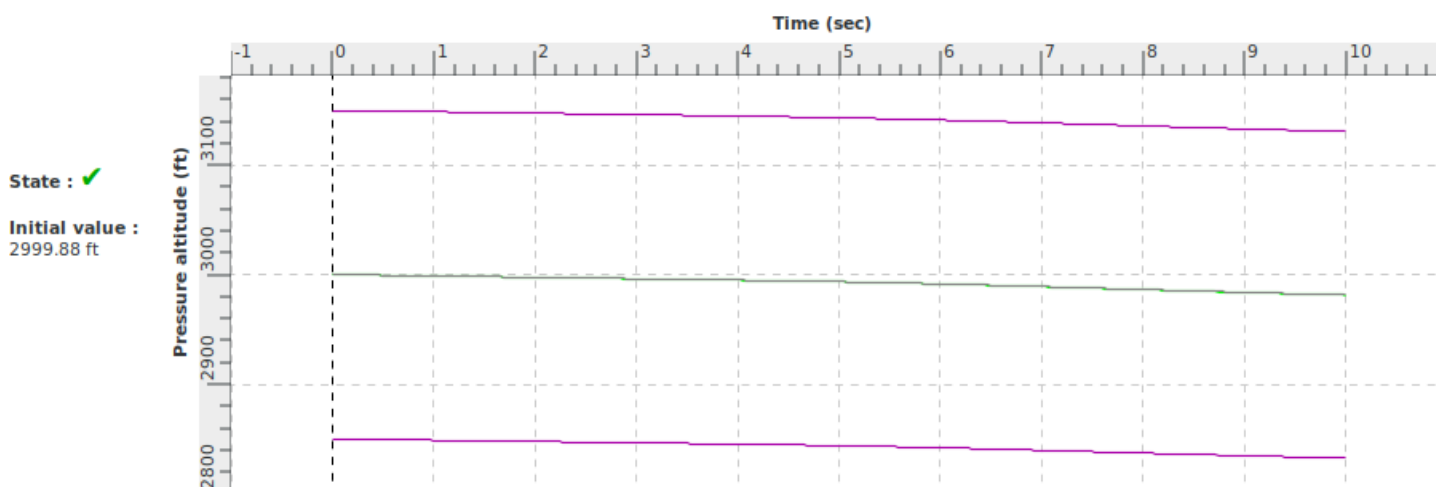
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
0.0	deconnectionPA_rudder	0.0	disable QTG Autopilot in yaw axis
1.0	SetRollCmdPalier	0.0	Send a step in the roll govern
2.0	SetRollCmdPalier	20.0	Send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

Title	Roll response rate during approach		
Id	2 d ii b	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

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



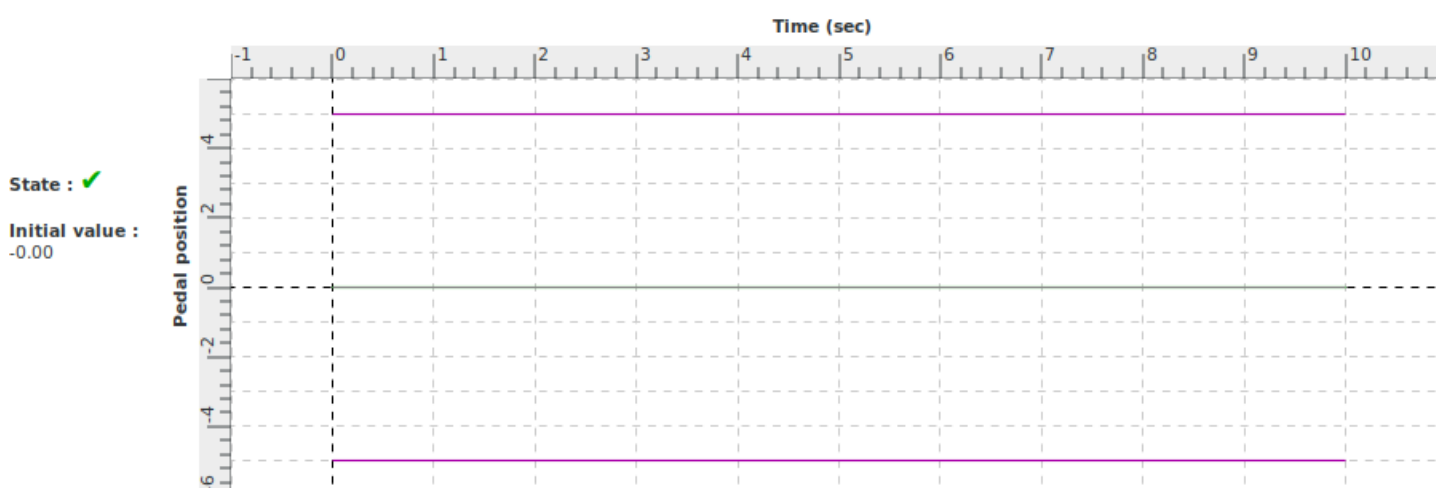
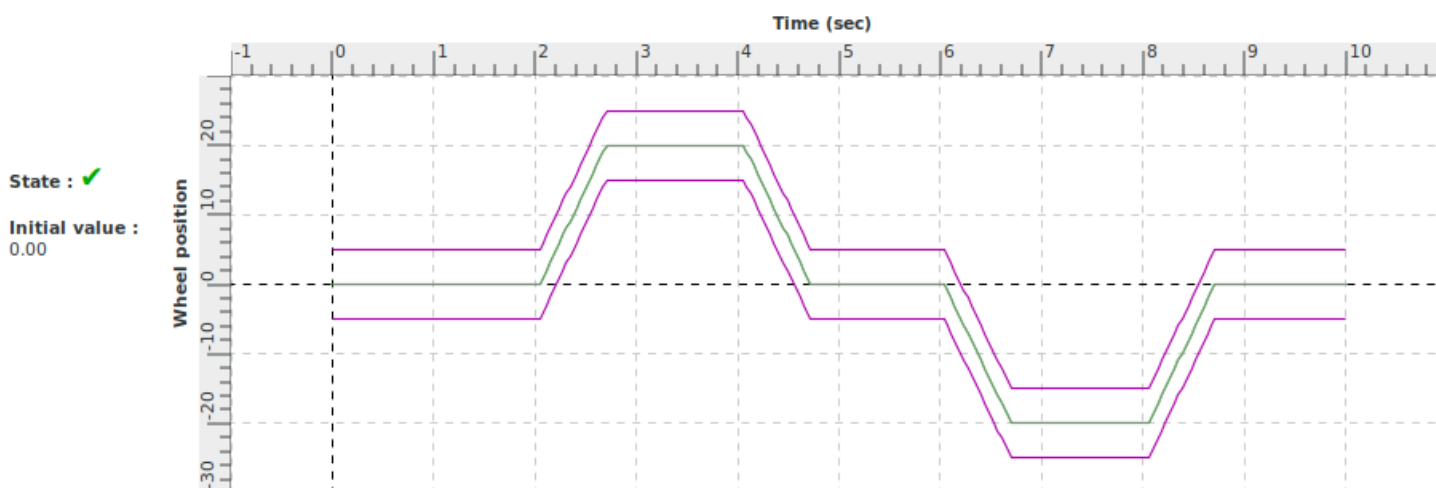
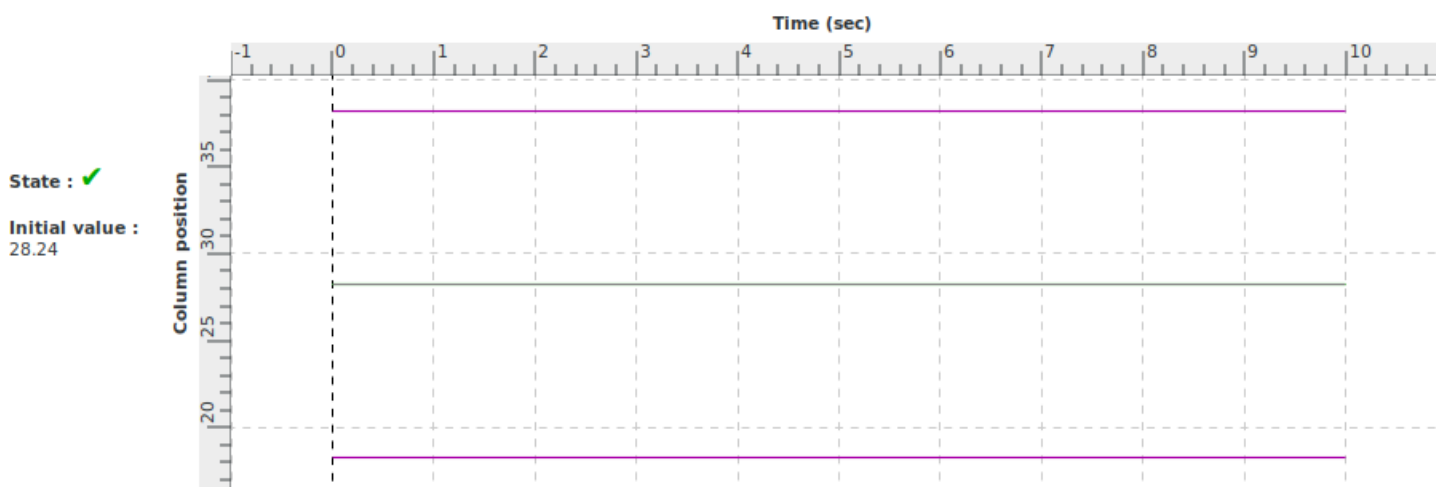
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsimg

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



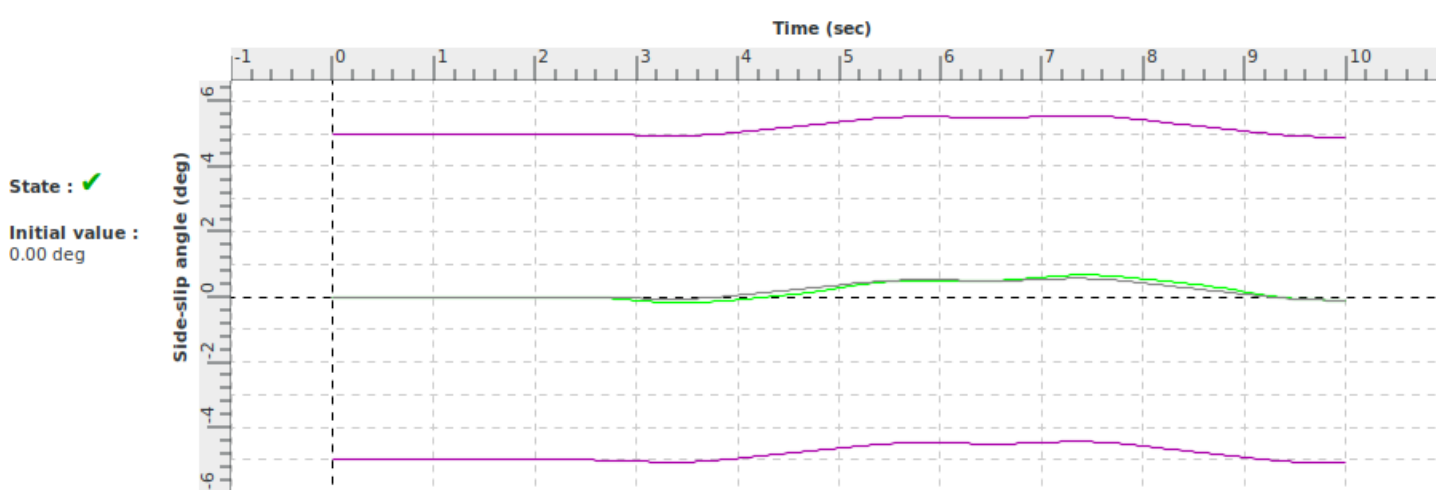
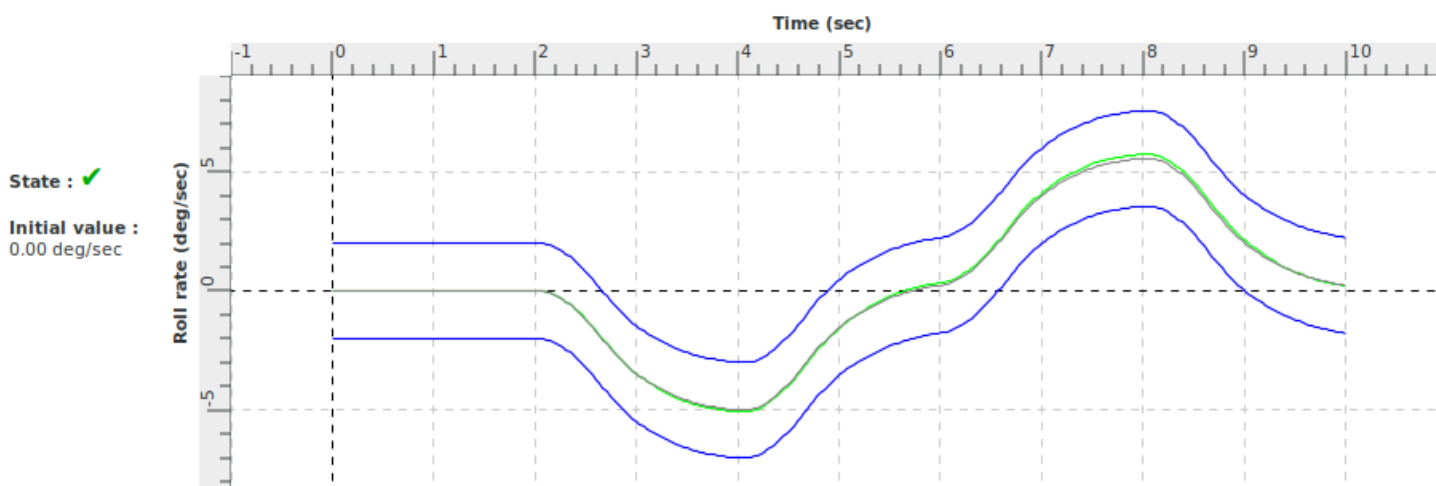
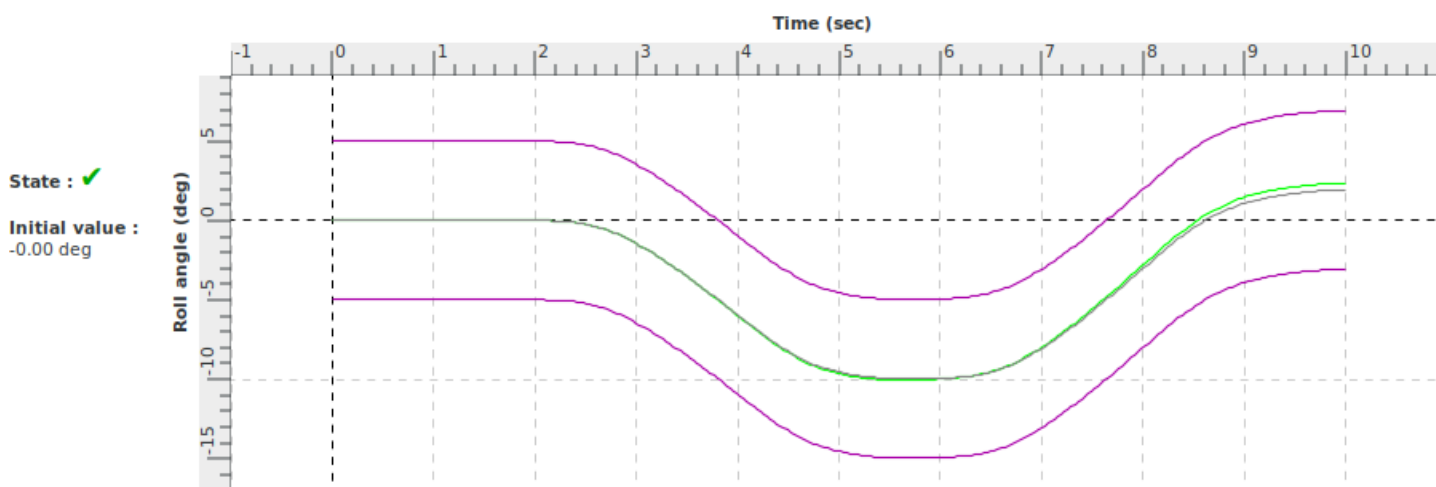
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
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



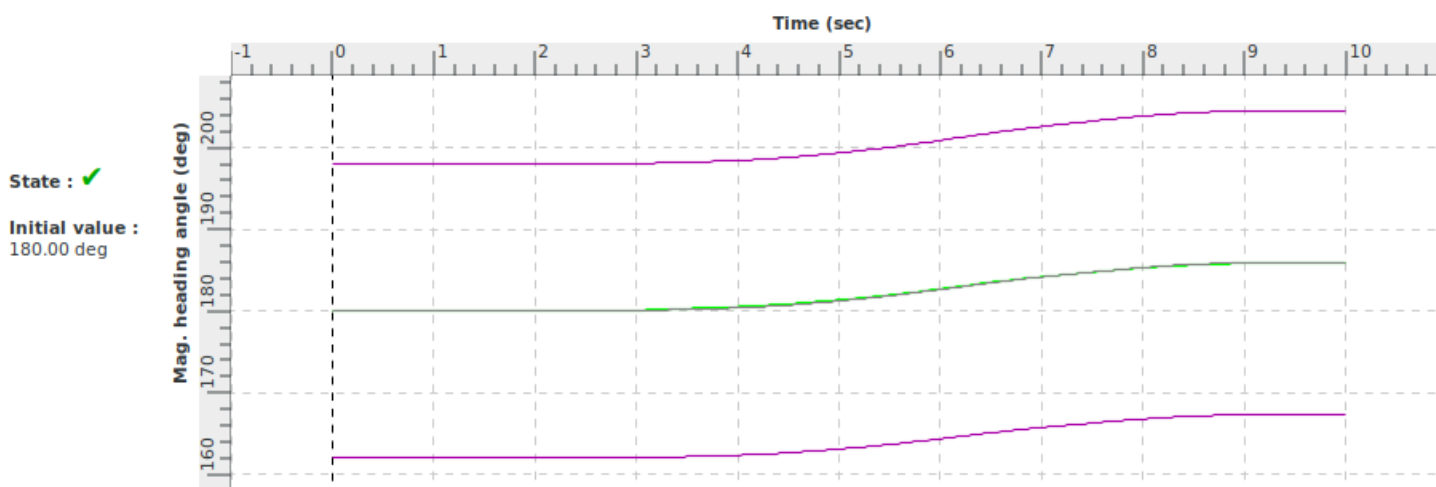
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsims

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



Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

VALIDATION TEST			
Title	Roll overshoot or response to step input of cockpit roll controller during approach		
Id	2 d iii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
Demonstrate that the simulation of roll characteristics during approach after a step roll control input conforms to the class of aeroplanes	Max Bank Angle: -15°
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.d.iii	+/- 2° or +/-10% Bank

Demonstration procedure	From steady approach initial conditions, a wheel deflection step of about 30% of maximum is applied for right direction to reach a bank angle of approximatively 15°. Then the wheel is abruptly return to neutral.
Manual test procedure	In ISA conditions and approach condition, the pilot trims the airplane. When approach is stabilised, the pilot applies impulse on the wheel 30% of total travel on each side.
Automatic test procedure	2 d iii

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Roll overshoot or response to step input of cockpit roll controller during approach		
Id	2 d iii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	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	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	

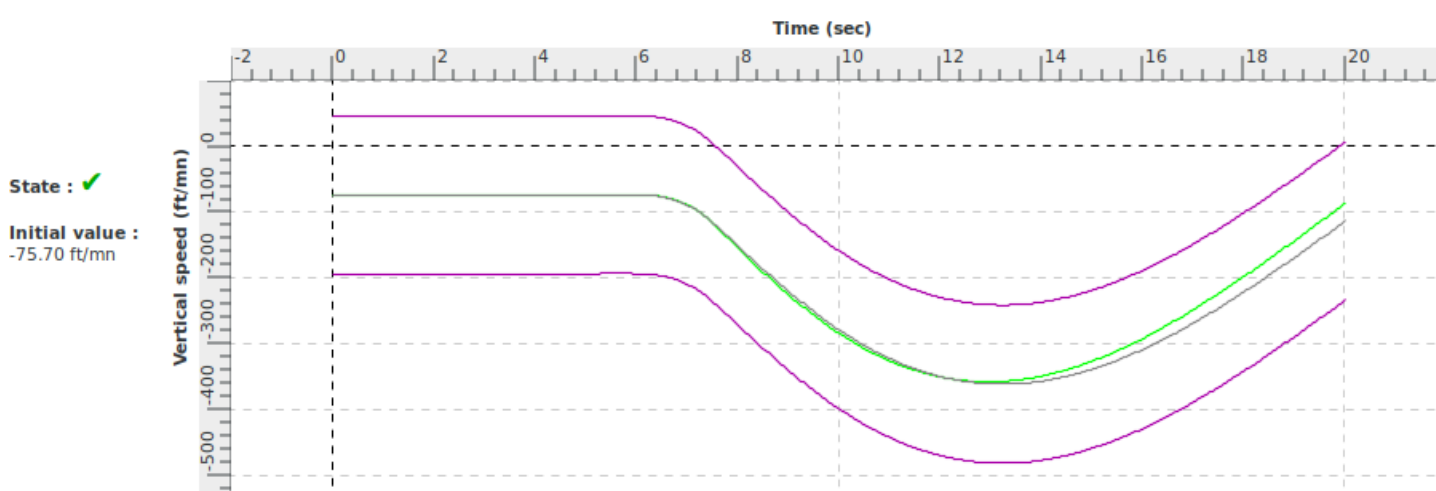
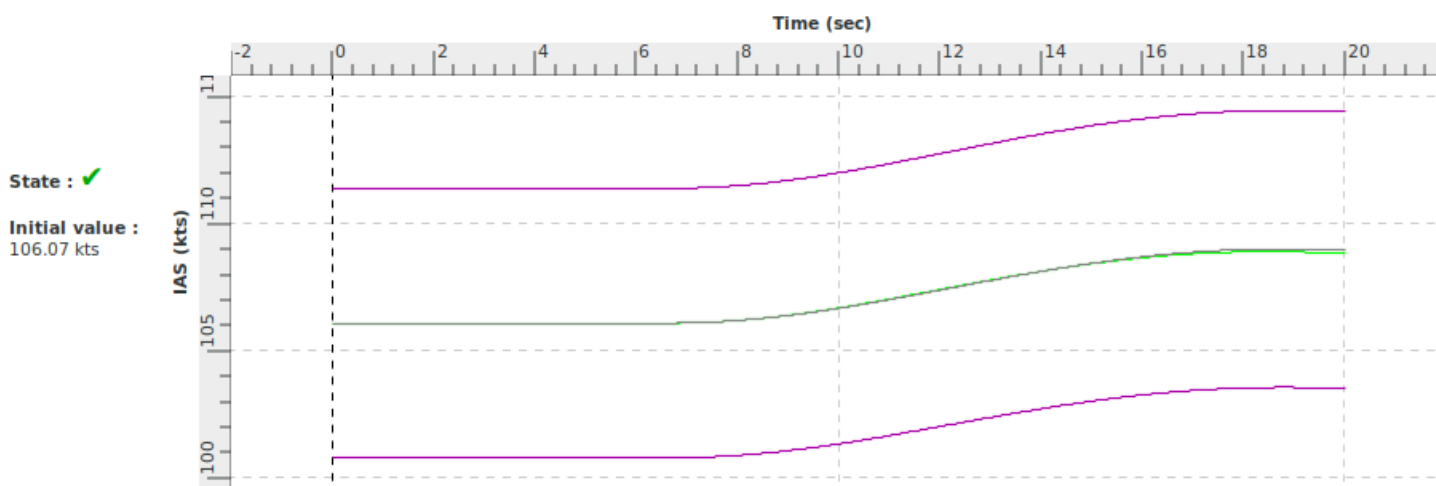
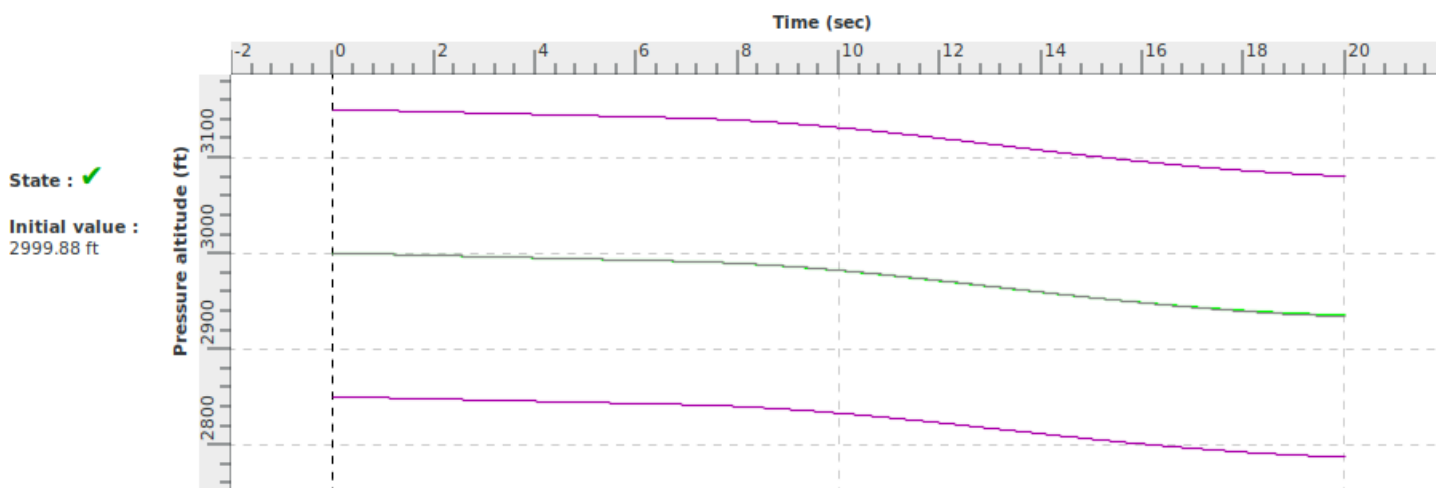
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_rudder	0.0	disable QTG Autopilot in yaw axis
0.0	deconnectionPA_att	0.0	disable QTG Autopilot in attitude axis
5.0	SetRollCmdPalier	30.0	Send a step in the roll govern
7.0	SetRollCmdPalier	0.0	Send a step in the roll govern
20.0	Stop_Test	0.0	Stop the test procedure

Title	Roll overshoot or response to step input of cockpit roll controller during approach		
Id	2 d iii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Roll overshoot or response to step input of cockpit roll controller during approach		
Id	2 d iii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



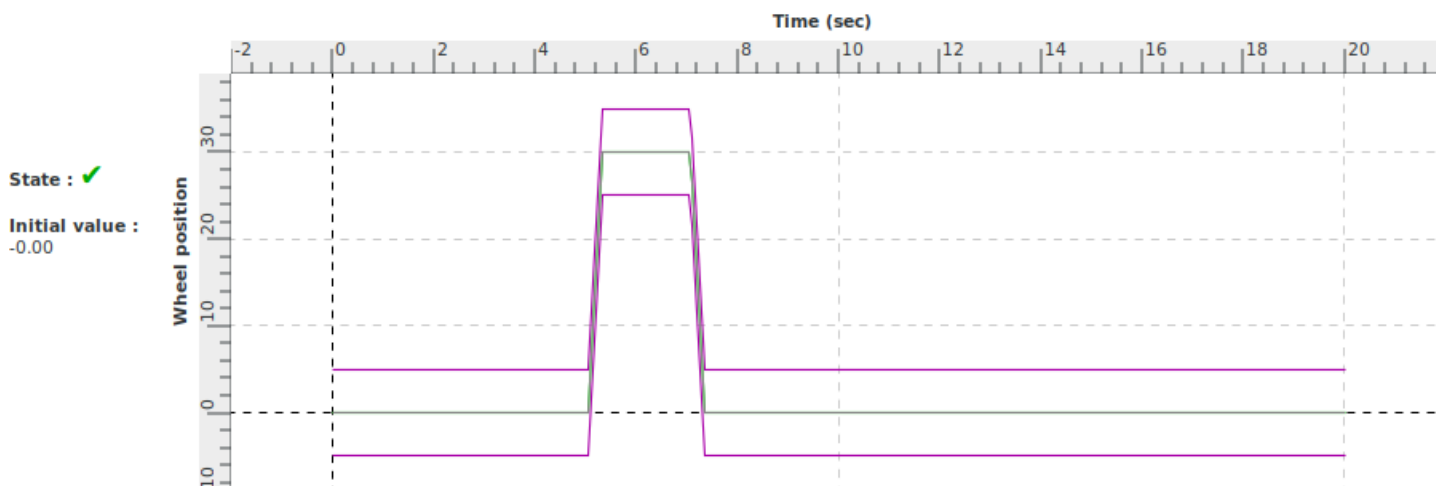
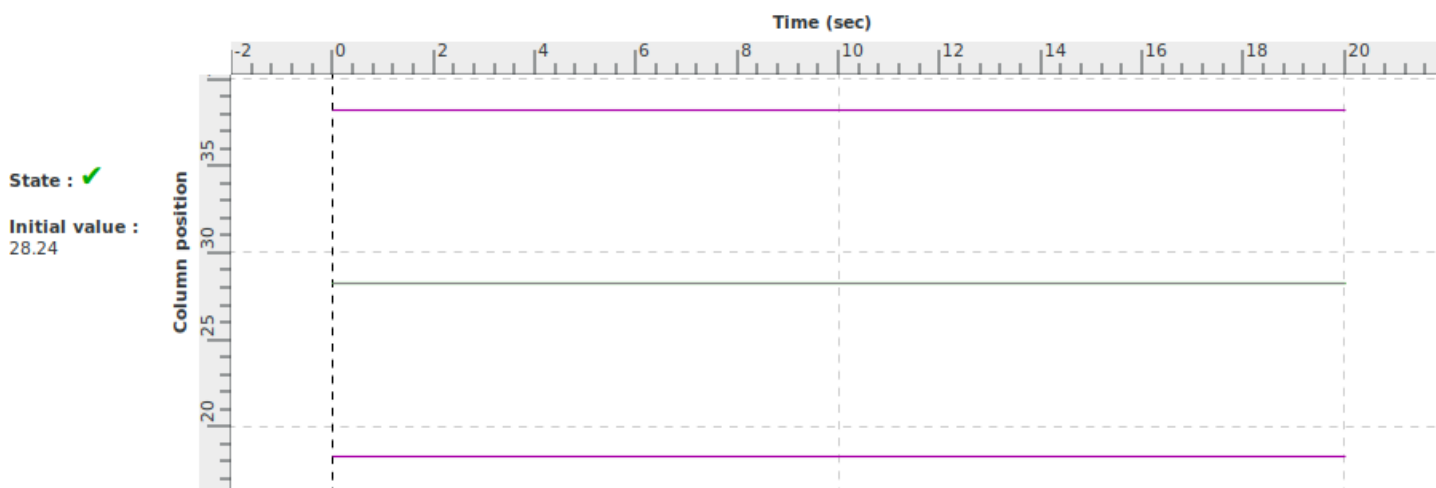
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Roll overshoot or response to step input of cockpit roll controller during approach		
Id	2 d iii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



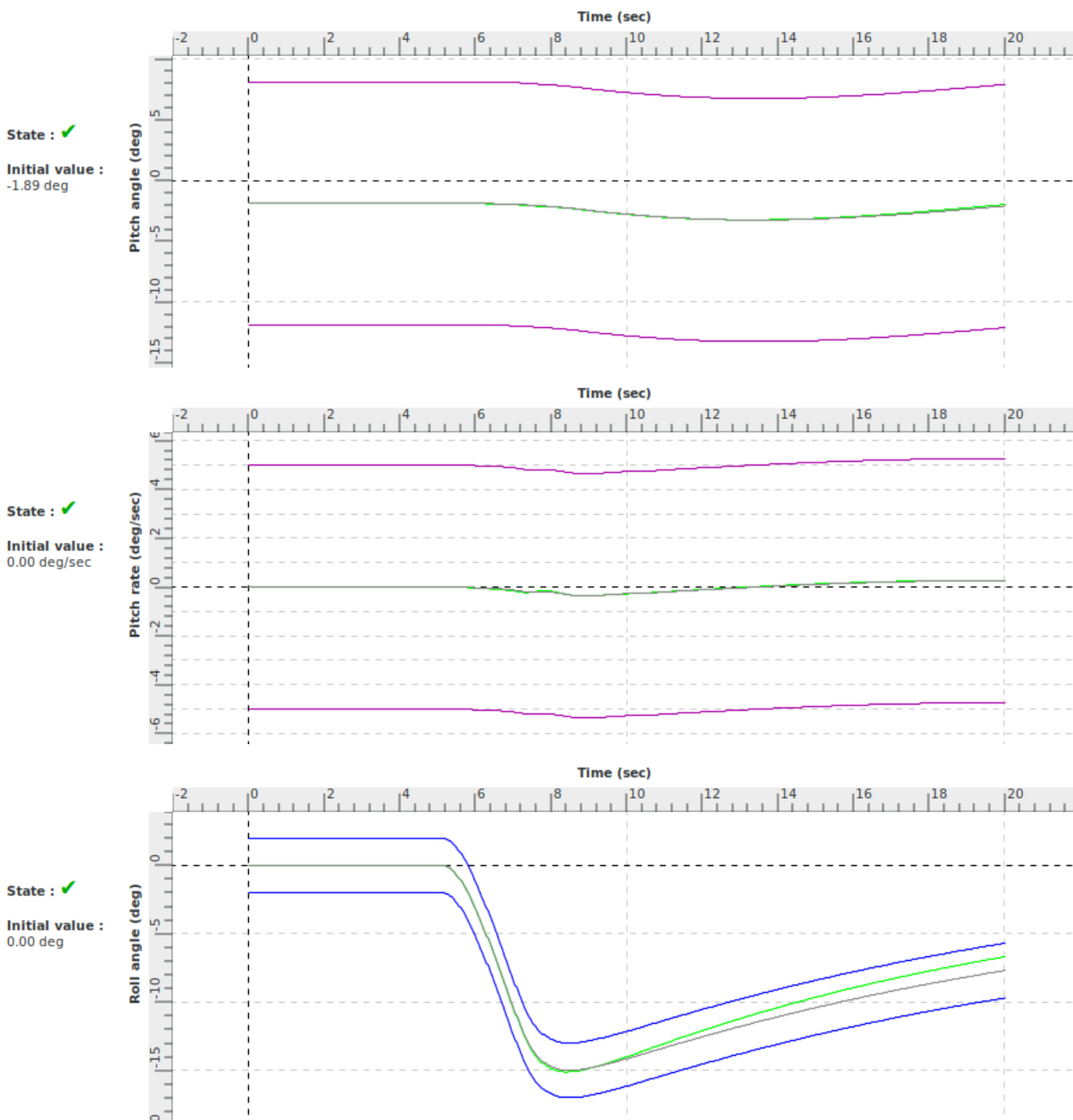
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Roll overshoot or response to step input of cockpit roll controller during approach		
Id	2 d iii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	Master Date	01/03/19
Result Load	2012.01	Master Load	1902



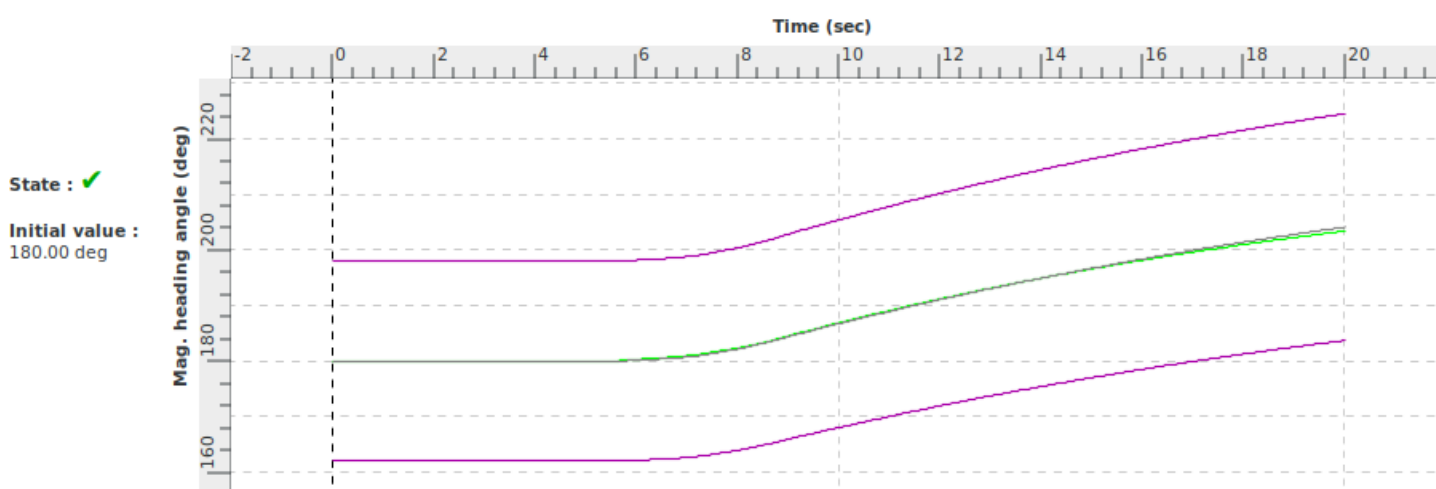
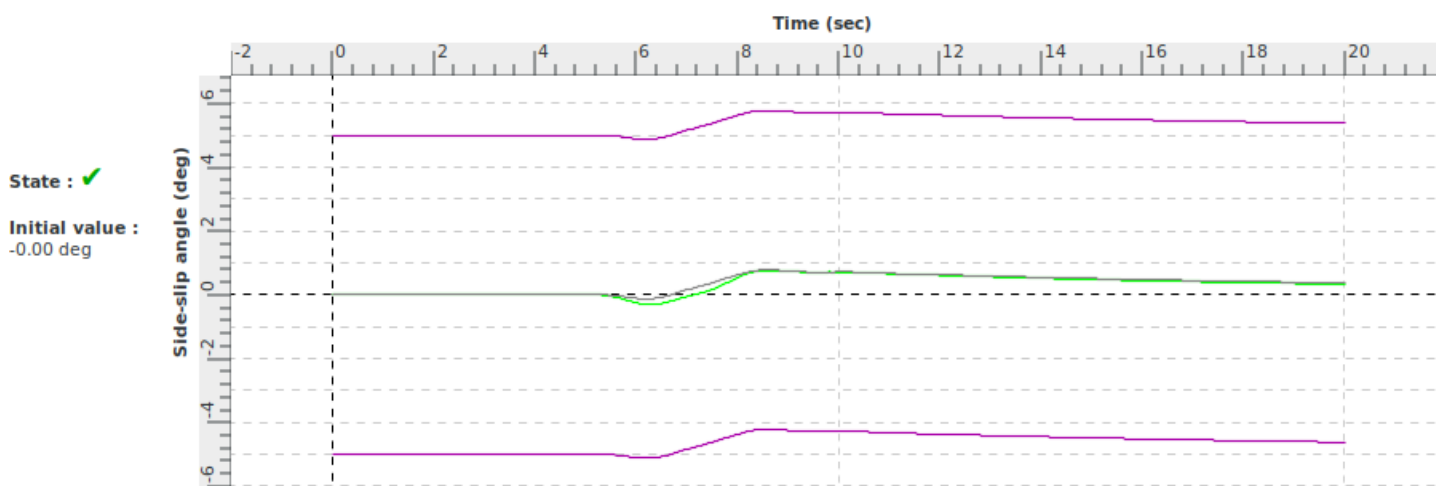
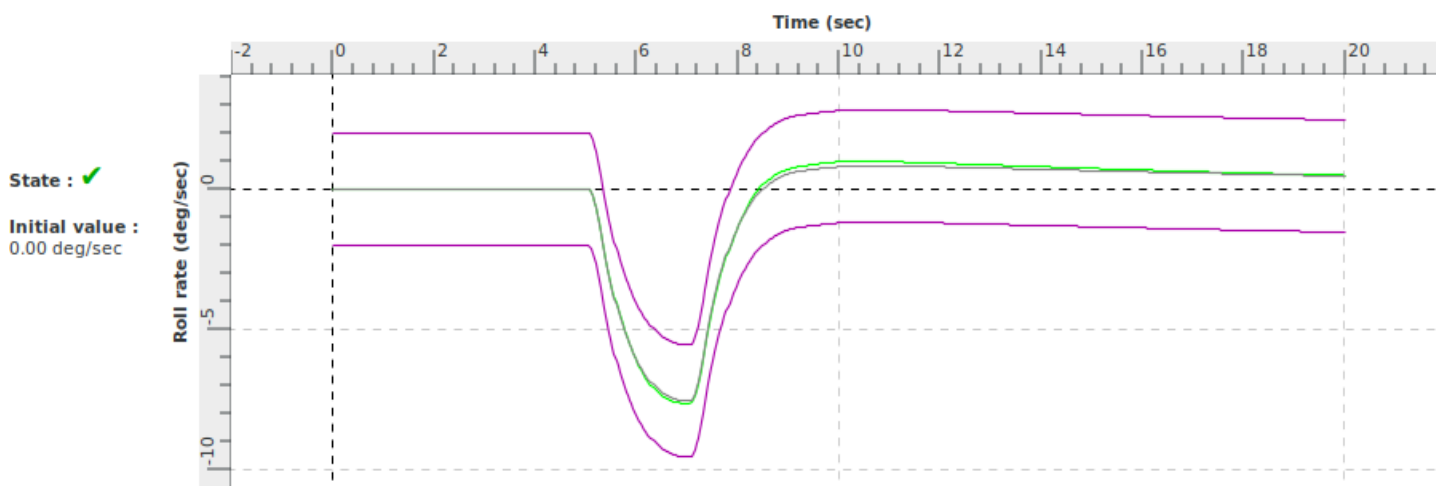
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Roll overshoot or response to step input of cockpit roll controller during approach		
Id	2 d iii	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	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

