

		ASN	2012-WSA-71-COA
		Case Status	RELEASED
		Date Created	06/07/2012
		Date Submitted	06/07/2012
Proponent Organization		Sponsor	USDA-ARS
		Attn Of	Jim Gartung
		Address	800 Buchanan Street
		Address2	
		City	Albany
		State	CA
		Postal Code	94710
		Telephone	(559) 596-2853
		Email	jim.gartung@ARS.USDA.GOV
Declaration		Declaration(a)	Yes
		Declaration(b)	Yes
Point of Contact		Representative	Jim Gartung
		Address	800 Buchanan St
		Address2	
		City	Albany
		State	CA
		Postal Code	94710-1105
		Telephone	(559) 596-2853
		Email	Jim.Gartung@ARS.USDA.GOV
Operational Description	Requested Effective Period	Beginning	
		End	
		Light out operation	No
		VFR operation	Yes
		IFR operation	No
		Day operation	Yes
		Night operation	No
		Program Executive Summary	The USDA Agriculture Research Services has established a small unmanned aircraft system program ("the Program") to assist in monitoring agricultural growth and development. The program will provide aerial photograph of particular agricultural fields that are of interest using the Leptron Avenger, a sUAS, that is equipped with a camera system that provides real-time video and photograph to the ground station. The sUAS team will be responsible for evaluating the mission parameters and ensuring that all flights comply with FAA regulations and COA mitigation steps. All operators will be trained by a manufacture representative or qualified pilot as set forth in this COA application.
		Operational Summary	<p>The Program will conduct all operations clear of Class B airspace. Operations will be conducted during VFR conditions with at least Class E weather minimums. The operator will maintain line of sight of the aircraft and of airspace in which the aircraft is operating. The aircraft will not exceed 400 feet AGL. All operations will be in compliance with Part 91 regulations.</p> <p>All operators of aircraft will be appropriately trained as set forth in this COA application. The operators will have a VHF radio available to communicate with other aircraft in the vicinity of the operation and with air traffic control when operating in the Class C airspace of Kahului. In addition, the operators will have cell phone access so that they may be in ready communication with air-traffic control. The operator shall notify all nearby air-traffic control facilities at least 15 minutes prior to launching and at the conclusion of operations. Such notification will include contact information for the operators, site location for the intended operation, anticipated duration of the operation and a proposed altitude of the operation.</p> <p>The aircraft will be equipped with a mode C transponder. Before any flight operation the pilot in command will obtain a discrete squawk code to be used for the entire duration of that flight.</p> <p>The initial purpose of the COA is to permit the Program to conduct training and evaluation of the aircraft. Once the agency obtains sufficient skills in flying the aircraft, the USDA will then conduct aerial photography flights over the designated areas.</p> <p>All operations will be conducted in accordance with the USDA-ARS' policy for the use of unmanned aircraft systems, which has been provided in this COA application. In addition, all operations will be conducted in accordance with manufacturer's recommendations and checklists.</p>
	Location	State	HI
		County	Maui
		Nearest Airport	KAHULUI
		AOR	Hawaii
	Class Of Airspace	Class-A	
		Class-B	
		Class-C	Yes
		Class-D	
		Class-E	Yes
		Class-G	Yes
System Description		Aircraft Type	
		Aircraft Type And Model Description Attachment	2
		Control Station Attachment	1
		Communications System Attachment	1
		List Certified Components (TSO) Attachment	1
		Other Attachment	1

Performance Characteristics		Climb Rate (feet/Minute)	400
		Descent Rate (feet/Minute)	2
		Turn Rate (Degrees/Second)	0.0
	Cruise Speed	Maximum	25
		Minimum	0
		Approach Speed	0
	Operating Attributes	Maximum MSL	1500
		Minimum MSL	0
		Gross Takeoff Wt	11.0
		Launch/Recovery Attachment	1
Airworthiness	FAA Type Certificate		
	If No FAA Certificate (Public Aircraft Only) Attachment	1	
Procedures	Lost Link/Mission Procedures Attachment	1	
	Lost Communications Procedures Attachment	1	
	Emergency Procedures Attachment	1	
Avionics/Equipment	Equipment Suffix Type	G	
	GPS	Yes	
	Moving map indicator (Command Station)	Yes	
	Tracking capability	Yes	
	TCA/MCAS	No	
	ELT	No	
	Transponder	Transponder	Yes
		On	Yes
		Off	Yes
		Standby	Yes
		Ident	Yes
		Mode S	No
		Mode C	Yes
	Transponder Retuneable in Flight	No	
Lights	Landing	No	
	Position/Navigation	No	
	Anti-collision	No	
	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	Yes	
	NTIA/FCC Authorization Attachment	0	
ATC Communications	Transmitter VHF Band	VHF Band	Yes
		Quantity	1
		In-Flight Retunable	Yes
	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	Yes
		Quantity	1
		In-Flight Retunable	Yes
	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	Yes
		Quantity	1
	Guard (Emergency) Frequencies UHF Band	UHF Band	No
		Quantity	
	Instantaneous Two-Way Voice	Direct to pilot	Yes
		SATCOM	No
		Relay via aircraft	No
Electronic Surveillance/ Detection Capability		EO/IR	Yes
		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	2000 Feet
		Horizontal	0.5 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)	Yes
		Instrument	No
		Commercial	No
		Air Transport	No
		Unique Trained Pilot	Yes
		Unique Trained Pilot Description	see attached description
		DOD certified/trained	No
		Other Certified Training	Yes
		Trained on FAR Part 91 Requirement	Yes
		Medical Certification Class (FAA or DOD equivalent)	2
		Currency Status	UDSDA annual medical exam with eye test to Class 2 medical standard
		Duty Time Restrictions	none
		Single UAS Control	Yes
		UAS Description	
		Total Numbers of UAS Controlled	1
	Observers	Private (Written)	No
		Private (Certified)	No
		Instrument	No
		Commercial	No
		Air Transport	No
		Unique Trained Pilot	Yes
		Unique Trained Pilot Description	see attached description
		DOD certified/trained	No
		Other Certified Training	No
		Trained on FAR Part 91 Requirement	Yes
		DOD Certified Training Attachment	3

		Medical Certification Class (FAA or DOD equivalent)	2
		Currency Status	USDA annual medical examination
		Duty Time Restrictions	none
		Single UAS Control	Yes
		UAS Description	
		Total Numbers of UAS Controlled	1
Special Circumstances		Special Circumstances	

Flight Operations Area/Plan

Type	User Defin Point	Loc ID	Degree	Distance	Latitude	Longitude	MSL Ceilin	MSL Floor
DEPARTURE								
WAYPOINT								
WAYPOINT								
WAYPOINT								
WAYPOINT								
WAYPOINT								
ARRIVAL								

Total Map Attachment 1

Maximum	Minimum	ξ Radius	SUA Description		
	20-49-29.92N		156-29-29.71W	1500	300
	20-51-10.08N		156-28-31.61W	1500	300
	20-54-44.31N		156-24-53.83W	1500	300
	20-53-29.90N		156-23-37.50W	1500	300
	20-47-08.21N		156-24-14.75W	1500	300
	20-51-06.31N		156-24-09.45W	1500	300
	20-47-38.68N		156-27-29.06W	1500	300

25	0	0.5
25	0	0.5
25	0	0.5
25	0	0.5
25	0	0.5
25	0	5.0
25	0	0.5