

		ASN	2010-CSA-19-COA
		Case Status	APPROVED
		Date Created	03/29/2010
		Date Submitted	04/15/2010
Proponent Organization		Sponsor	U.S. Army, Night Vision and Electronic Sensors Directorate (NVESD)
		Attn Of	(b) (6) Project Manager, BUSTER UAS Operations
		Address	10221 Burbeck Road
		Address2	
		City	Fort Belvoir
		State	VA
		Postal Code	22060-5806
		Telephone	(703) 704-3056
		Email	(b) (6) @nvl.army.mil
Declaration		Declaration(a)	Yes
		Declaration(b)	Yes
Point of Contact		Representative	(b) (6)
		Address	14785 Omicron Drive
		Address2	
		City	San Antonio
		State	TX
		Postal Code	78245
		Telephone	(210) 264-7034
		Email	(b) (6) @gvec.net
Operational Description	Requested Effective Period	Beginning	
		End	
		Light out operation	No
		VFR operation	Yes
		IFR operation	No
		Day operation	Yes
		Night operation	Yes
		Program Executive Summary	BUSTER UAS flight test operations by US Army Night Vision Laboratory (NVL). This COA application is to renew previous (2007 & 2008) NVL COAs for a 1 year period with operating parameters and restrictions updated to comply with UAS Interim Operational Approval Guidance 08-01. The application is for the Hondo TX test area detailed in the Flight Operations section and summarized below.
		Operational Summary	HONDO - This area will be used for routine local factory acceptance and maintenance test activity. All flight activity from this location will remain between surface (870' MSL) and Hondo Class E airspace (1630' MSL) and within 1/2 mile of the ground observer.
	Location	State	TX
		County	Medina
		Nearest Airport	SQUIRREL CREEK RANCH
		AOR	Texas - West
	Class Of Airspace	Class-A	
		Class-B	
		Class-C	
		Class-D	
		Class-E	Yes
		Class-G	Yes
System Description		Aircraft Type	102154744 - Buster

		Aircraft Type And Model Description Attachment	1
		Control Station Attachment	1
		Communications System Attachment	1
		List Certified Components (TSO) Attachment	1
		Other Attachment	0
Performance Characteristics		Climb Rate (feet/Minute)	420
		Descent Rate (feet/Minute)	300
		Turn Rate (Degrees/Second)	6
	Cruise Speed	Maximum	65
		Minimum	32
		Approach Speed	32
	Operating Attributes	Maximum MSL	13000
		Minimum MSL	200
		Gross Takeoff Wt	13.0
		Launch/Recovery Attachment	1
Airworthiness		FAA Type Certificate	
		If No FAA Certificate (Public Aircraft Only) Attachment	1
Procedures		Lost Link/Mission Procedures Attachment	2
		Lost Communications Procedures Attachment	1
		Emergency Procedures Attachment	1
Avionics/Equipment		Equipment Suffix Type	D
		GPS	Yes
		Moving map indicator (Command Station)	Yes
		Tracking capability	Yes
		TCA/MCAS	No
		ELT	No
	Transponder	Transponder	No
		On	
		Off	
		Standby	
		Ident	
		Mode S	
		Mode C	
		Transponder Retuneable in Flight	
Lights		Landing	No

		Position/Navigation	Yes
		Anti-collision	Yes
		Infrared (IR)	No
Spectrum Analysis Approval		Data Link	Yes
		Data Link Attachment	0
		Control Link(s)	Yes
		Control Link Attachment	0
		Operations utilizing Radio Control (R/C) frequencies as described in Title 47 CFR 95	No
		NTIA/FCC Authorization Attachment	0
ATC Communications	Transmitter VHF Band	VHF Band	No
		Quantity	
		In-Flight Retunable	No
	Transmitter UHF Band	UHF Band	No
		Quantity	
		In-Flight Retunable	No
	Transmitter HF band	HF Band	No
		Quantity	
		In-Flight Retunable	No
	Receiver VHF Band	VHF Band	No
		Quantity	
		In-Flight Retunable	No
	Receiver UHF Band	UHF Band	No
		Quantity	
		In-Flight Retunable	No
	Receiver HF band	HF Band	No
		Quantity	
		In-Flight Retunable	No
	Guard (Emergency) Frequencies VHF Band	VHF Band	No
		Quantity	
	Guard (Emergency) Frequencies UHF Band	UHF Band	No
		Quantity	
	Instantaneous Two-Way Voice	Direct to pilot	No
		SATCOM	No
		Relay via aircraft	No
Electronic Surveillance/Detection Capability		EO/IR	No
		Terrain detection	No
		Weather/icing detection	No