Title	Left spiral stability during cruise		
Id	2 d iv 1 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Objective	Expected Results
Demonstrate that the simulation of the dynamic lateral/directional characteristics in the spiral mode during cruise conform to the class of aeroplanes	Max Roll Rate of return = -1°/s Delta Roll angle from max to 20 sec after = -15 deg
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.d.iv.1.a	Correct trend and +/- 2 deg or +/- 10 % Bank in 20 seconds

Demonstration procedure	From steady cruise initial conditions, a wheel deflection is applied in order to establish a steady left turn of about 25° afterwards the wheel is released to neutral.
Manual test procedure	In ISA conditions and cruise condition, the pilot trims the airplane to symmetrical wing level flight . Smooth roll until about 25° of the bank angle is initiated and roll control slowly returned to neutral and controls released.
Automatic test procedure	2 d iv 1 a

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Left spiral stability during cruise		
Id	2 d iv 1 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Autopilot mode	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>	

Initial parameters	CRUISE
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 6000 Vertical speed (ft/min) : 0 (free) IAS (kt) : 139 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

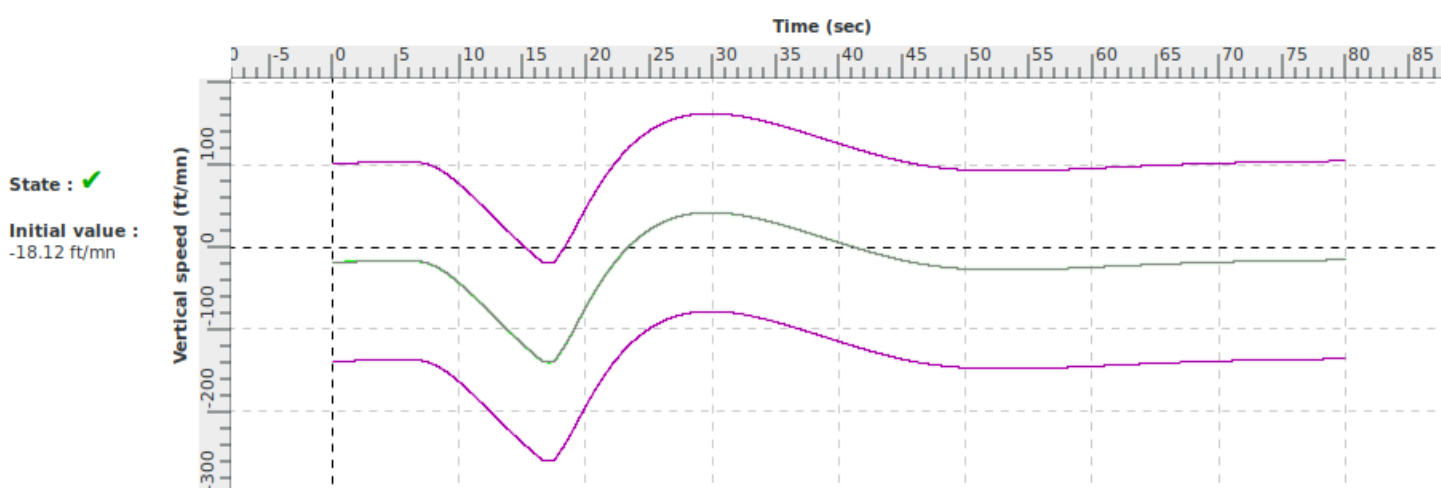
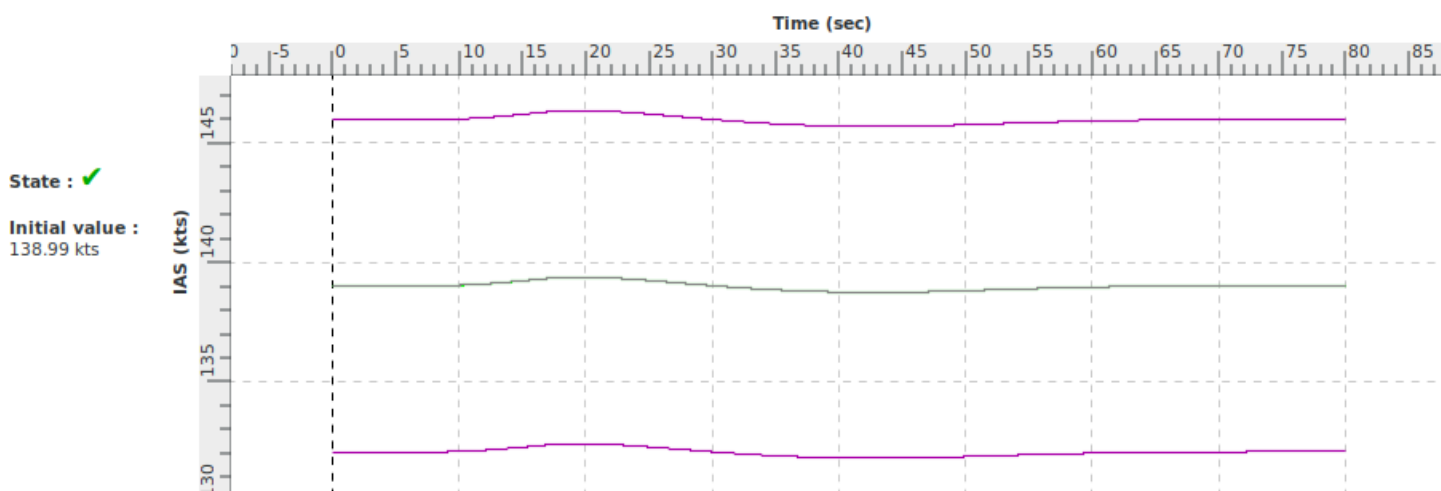
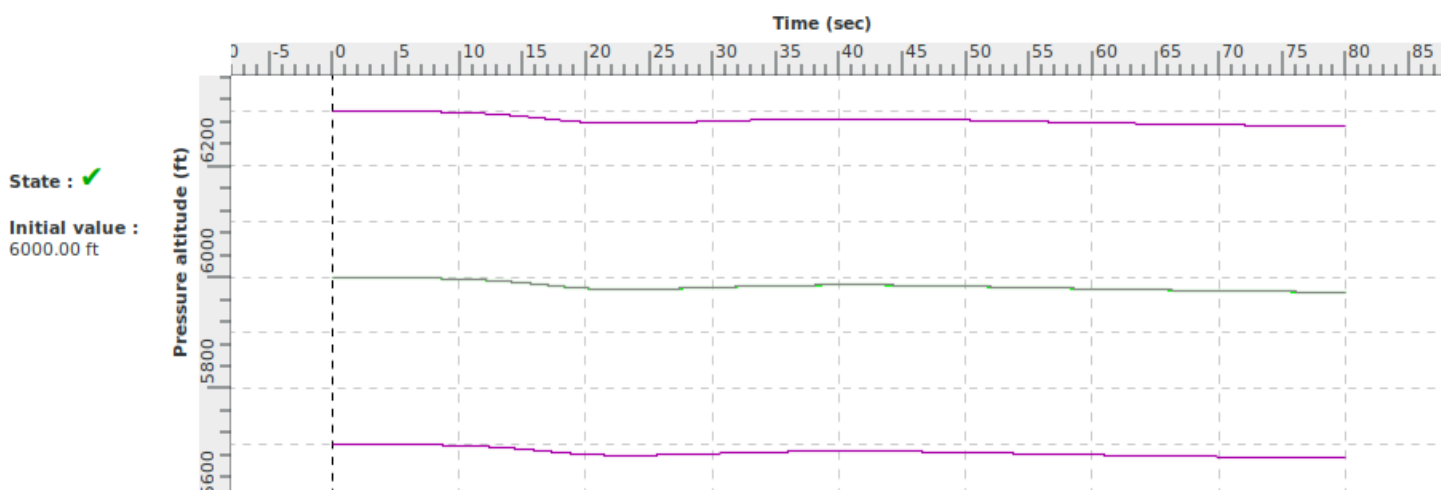
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
1.0	SetRudderCmdPalier	0.0	Send a step in the rudder govern
5.0	SetRollCmdPalier	-7.0	Send a step in the roll govern
16.0	SetRollCmdPalier	0.0	Send a step in the roll govern
80.0	Stop_Test	0.0	Stop the test procedure

Title	Left spiral stability during cruise		
Id	2 d iv 1 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

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

Notes

Title	Left spiral stability during cruise		
Id	2 d iv 1 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



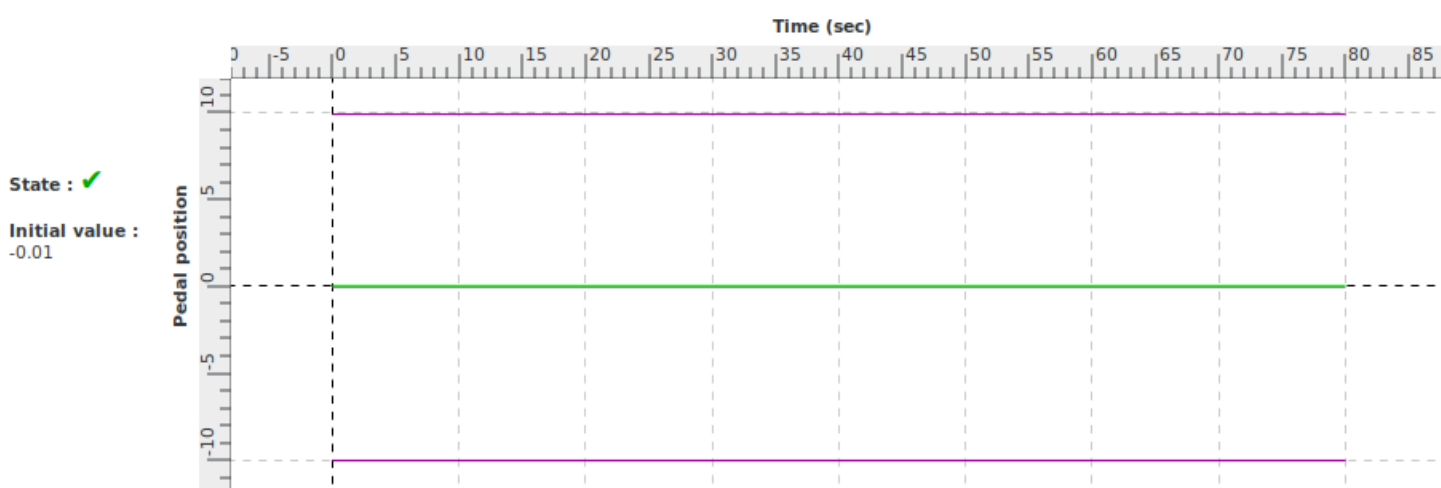
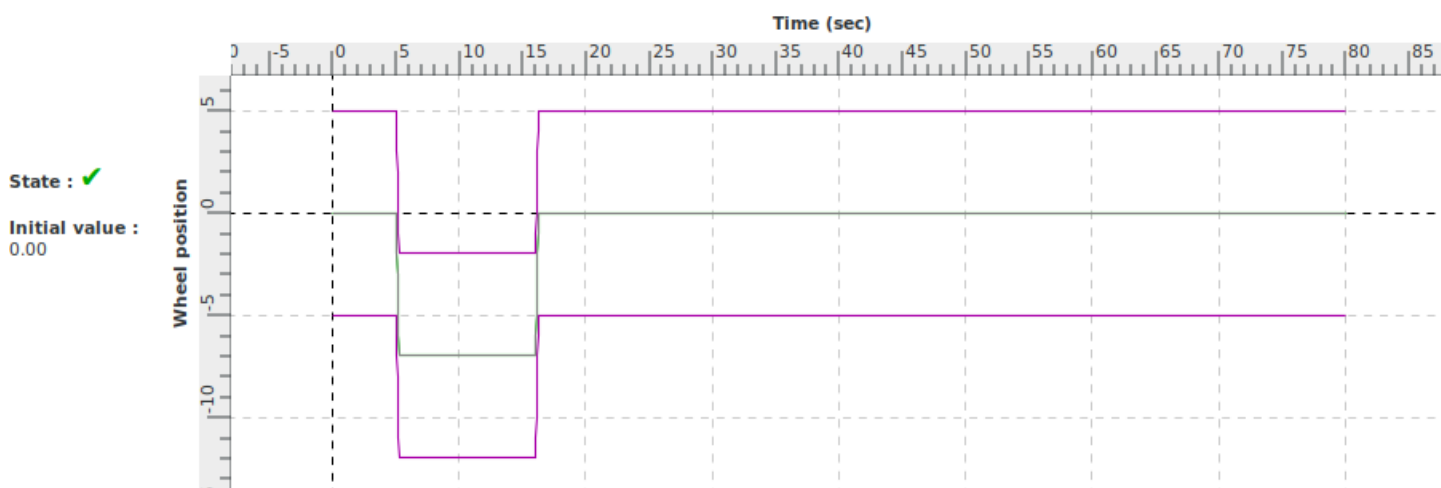
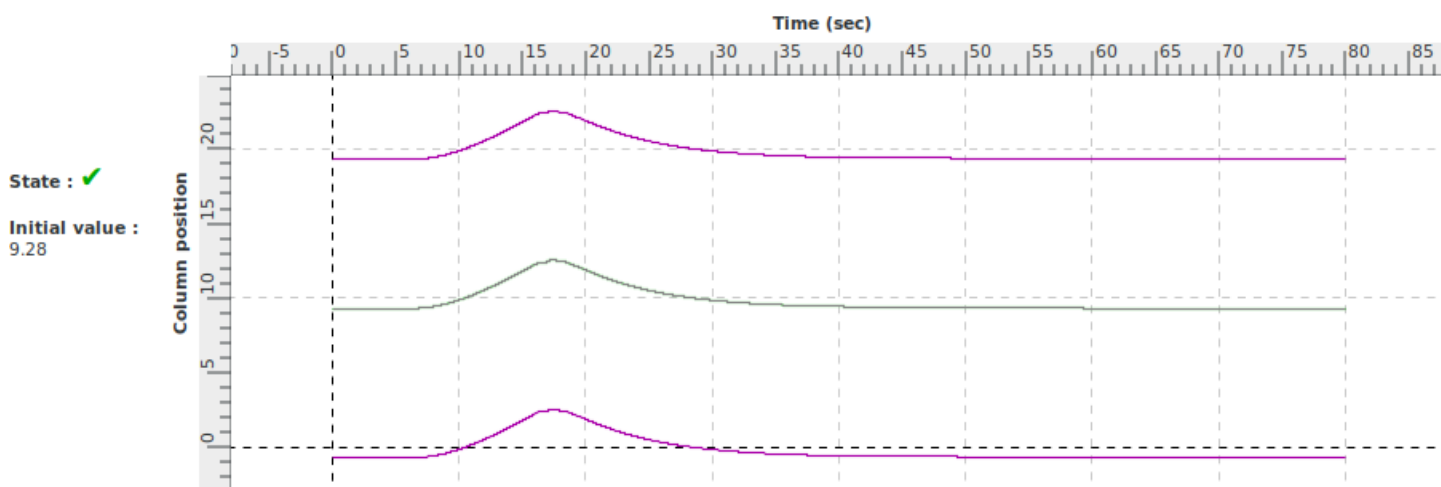
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Left spiral stability during cruise		
Id	2 d iv 1 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



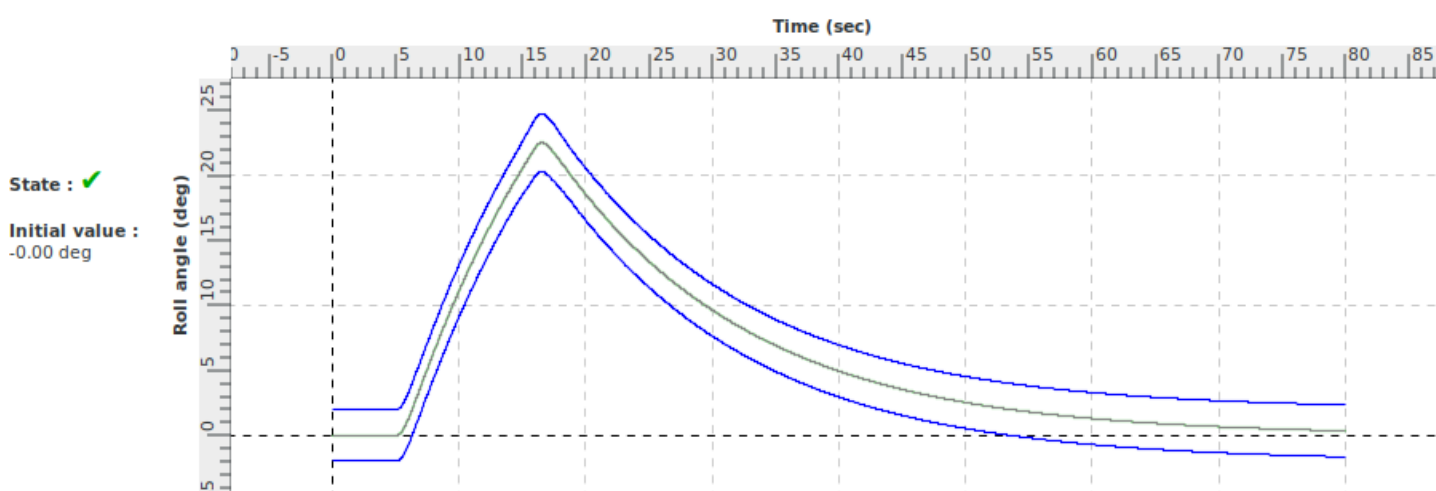
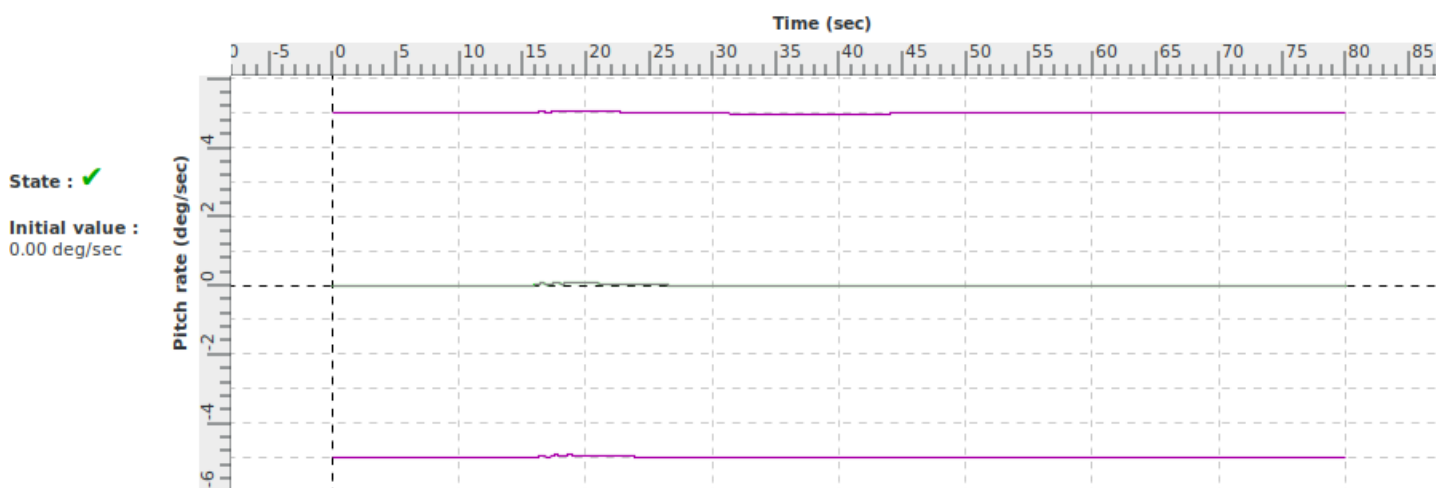
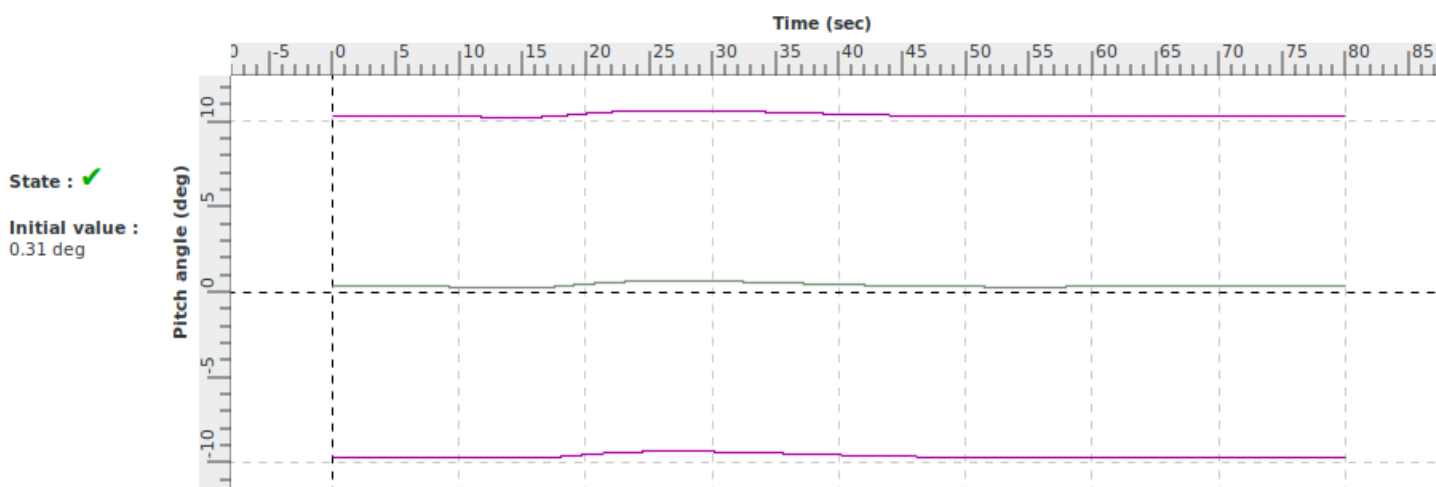
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsims

grey : master

Title	Left spiral stability during cruise		
Id	2 d iv 1 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



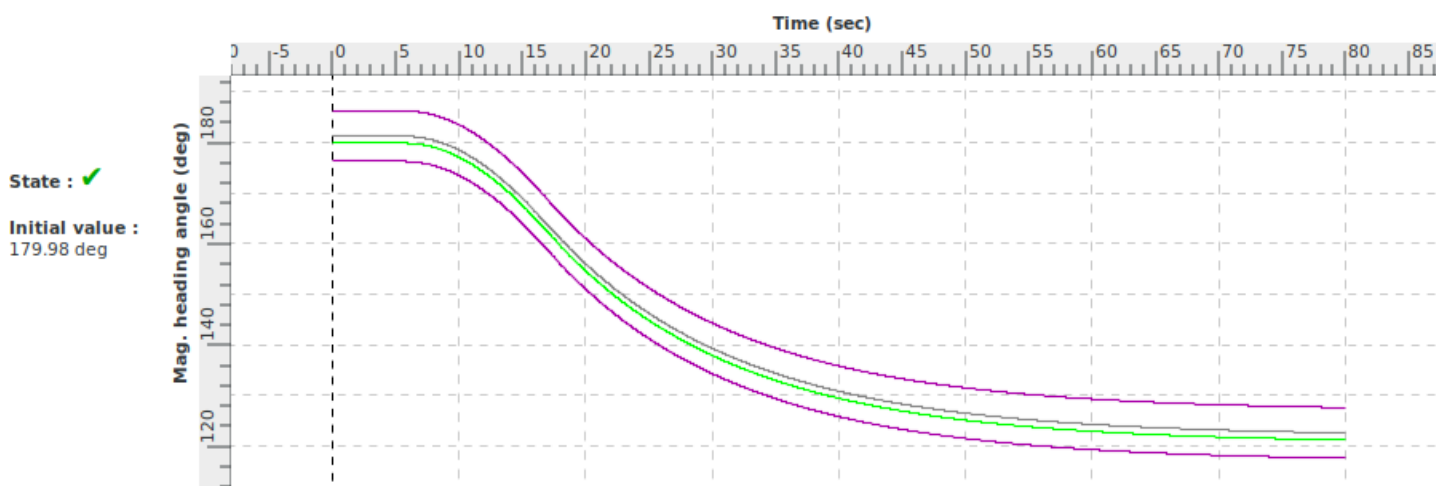
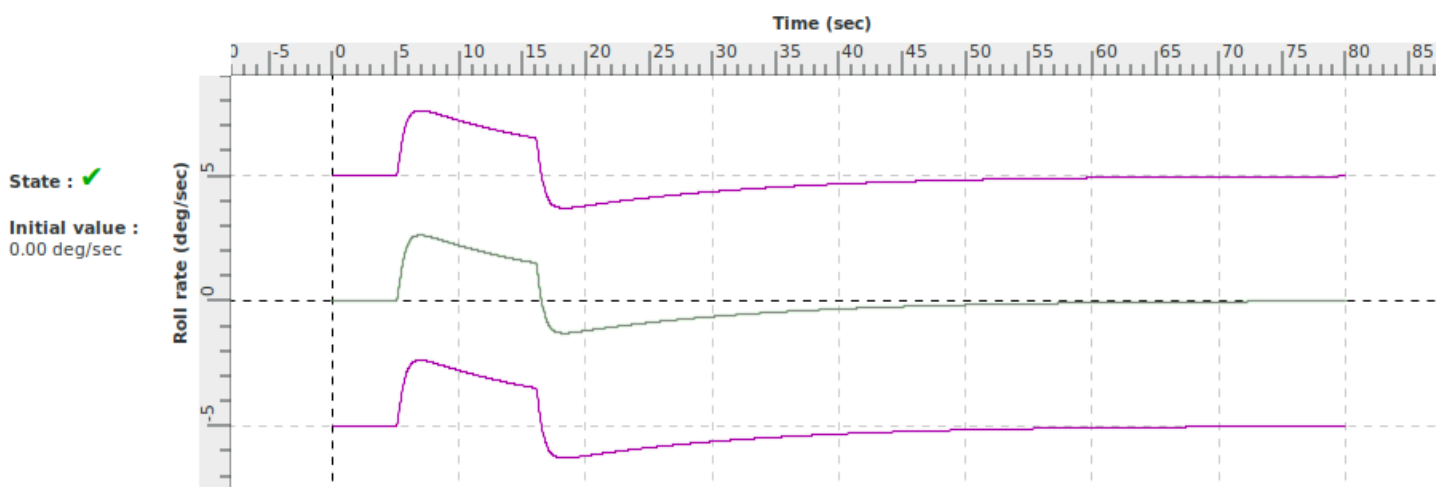
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Left spiral stability during cruise		
Id	2 d iv 1 a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	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

Title	Right spiral stability during cruise		
Id	2 d iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Objective	Expected Results
Demonstrate that the simulation of the dynamic lateral/directional characteristics in the spiral mode during cruise conform to the class of aeroplanes	Max Roll Rate of return = 1 °/s Delta Roll angle from max to 20 sec after = +15 deg
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.d.iv.1.b	Correct trend and +/- 2 deg or +/- 10 % Bank in 20 seconds

Demonstration procedure	From steady cruise initial conditions, a wheel deflection is applied in order to establish a steady right turn of about 25 ° afterwards the wheel is released to neutral.
Manual test procedure	In ISA conditions and cruise condition, the pilot trims the airplane to symmetrical wing level flight . Smooth roll until about 25° of the bank angle is initiated and roll control slowly returned to neutral and controls released.
Automatic test procedure	2 d iv 1 b

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Right spiral stability during cruise		
Id	2 d iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Autopilot mode	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>	

Initial parameters	CRUISE
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 6000 Vertical speed (ft/min) : 0 (free) IAS (kt) : 139 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

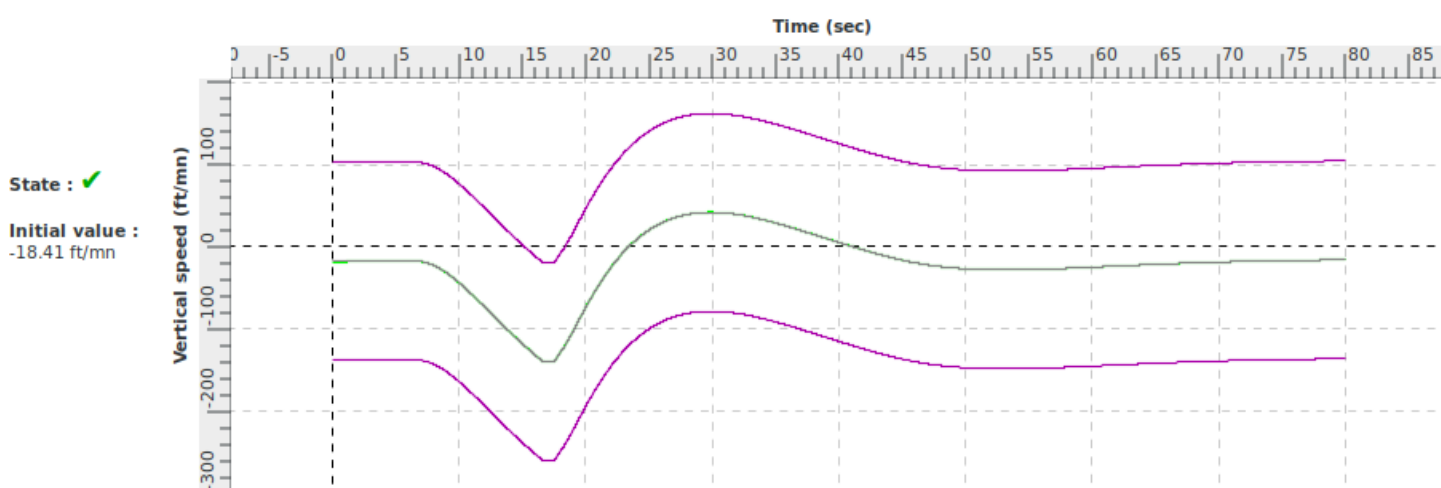
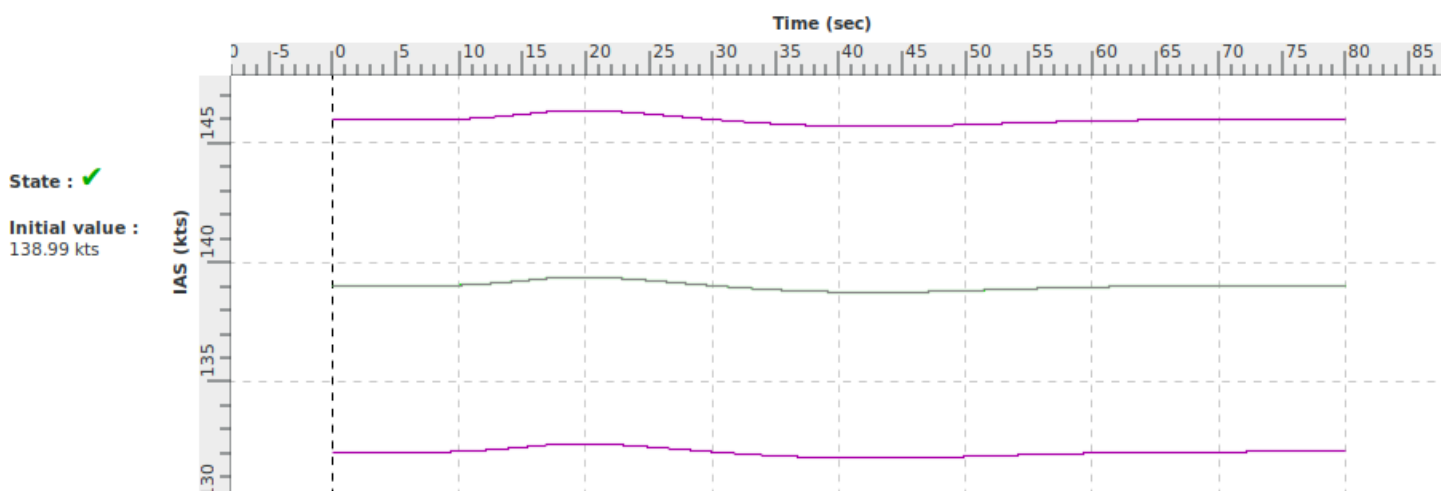
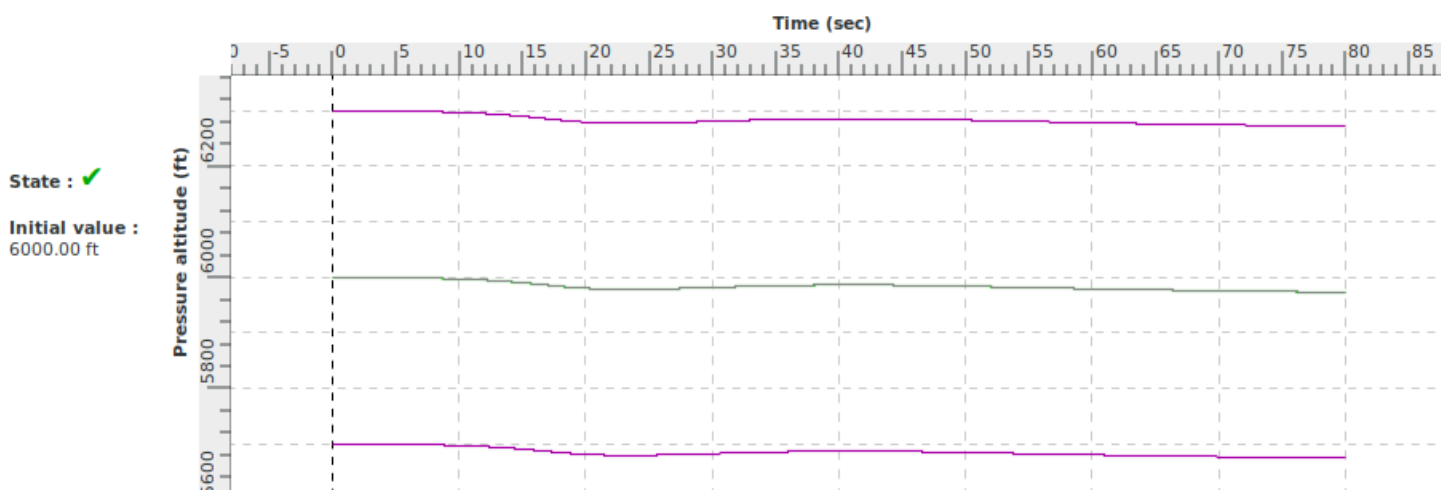
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
1.0	SetRudderCmdPalier	0.0	Send a step in the rudder govern
5.0	SetRollCmdPalier	7.0	Send a step in the roll govern
16.0	SetRollCmdPalier	0.0	Send a step in the roll govern
80.0	Stop_Test	0.0	Stop the test procedure

Title	Right spiral stability during cruise		
Id	2 d iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

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

Notes

Title	Right spiral stability during cruise		
Id	2 d iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



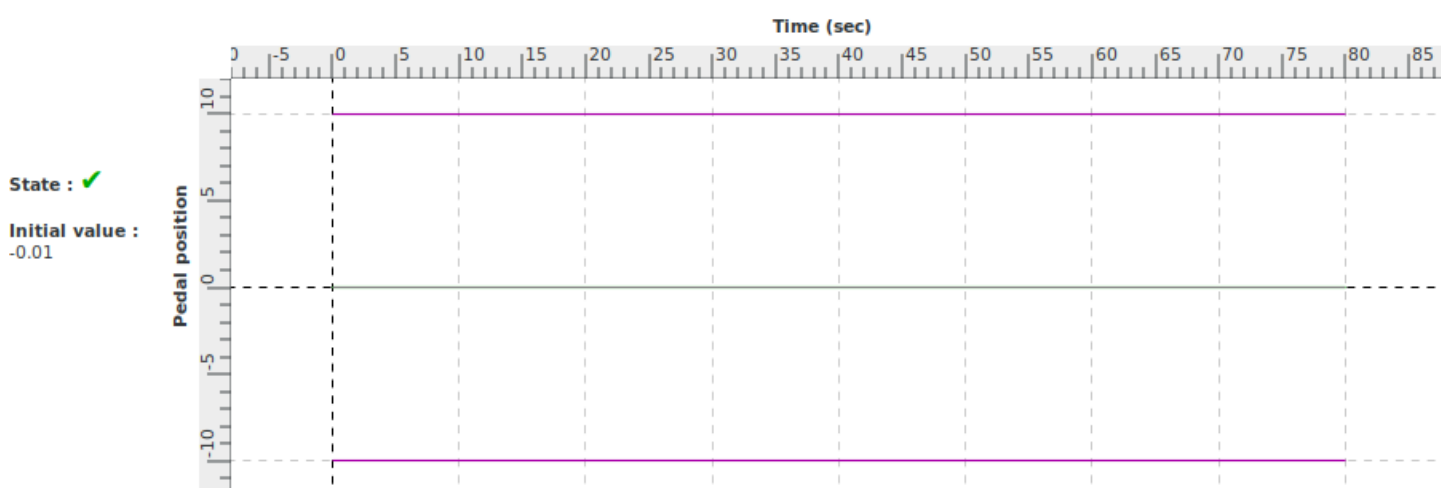
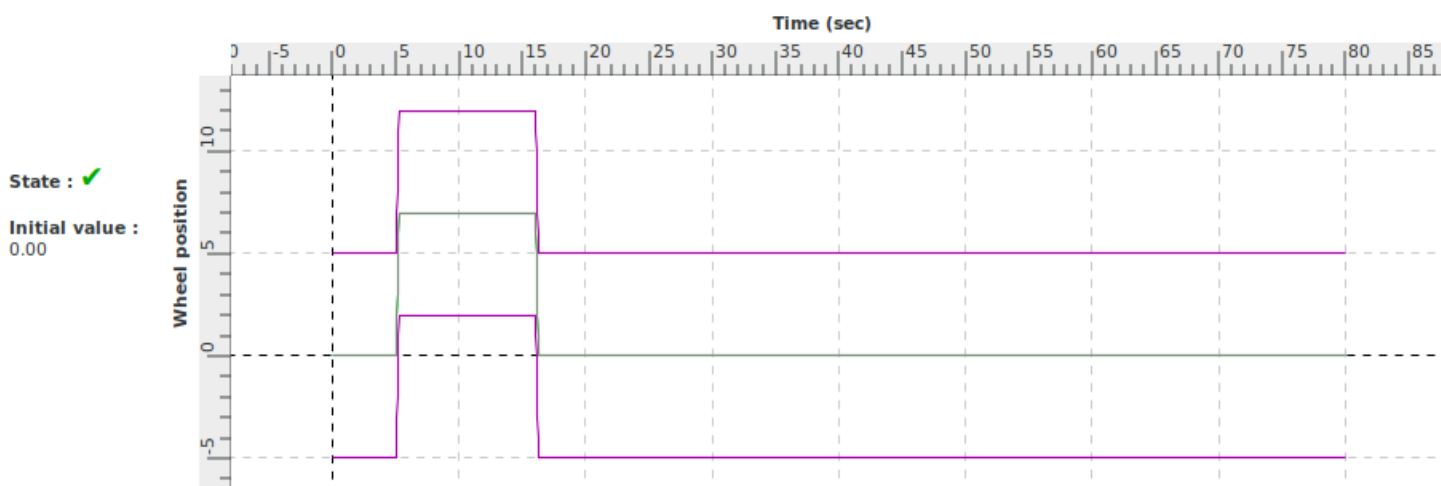
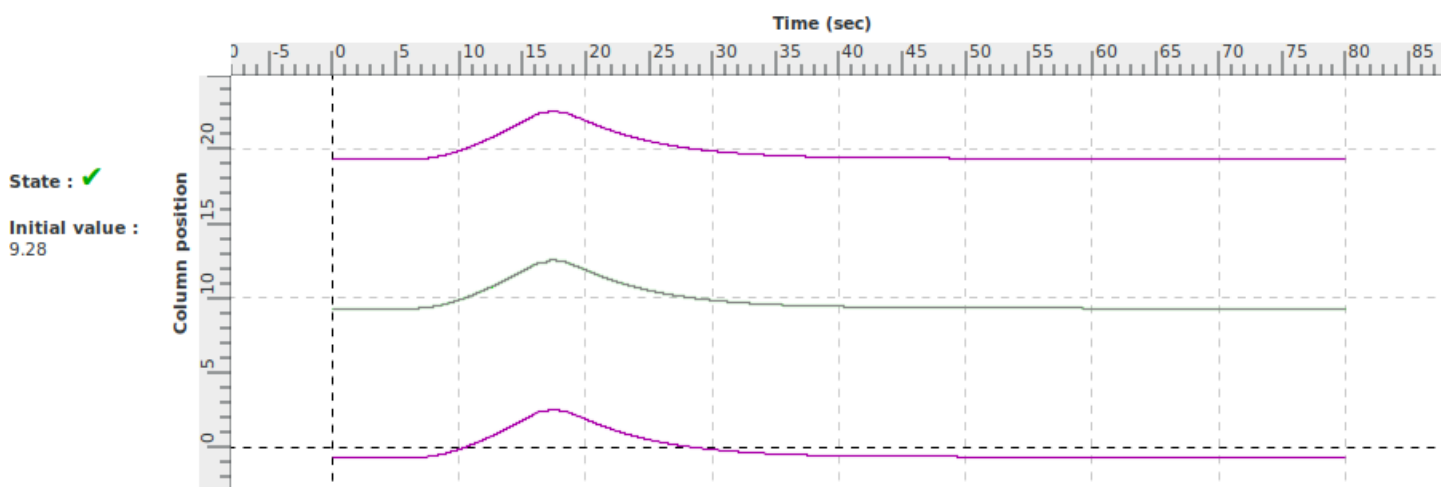
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Right spiral stability during cruise		
Id	2 d iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



