

		ASN	2008-ESA-34-COA
		Case Status	EXPIRED
		Date Created	06/24/2008
		Date Submitted	08/05/2008
Proponent Organization		Sponsor	NASA Wallops Flight Facility
		Attn Of	(b) (6)
		Address	Building E106, Room 307
		Address2	
		City	Wallops Island
		State	VA
		Postal Code	23337
		Telephone	(757) 824-1033
		Email	(b) (6)
Declaration		Declaration(a)	Yes
		Declaration(b)	Yes
Point of Contact		Representative	(b) (6)
		Address	NASA Wallops Flight Facility
		Address2	Building E106, Room 307
		City	Wallops Island
		State	VA
		Postal Code	23337
		Telephone	(757) 824-1033
		Email	(b) (6)
Operational Description	Requested Effective Period	Beginning	
		End	
		Light out operation	Yes
		VFR operation	Yes
		IFR operation	No
		Day operation	Yes
		Night operation	Yes
		Program Executive Summary	This COA is seeking to conduct NASA & NOAA hurricane boundary layer research utilizing the Aerosonde UAV. In an attempt to reach hurricanes as they are intensifying, the operation is planned to be conducted out of Barbados and fly out into Piarco oceanic airspace. Depending on the track of hurricanes, flights could possibly travel northeast into New York Oceanic airspace. NASA & NOAA are also coordinating with the Barbados and Trinidad aviation authorities in cooperation with the US State Department through the Barbados Embassy.

		Operational Summary	<p>Aerosonde UAS flight over international waters at or below 5000 ft AGL. Flights will originate and terminate on the island of Barbados at the Paragon Post (south of island adjacent to Grantley Adams International airport). Flights will transition from the airspace above Paragon Post to the east and into Piarco (Trinidad and Tobago) oceanic airspace. Once transitioned to Piarco airspace (80km east of Barbados) Aerosonde will vector on a northerly to northeasterly route to intercept hurricanes approaching from the Western coast of Africa. Communications will be coordinated through Barbados ATC throughout entire flight.</p> <p>Flight mission lengths expected to be over 15 hours. Launch and recovery will be during daylight hours under VFR conditions. Flights will only be launched when significant weather conditions develop within range of Aerosonde launched and recovered from Barbados. Flights will most likely occur in the months of August, September and October but could extend to the end of the year to cover the entire 2008 hurricane season. Coordination with Barbados and Piarco controllers has already been initiated. No significant restrictions are foreseen for flight provided the Aerosonde coordinates all activities with Barbados ATC (Piarco will be contacted by Barbados ATC) and flies less than 5k ft AGL during transitions to and from hurricanes. Meteorological data will be recorded once the Aerosonde rendezvous with the storm. Once inside the storm, Aerosonde will fly patterns at various heights and speeds to collect data until return to base required.</p>
	Location	State	VI
		County	St. Croix
		Nearest Airport	PRINCESS JULIANA INTL
		AOR	Virgin Islands
	Class Of Airspace	Class-A	
		Class-B	
		Class-C	
		Class-D	Yes
		Class-E	Yes
		Class-G	
System Description		Aircraft Type	102154739 - Other
		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)	588
		Descent Rate (feet/Minute)	984
		Turn Rate (Degrees/Second)	14

	Cruise Speed	Maximum	62
		Minimum	40
		Approach Speed	50
	Operating Attributes	Maximum MSL	12000
		Minimum MSL	500
		Gross Takeoff Wt	33.4
		Launch/Recovery Attachment	1
Airworthiness		FAA Type Certificate	
		If No FAA Certificate (Public Aircraft Only) Attachment	3
Procedures		Lost Link/Mission Procedures Attachment	1
		Lost Communications Procedures Attachment	1
		Emergency Procedures Attachment	3
Avionics/Equipment		Equipment Suffix Type	X
		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	No
		Anti-collision	No
		Infrared (IR)	No
Spectrum Analysis Approval		Data Link	Yes

		Data Link Attachment	1
		Control Link(s)	Yes
		Control Link Attachment	1
		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	Yes
		Quantity	1
		In-Flight Retunable	Yes
	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	Yes
		Quantity	1
		In-Flight Retunable	Yes
	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	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	Yes
		NAS Operational Capability Attachment	1
Visual Surveillance/ Detection Capability	Maximum Distance from UA	Vertical	2000 Feet
		Horizontal	0.5 Nautical Miles
		Airborne based (Chase Aircraft)	Yes
		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	Trained and qualified per AAI/Aerosonde standards and training programs for each specific UAS in written, oral, and practical skill qualifications and current Type II Medical.
		DOD certified/trained	No
		Other Certified Training	No
		Trained on FAR Part 91 Requirement	Yes
		Medical Certification Class (FAA or DOD equivalent)	2
		Currency Status	A minimum of 3 flights per 90 day period
		Duty Time Restrictions	8 hour duty cycle
		Single UAS Control	Yes
		UAS Description	Each ground control station is dedicated to single UAV operation. Back up control station active for redundancy
		Total Numbers of UAS Controlled	1
	Observers	Private (Written)	No
		Private (Certified)	No
		Instrument	No
		Commercial	No
		Air Transport	No
		Unique Trained Pilot	No
		Unique Trained Pilot Description	Trained and qualified per AAI/Aerosonde standards and training programs for each specific UAS in written, oral, and practical skill qualifications and valid automotive drivers license. All observers must have a current Type II medical certification
		DOD certified/trained	No
		Other Certified Training	No
		Trained on FAR Part 91 Requirement	Yes
		DOD Certified Training Attachment	4
		Medical Certification Class (FAA or DOD equivalent)	2
		Currency Status	12 month refresher training
		Duty Time Restrictions	8 hour duty cycle
		Single UAS Control	Yes
		UAS Description	
		Total Numbers of UAS Controlled	1
Special Circumstances		Special Circumstances	a

Flight Operations Area/Plan

Type	User Defin Point	Loc ID	Degree	Distance	Latitude	Longitude	MSL Ceilin
USER DEFINED AREA Barbados			1				
			2				
			3				
			4				

Total Map Attachment 1

MSL Floor	Maximum	Minimum	S Radius	SUA Description	
		13-04-16.06N		59-29-16.19W	5000
		13-01-33.98N		58-45-15.99W	5000
		15-11-44.99N		55-06-08.63W	5000
		15-14-18.65N		57-23-43.73W	5000



500	60	40
500	60	40
500	60	40
500	60	40