		Radar	No
		Other Attachment	0
		Electronic detection systems	No
		Electronic detection systems attachment	0
		Radar observation	No
		NAS Operational Capability Attachment	0
Visual Surveillance/Detection Capability	Maximum Distance from UA	Vertical	1000 Feet
		Horizontal	0.87 Nautical Miles
		Airborne based (Chase Aircraft)	No
		Ground based	Yes
		Visual observation from one or more ground sites	Yes
		Forward or side looking cameras	Yes
		Attachment for All	1
Aircraft Performance Recording		Flight data recording	Yes
		Control station recording	Yes
		Voice Recording	No
Flight Aircrew Qualifications	Pilots	Private (Written)	Yes
		Private (Certified)	No
		Instrument	No
		Commercial	No
		Air Transport	No
		Unique Trained Pilot	Yes
		Unique Trained Pilot Description	Two week training course at the manufactures location in Hondo TX
		DOD certified/trained	Yes
		Other Certified Training	No
		Trained on FAR Part 91 Requirement	Yes
		Medical Certification Class (FAA or DOD equivalent)	2
		Currency Status	Each year
		Duty Time Restrictions	8 hours
		Single UAS Control	Yes
		UAS Description	
		Total Numbers of UAS Controlled	1
	Observers	Private (Written)	Yes
		Private (Certified)	No
		Instrument	No
		Commercial	No
		Air Transport	No
		Unique Trained Pilot	Yes

		Unique Trained Pilot Description	Two week training course at the manufacturers location in Hondo TX
		DOD certified/trained	Yes
		Other Certified Training	No
		Trained on FAR Part 91 Requirement	Yes
		DOD Certified Training Attachment	0
		Medical Certification Class (FAA or DOD equivalent)	2
		Currency Status	Each year
		Duty Time Restrictions	8 hours
		Single UAS Control	Yes
		UAS Description	
		Total Numbers of UAS Controlled	1
Special Circumstances		Special Circumstances	<p>EMERGENCY PROCEDURES</p> <ul style="list-style-type: none"> - All missions will have a pre-programmed "CF" (communication failure) waypoint, normally overhead the initial launch area, to which the vehicle will return in event of lost command data link (vehicle is equipped with GPS and INS). - AV engine or major system failure which prevents return to the CF waypoint will trigger automatic deployment of the recovery parachute. - All system (critical and non-critical) failures are identified to the pilot on the active GCS screen and the pilot can take immediate action as appropriate. Pilot can also immediately intervene in autonomous operation at any time in response to verbal (including radio) input from the observers. - In event of emergency, the pilot will confirm that the observer has the AV in sight and reports condition (engine running, AV returning to CF waypoint, chute deployed, etc.) After chute deployment, observers and launcher operator will proceed to landing area to secure and recover the AV. - If pilot observes any hazard in the test area he will retrieve the AV to the CF (launch) area. All airports in the vicinity of the three test areas are uncontrolled (no tower) but have assigned operating frequencies. The pilot will monitor this frequency and advise any aircraft on frequency of AV operation. All BUSTER pilots are trained in appropriate VFR flight terminology and airport procedures and local traffic routes. - Pilots will report all hazardous circumstances, incidents or accidents immediately by cell phone to the operations officer. If an incident or accident involved a manned aircraft, the operations officer will notify the FAA (FSS that processed the NOTAM) with the details. Further reporting will be as specified in the COA. <p>NIGHT OPERATIONS - Request authorization for occasional nighttime operation due to the special test mission requirements of the U.S. Army Night Vision Laboratory. Vehicle will be equipped with standard (red, green & white) navigation lights and electronic "falcon finder" for backup position monitoring. Maximum altitude 500' AGL. 1 Km horizontal from ground observer. All normal and emergency procedures and crew currency/qualifications are the same as for daylight operation with no increased risk to air safety. Nighttime flight profiles are designed to evaluate night sensor performance relative to specialized/calibrated targets in the launch area and to cover minimum area which actually allows easier tracking by ground observers than daytime flights. Ground observers will be in place one hour prior to that operation to ensure acclimation to the twilight/nighttime environment IAW UAS Interim Operational Approval Guidance 08-01.</p>

Flight Operations Area/Plan

Type	User Define Area ID	Point	Loc ID	Degree	Distance	Latitude	Longitude	MSL Ceiling	MSL Floor	Maximum Speed	Minimum Speed	Radius	SUA Description
DEPARTURE		29-15-03.94N		99-18-26.21W	1630			870	65	35			
WAYPOINT		29-14-11.42N		99-18-26.21W	1630			870	65	35			
WAYPOINT		29-14-11.52N		99-16-59.21W	1630			870	65	35			

WAYPOINT	29-15-04.26N	99-15-04.26W	1639	870	65	35
ARRIVAL	29-15-03.94N	99-18-26.21W	1630	870	65	35

Total Map Attachment 2