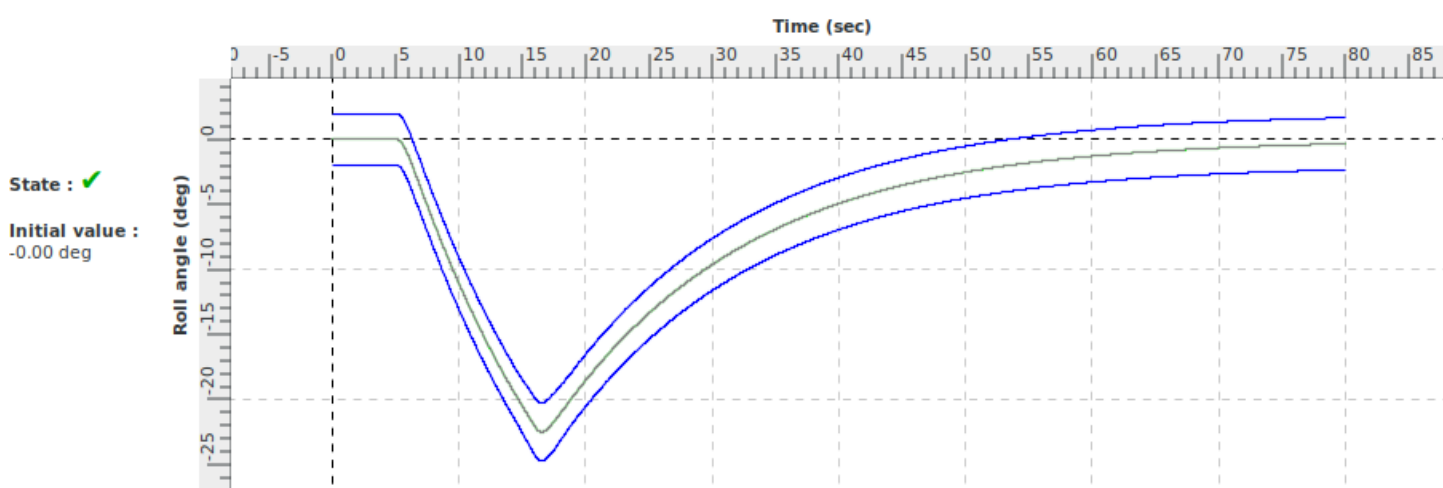
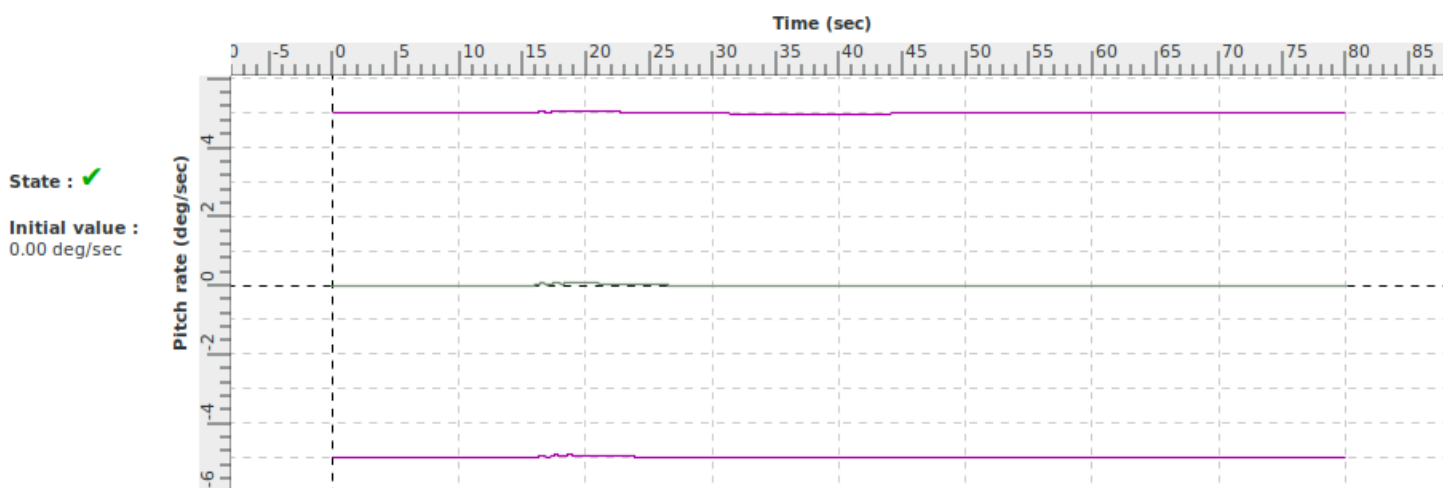
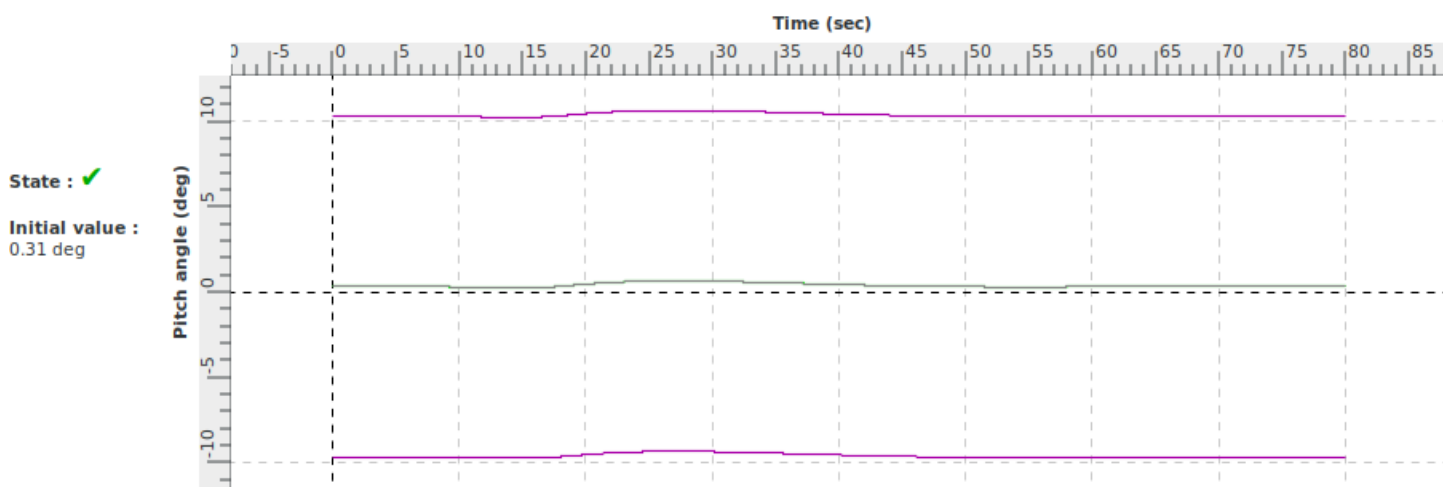
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Right spiral stability during cruise		
Id	2 d iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



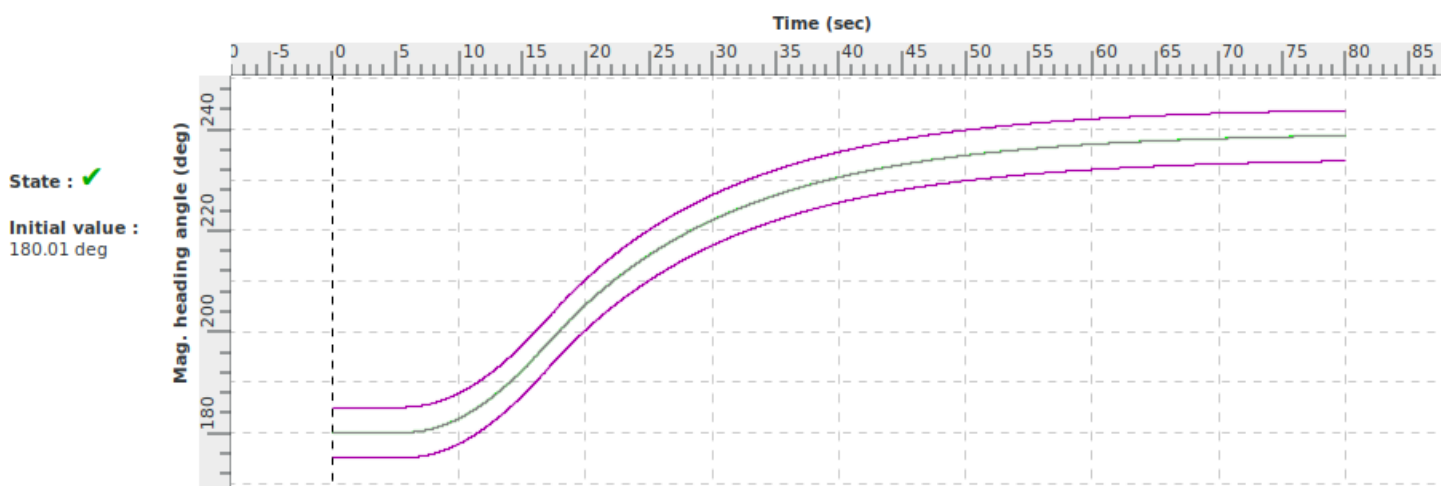
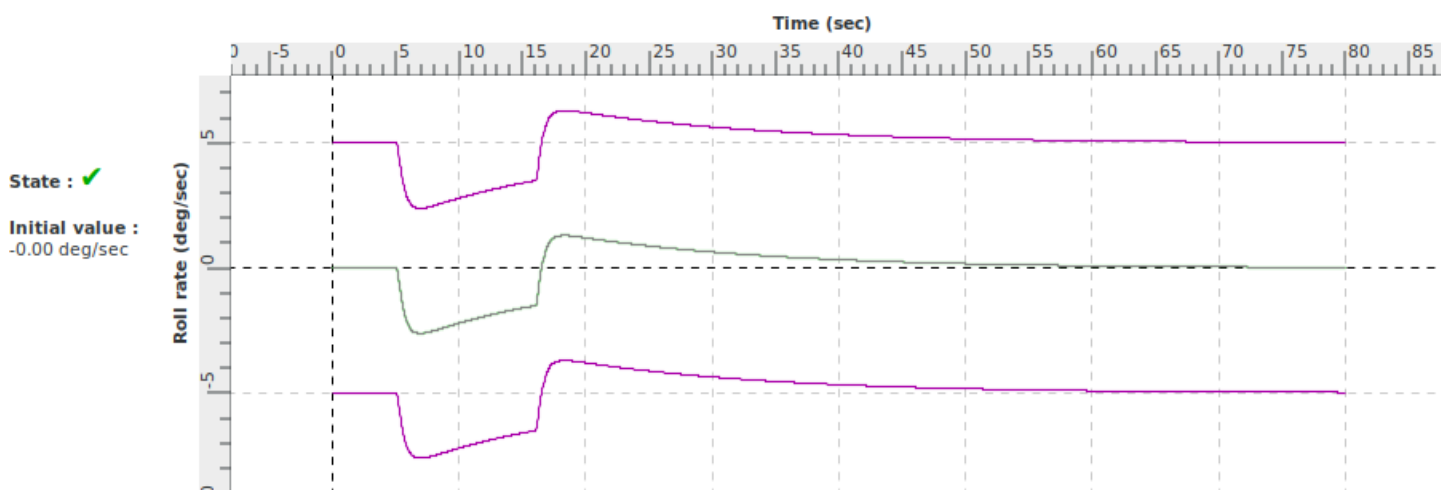
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Right spiral stability during cruise		
Id	2 d iv 1 b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	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

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

Objective	Expected Results
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 %
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.d.v.a	+/-1° Rudder angle (equivalent 3% of pedal position) +/-2° Sideslip angle

Demonstration procedure	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.
Manual test procedure	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.
Automatic test procedure	2 d v a

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Engine inoperative trim second segment climb		
Id	2 d v a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
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_HEADING
Automatic AUTO_HEADING mode : Heading is maintained constant through roll and yaw trim and Vertical Speed through pitch trim.	

Initial parameters	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

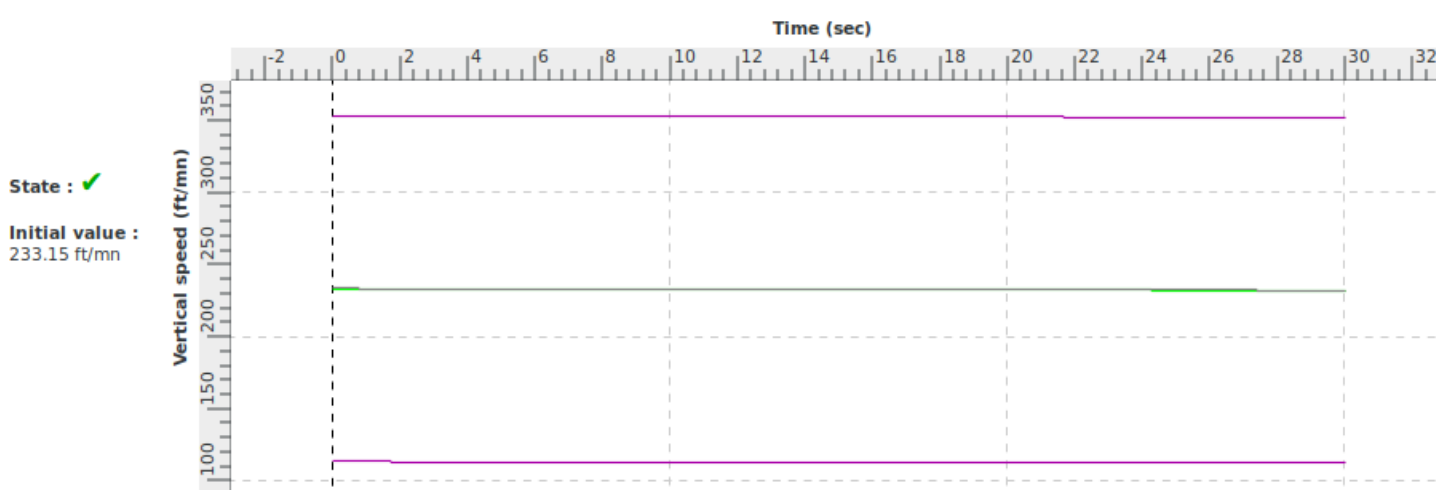
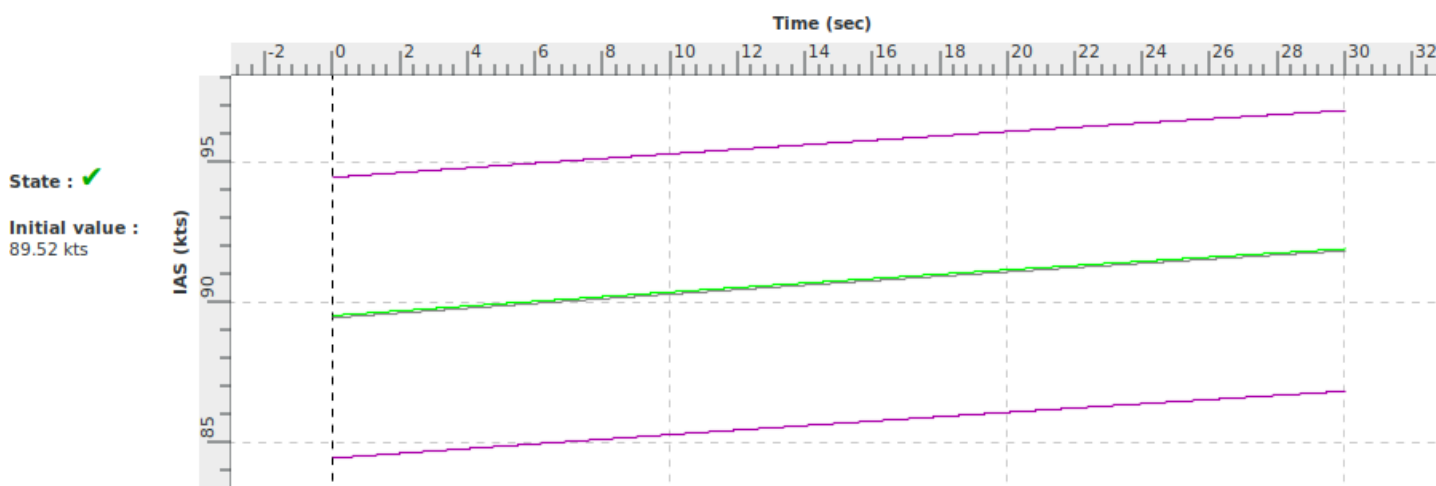
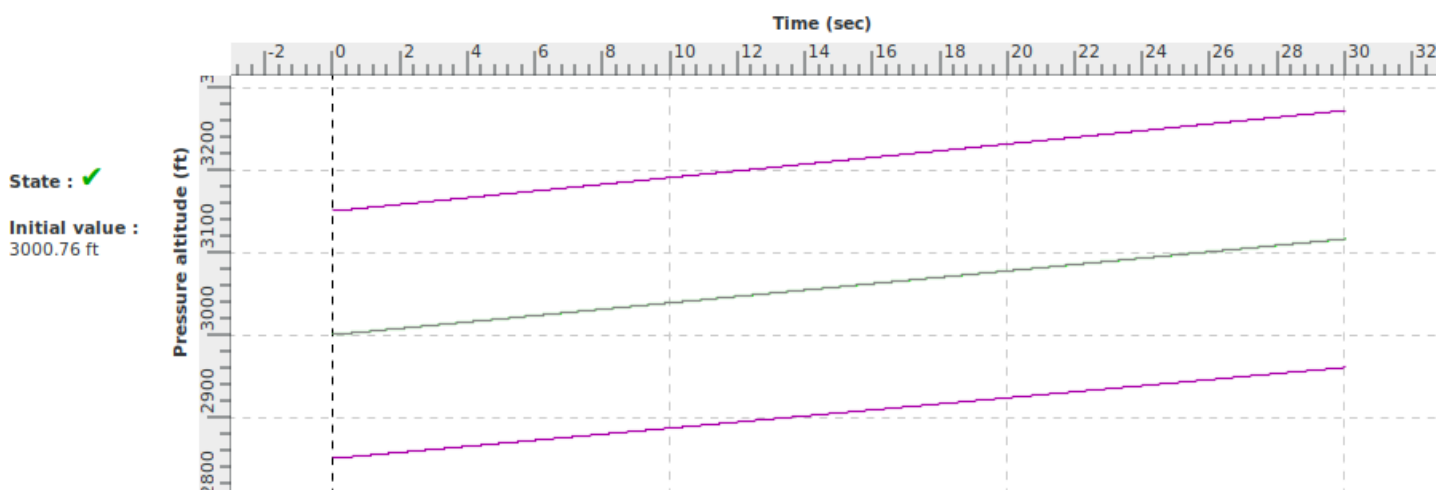
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
30.0	Stop_Test	0.0	Stop the test procedure

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



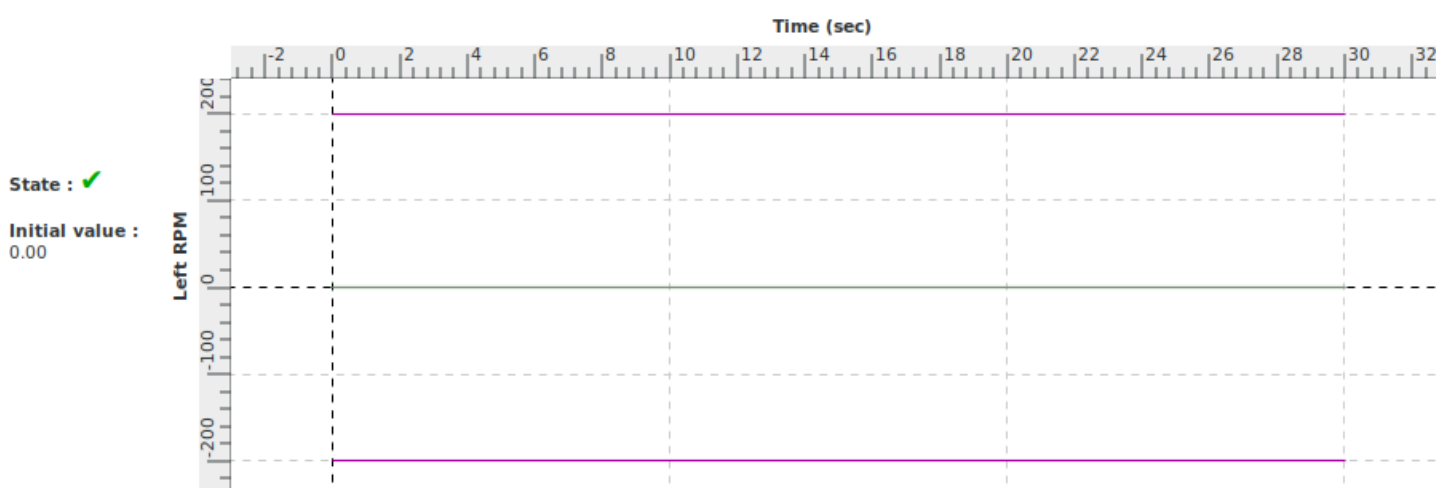
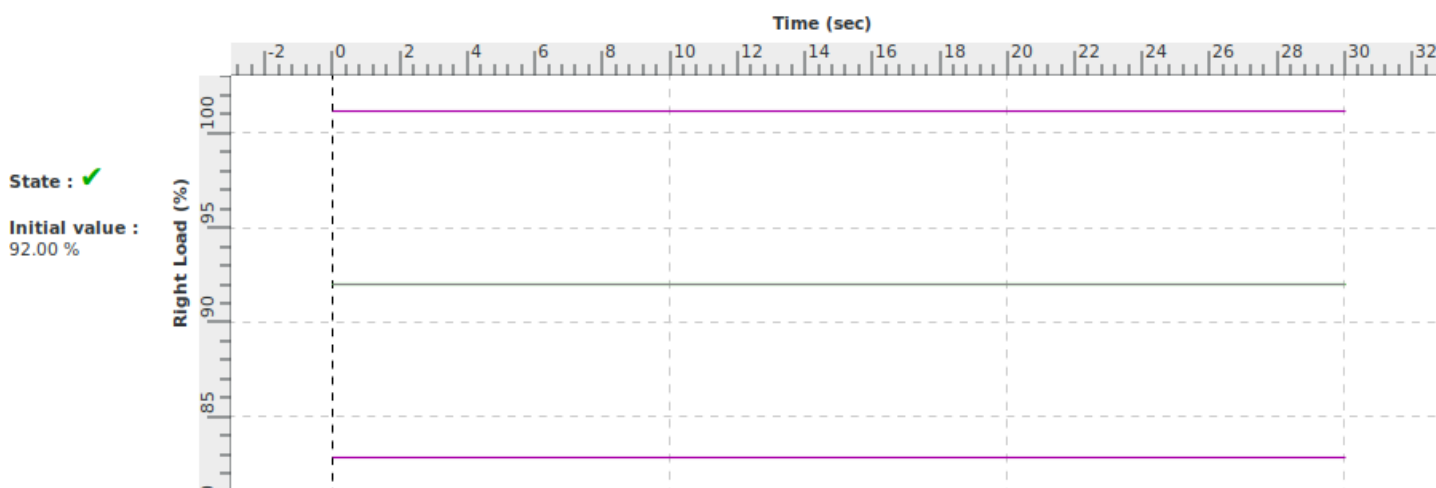
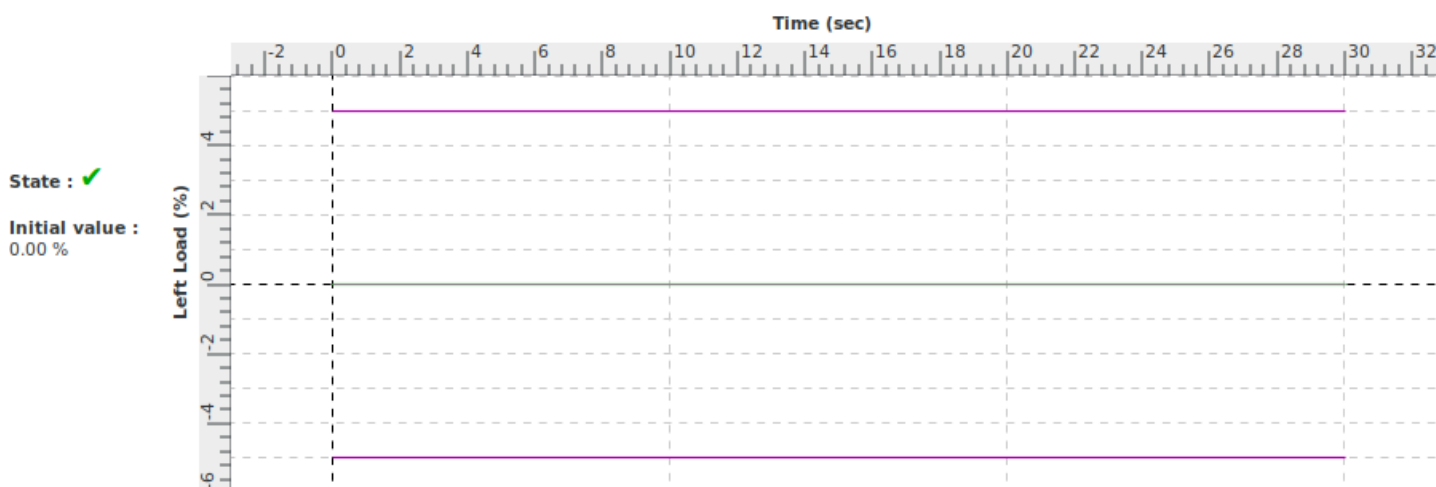
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

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



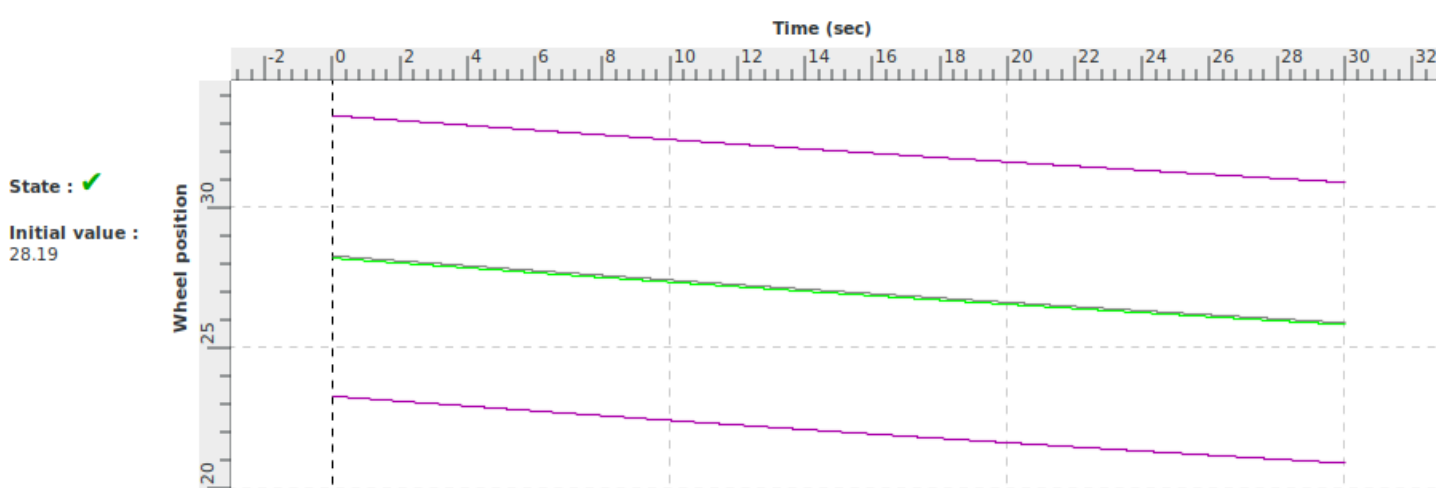
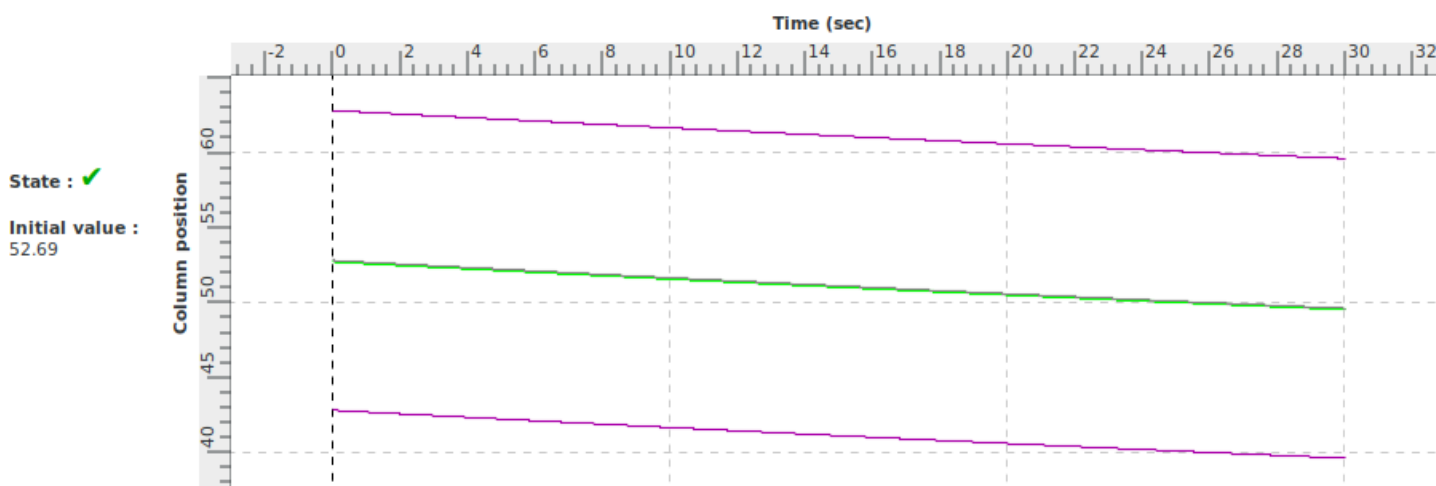
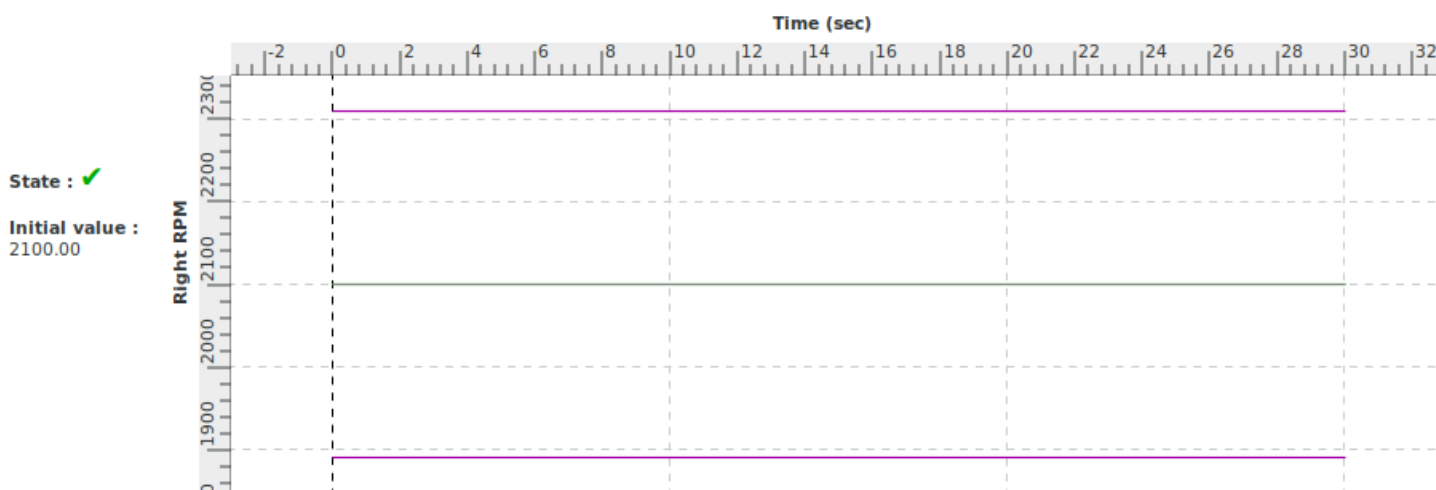
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

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



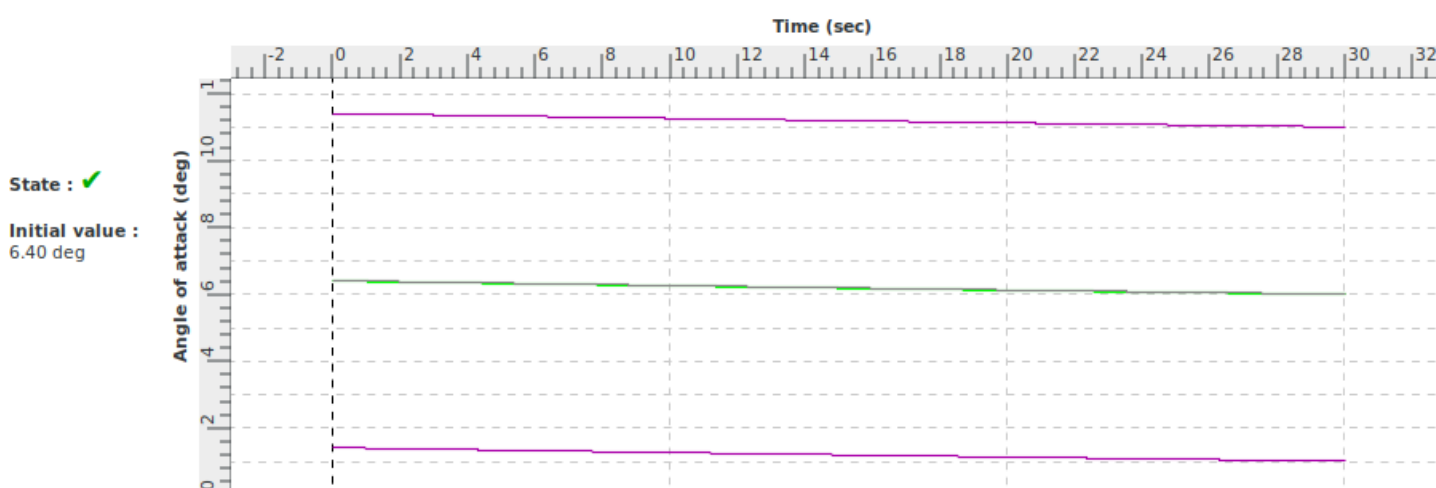
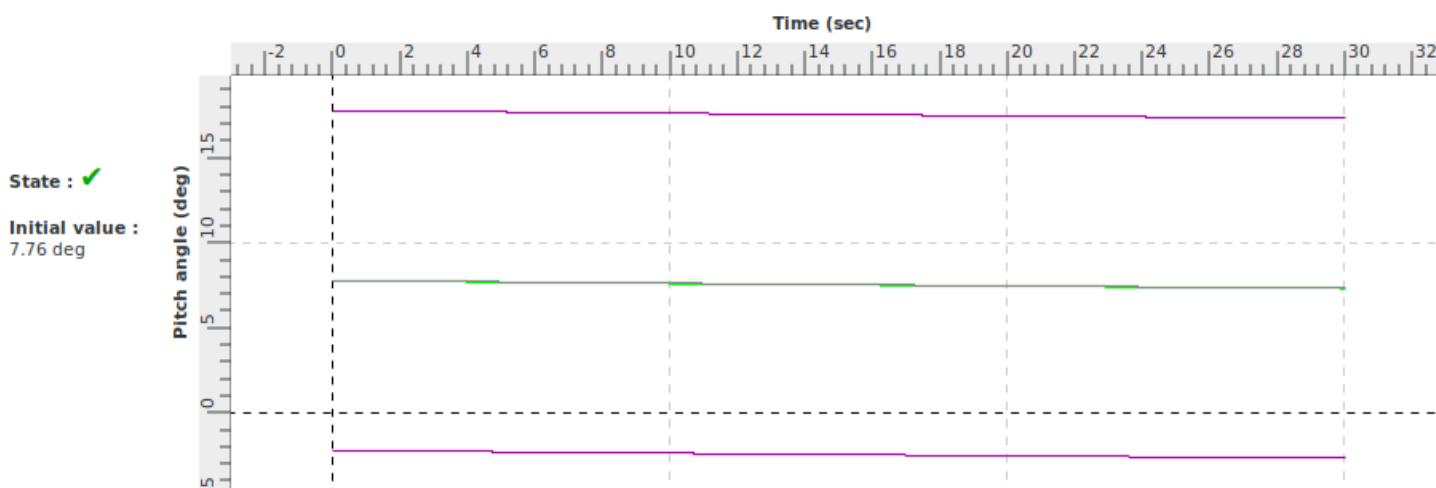
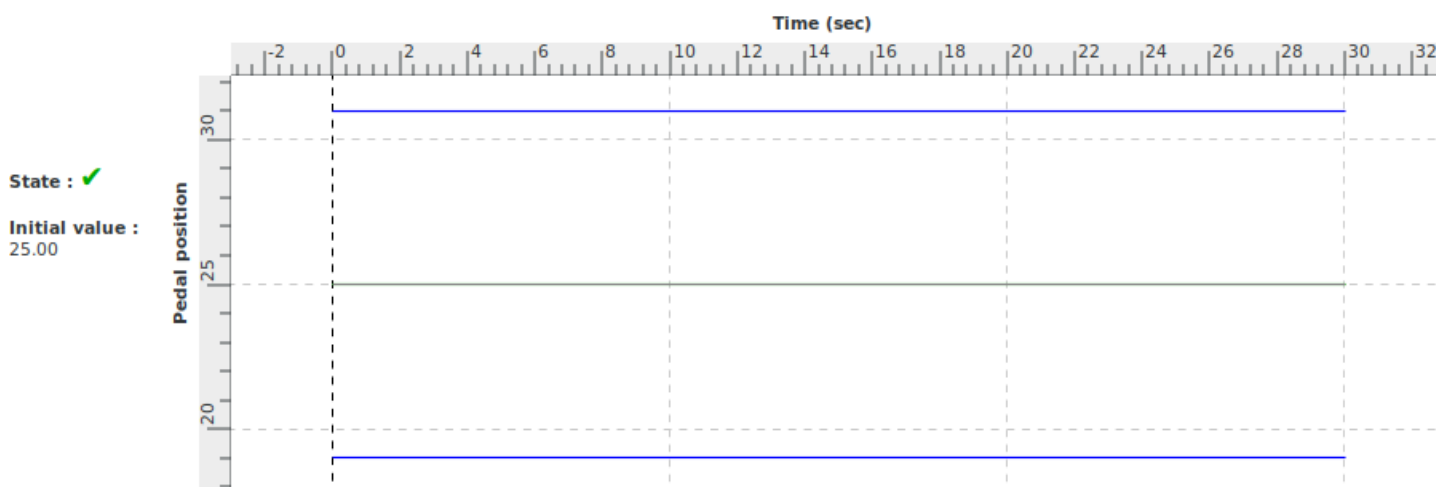
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

