

World Leader in Professional UAS Autopilots



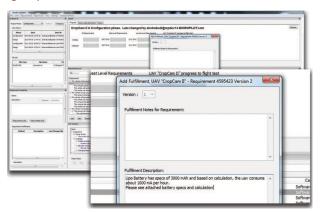
CropCam II X		×	Requirements List									
Project Phase:	Configuration 👻 🛛	ollback Freeze Configuration	Q- Search									
UAV History			Requirement	Importance	Туре	Date Edited UserId	Version	Category 1	Category 2	Category 3	3 Category 4	Linked
Phase	Date	User ID	The vehicle will use an automatic airspeed transducer interconnect	Medium	Safety	2011-10-23 15:hloewen@hloev	4	Software Requirement				No
Fildse	Date	USER ID	- The vehicle will include a user manual	Medium	Safety	2011-10-23 15:hloewen@hloev	2	Software Requirement				No
Configuration	2014-03-26 12:45:16	aindrabudi@mpdev14.MICROPIL	The manual will include a maintanence schedule	Medium	Safety	2011-10-23 15:hloewen@hloev	3	Software Requirement				No
			The maintenance schedule will include an annual check of sensor calibration	Medium	Safety	2011-10-21 12:hloewen@hloev	2	Software Requirement				No
Design 2013-04-25 11:47:15 aindrabudi@mpdev14.MICROPIL		aindrabudi@mpdev14.MICROPILI	The maintanence schedule will specify that servos are replaced every 50 hours	Medium	Safety	2011-10-21 12:hloewen@hloev	2	Software Requirement				No
Configuration	2011-10-23 16:05:24	hloewen@hloewen-LatZ.MICROP	The maintenance schedule will specify that the propeller is replaced every 25 hours	Medium	Safety	2011-10-20 18:hloewen@hloev	1	Software Requirement				No
Configuration	2011 10 20 10:00:21	incenter enter contractor	The manual will include a daily inspection	Medium	Safety	2011-10-20 17:hloewen@hloev	1	Software Requirement				No
Design	2011-08-24 17:53:41	hloewen@hloewen-LatZ.MICROP	All servos will be inspected daily	Medium	Safety	2011-10-21 12:hloewen@hloev		Software Requirement				No

XTENDERvalidate Requirements based UAV life cycle software

Develop high-level requirements and easily decompose them into appropriate lower level requirements with XTENDER^{validate}, the world's first available design life-cycle tool for UAVs.

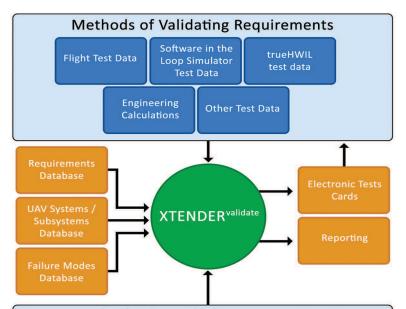
Systematically link flight, user, and simulator testing validation data to requirements. Likewise, link requirements to autopilot options and GCS settings. Additionally, XTENDER^{validate} incorporates a failure analysis tool that helps identify subsystem failure modes and links them to requirements.

Fulfilling requirements



With XTENDER^{validate}, clearly satisfy requirements via autopilot options, ground control station options, UAV design, and more. And auto-generate electronic test cards complete with descriptions for each test, indicators for severity, and schedule dates.

Automate documentation for each requirement and its implementation, with this design lifecycle tool. XTENDER^{validate} offers a flexible means of satisfying requirements and provides progress and fulfillment reporting.



Methods of Satisfying Requirements

HORIZON ^{mp} Settings	MP2x28 ^{g2} Autopilot VRS Settings	HORIZON ^{checklist} Configurable Checklist Utility	XTENDER ^{mp} Software Developer's Kit
User Manuals	HORIZON ^{trainer} User Configurable Training Tool	HORIZON ^{mp} Error Monitor	Joystick Plug-In
	Written Arguments	Engineering Calculations	

Build quality systems that meet high-level expectations

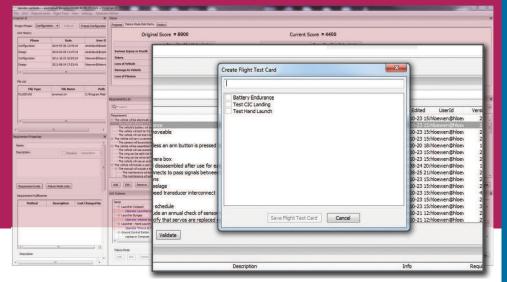






XTENDER^{validate}

FLIGHT TEST CARD



XTENDER validate overall

Features:

- Freeze and roll back requirements and implementation capability
- Requirements link to autopilot options and GCS settings
- System and subsyste decomposition tool
- Share requirement subsets among multiple UAVs
- Integrated failure modes analysis and mitigation tool
- Auto generated electronic test cards from requirements
- Validation data linking to requirements
- Requirements and implementation change history
- Progress tracking for satisfying and validating requirements