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



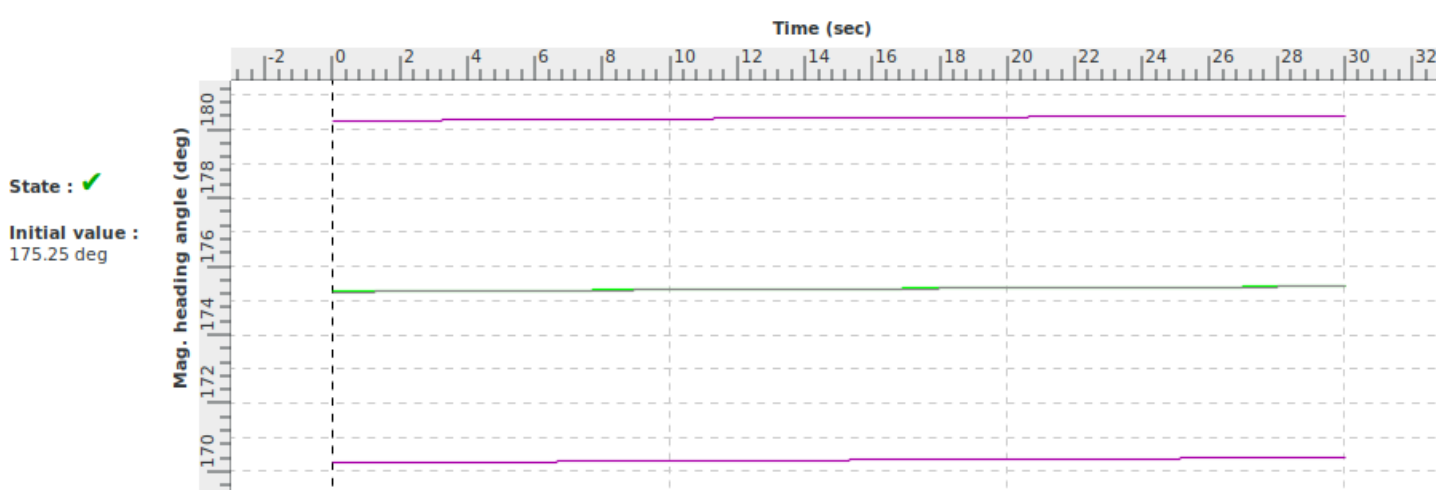
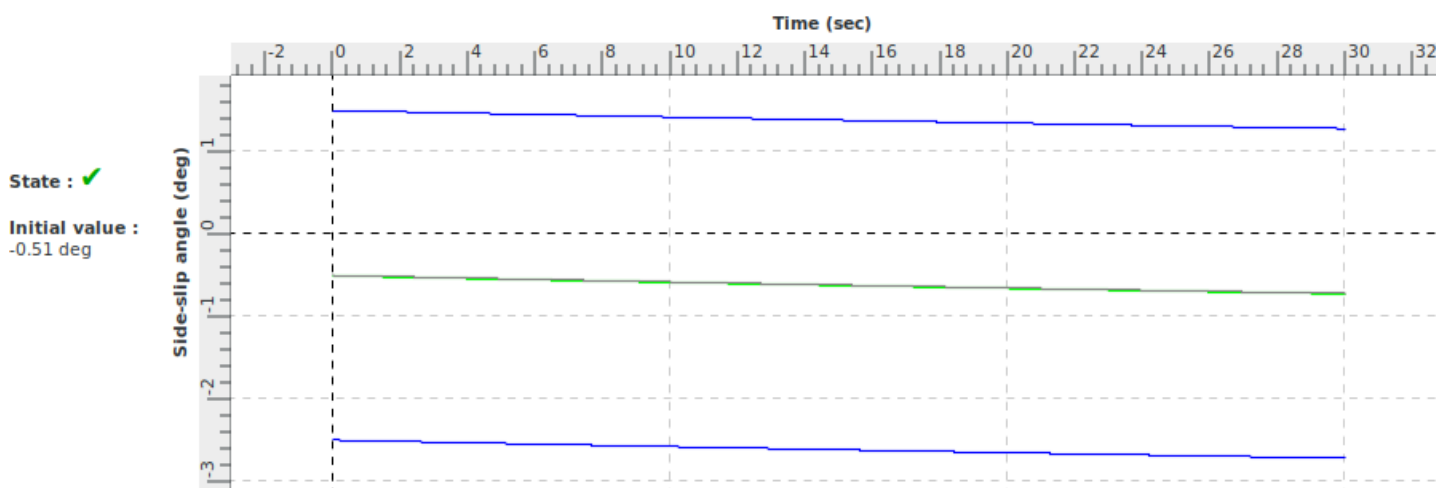
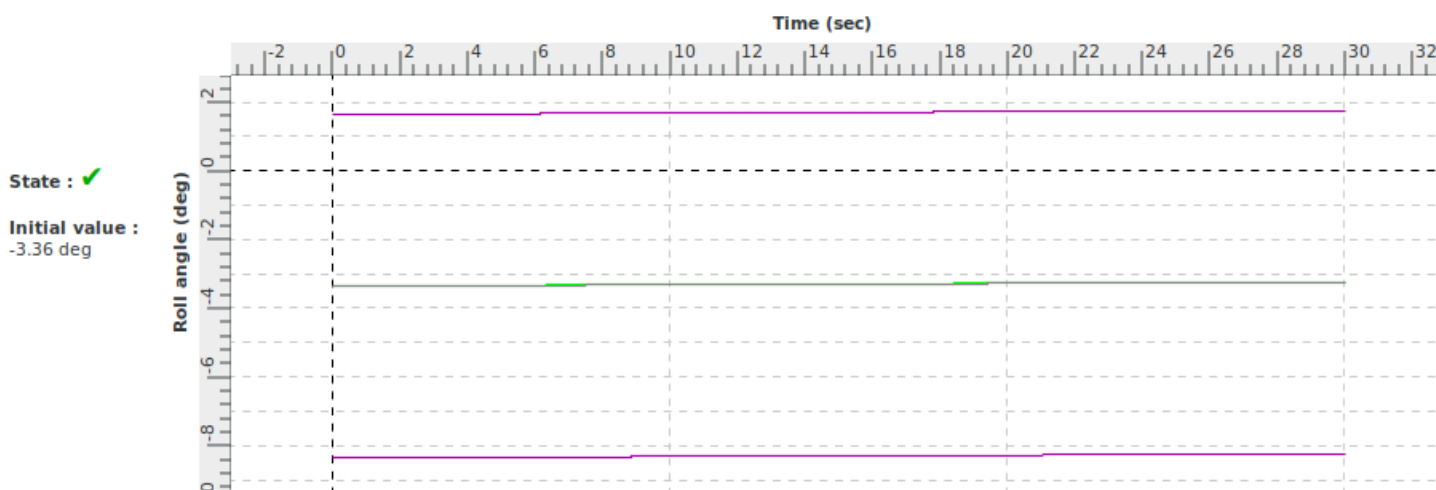
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

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

Title	Engine inoperative trim during approach		
Id	2 d v b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Objective	Expected Results
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 = 23 %
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.d.v.b	+/-1° Rudder angle (equivalent 3% of pedal position) +/-2° Sideslip angle

Demonstration procedure	From steady one engine inoperative approach initial conditions, 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.
Manual test procedure	See the aircraft configuration described next page.&&In ISA conditions and one engine inoperative approach configuration, the pilot trims the aeroplane for the engine out condition with the relevant propeller feathered.
Automatic test procedure	2 d v b

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Engine inoperative trim during approach		
Id	2 d v b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

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

Initial parameters	DESCENT_FLAPS_APP_N-1
Gross weight (kg) : 1900	Flaps lever position : 1
Balance (%) : 50	Gear lever position : 1
Altitude (ft) : 3000	Left Load (%) : 0
Vertical speed (ft/min) : -470	Right Load (%) : 50
IAS (kt) : 90 (free)	Left RPM : 0
Heading (°) : 0	Right RPM : 2030
Bank (°) : 0 (free)	
Attitude (°) : -2	
Pedal Position (%) : 23	
Column Position (%) : 49	
Wheel Position (%) : -5	

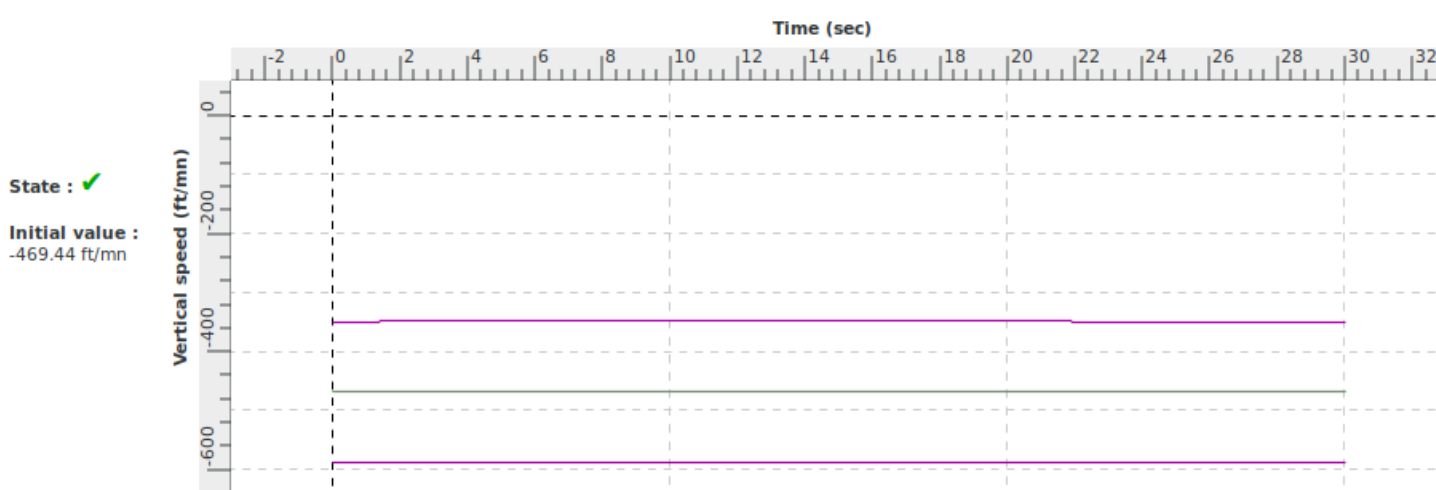
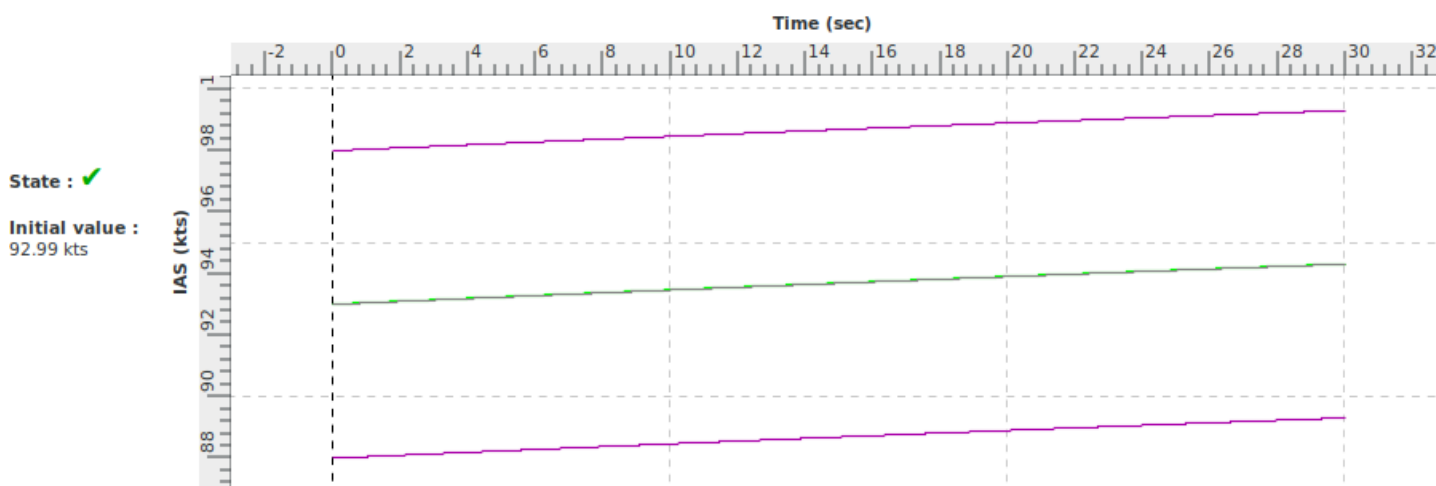
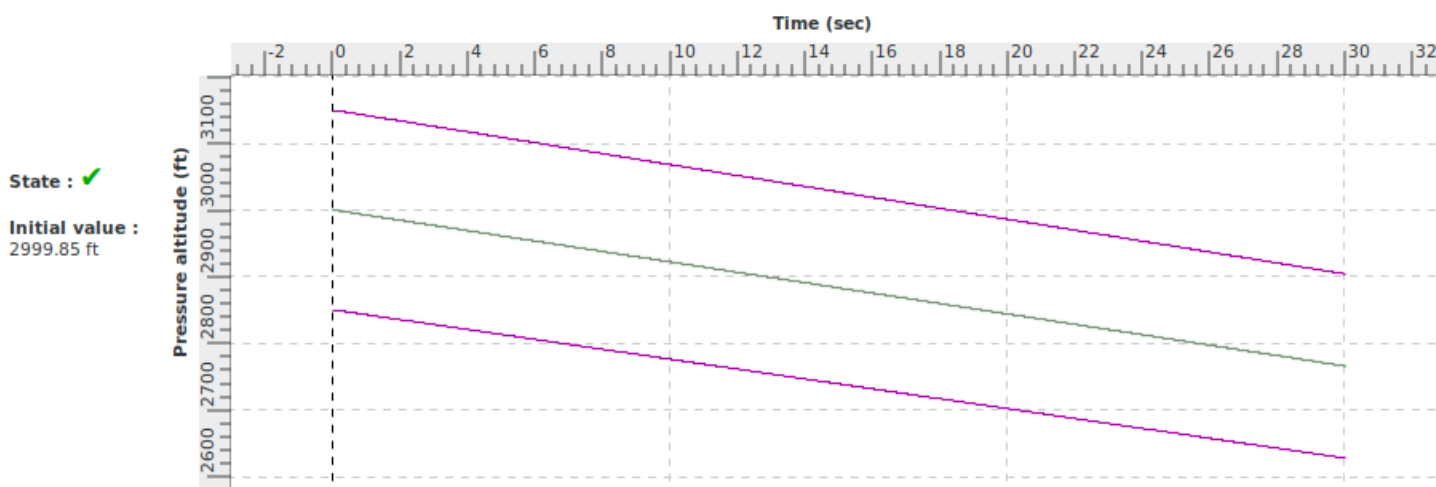
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
30.0	Stop_Test	0.0	Stop the test procedure

Title	Engine inoperative trim during approach		
Id	2 d v b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Log of Revision		
Rev. Nbr	Date	Reason for revision
1.01	29/03/21	1909 master. New expected results. Pedal input to 23%
1.02	27/07/21	2012-R1 Master. Expected results unchanged.

Notes

Title	Engine inoperative trim during approach		
Id	2 d v b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



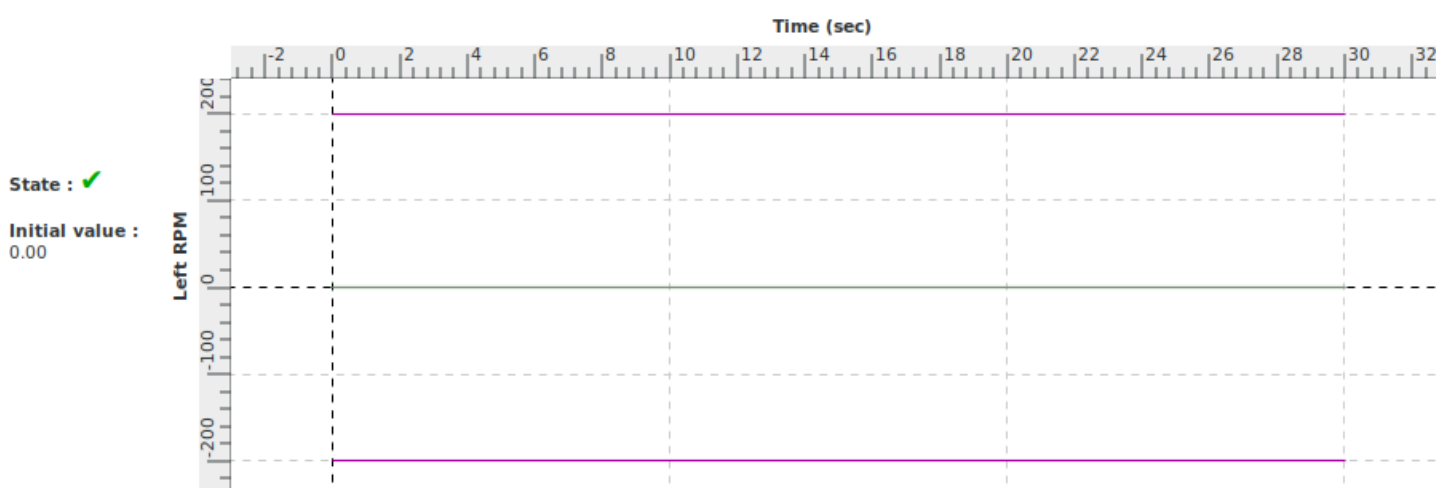
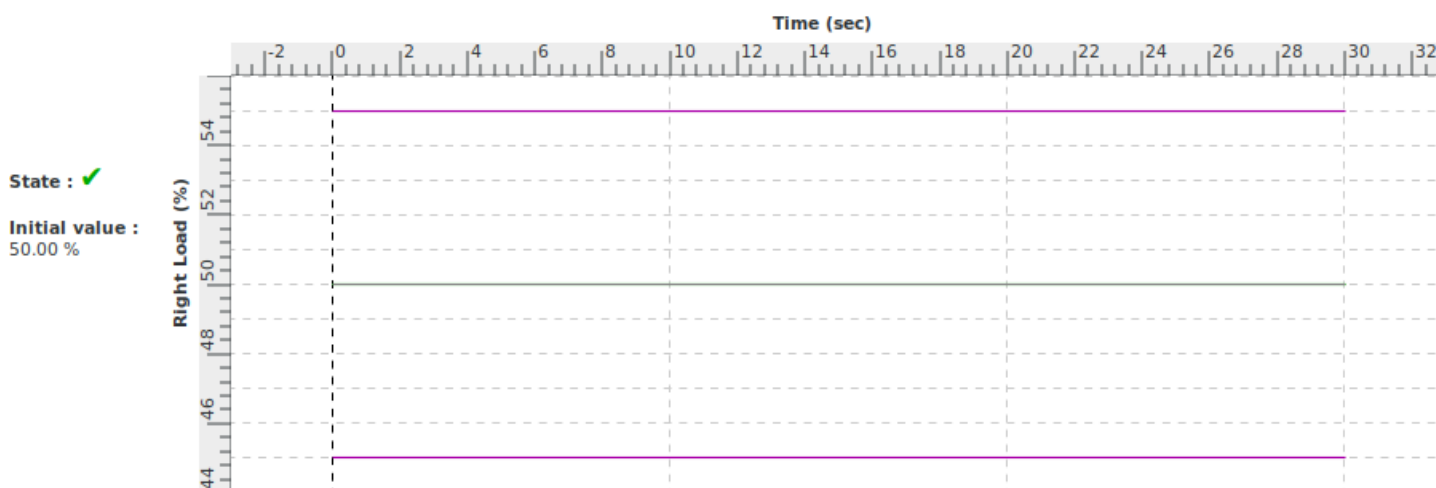
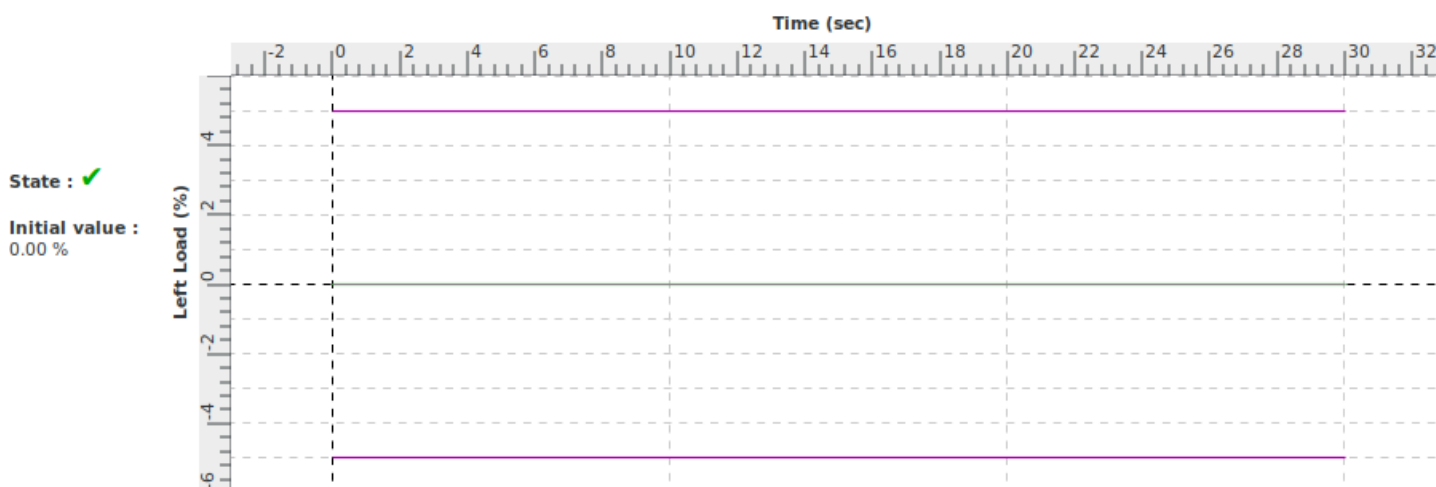
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Engine inoperative trim during approach		
Id	2 d v b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



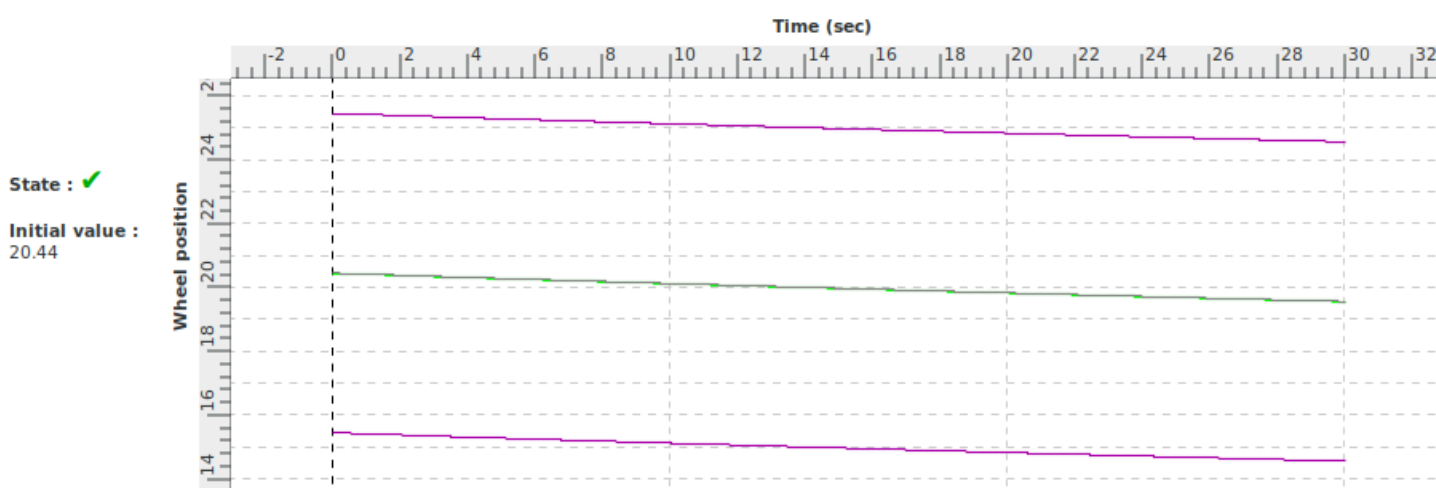
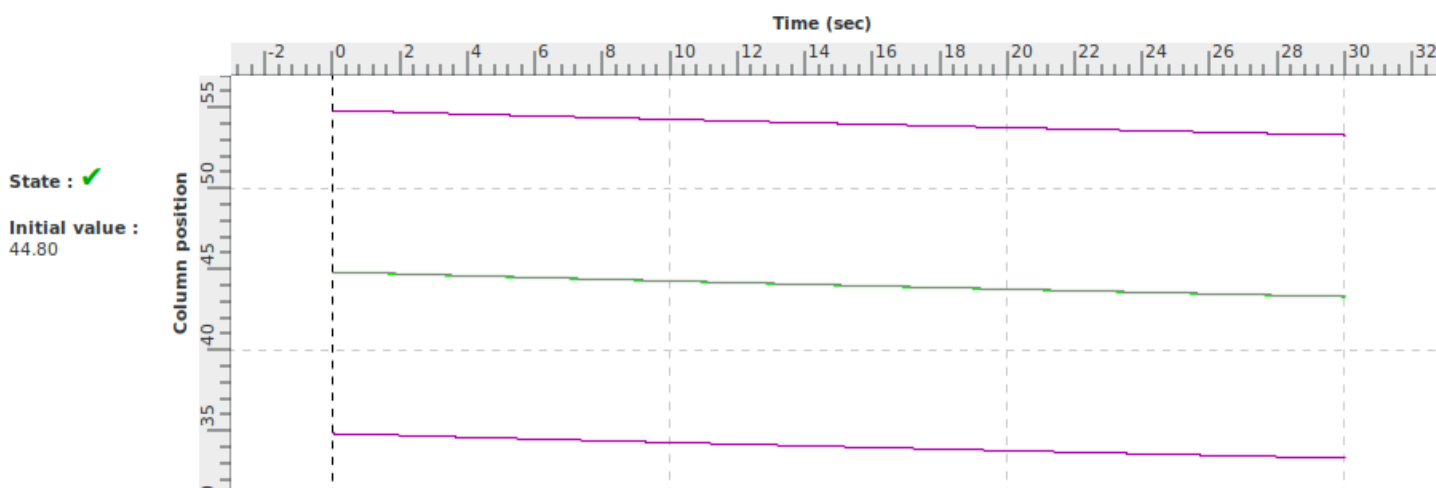
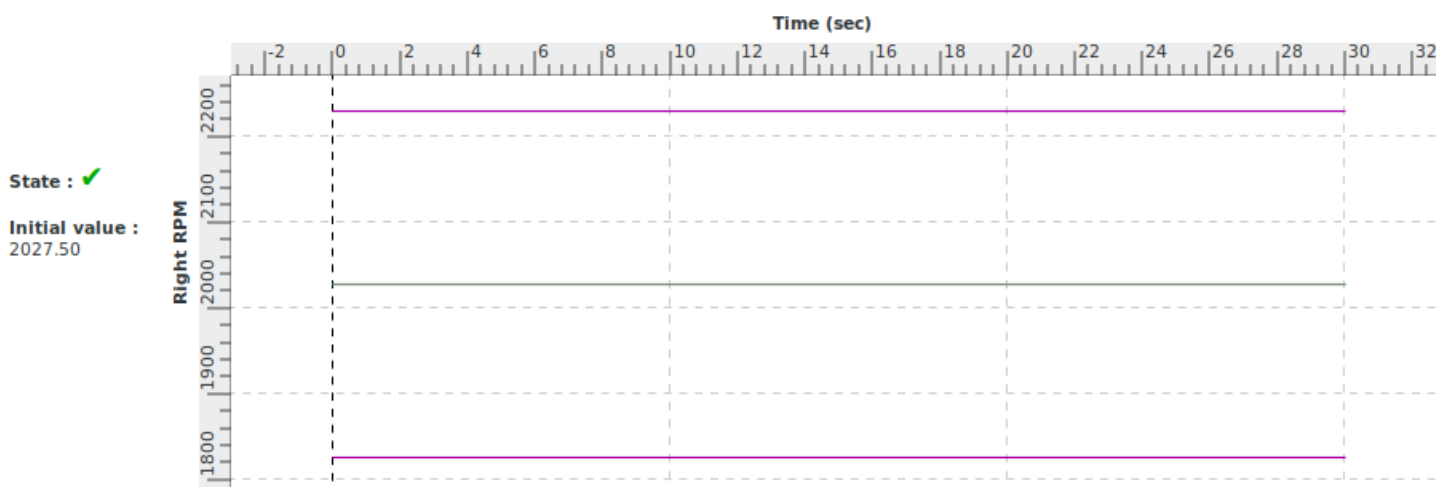
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Engine inoperative trim during approach		
Id	2 d v b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



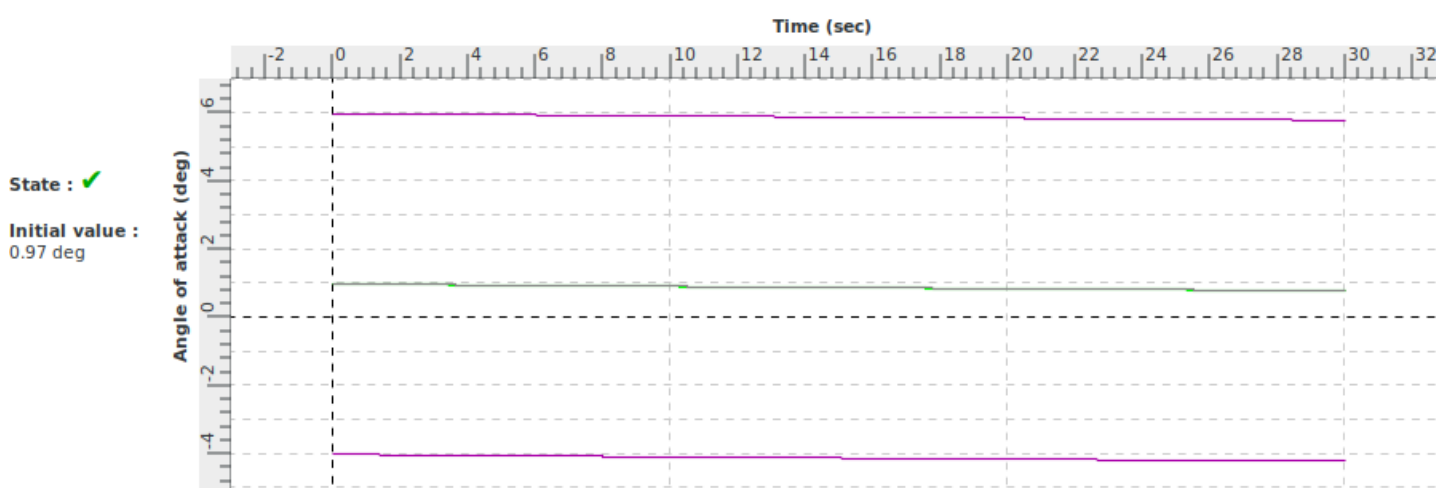
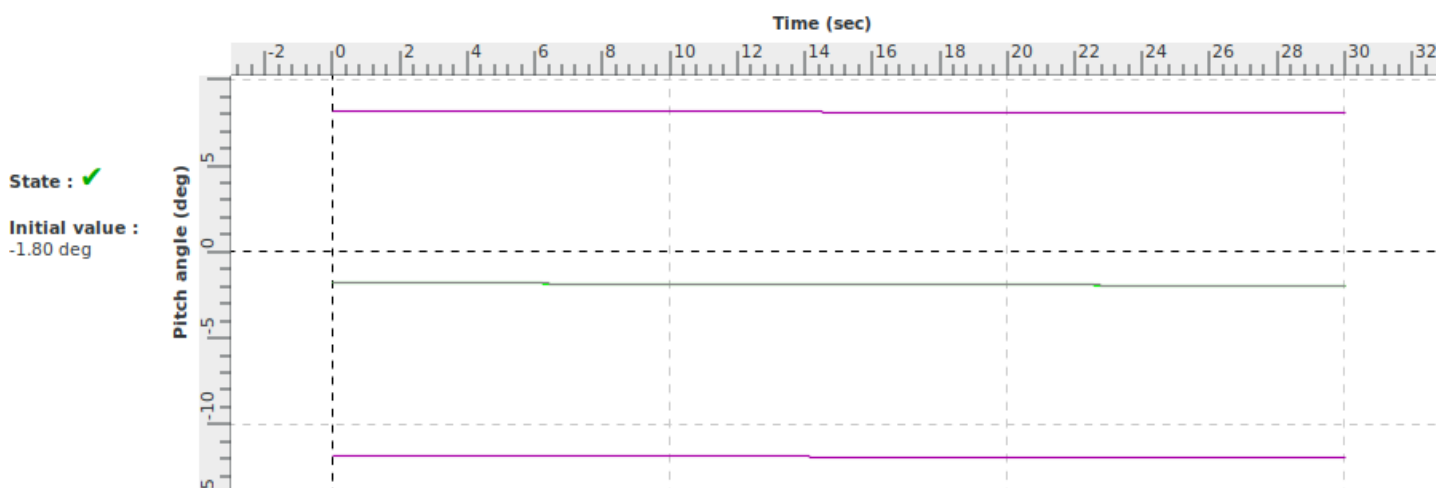
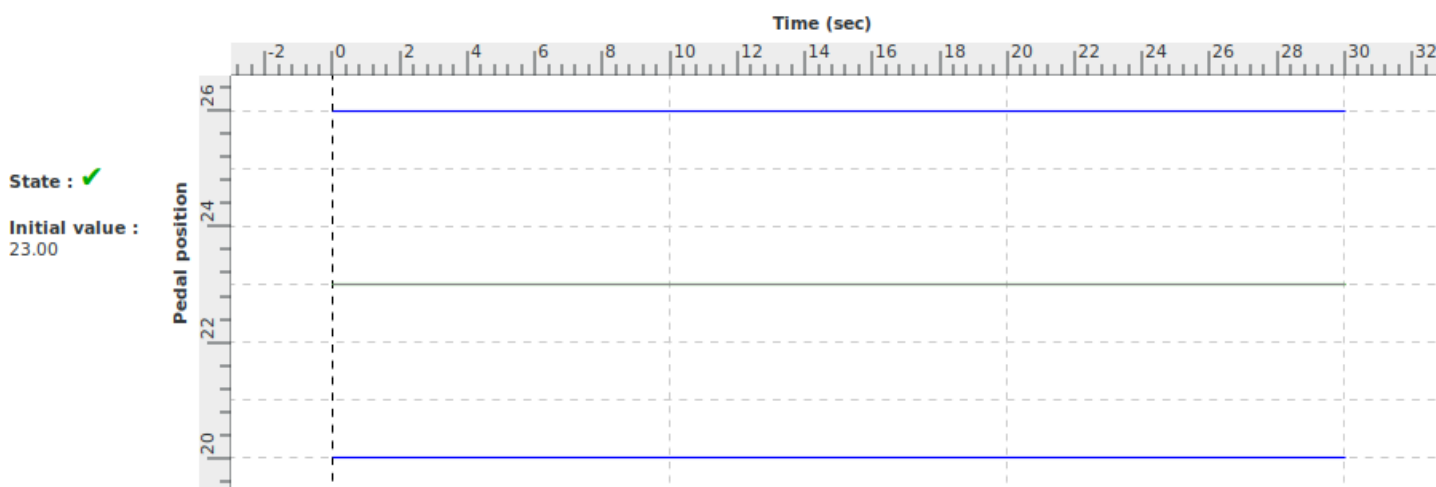
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsimg

grey : master

Title	Engine inoperative trim during approach		
Id	2 d v b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	03/12/23	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



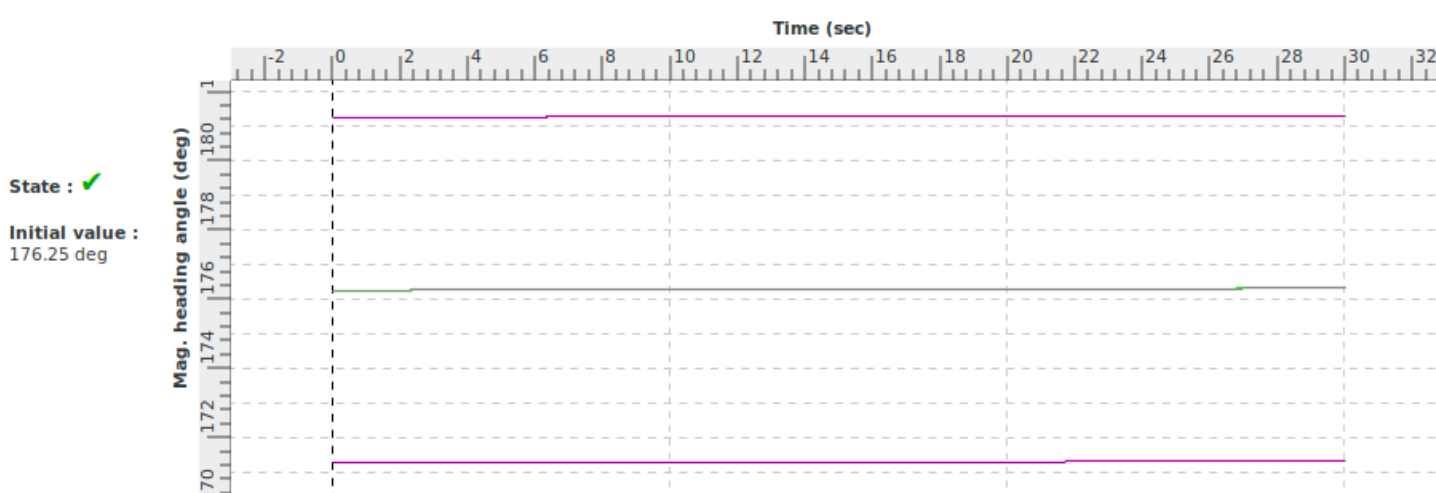
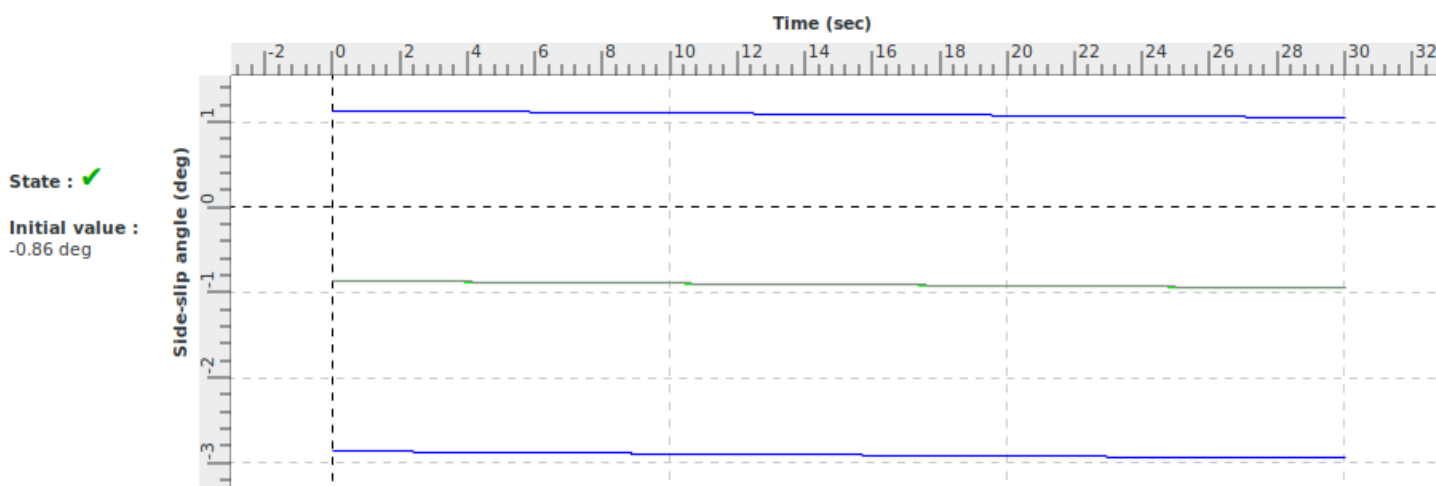
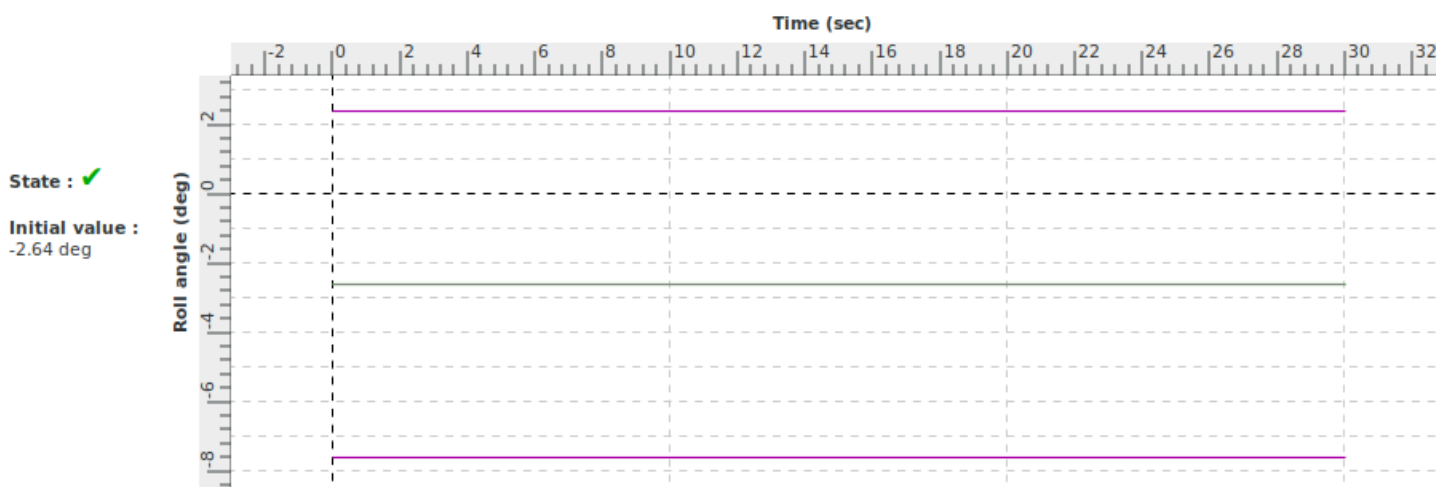
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Engine inoperative trim during approach		
Id	2 d v b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	03/12/23	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 Alsिम

grey : master

VALIDATION TEST

Title	Rudder response during approach		
Id	2 d vi	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Objective	Expected Results
Demonstrate that the the simulator directional response from rudder control movements during approach conform to the class of aeroplanes	Max Yaw Rate: -3,8°/s
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.d.vi	+/- 2 deg/sec or 10% yaw rate or Heading change

Demonstration procedure	From steady approach initial conditions, an abrupt rudder step input of about 25% is applied.
Manual test procedure	In ISA conditions and cruise 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.
Automatic test procedure	2 d vi

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Rudder response during approach		
Id	2 d vi	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Autopilot mode	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>	

Initial parameters	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

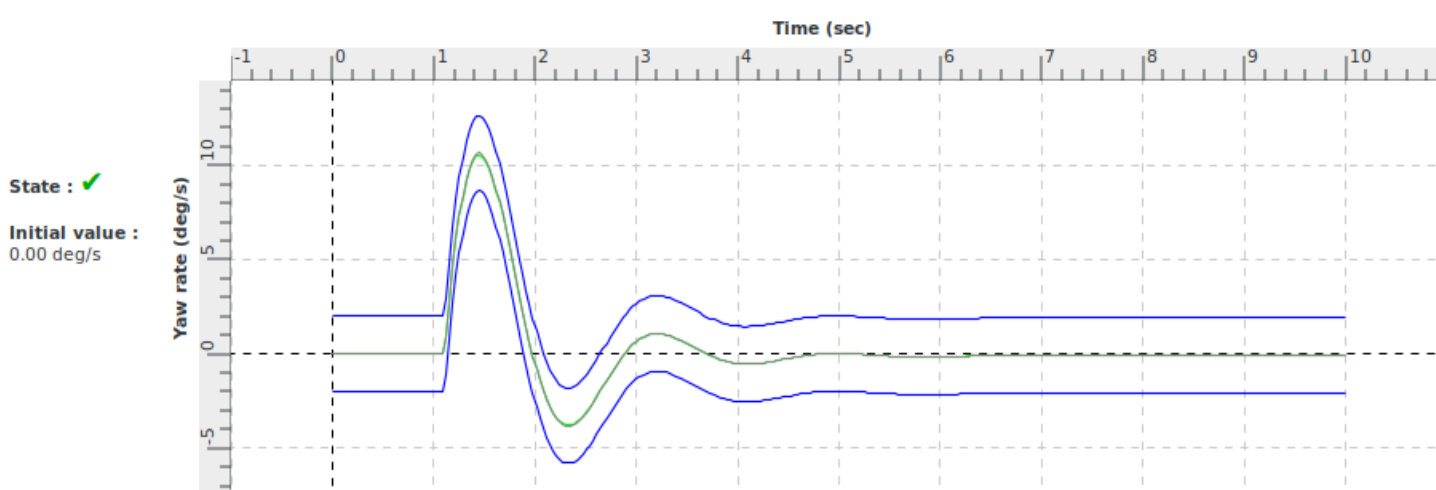
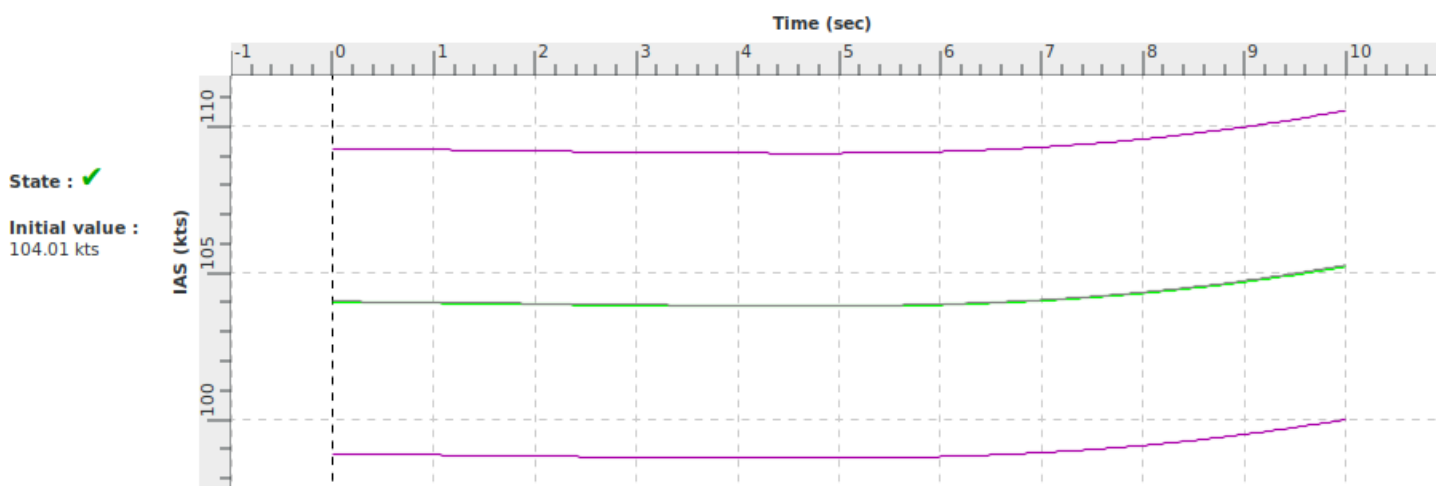
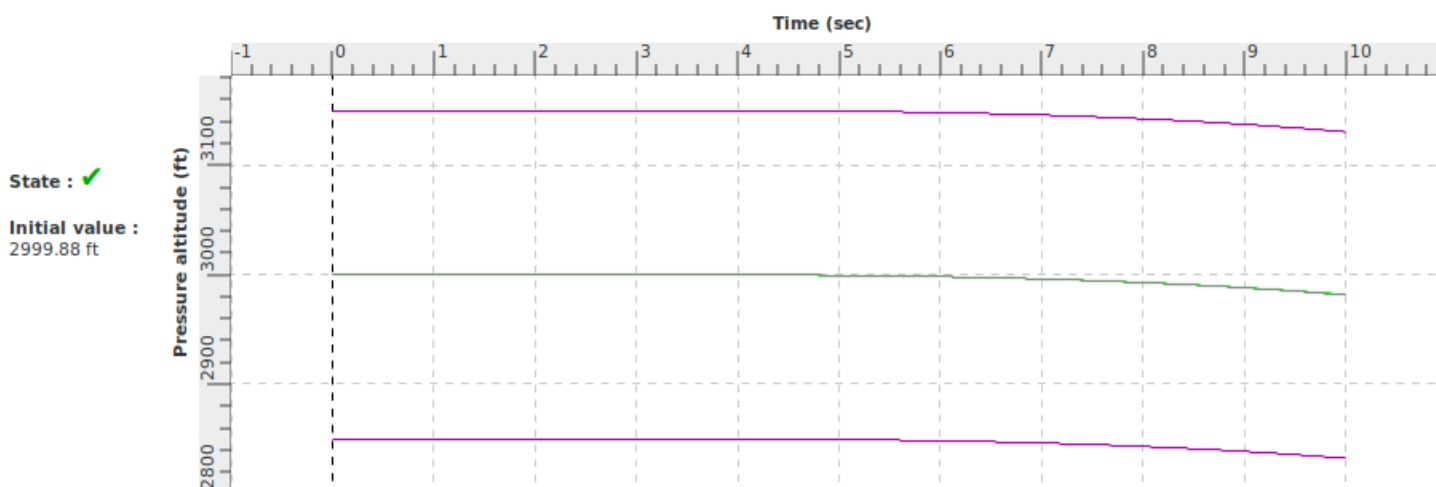
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
1.0	SetRudderCmdPalier	-25.0	Send a step in the rudder govern
1.0	SetRollCmdPalier	0.0	Send a step in the roll govern
1.0	SetAttCmdPalier	0.0	Send a step in the attitude govern
10.0	Stop_Test	0.0	Stop the test procedure

Title	Rudder response during approach		
Id	2 d vi	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

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

Notes

Title	Rudder response during approach		
Id	2 d vi	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



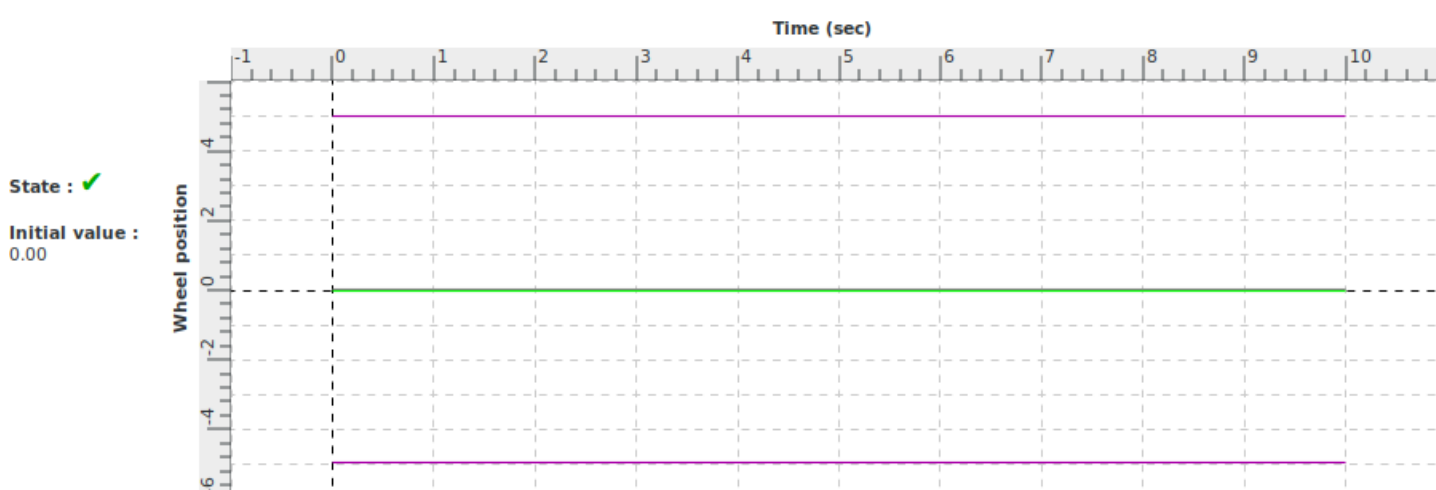
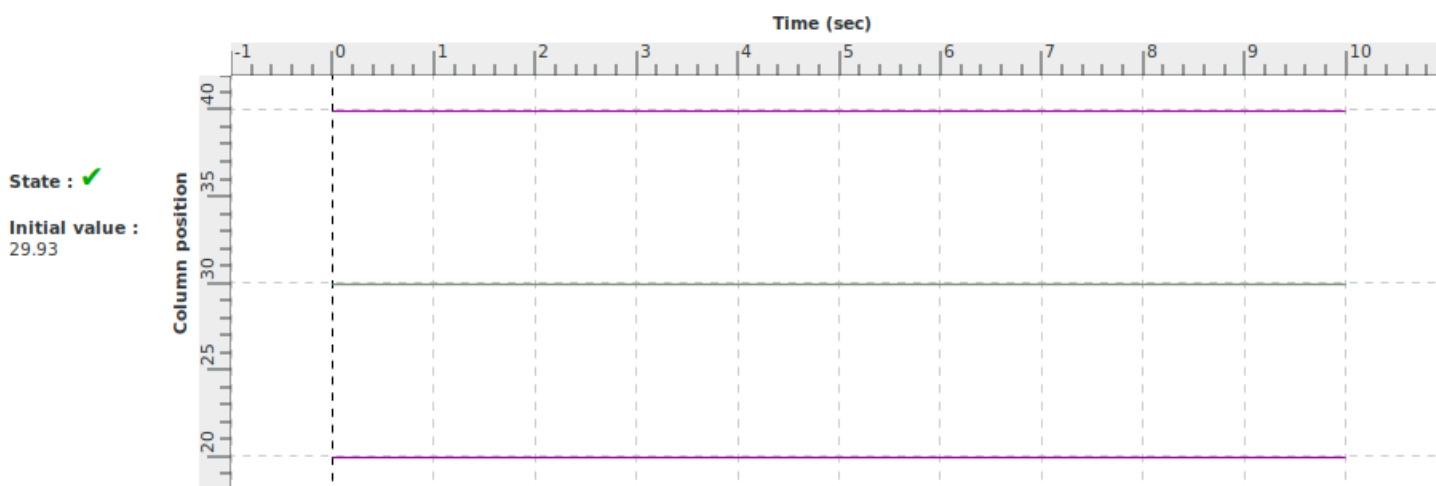
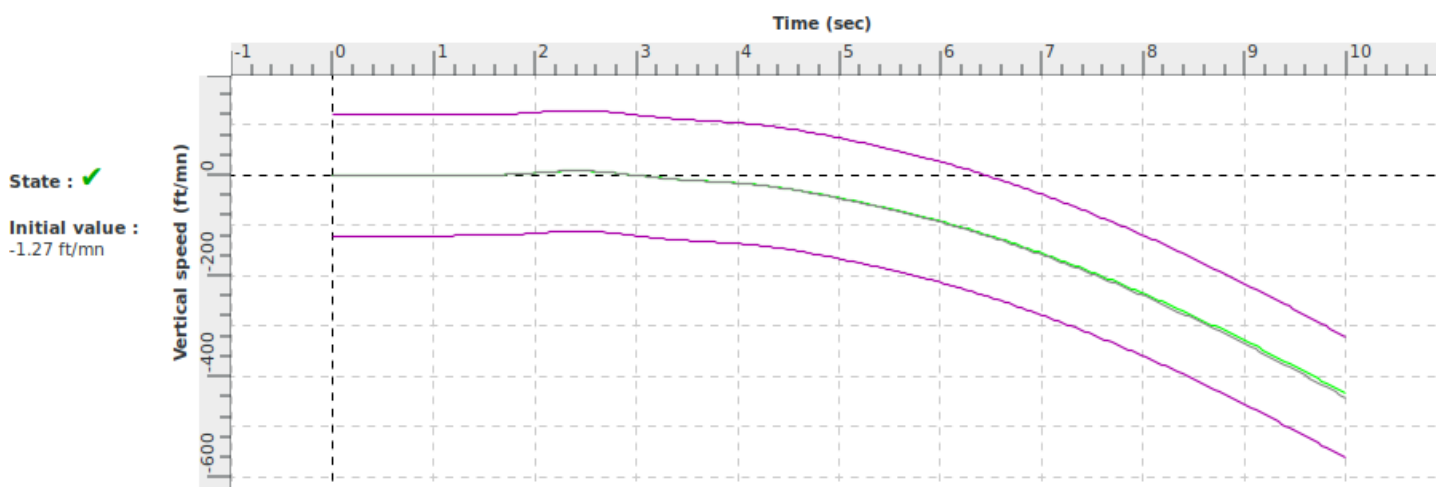
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Rudder response during approach		
Id	2 d vi	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



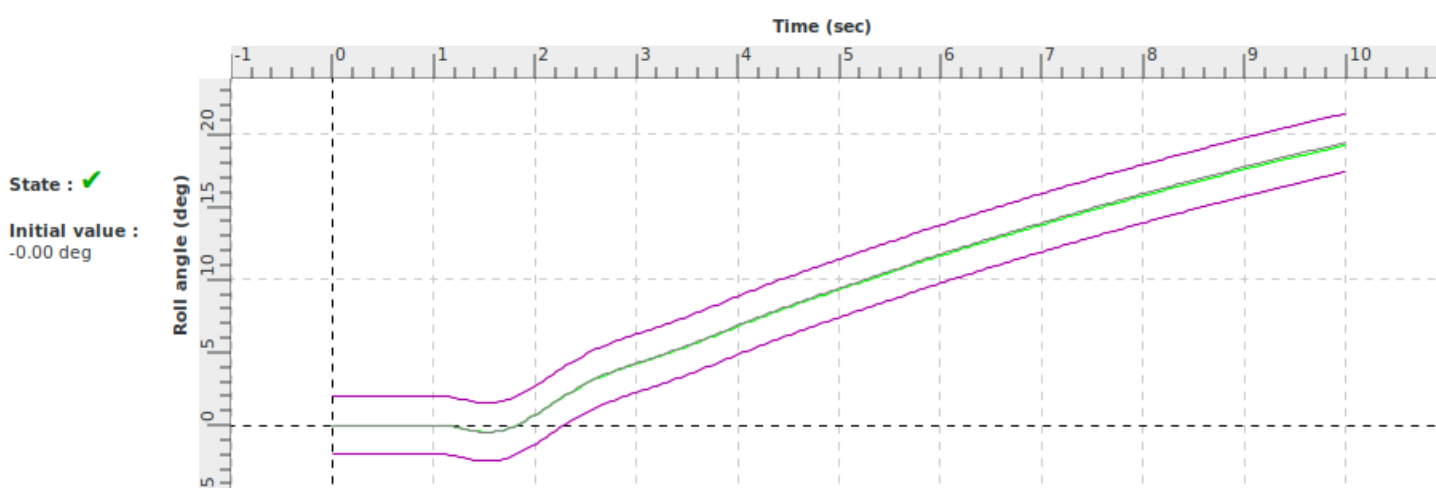
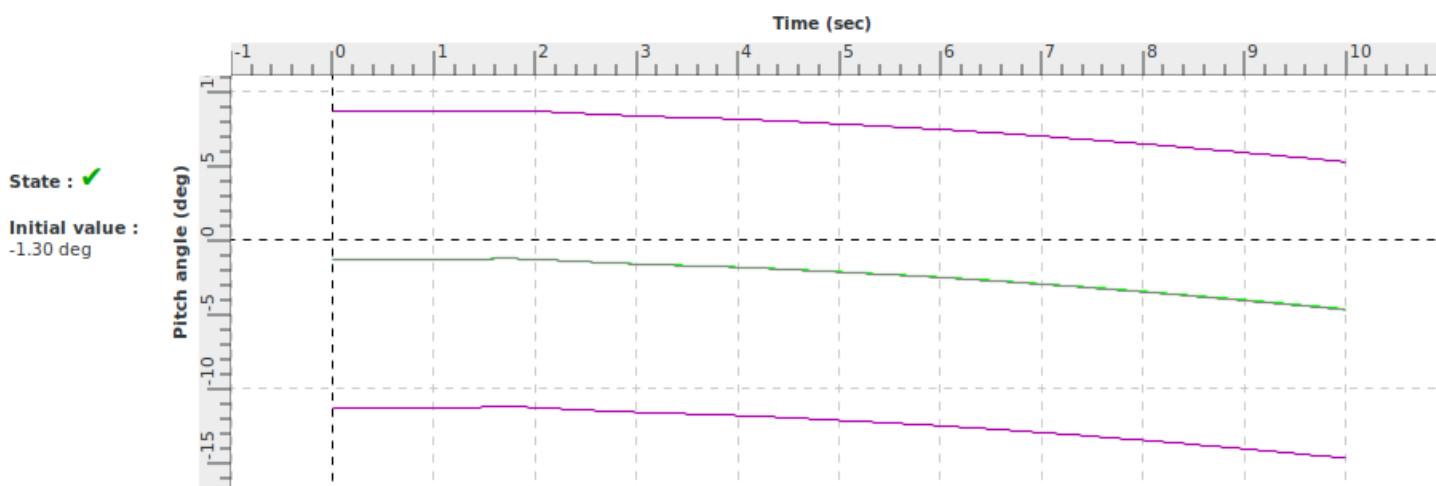
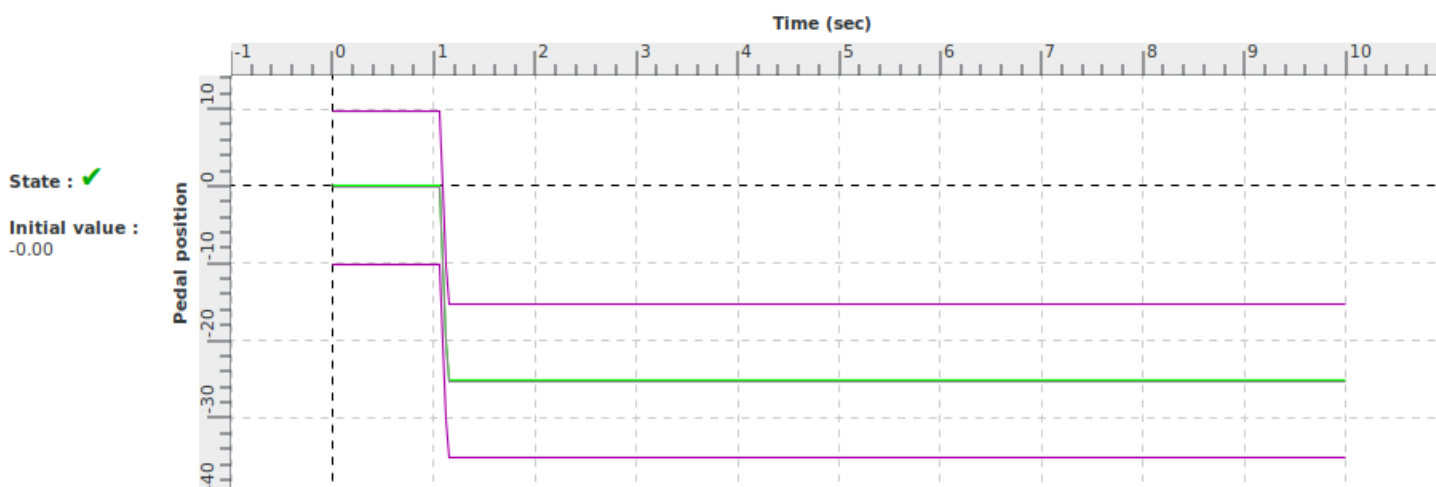
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Rudder response during approach		
Id	2 d vi	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



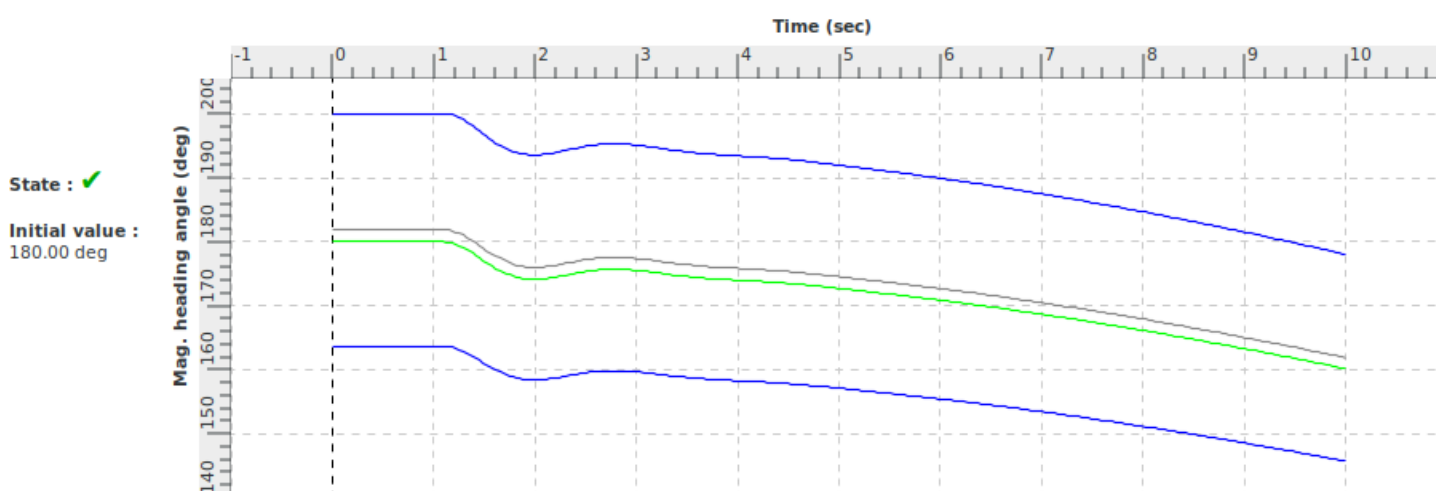
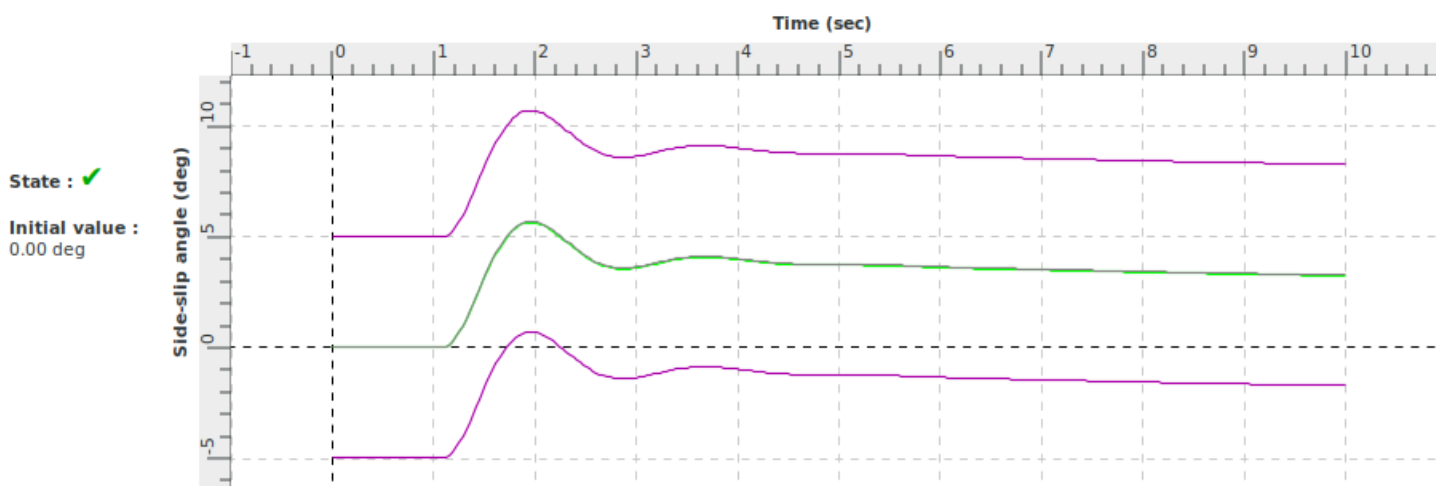
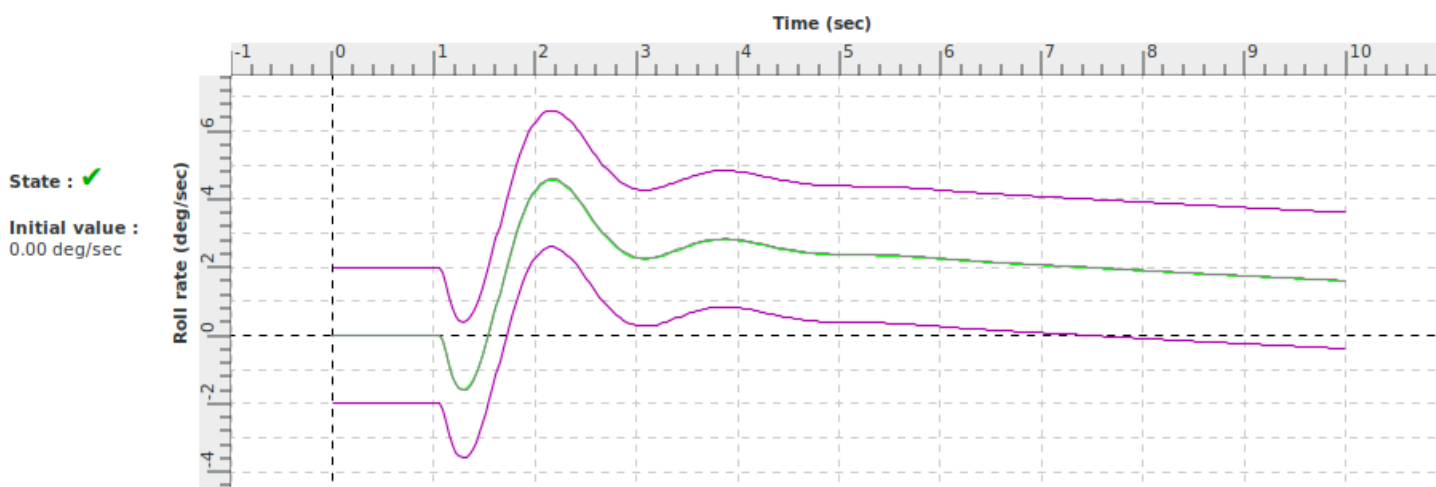
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Rudder response during approach		
Id	2 d vi	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/02/24	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

Title	Dutch roll (yaw damper off) during cruise		
Id	2 d vii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Objective	Expected Results
Demonstrate that the lateral/directional dynamic stability characteristics of the simulator in the dutch roll mode during cruise conform to the class of aeroplanes	Roll/yaw period: 1.42 s Time to half amplitude: 1.8 s Phase Delay: 0.7 s (results to be determined using the Table Sheet AL42_DA42VI_Tables_QTG_VolIII.xls)
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.d.vii.a	+/- 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

Demonstration procedure	From steady cruise 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.
Manual test procedure	In ISA conditions and cruise configuration, the pilot trims the airplane at cruise. Then, the pilot applies impulse excitation on the pedals and leaves the controls free 5 to 10 seconds.
Automatic test procedure	2 d vii a

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Dutch roll (yaw damper off) during cruise		
Id	2 d vii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

Autopilot mode	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>	

Initial parameters	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

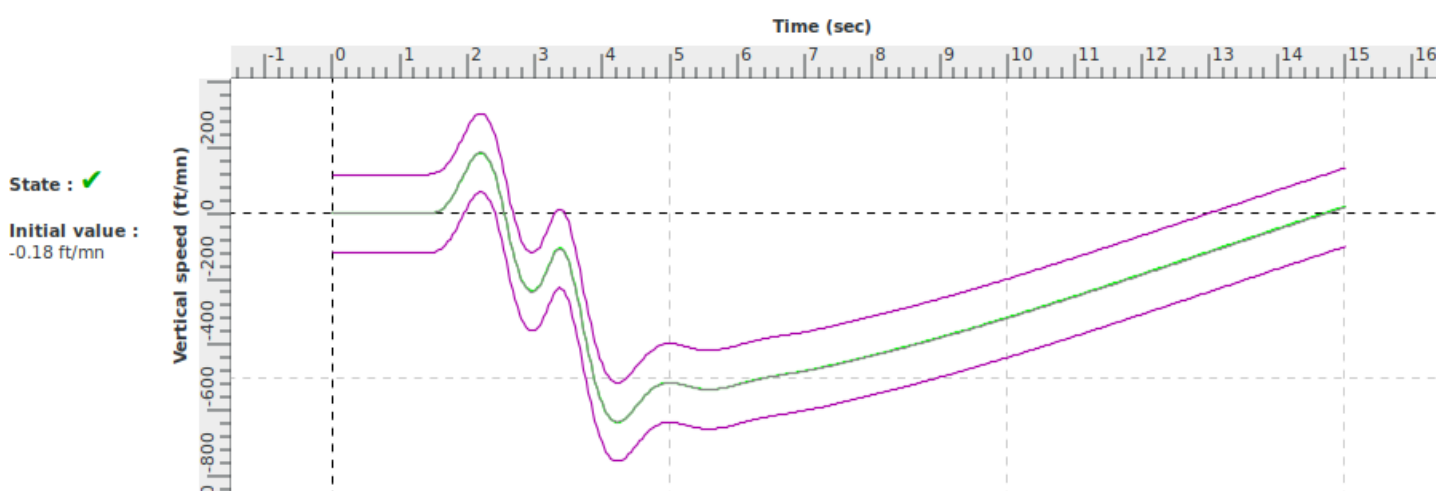
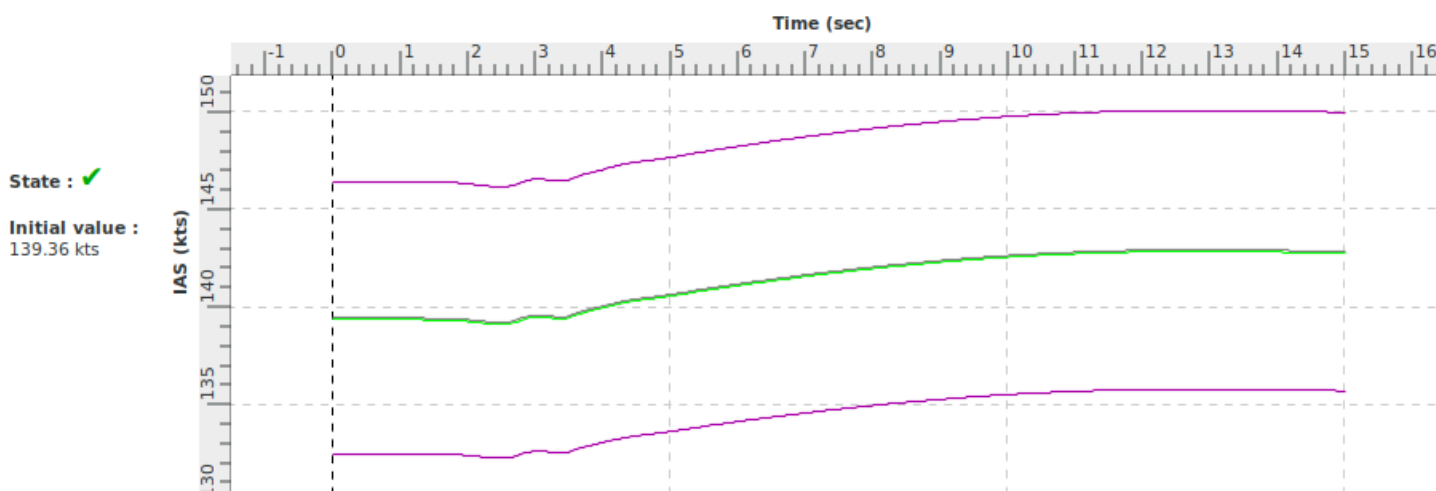
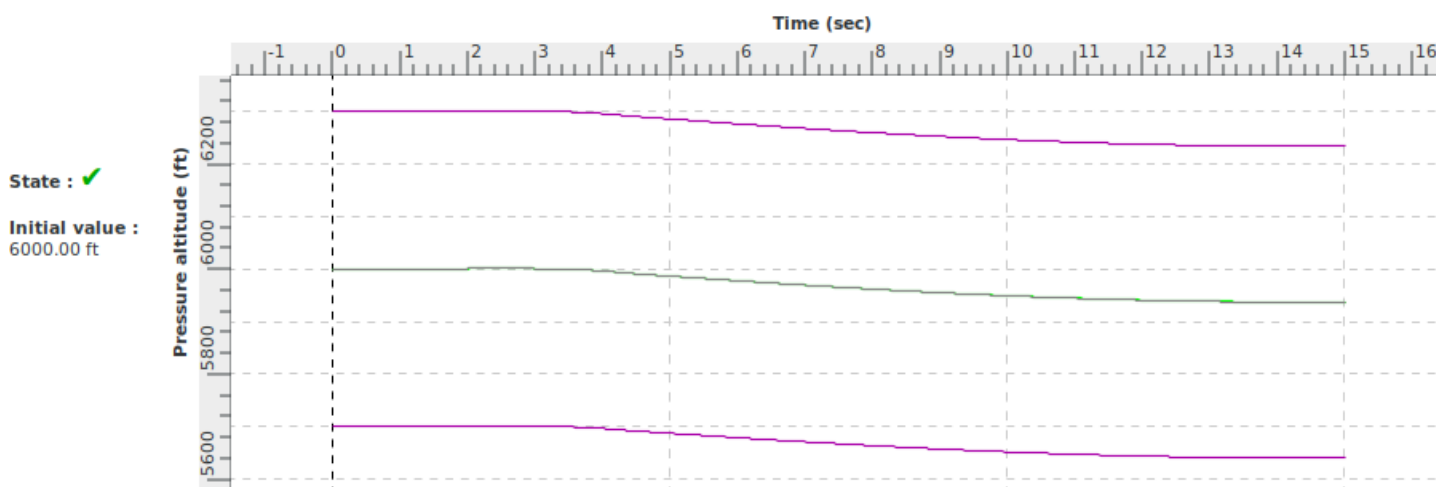
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_roll	0.0	disable QTG Autopilot in roll axis
1.0	SetRudderCmdPalier	-70.0	Send a step in the rudder govern
1.0	SetAttCmdPalier	0.0	Send a step in the attitude govern
2.0	SetRudderCmdPalier	70.0	Send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

Title	Dutch roll (yaw damper off) during cruise		
Id	2 d vii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01

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

Notes

Title	Dutch roll (yaw damper off) during cruise		
Id	2 d vii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



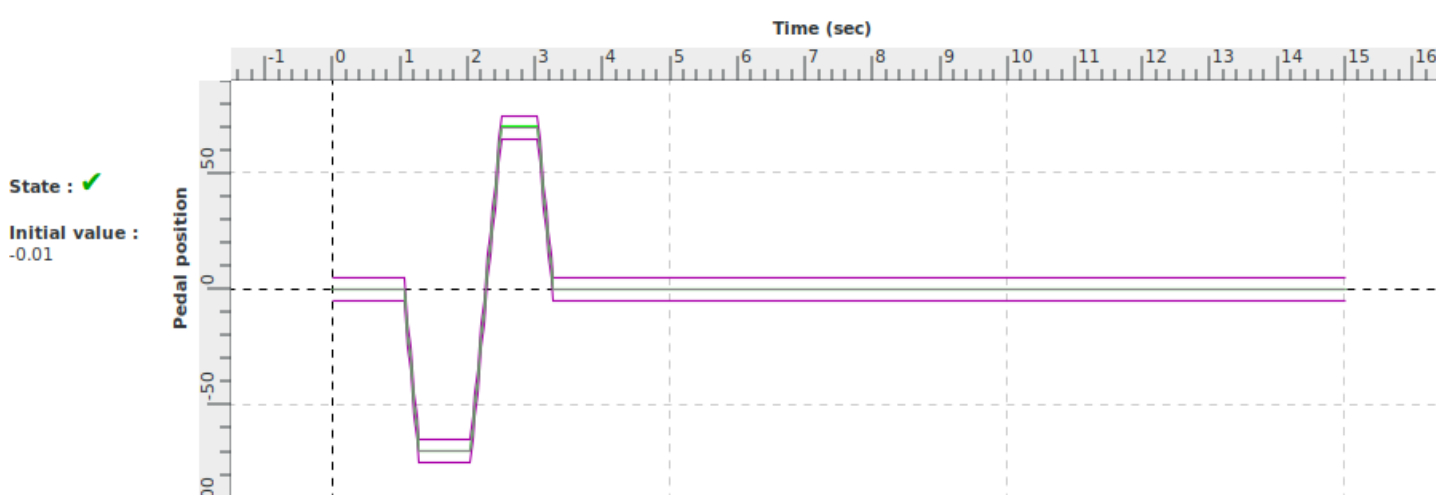
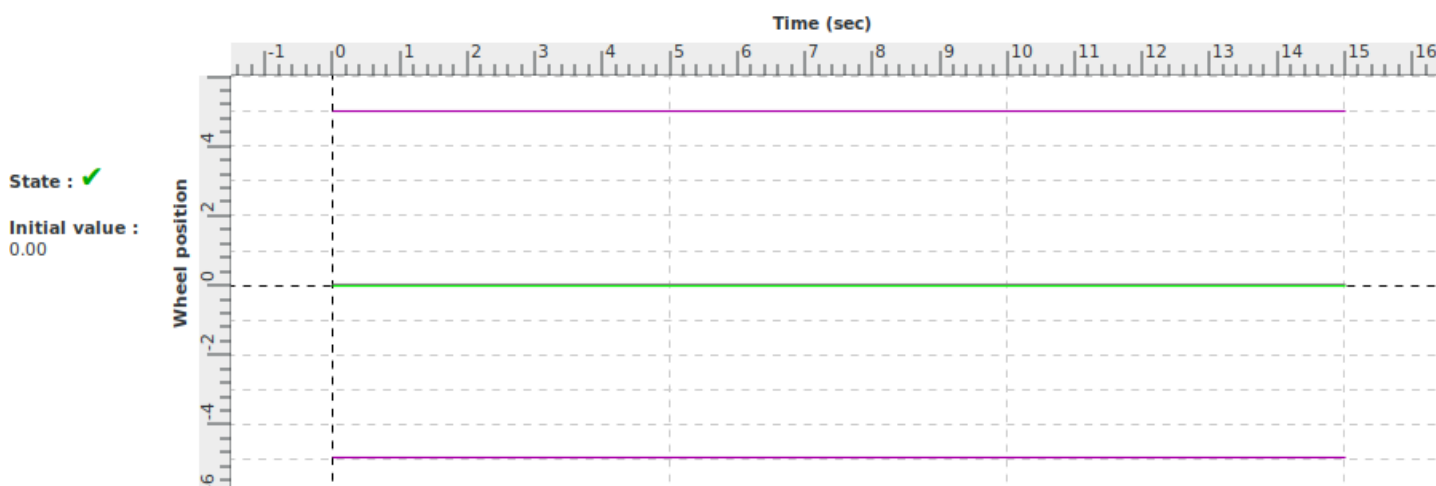
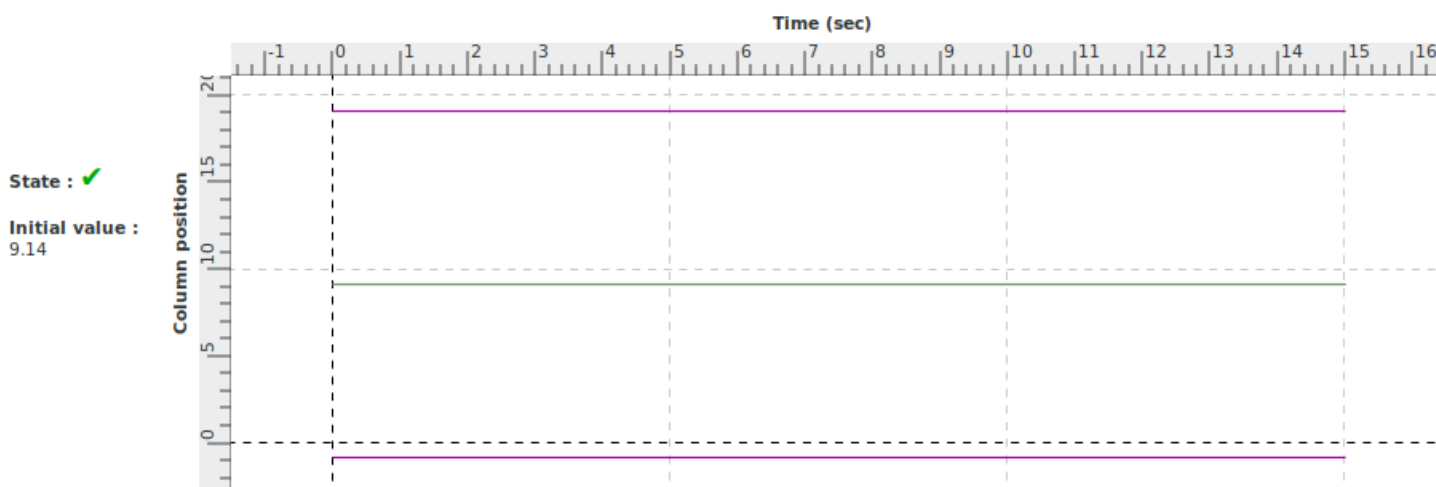
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Dutch roll (yaw damper off) during cruise		
Id	2 d vii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