mentionale Configuration	nee Configurator				Original Score = 8900		Curre	nt Score = 44	400					
Desgn 2013-04-05 11-47-18 Cardguston 2011-13-25 (8-05:24	Hoeven@risever III The vehicle will carry a series The carver's will be protected by a line incenter protected III The vehicle will be asserbled for use a	ene adde - rieu as an billio a pessel or Fe rende o pr	Heburn Parked 2011-05-23 (3)-40 (Hoeven/Diros-en-L) 2 Heburn Parked 2011-25-23 (3)-40 (Hoeven/Diros-en-L) 2 Heburn Operations 2011-40-24 2016 (2)-50-44	n Groups 1 Golger 3 Golger 3 Golger 4 Golger 4 Golger 4 Golger 3 Golger 3 Golger 4 G	Bank Pecadite Statuty Context Accessed Injuny or Death 2 6 2 2 Approp 0 0 2 2 Lease of Medicine 3 9 4 0 Lease of Medicine 3 9 6 0 Lease of Medicine 3 9 6 0 Lease of Medicine 3 1 9 6	Segury Loss of 1	to Vehicle		Abb Likely Certain 6 4 2 1 8 8 0 2 8 5 1 8 8 3 9					
ject Phase: Configura	tion 💌 Rollback	Freeze Configuration	Q- Search		Progress Failure Mode Risk Matrix	History								
IAV History			Requirement		Original	Score =	8900			Curren	Score	= 4400		
Phase	Date	User II	The vehicle will be electrically powered The vehicle will have 1.5 hours endurance The vehicle's battery will be easily removeable		origina	Score -	0000			curren	Score			
onfiguration	2014-03-26 12:45:16	aindrabudi@mpdi				Rare	Possible	Likely	Certain		Rare	Possible	Likely	Certa
esign	2013-04-25 11:47:15	aindrabudi@mpdi	The vehice will land on it's batteries The vehicle will not start its engine un	nless an arm button is pressed on the vehicle or o	Serious Injury or Death	3	6	2	0	Serious Injury or Death	3	5	1	0
onfiguration	2011-10-23 16:05:24	hloewen@hloewe	The vehicle will carry a camera The camera will be protected by a car		Injury	0	0	0	0	Injury	3	1	0	0
esign	2011-08-24 17:53:41	hloewen@hloewe	- The vehicle will be assembled for use and	d dissasembled after use for easy shipping	Loss of Vehicle	3	9	4	0	Loss of Vehicle	1	0	2	0
The vehicle will use automatic interconnects to pass signals between wing and fuselag The wing can be split into three sections				Damage to Vehicle	1	3	6	0	Damage to Vehicle	6	3	1	0	
Hothed Description Last	Changed By Bill Strategy and Strategy and	-	The wing can be removed from the fu	uselage	Loss of Mission	6	3	0	0	Loss of Mission	17	8	3	0
	The checklet will ensure that The checklet will need the time the checklet will reduce a re The prevolution of include a	ueed every and point tube reason effects device de an even renexise of tub anteres upon versalization te lastant versinge la modern ere succepted lastato the fallures tersaline tersaline tersaline tersaline	Number Defense 201-0-01 201-01 201-0-01	Diversion 64	Back to be a set of the set	The first sectors at the con- file first sciences attack Mitch sciences for the first Wester despire technic to pro- vise dos despire fiels consider to			entel enfuences is registificated by re	-1 *25 1 800%	14% 903%	and and		e.

Linking flight test to requirements

Friend and B	Penders Ultra			Trapess Palue Hode Rol Metry Seaway					
Academic Configuration + Annual Resourcesting				Original Score = 89	10	Curren	t Score = 4400		
Laki Habary Place Data Solution Solution Design 2014/0-2014/01 and solution Design 2014/0-2014/01 and solution Design 2014/0-2014/01/01 and solution Design 2014/0-2014/01/01 and solution Design 2014/01/2014/01 and solution Design 2014/01/2014/00/2014/01/2014/01/2014/01/2014/01/2014/01/2014/01/2014/01/2014/00/2014/01/2014/01/2014/01/2014/00/2014/01/2014/00/2014/00/2014/000/0000000000	A series of the	Senders Lands renign Senders 2012;11:01100/basengreen I Mithewiskaa 2012;21:01100/basengreen I Mithewiskaa Mithewisk Sender I Senders Schwarz Senders I Senders I Senders I Senders Schwarz Sc	aanent	An and a second	Likely Carlan 2 4 0 0 4 0 5 0	annee Injury se Dealls oppry aas of Vehicle Ismage to Vehicle das of Hannet	Reve Pecchine Likely Contain 2 5 1 0 3 2 0 0 4 2 2 0 6 2 2 0 7 3 3 0		
equirement			Importance Ty	ype UAV Systems					
The vehicle will be electrica The vehicle will have 1		_	Low Open Medium Open	Damage to Vehicl	e 1	3	6 0	Damage to Vehicle	1
The vehicle's battery w	will be easily removeable Select A Requirement to Flight Test		Low Oper-	rational Loss of Mission	6	3	0 0	Loss of Mission	
The vehicle will carry a ca The camera will be pro The vehicle will be assemb	Q - Search			AV Systems				Description	
The vehicle will use au		Importance Type	Date Edited	UserId - Launcher Cata	pult			Pneumatic Catapult, can be disassembled for transport	
The wing can be split in The wing can be removed			mal 2013-08-07 17:jnix		aunches towards Terrain or	Obstruction		The Operator Launches the UAV at an obstruction	
								Bungee cord launcher - one of three launch mechanisms	
		p High Operatio	nal 2013-08-07 17:jnix	(on@Gar Launcher Bun	ee				
The vehicle will use an	The autopilot will calculate the distance above the glide slo	Conception	anal 2013-08-07 17:jnix	Operator r	eleases bungee towards Ter	rain or Obstru	tion	The Operator Throws the UAV at an obstruction Basic Jaunch mechanism	
	The autopilot will calculate the distance above the glide slo	an i Scherten an i Scherten an i Scherten	in (boot) (boot) (b	Operator n	eleases bungee towards Ter od Launch		ang he seas alo a showar	The Operator Throws the UAV at an obstruction	-