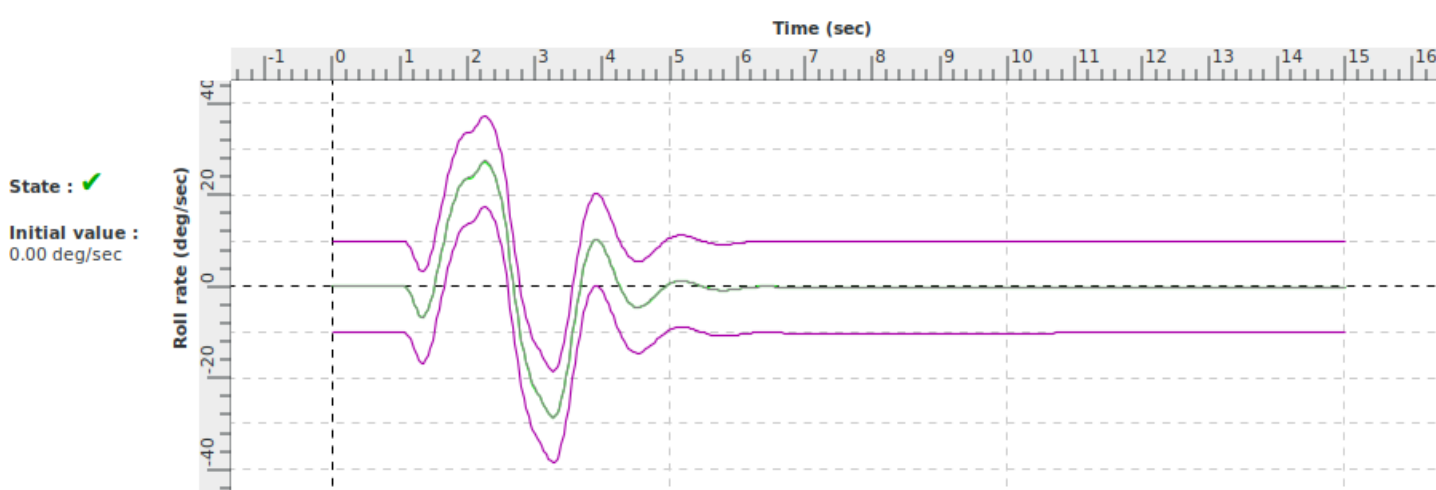
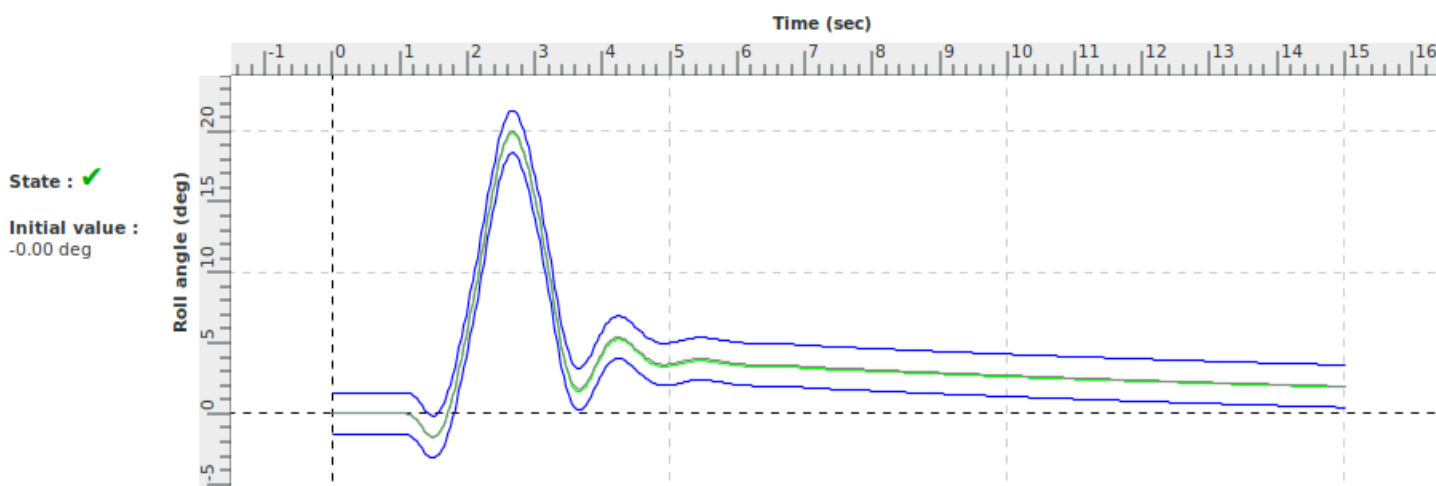
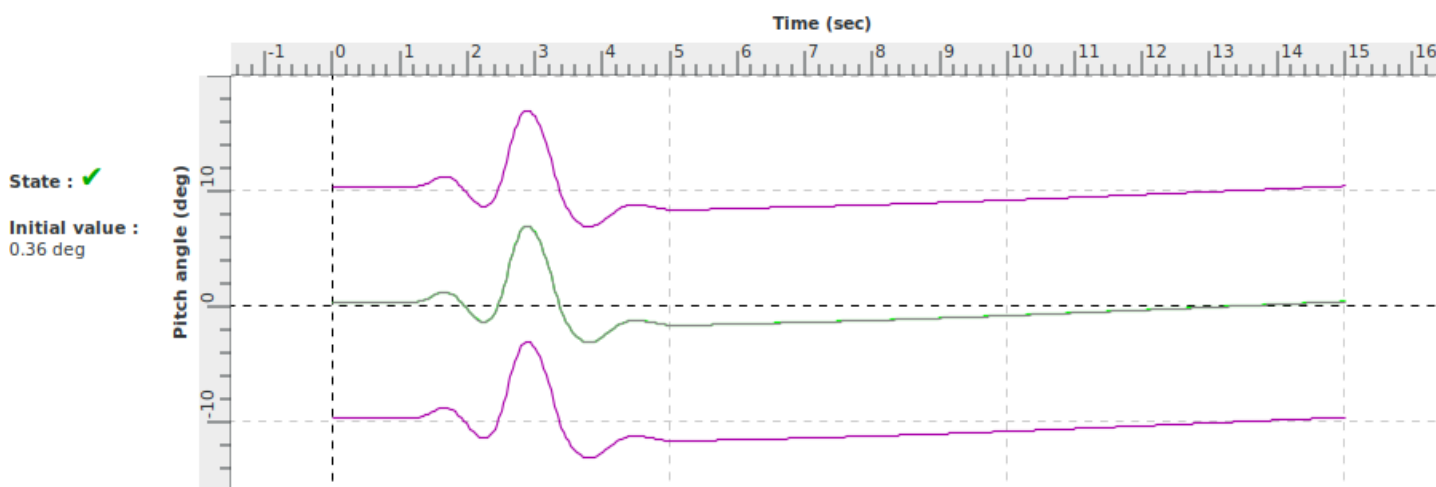
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Dutch roll (yaw damper off) during cruise		
Id	2 d vii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	Master Date	27/07/21
Result Load	2012.01	Master Load	2012.01



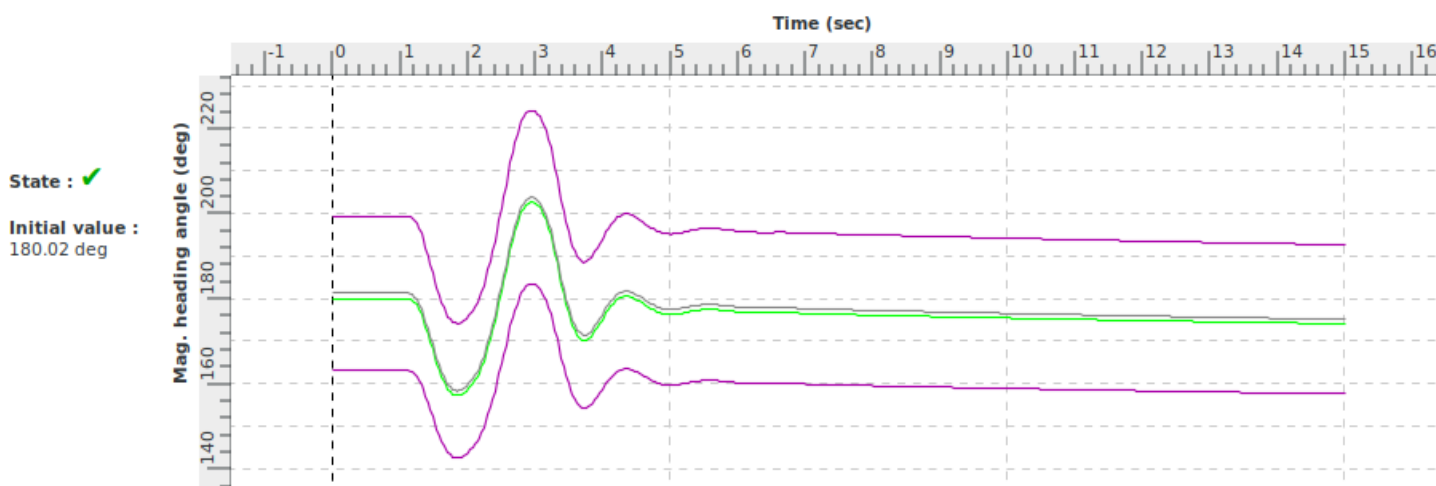
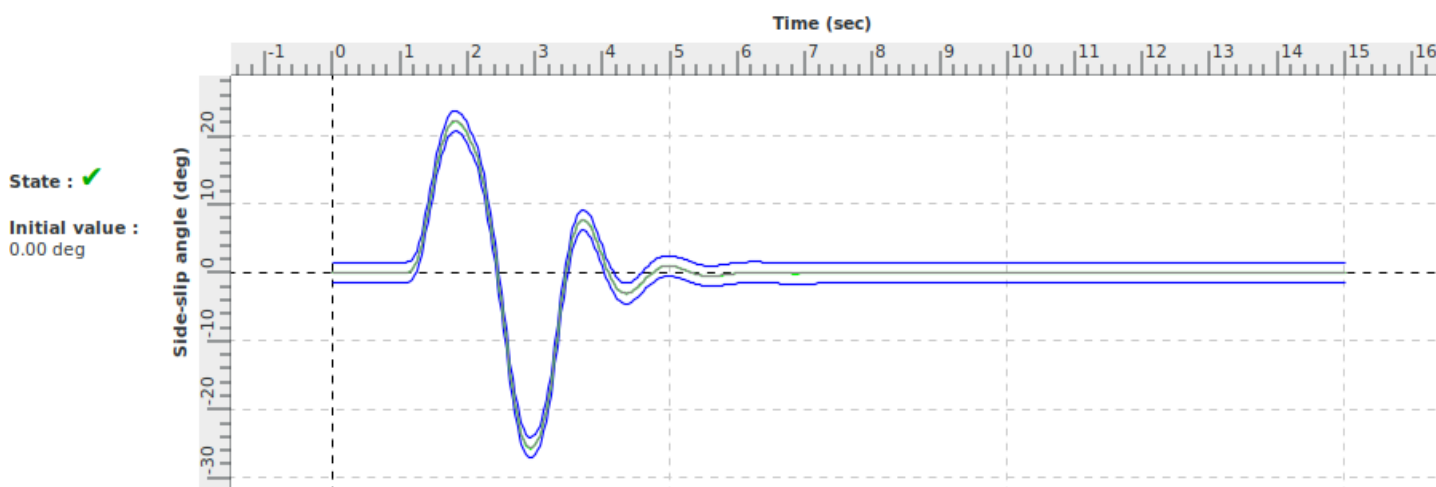
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Dutch roll (yaw damper off) during cruise		
Id	2 d vii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
Result Date	04/06/24	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

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

Objective	Expected Results
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)
Reference	Evaluation Criteria
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

Demonstration procedure	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.
Manual test procedure	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.
Automatic test procedure	2 d vii b

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Dutch roll (yaw damper off) during approach		
Id	2 d vii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.02
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_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>	

Initial parameters	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

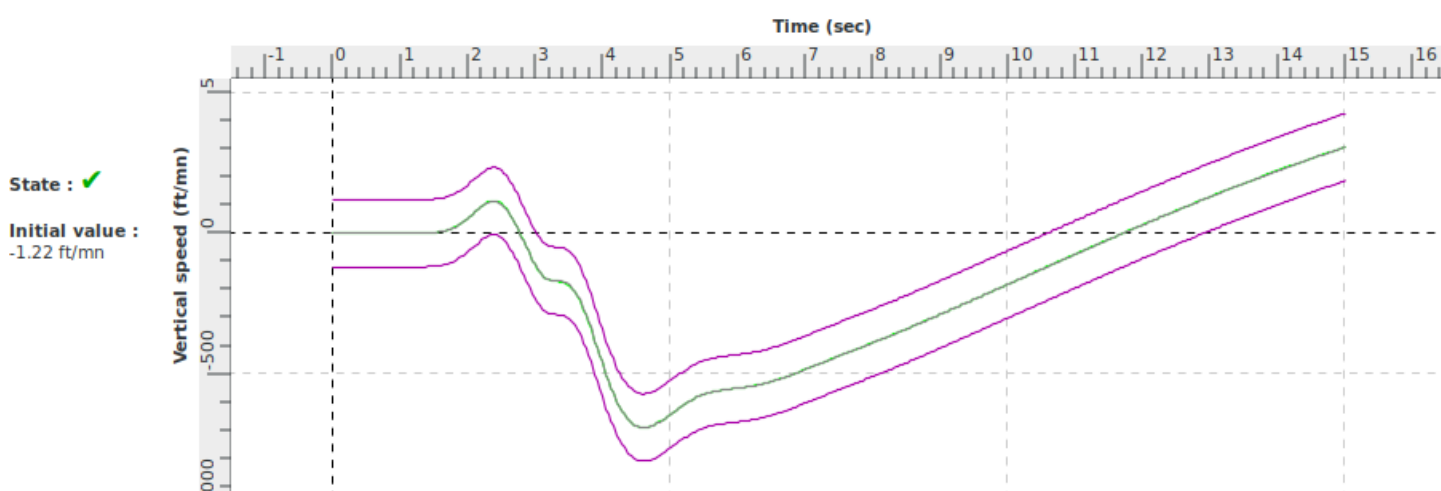
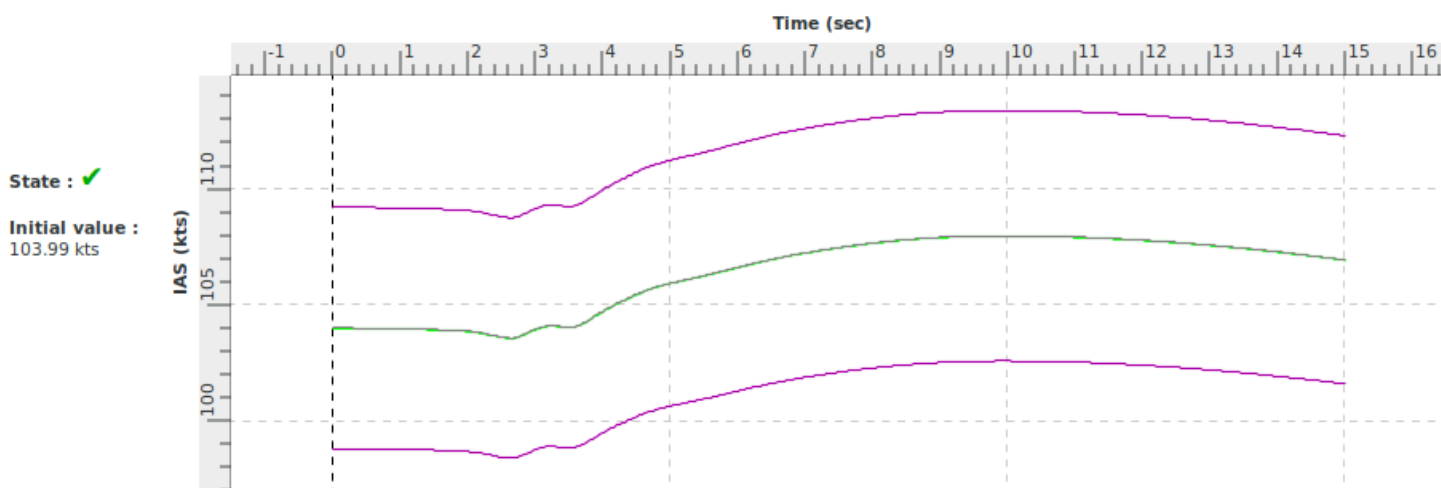
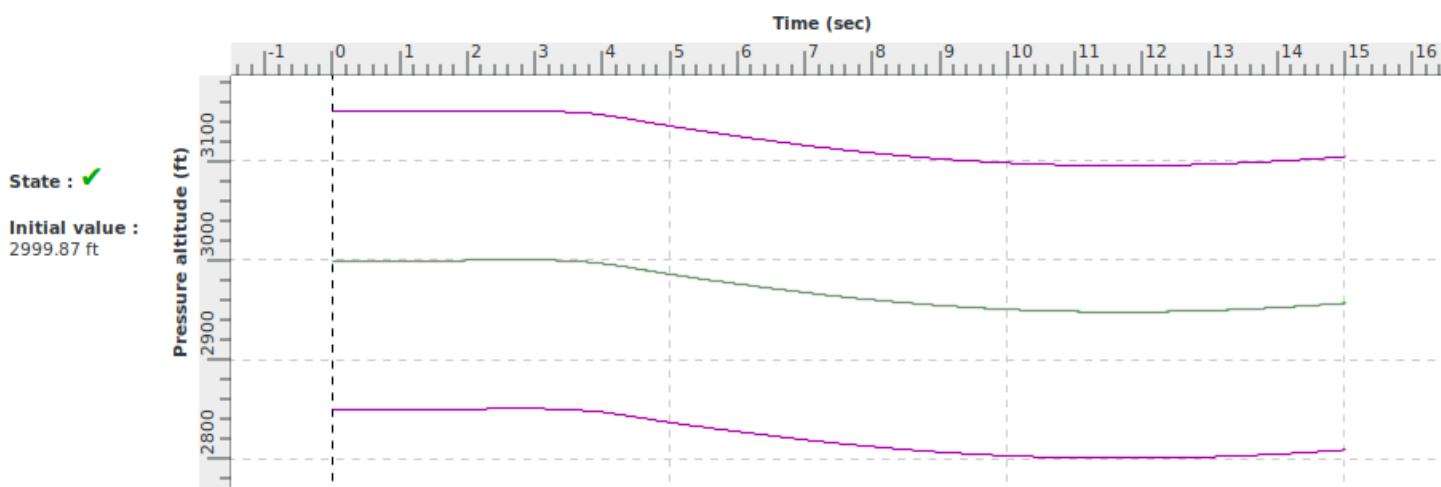
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
0.0	deconnectionPA_roll	0.0	disable QTG Autopilot in roll axis
1.0	SetRudderCmdPalier	-70.0	Send a step in the rudder govern
1.0	SetAttCmdPalier	0.0	Send a step in the attitude govern
1.0	SetRollCmdPalier	0.0	Send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

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



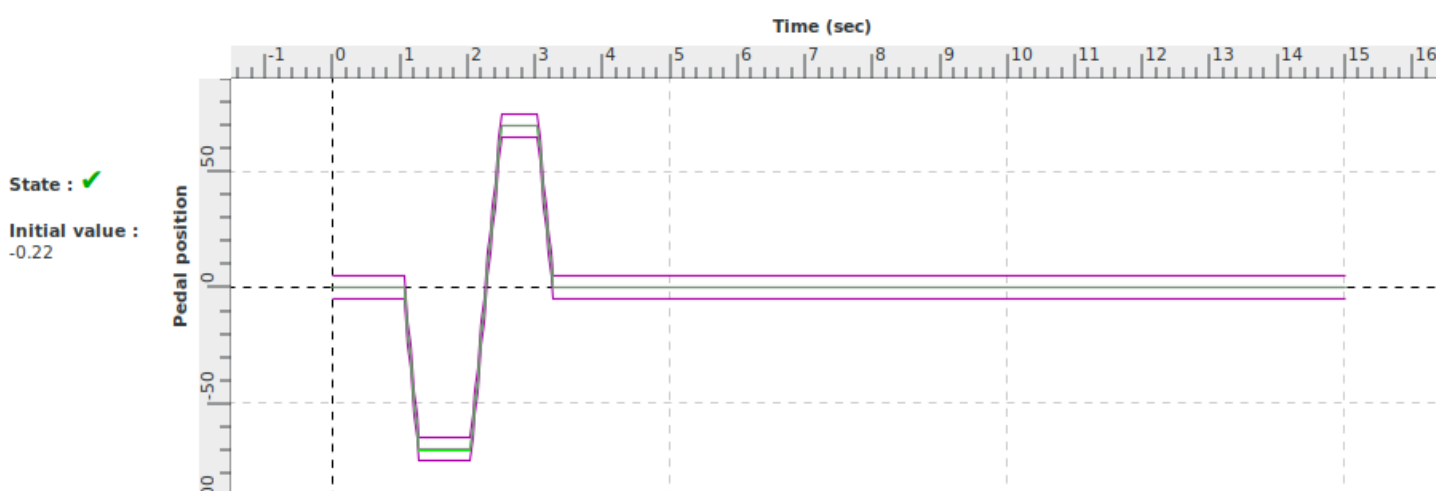
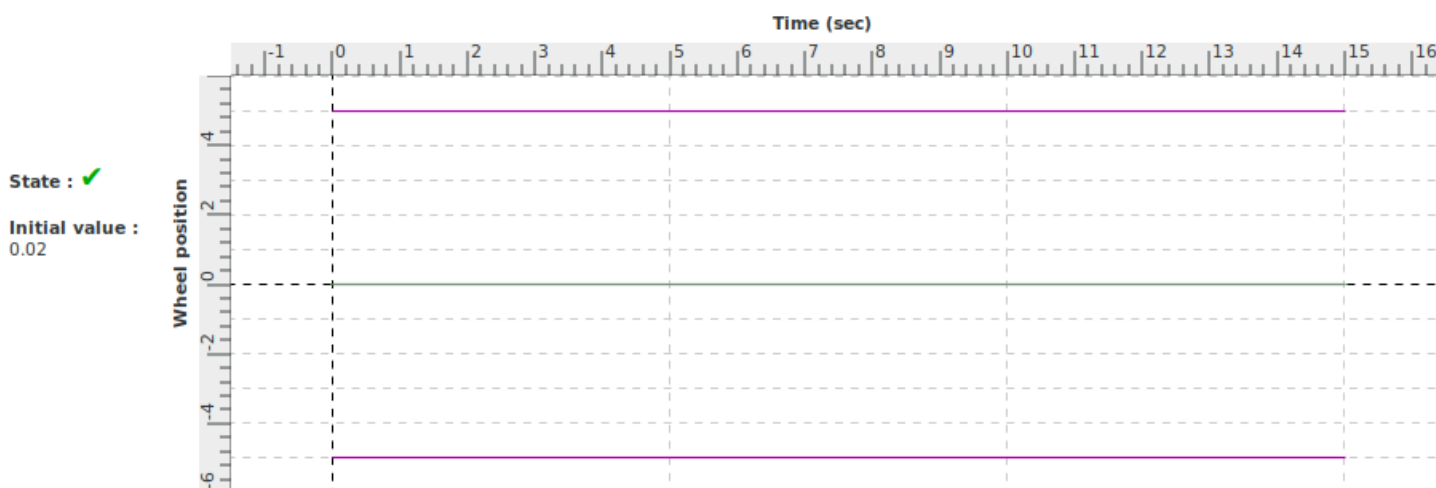
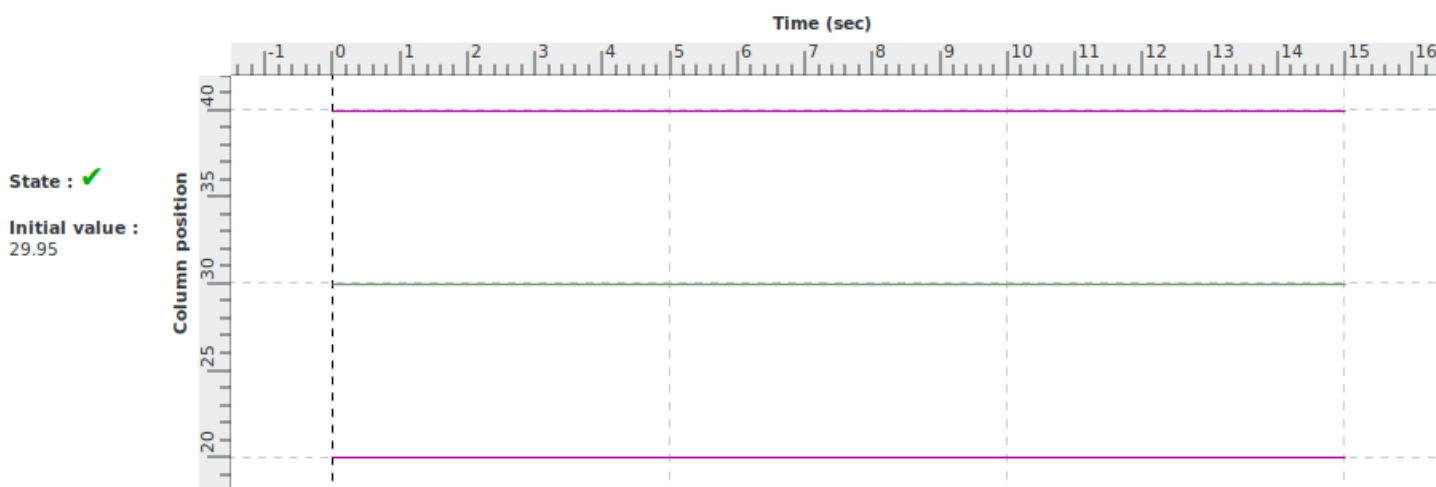
Legend :

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



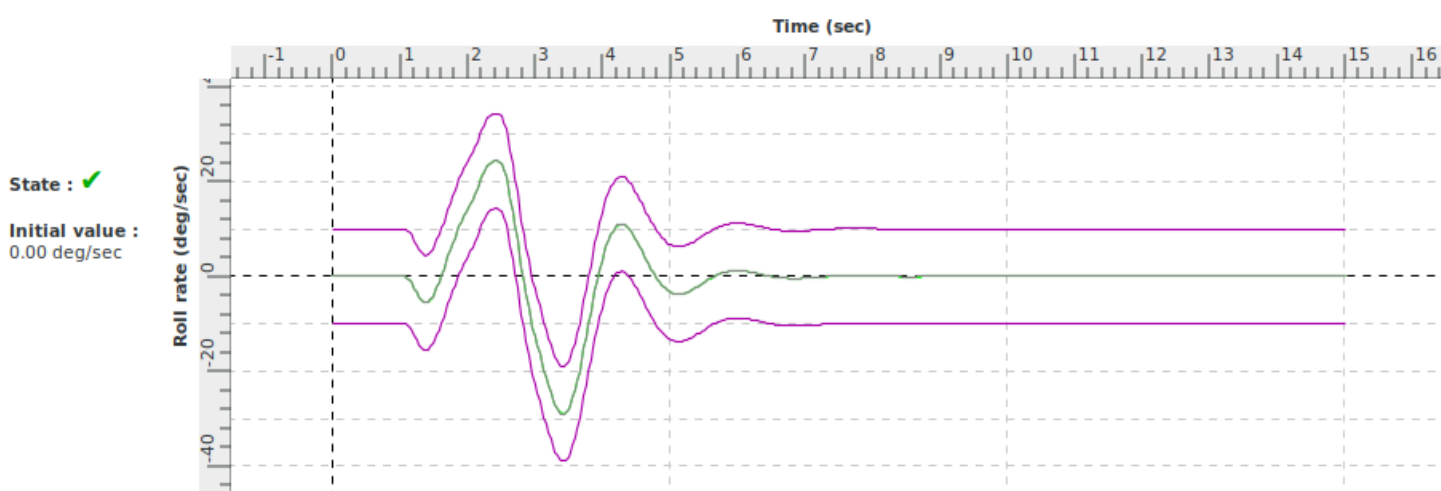
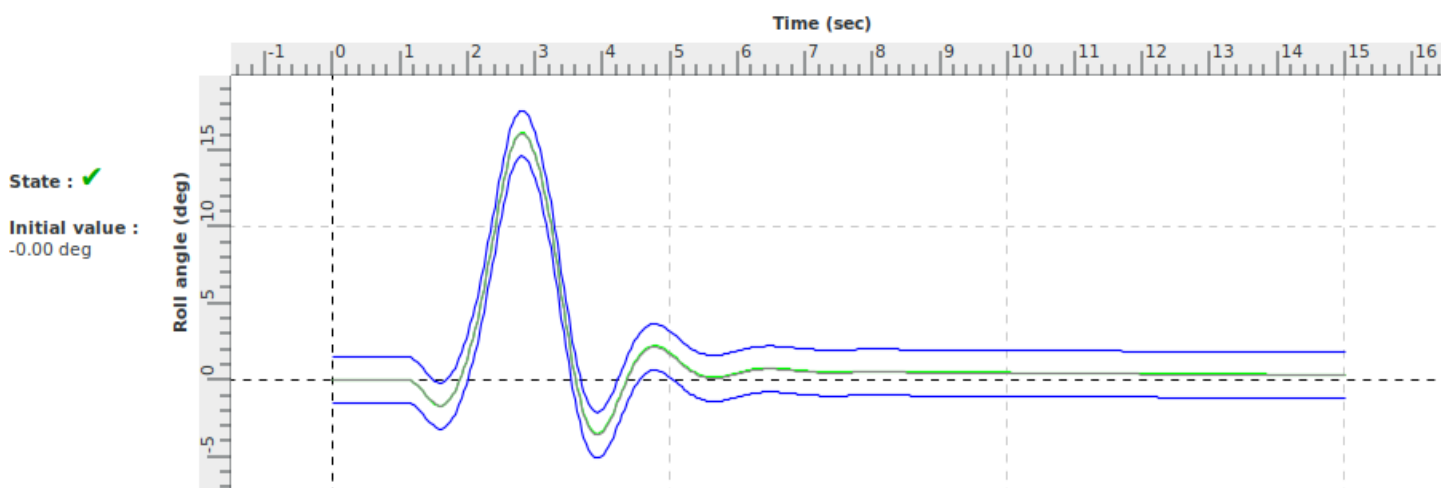
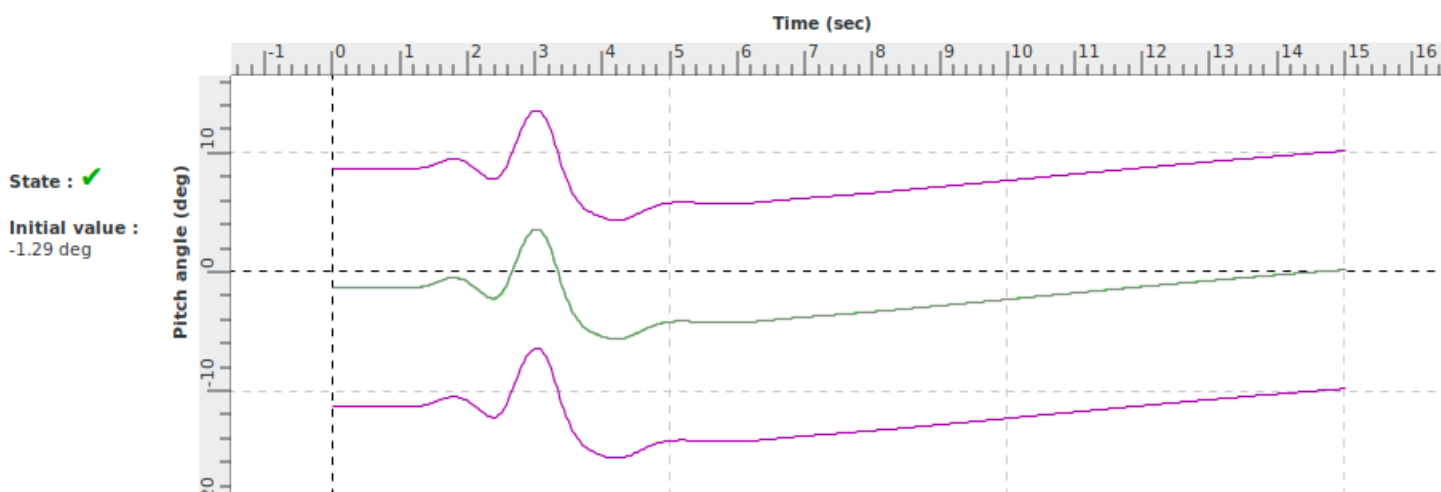
Legend :

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



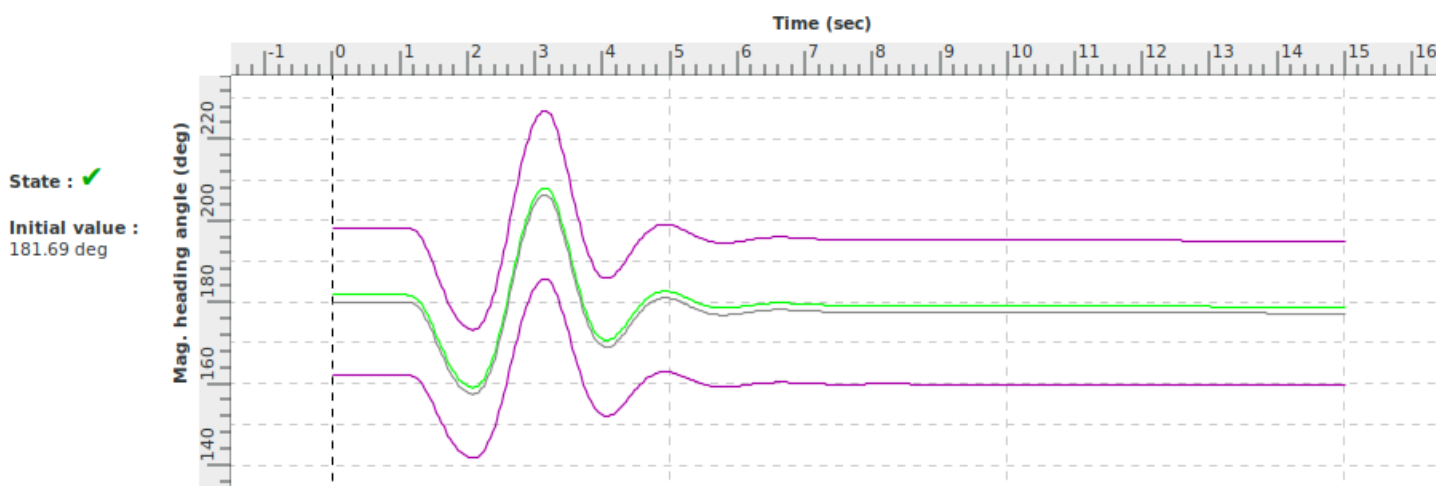
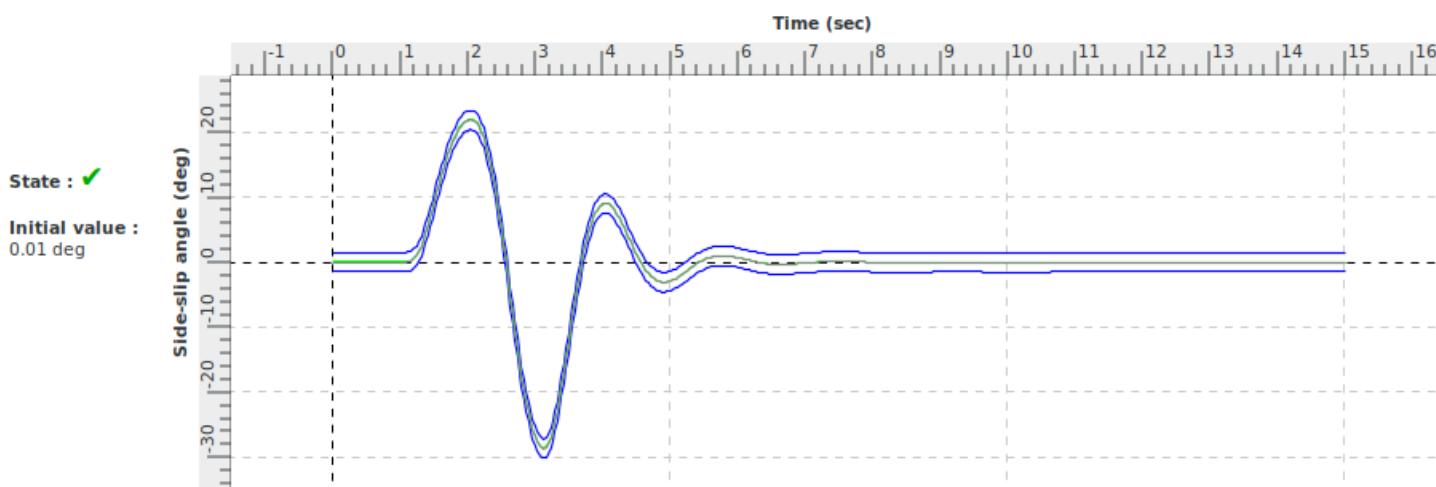
Legend :

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

Title	Steady state sideslip during approach - Left		
Id	2 d viii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	19/04/22
Result Load	2012.01	Master Load	2012.01

Objective	Expected Results
Demonstrate that the the simulator exhibits the correct inter-relationship of steady state lateral/directional flight characteristics in conformance with the class of aeroplanes	Rudder / Bank / Sideslip / Wheel position -20% / -1.5 deg / 3.1 deg / 8.5% -100% / -10.2 deg / 25 deg / 68%
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.d.viii.a	+/- 2 deg bank +/- 1 deg sideslip +/- 5 deg or +/- 10% wheel position

Demonstration procedure	From steady approach initial conditions, the control rudder is used to established a steady state sideslip on the left, for two different rudder displacements.
Manual test procedure	In ISA conditions and approach configuration, the pilot performs standard approach profile. When approach is stabilised, the pilot moves the rudder by 20% then 60% of its travel in one side whilst the roll control is moved to stabilize a new heading.
Automatic test procedure	2 d viii a

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Steady state sideslip during approach - Left		
Id	2 d viii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	19/04/22
Result Load	2012.01	Master Load	2012.01

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

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	Right Load (%) : 70
IAS (kt) : 106 (free)	Left RPM : 2060
Heading (°) : 0	Right RPM : 2060
Bank (°) : 0 (free)	
Attitude (°) : -1	
Pedal Position (%) : 0	
Column Position (%) : 32	
Wheel Position (%) : 0	

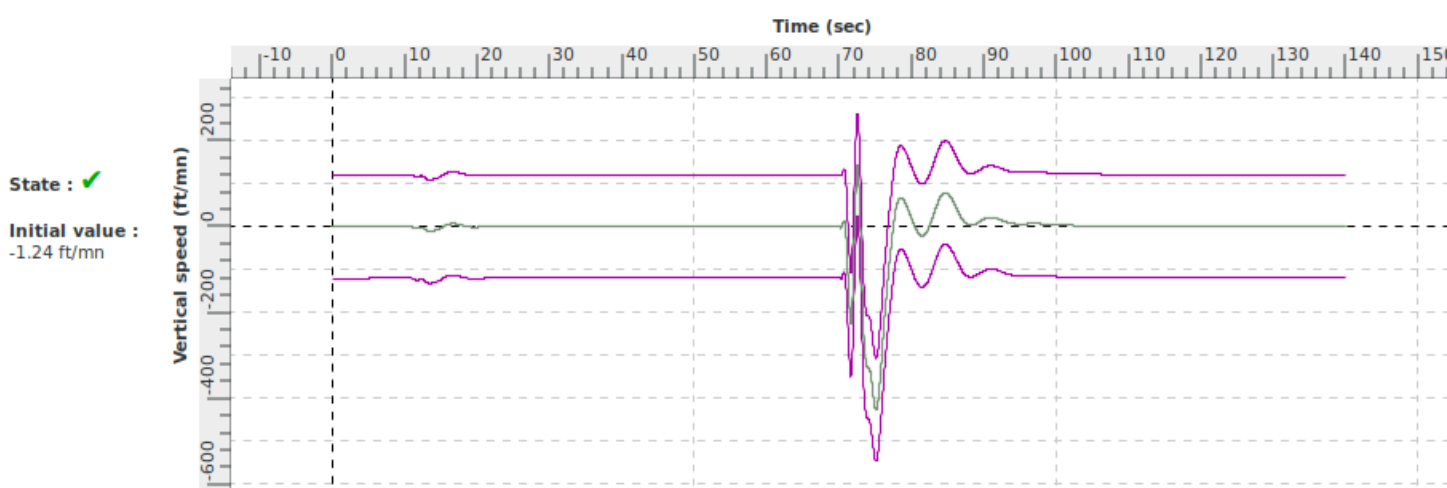
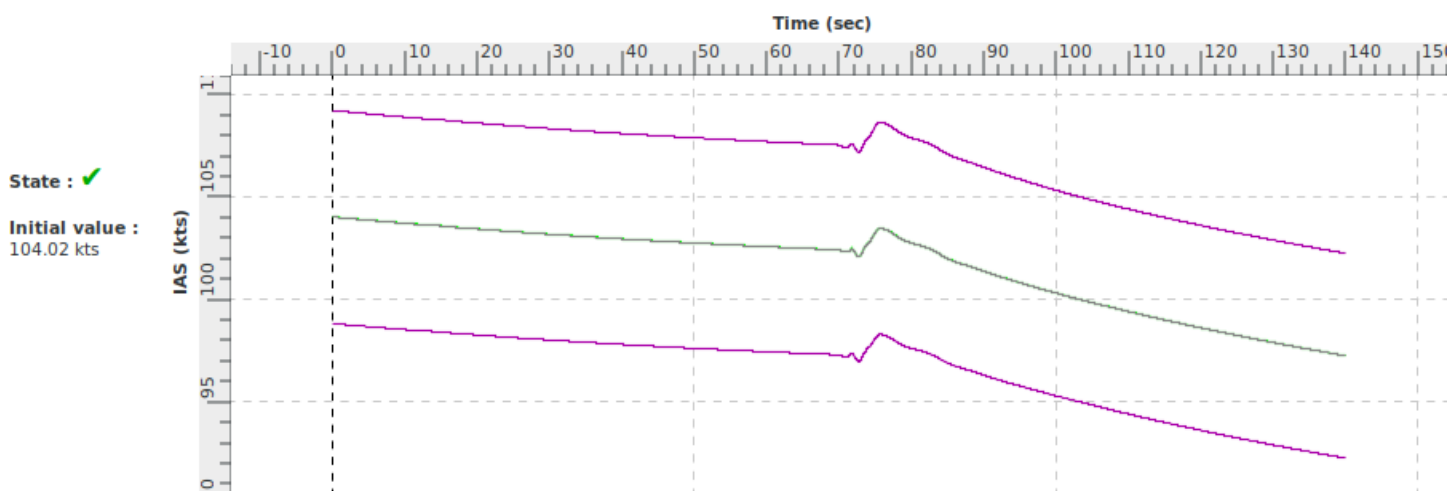
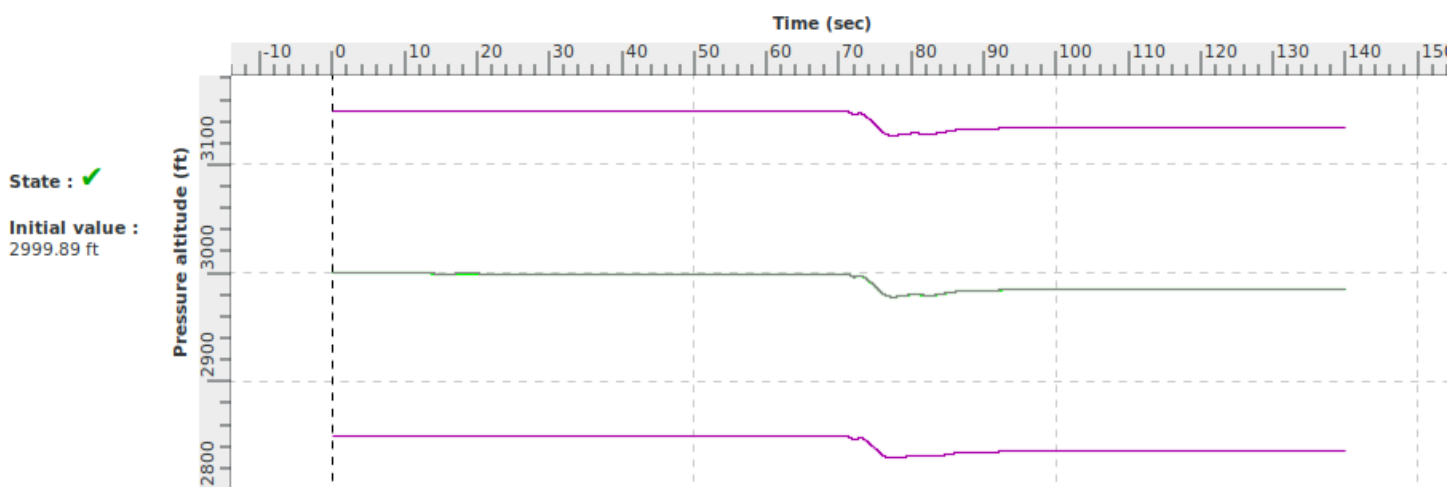
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
1.0	set_rudder_auto_heading	0.0	Ask it to maintain the desired rudder angle
10.0	set_rudder_auto_heading	-20.0	Ask it to maintain the desired rudder angle
70.0	set_rudder_auto_heading	-100.0	Ask it to maintain the desired rudder angle
140.0	Stop_Test	0.0	Stop the test procedure

Title	Steady state sideslip during approach - Left		
Id	2 d viii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Qualification Level	FNPT2	Operator	AFTA
Result Date	03/12/23	Master Date	19/04/22
Result Load	2012.01	Master Load	2012.01

Log of Revision		
Rev. Nbr	Date	Reason for revision
1.01	29/03/21	1909 Master. New expected results and new command.
1.02	27/07/21	2012-R1 Master. New expected results.
1.03	19/04/22	2012-R1 master correction on Force

Notes

Title	Steady state sideslip during approach - Left		
Id	2 d viii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Result Date	03/12/23	Master Date	19/04/22
Result Load	2012.01	Master Load	2012.01



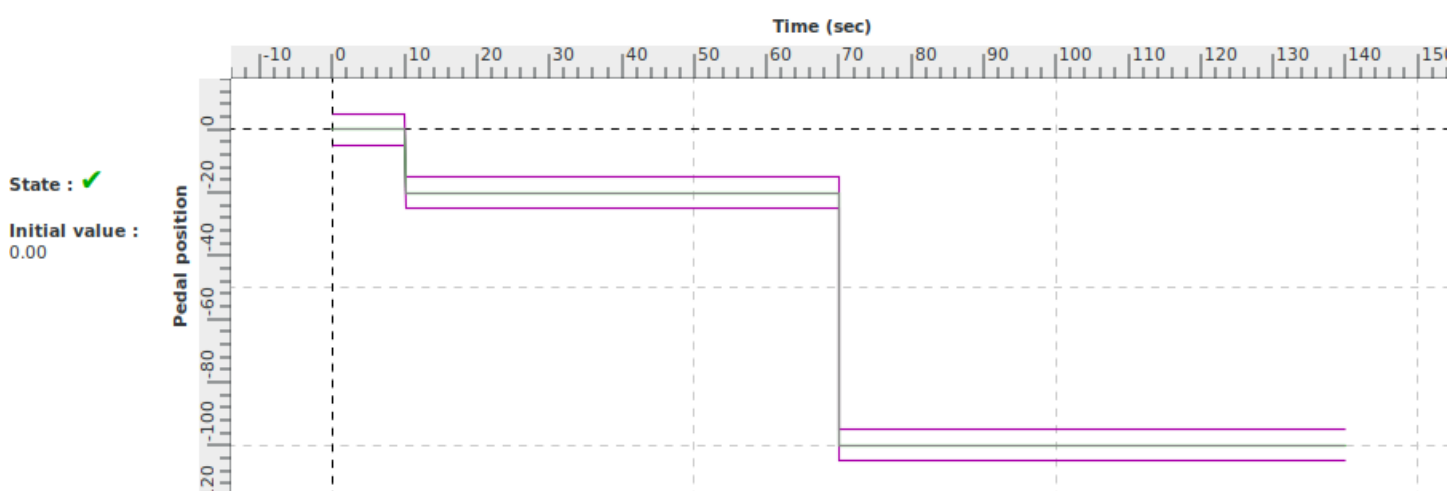
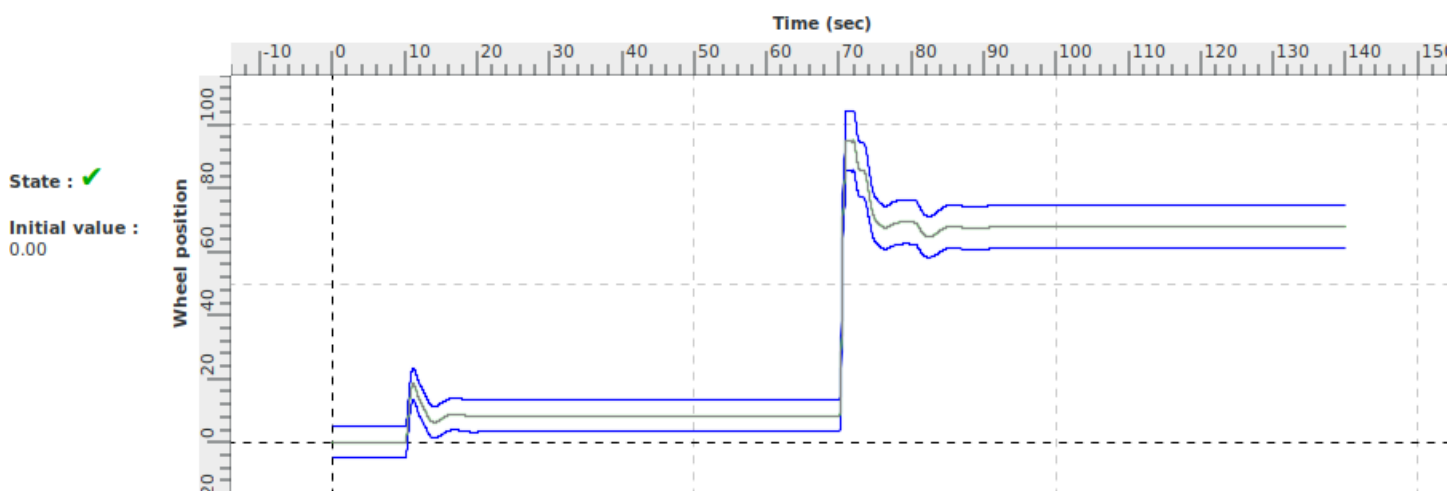
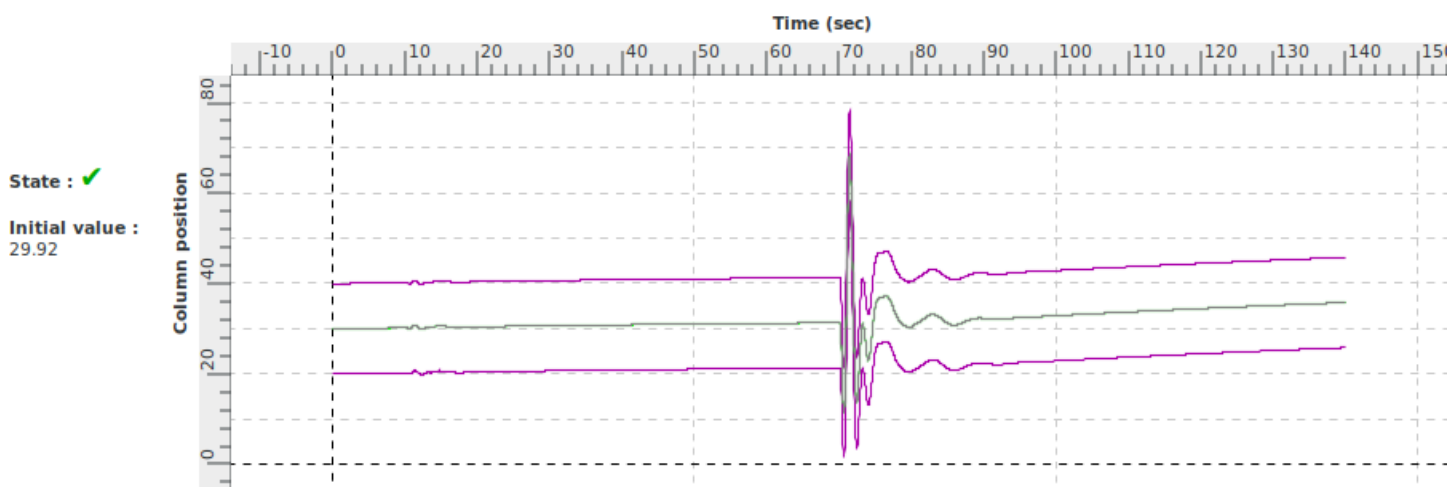
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Steady state sideslip during approach - Left		
Id	2 d viii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Result Date	03/12/23	Master Date	19/04/22
Result Load	2012.01	Master Load	2012.01



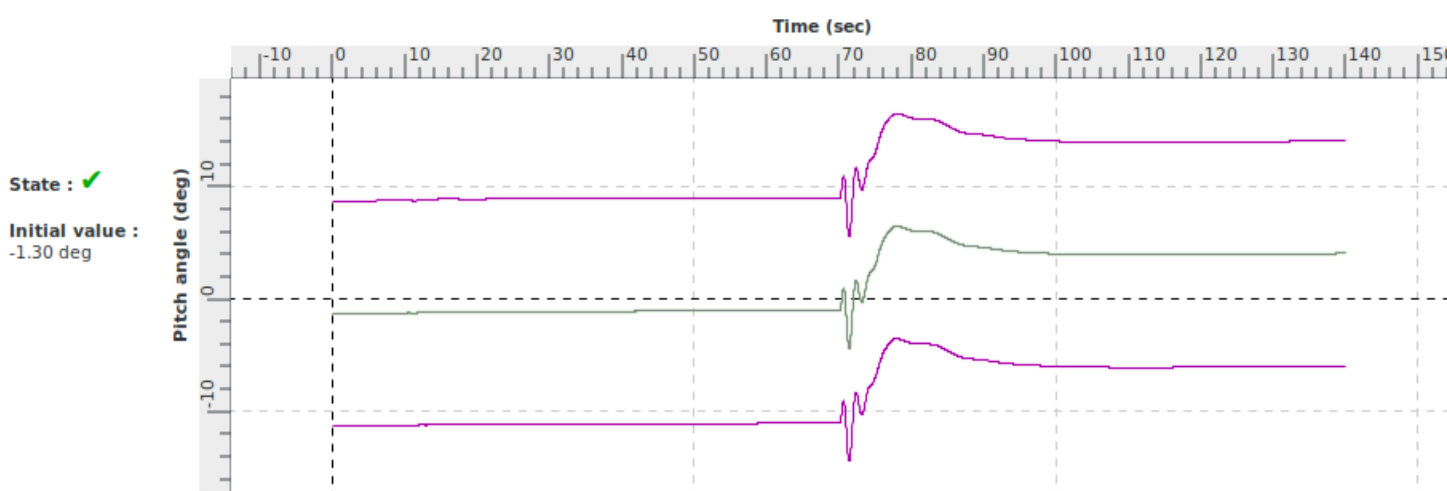
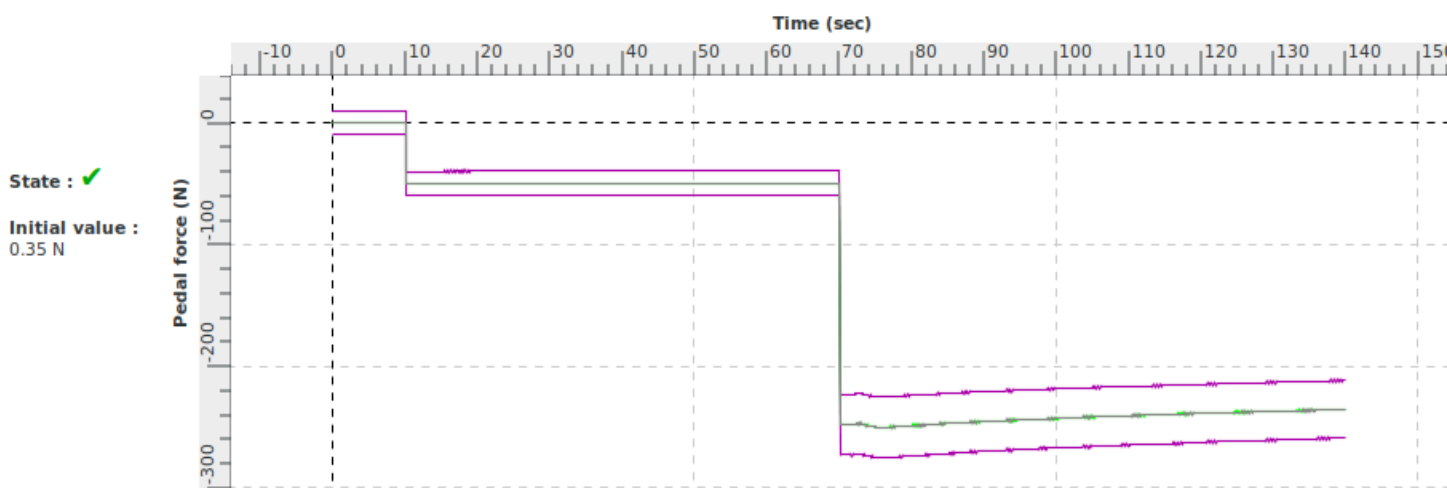
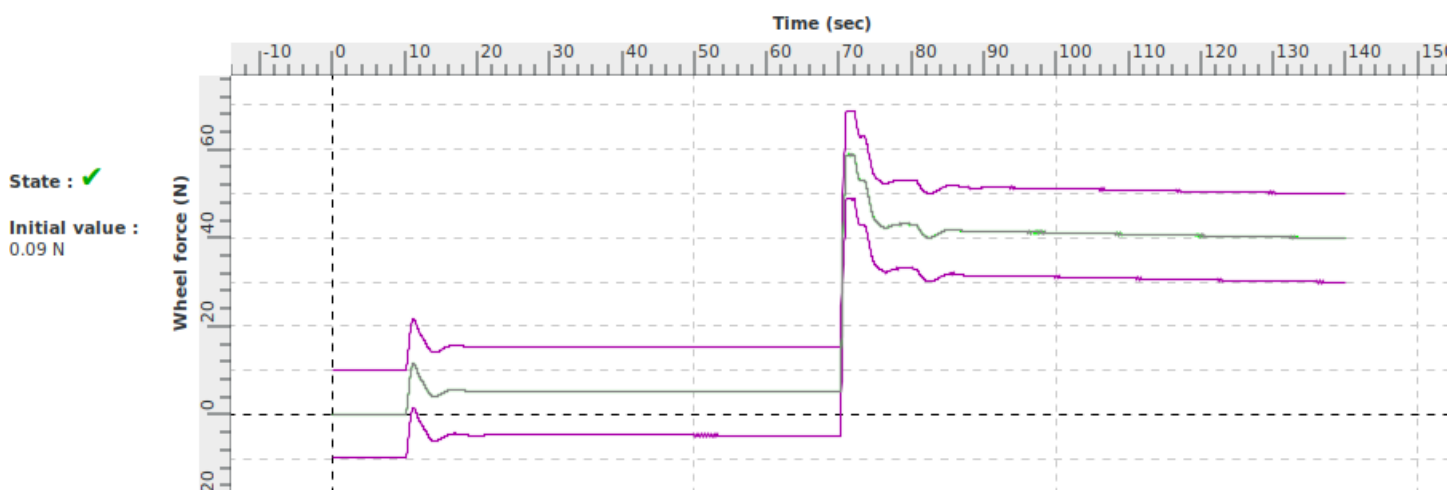
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Steady state sideslip during approach - Left		
Id	2 d viii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Result Date	03/12/23	Master Date	19/04/22
Result Load	2012.01	Master Load	2012.01



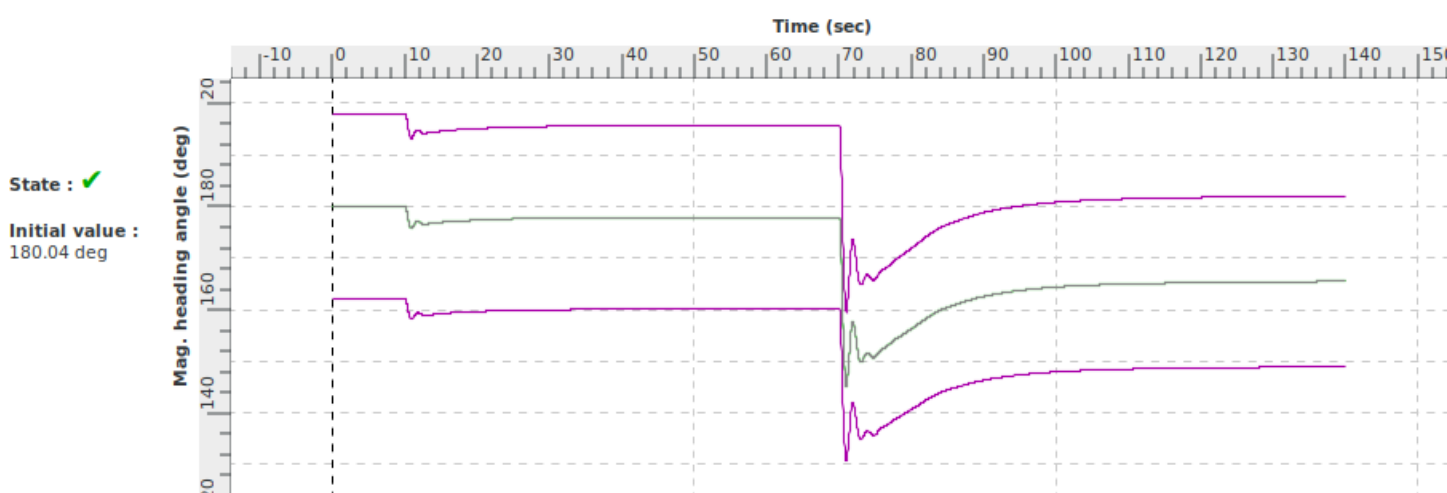
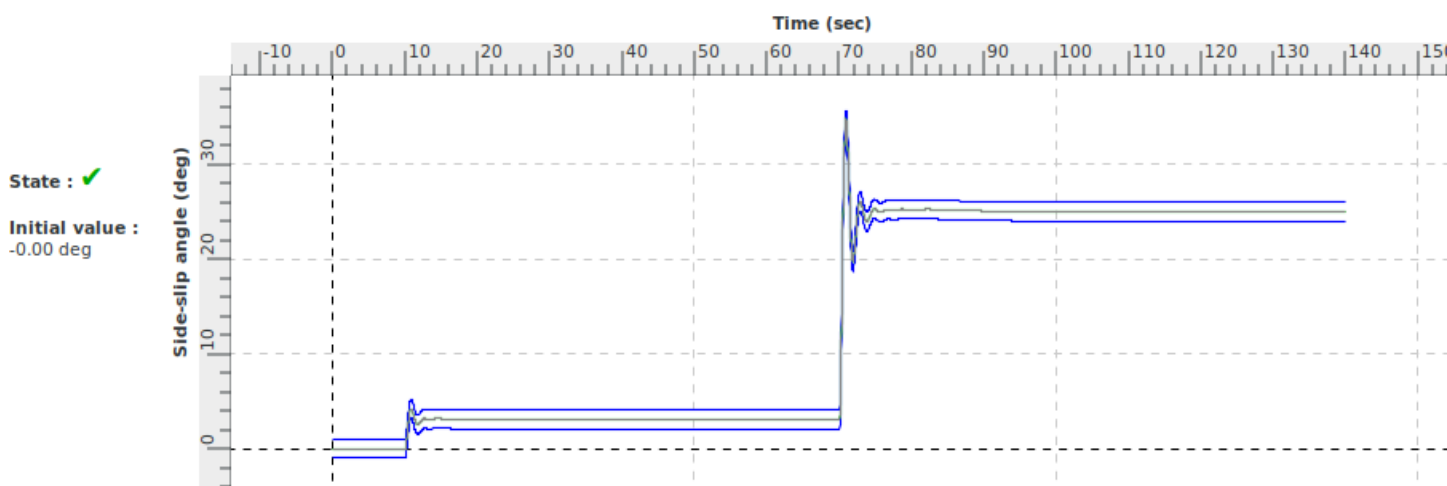
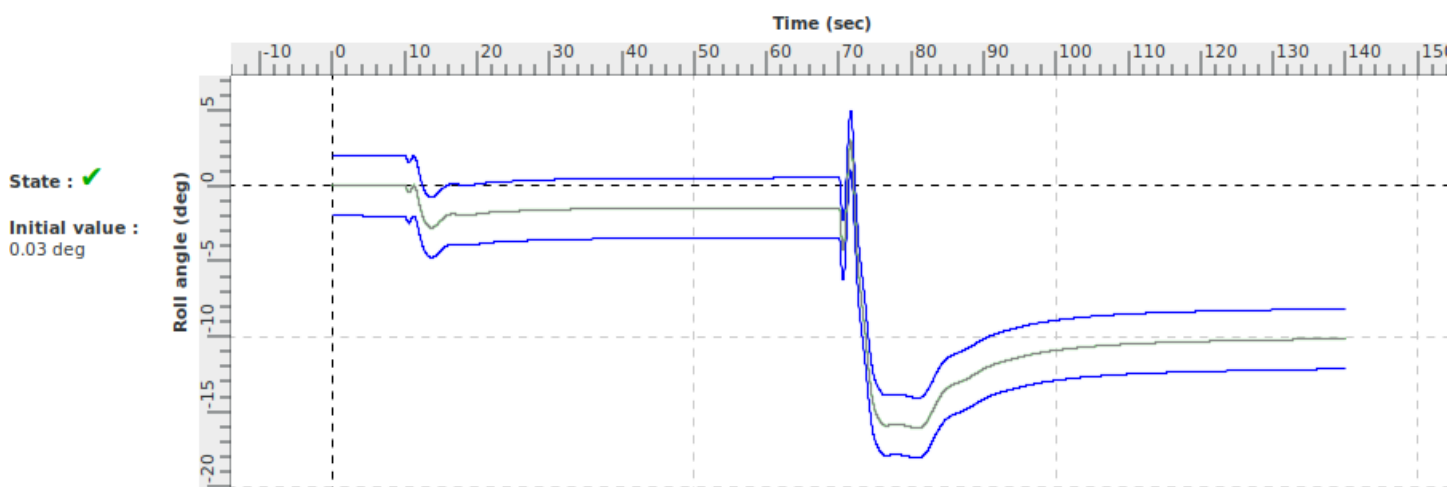
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Steady state sideslip during approach - Left		
Id	2 d viii a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Result Date	03/12/23	Master Date	19/04/22
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

Title	Steady state sideslip during approach - Right		
Id	2 d viii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	19/04/22
Result Load	2012.01	Master Load	2012.01

Objective	Expected Results
Demonstrate that the the simulator exhibits the correct inter-relationship of steady state lateral/directional flight characteristics in conformance with the class of aeroplanes	Rudder / Bank / Sideslip / Wheel position 20% / 1.5 deg / -3.1 deg / -8.5% 100% / 10.2 deg / -25 deg / -68%
Reference	Evaluation Criteria
Chapter 12 - Validation data - Handling Qualities - Test 2.d.viii.b	+/- 2 deg bank +/- 1 deg sideslip +/- 5 deg or +/- 10% wheel position

Demonstration procedure	From steady approach initial conditions, the control rudder is used to established a steady state sideslip on the right, for two different rudder displacements.
Manual test procedure	In ISA conditions and approach configuration, the pilot performs standard approach profile. When approach is stabilised, the pilot moves the rudder by 20% then 60% of its travel in one side whilst the roll control is moved to stabilize a new heading.
Automatic test procedure	2 d viii b

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Steady state sideslip during approach - Right		
Id	2 d viii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	19/04/22
Result Load	2012.01	Master Load	2012.01

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

Initial parameters	HOLD_FLAPS_APP_GEAR
Gross weight (kg) : 1900 Balance (%) : 50 Altitude (ft) : 3000 Vertical speed (ft/min) : 0 IAS (kt) : 106 (free) Heading (°) : 0 Bank (°) : 0 (free) 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

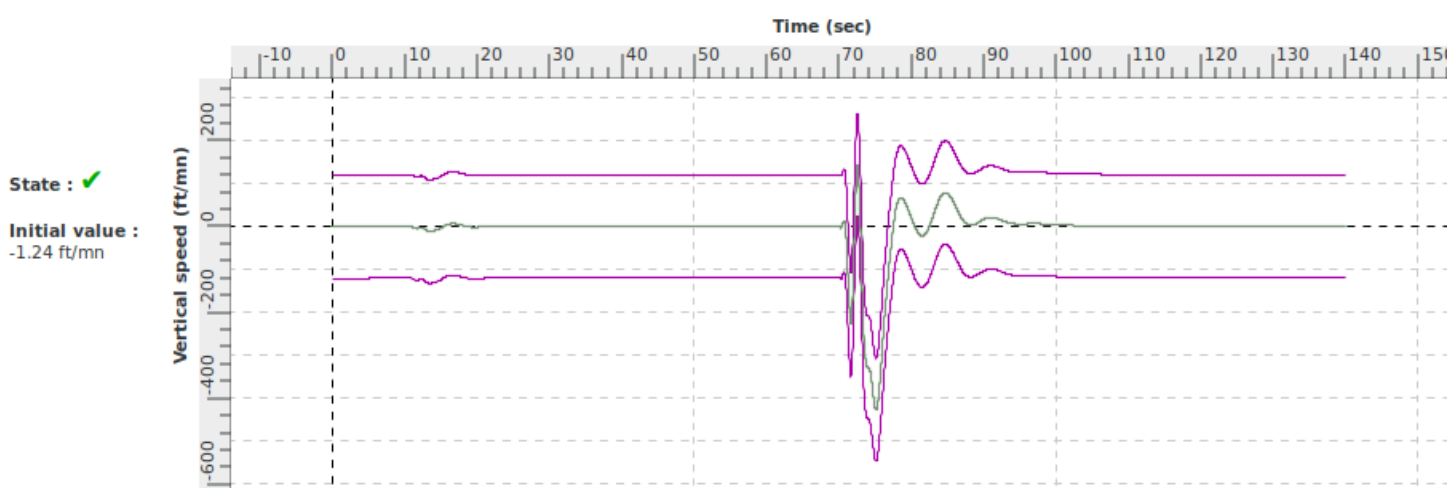
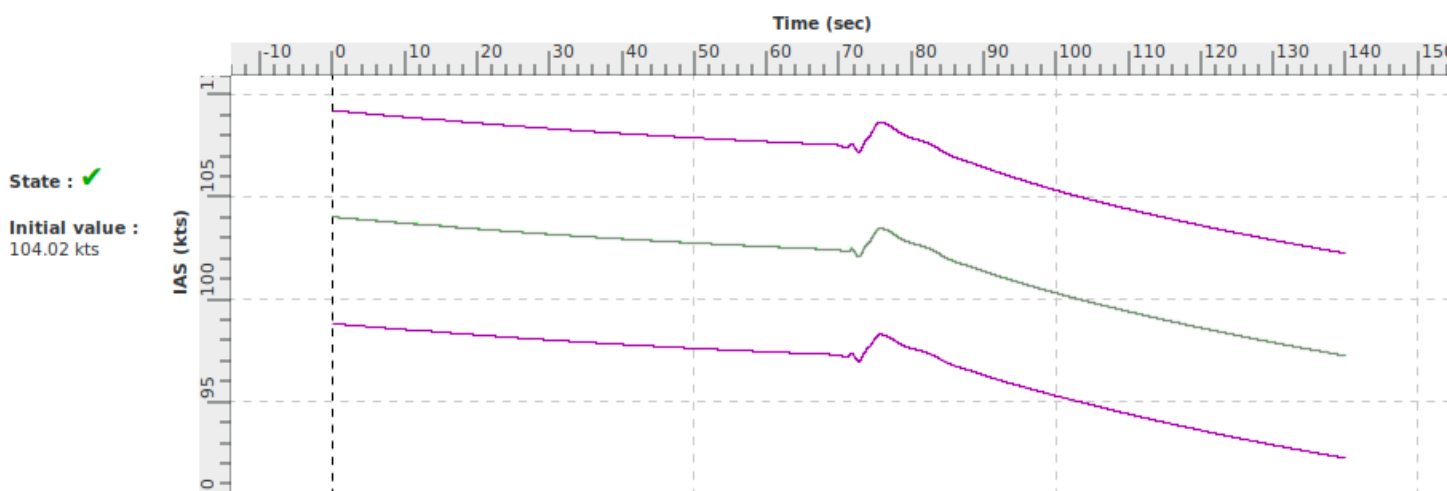
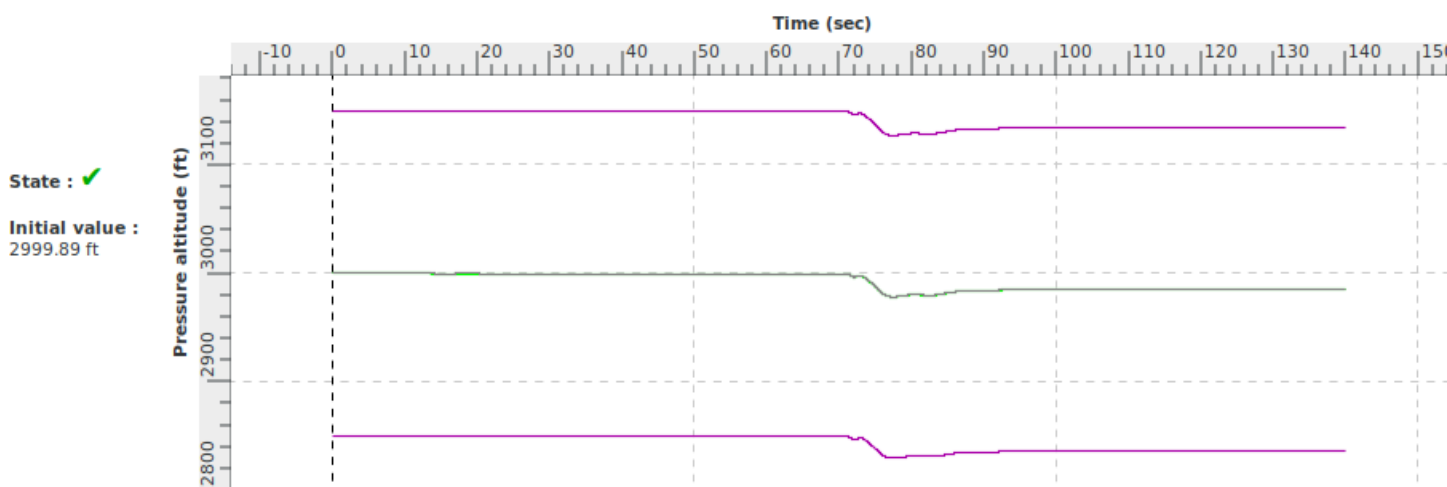
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
1.0	set_rudder_auto_heading	0.0	Ask it to maintain the desired rudder angle
10.0	set_rudder_auto_heading	20.0	Ask it to maintain the desired rudder angle
70.0	set_rudder_auto_heading	100.0	Ask it to maintain the desired rudder angle
140.0	Stop_Test	0.0	Stop the test procedure

Title	Steady state sideslip during approach - Right		
Id	2 d viii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/02/24	Master Date	19/04/22
Result Load	2012.01	Master Load	2012.01

Log of Revision		
Rev. Nbr	Date	Reason for revision
1.01	29/03/21	1909 Master. New expected results and new command.
1.02	27/07/21	2012-R1 Master. New expected results.
1.03	19/04/22	2012-R1 master correction on Force

Notes

Title	Steady state sideslip during approach - Right		
Id	2 d viii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Result Date	04/02/24	Master Date	19/04/22
Result Load	2012.01	Master Load	2012.01



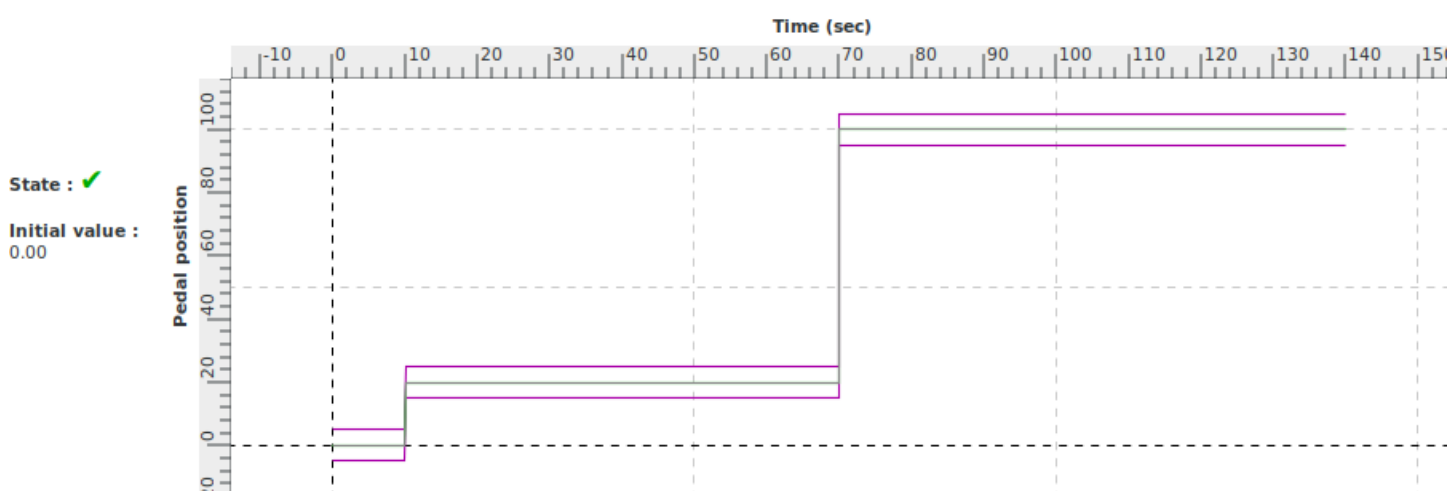
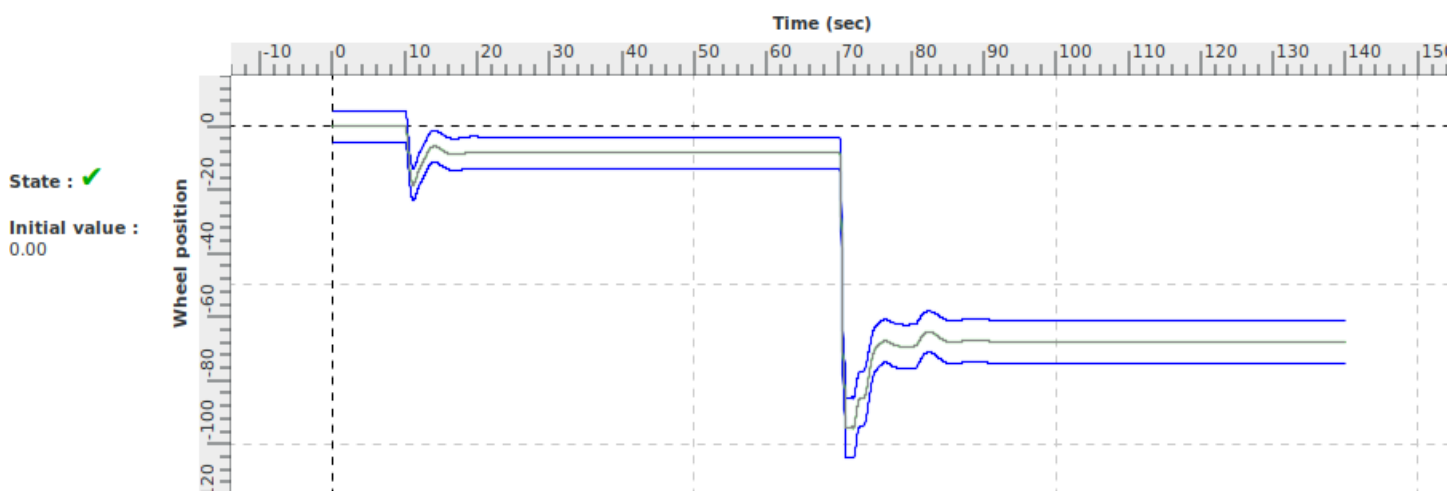
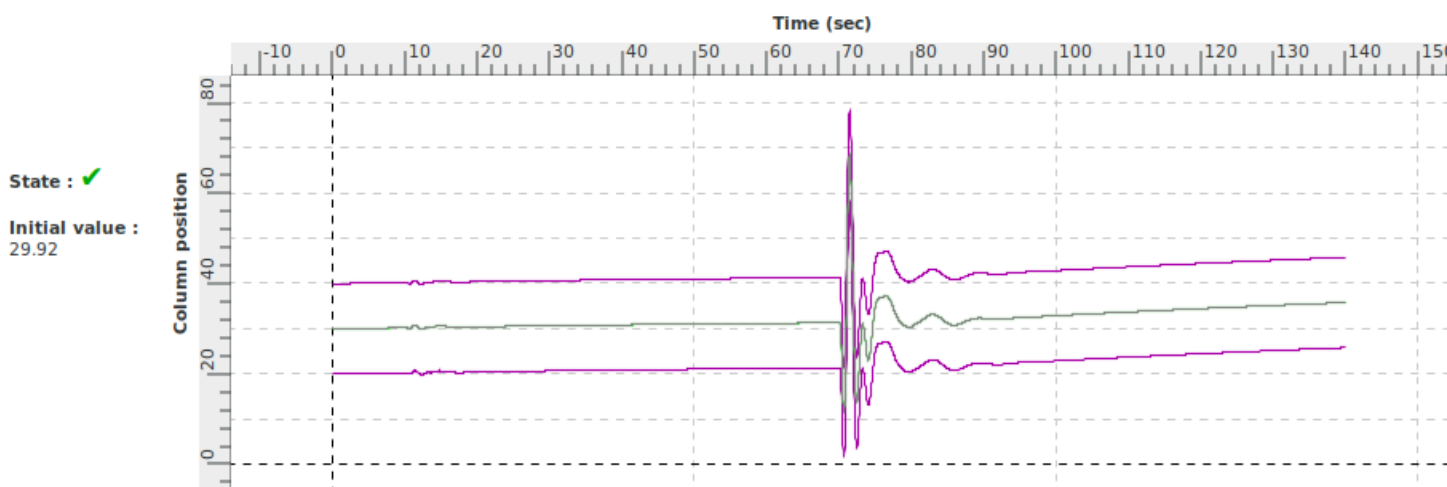
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Steady state sideslip during approach - Right		
Id	2 d viii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Result Date	04/02/24	Master Date	19/04/22
Result Load	2012.01	Master Load	2012.01



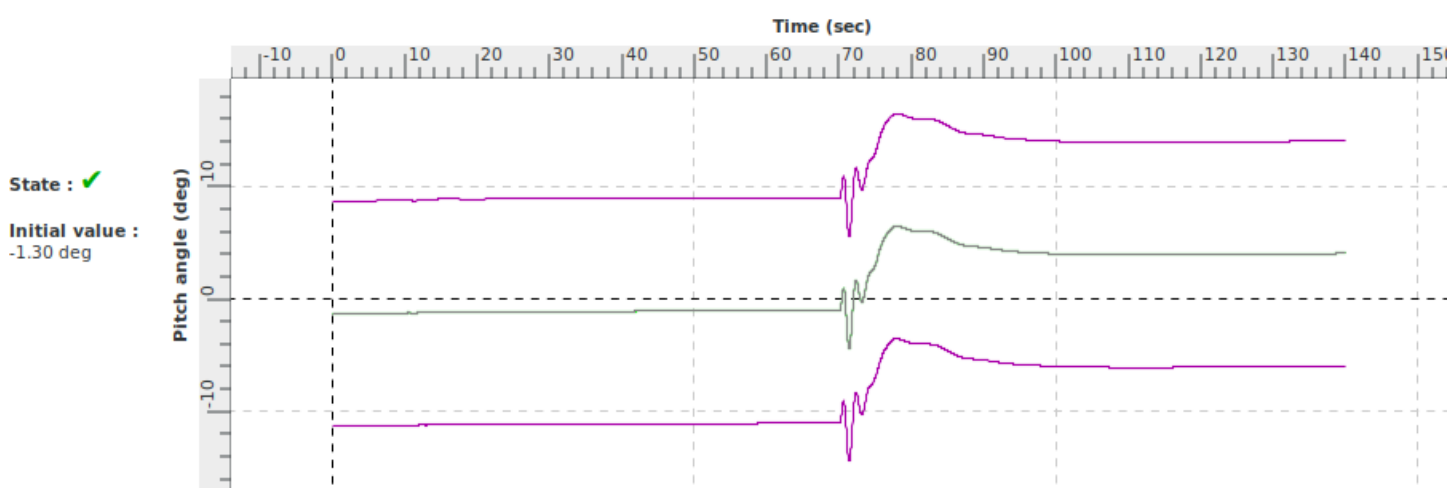
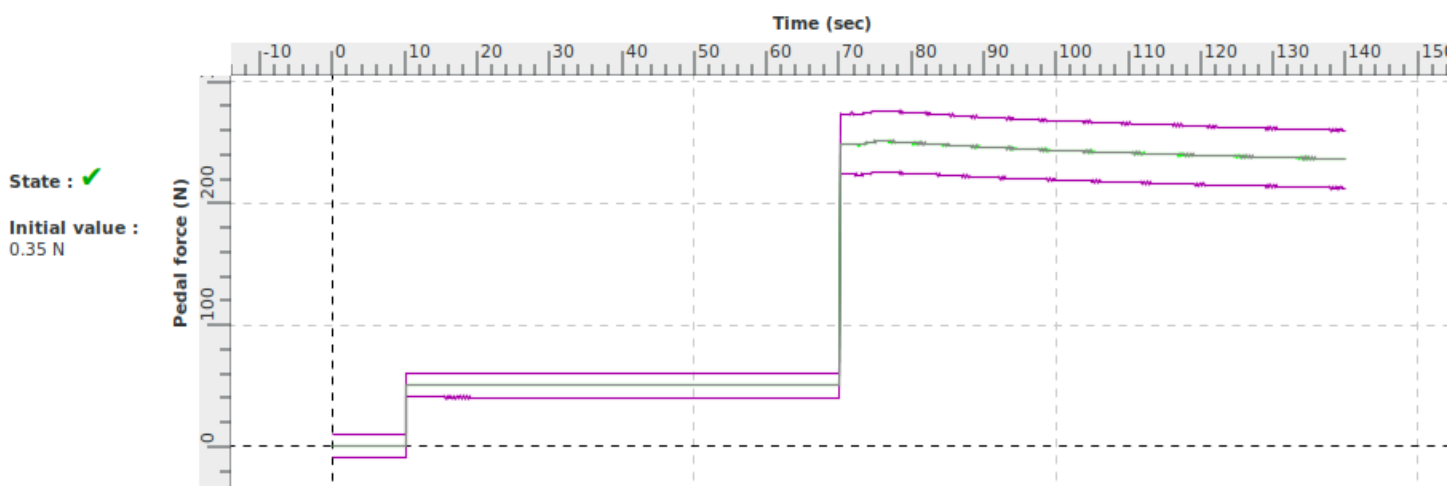
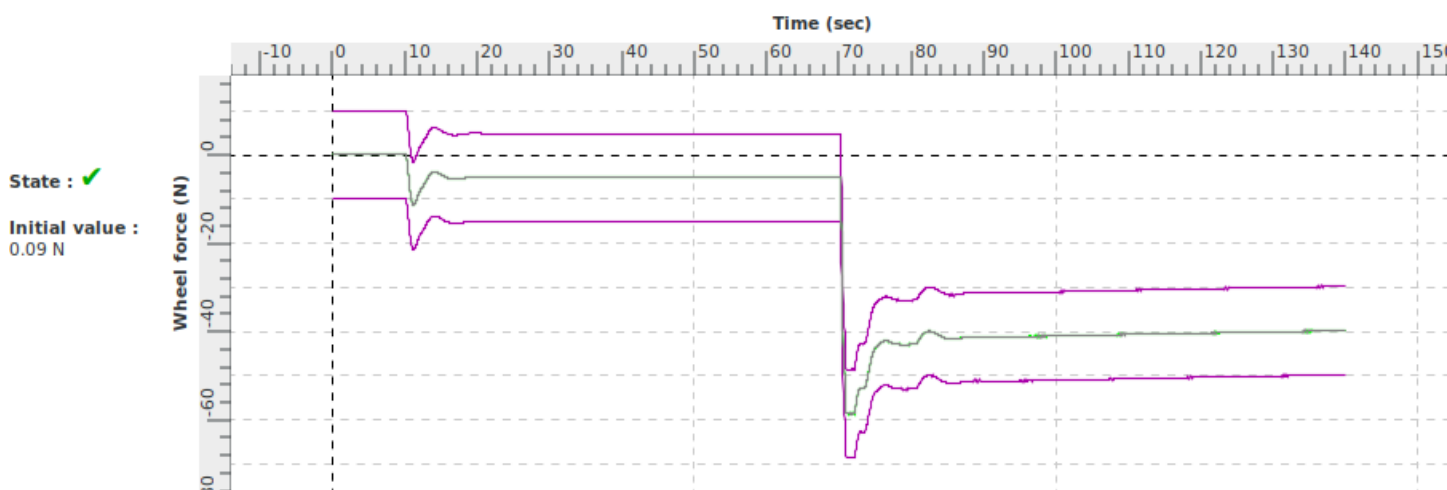
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsim

grey : master

Title	Steady state sideslip during approach - Right		
Id	2 d viii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Result Date	04/02/24	Master Date	19/04/22
Result Load	2012.01	Master Load	2012.01



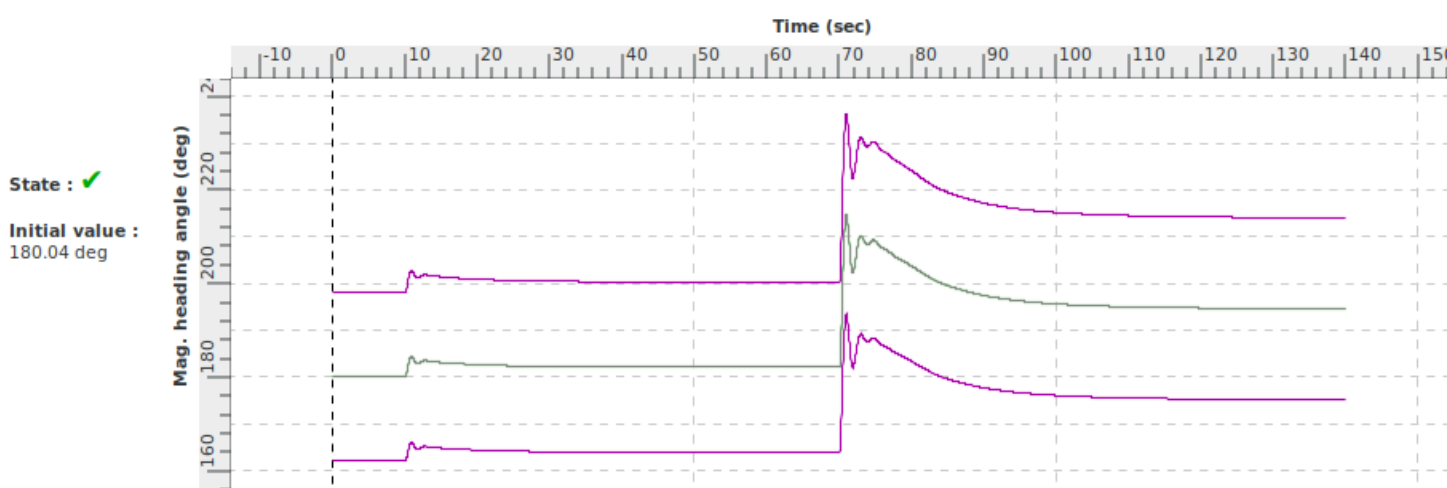
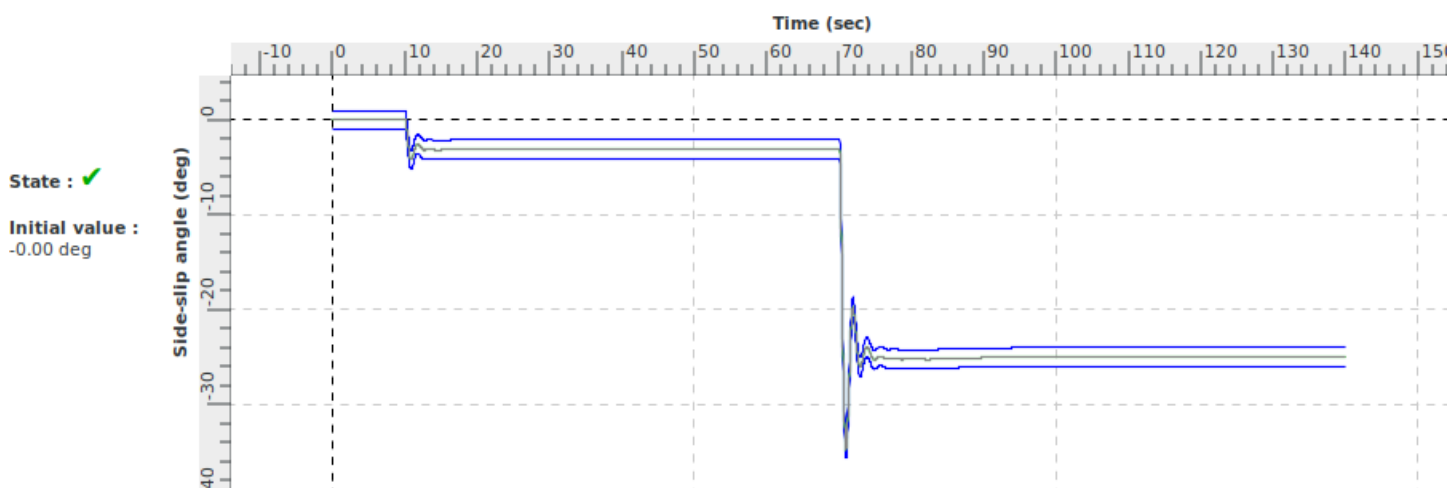
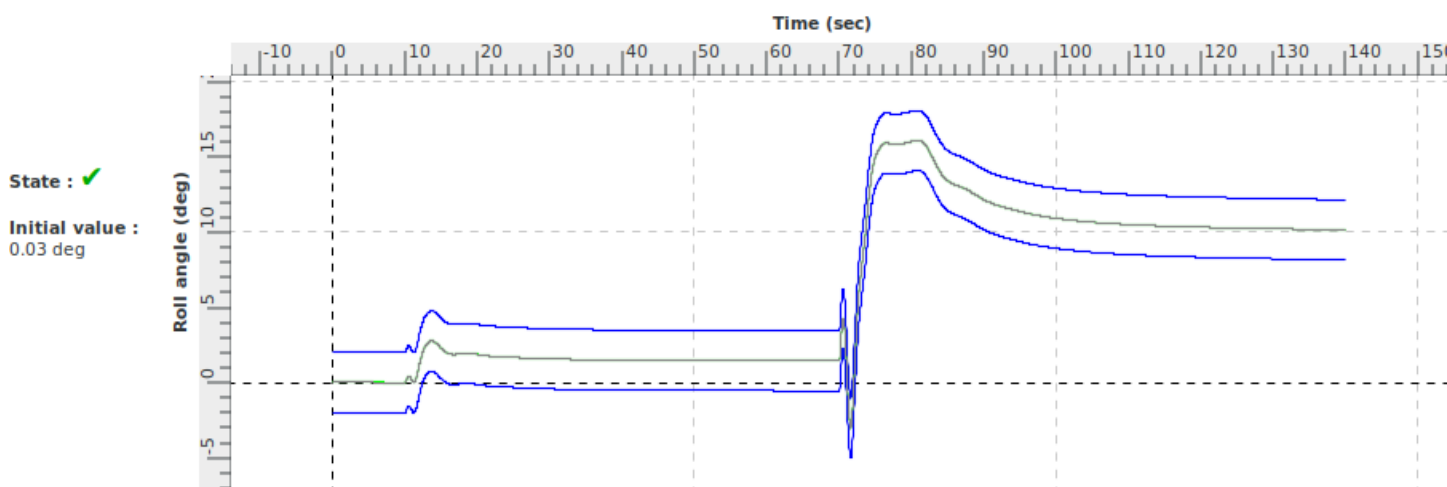
Legend :

green : results within tolerances
blue : tolerances

red : results out of tolerances
violet : tolerances Alsिम

grey : master

Title	Steady state sideslip during approach - Right		
Id	2 d viii b	Aircraft	DA42-VI
Device	A42M2-12	Version	1.03
Result Date	04/02/24	Master Date	19/04/22
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

Title	Transport delay on pitch axis		
Id	4 a i a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Objective	Expected Results
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
Reference	Evaluation Criteria
Chapter 12 - Validation data - Visual System Tests - Test 4.a.i.a	less than 300 ms

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

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Transport delay on pitch axis		
Id	4 a i a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Autopilot mode	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>	

Initial parameters	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

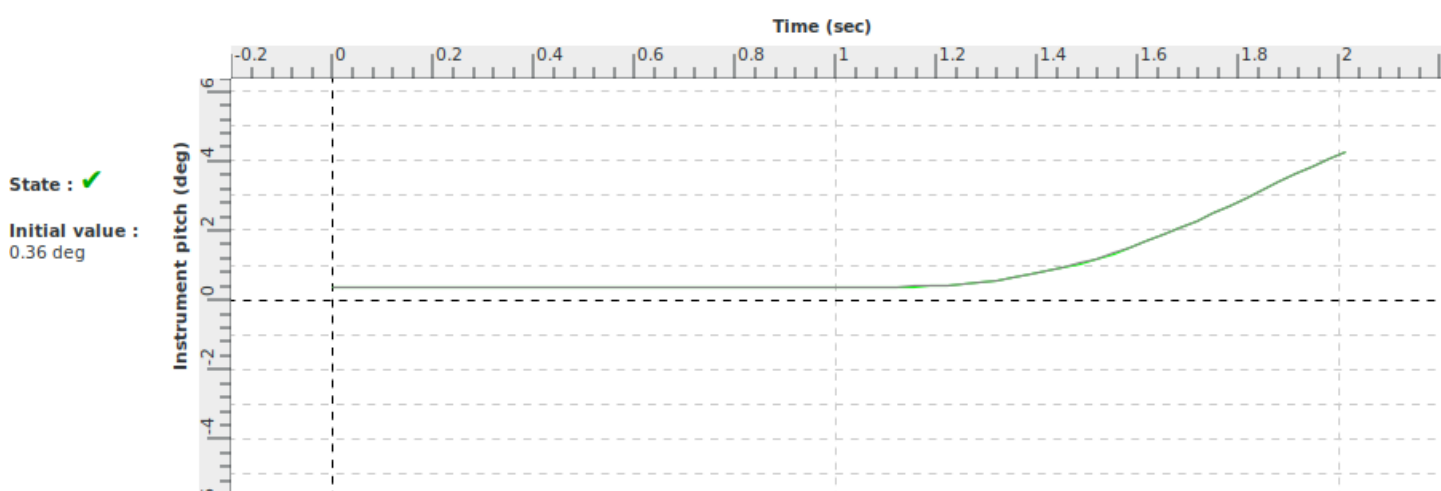
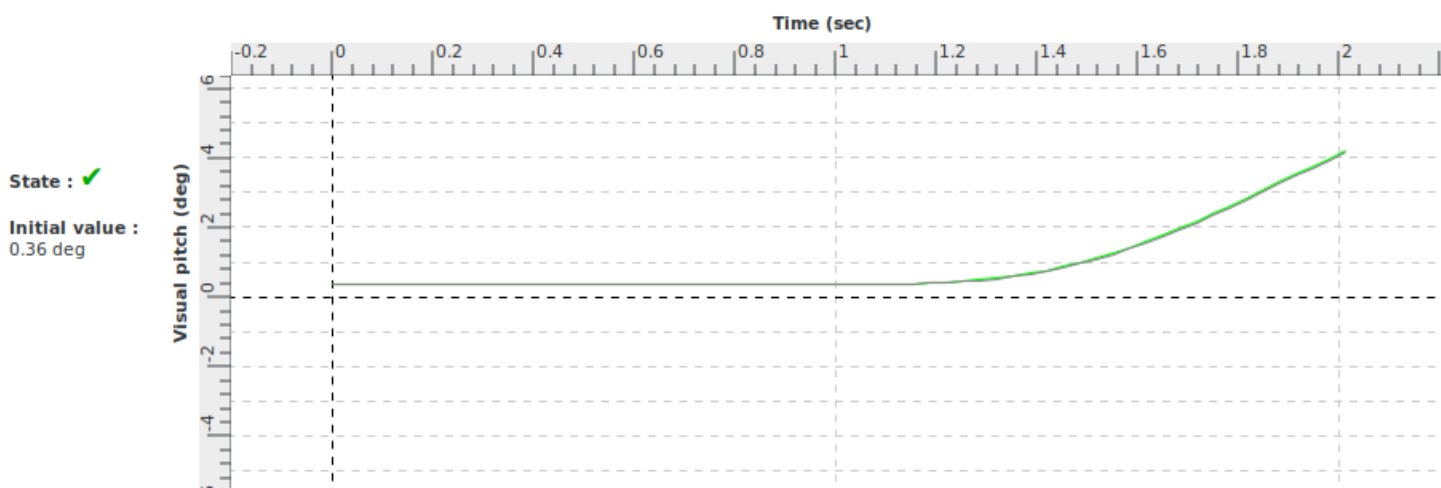
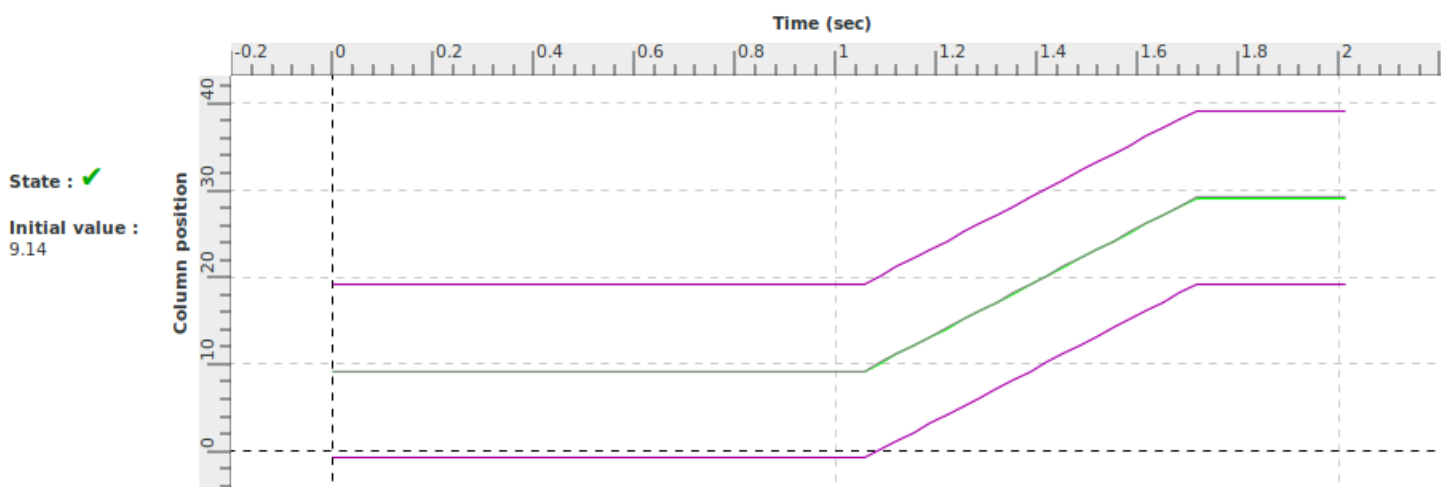
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
1.0	SetAttCmdPalier	20.0	Send a step in the attitude govern
2.0	Stop_Test	0.0	Stop the test procedure

Title	Transport delay on pitch axis		
Id	4 a i a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Qualification Level	FNPT2	Operator	AFTA
Result Date	04/06/24	Master Date	01/03/19
Result Load	2012.01	Master Load	1902

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Transport delay on pitch axis		
Id	4 a i a	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	04/06/24	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

Title	Transport delay on roll axis		
Id	4 a i b	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

Objective	Expected Results
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
Reference	Evaluation Criteria
Chapter 12 - Validation data - Visual System Tests - Test 4.a.i.b	less than 300 ms

Demonstration procedure	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
Manual test procedure	The pilot moves rapidly the wheel control of about 20% on one side.
Automatic test procedure	4 a i b

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

Title	Transport delay on roll axis		
Id	4 a i b	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
<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>	

Initial parameters	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

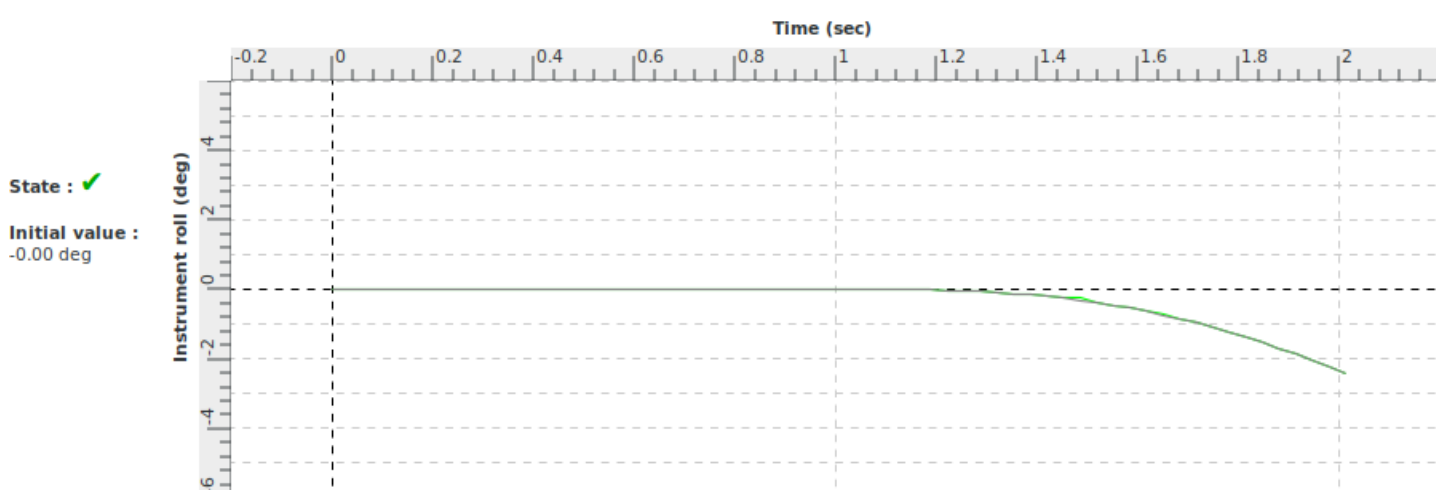
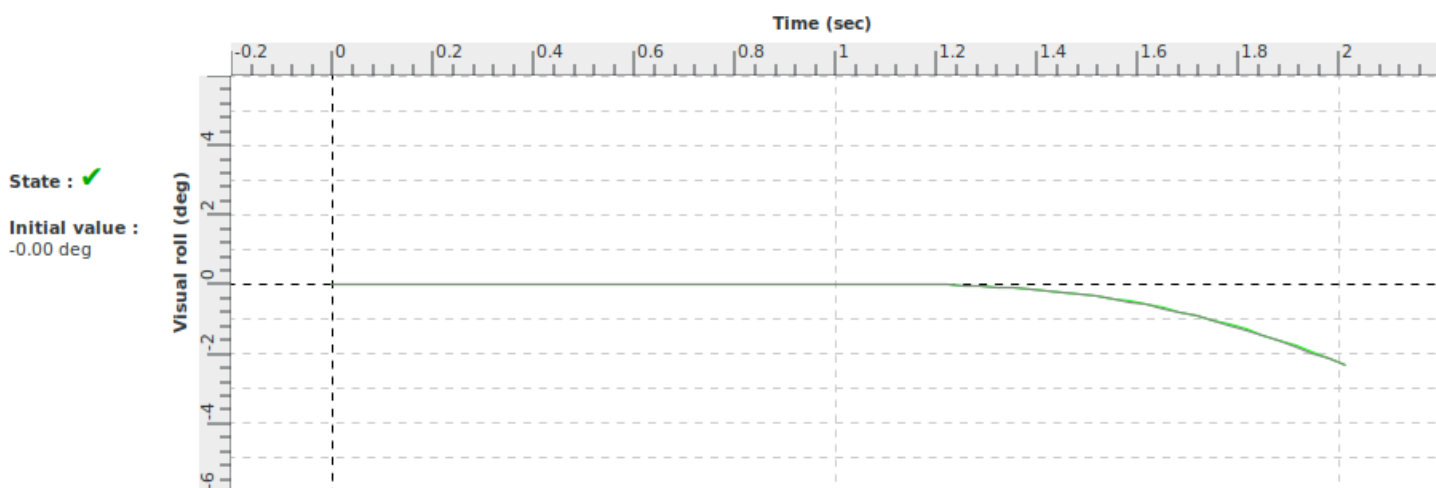
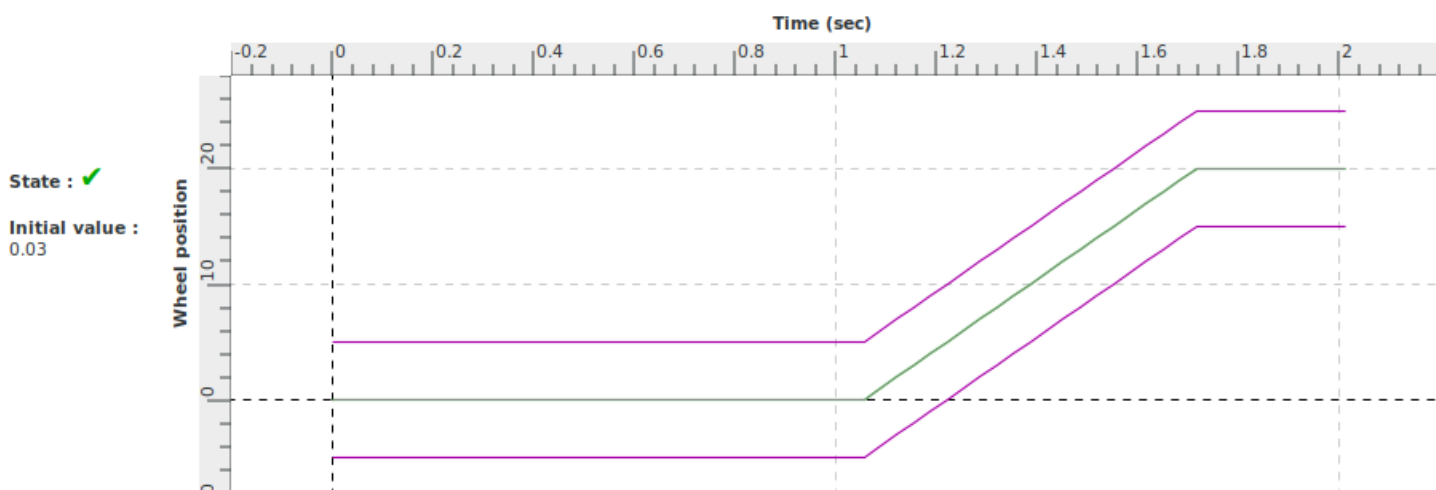
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
1.0	SetRollCmdPalier	20.0	Send a step in the roll govern
2.0	Stop_Test	0.0	Stop the test procedure

Title	Transport delay on roll axis		
Id	4 a i b	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

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

VALIDATION TEST

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

Objective	Expected Results
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
Reference	Evaluation Criteria
Chapter 12 - Validation data - Visual System Tests - Test 4.a.i.c	less than 300 ms

Demonstration procedure	The Yaw trim is moved to force the control loading system to move the yaw control. The yaw position is plotted versus time while the instruments and visual system response are also plotted versus time
Manual test procedure	The pilot moves rapidly the rudders of about 5% on one side.
Automatic test procedure	4 a i c

Authority's approval (date, signature and comments)	Operator's approval (date, signature and comments)

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

Autopilot mode	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>	

Initial parameters	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

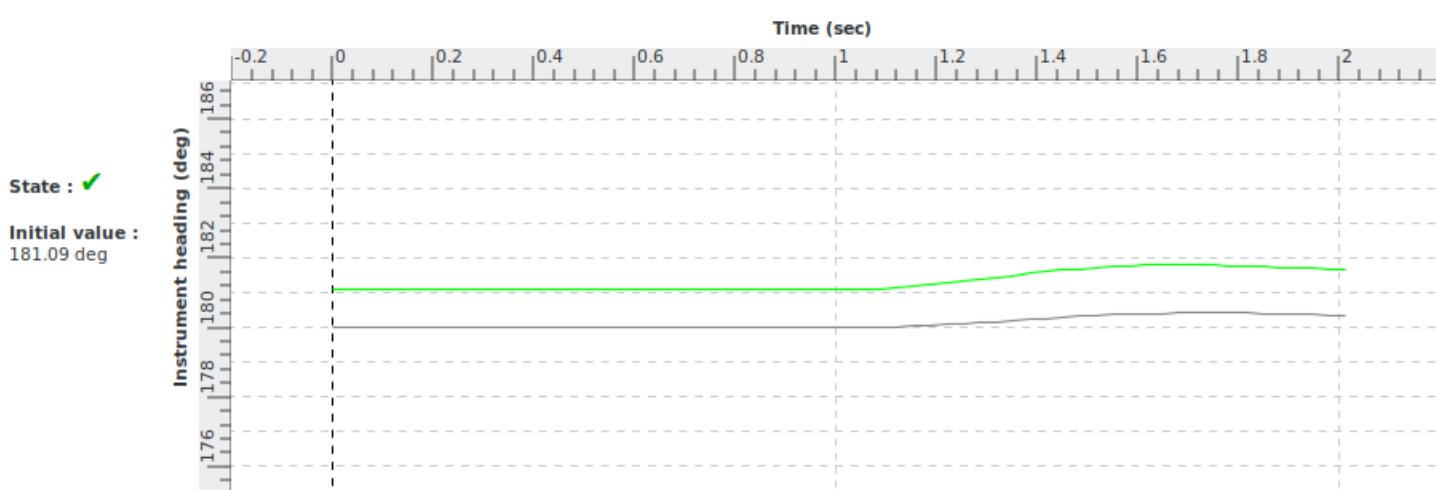
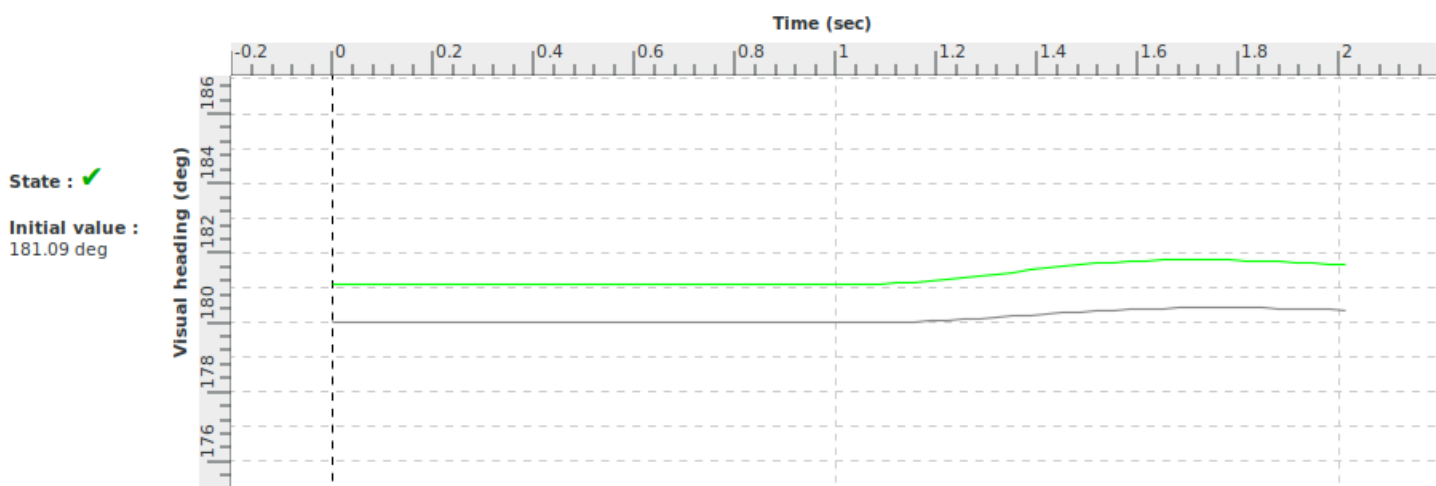
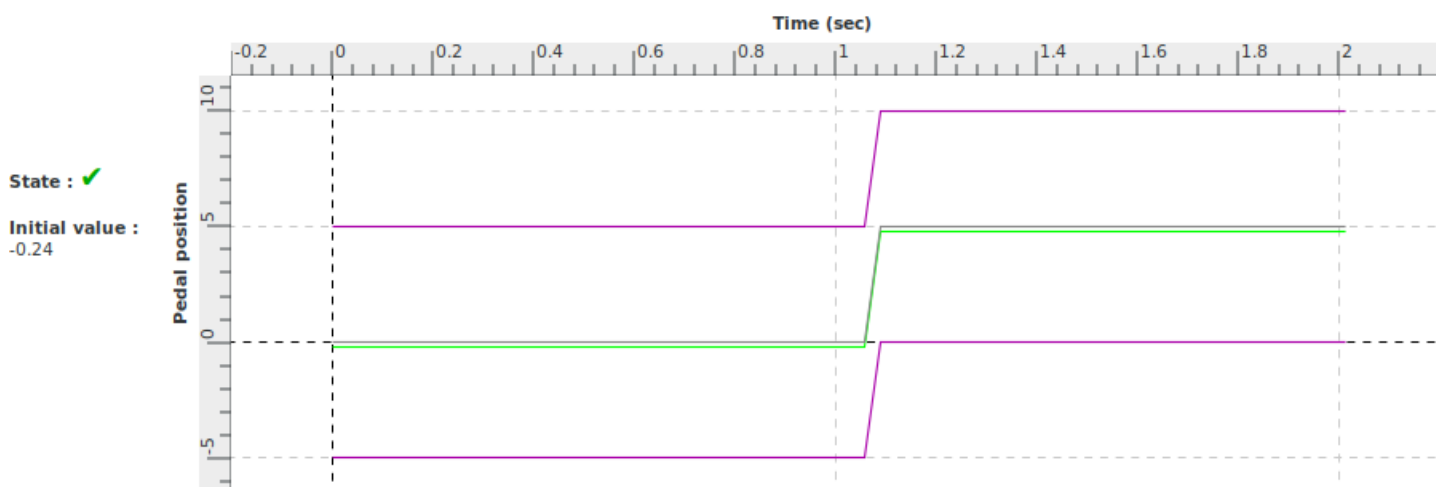
Commands			
Time	Name	Param	Explanations
0.0	Start_Test	0.0	Start the results recording
1.0	SetRudderCmdPalier	5.0	Send a step in the rudder govern
2.0	Stop_Test	0.0	Stop the test procedure

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

Log of Revision		
Rev. Nbr	Date	Reason for revision

Notes

Title	Transport delay on yaw axis		
Id	4 a i c	Aircraft	DA42-VI
Device	A42M2-12	Version	1.0
Result Date	03/12/23	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