		ASN	2008-ESA-22-COA
		Case Status	EXPIRED
		Date Created	03/07/2008
		Date Submitted	03/07/2008
Proponent Organization		Sponsor	NASA LaRC
		Attn Of	(b) (6)
		Address	4 Langley Boulevard
		Address2	
		City	Hampton
		State	VA
		Postal Code	23681-2199
		Telephone	(757)864-5107
		Email	(b) (6)
Declaration		Declaration(a)	Yes
		Declaration(b)	Yes
Point of Contact		Representative	NASA (b) (6)
		Address	4 Langley Boulevard
		Address2	
		City	Hampton
		State	VA
		Postal Code	23681-2199
		Telephone	(757)864-5107
		Email	(b) (6)
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	Request for COA renewal; reference - ASN# 2007-AHQ-2-COA Case Status: Approved submitted 02/15/2007. The Systems Engineering Directorate (SED) of the NASA Langley Research Center desires to fly a "suite" of similar generic Unmanned Aircraft System (UAS) aircraft (Radio Control Models) at Blackstone (BKT), Virginia (Each vehicle weighs less than 100 pounds). This project activity is provided to the NASA Aviation Safety Program (AvSP) Office request for developing an Airborne Subscale Transport Aircraft Research (AirSTAR) generic transport aircraft test bed for conducting experiments. AirSTAR UAS will be flown at Blackstone Airfield in support of the Control Upset Prevention and Recovery (CUPR) element of the AvSP. The typical flight agenda at Blackstone Airfield will consist of takeoff, traffic pattern maneuvers, and landing. All flight operations will be conducted in day and VFR "see and avoid" conditions within the confines of the airfield property. The AirSTAR Project UAS will be flown in a manner consistent with policy and procedures applicable with the airfield flight operations at Blackstone. Flight operation can be easily accomplished at altitudes between the surface and 1,500 feet AGL and ~ 2.5 mile radius of the airfield. A Notice to Airman (NOTAM) will be filed with the Leesburg Flight Service in accordance with controlled airspace. The AirSTAR Project UAS vehicles are utilized specifically for development of safety pilot skills. These skills require pilot proficiency to fly UAS vehicle configurations with wing loads up to 144 ounces per square foot. These skills are required for the AirSTAR Project Control Upset research testing that will be conducted at Wallops Flight Facility, Goddard Space Flight Center.
		Operational Summary	The NASA Langley UAS lab intends to utilize the airspace on an average of two days per week (Monday through Friday) between the hours of 8:30 am to 5:30 pm (local time). Each UAS flight activity has duration of approximately 12 minutes in length and on a good weather day, will complete 8 to 12 fights.
	Location	State	VA
		County	Nottoway
		Nearest Airport	ALLEN C PERKINSON BLACKSTONE AAF
		AOR	Virginia
	Class Of Airspace	Class-A	
		Class-B	
		Class-C	
		Class-D	
		Class-E	Yes
		Class-G	
System Description		Aircraft Type	
		Aircraft Type And Model Description Attachment	1
		Control Station Attachment	1
		Communications System Attachment	1
		List Certified Components (TSO) Attachment	1
		Other Attachment	1
Performance Characteristics		Climb Rate (feet/Minute)	800
		Descent Rate (feet/Minute)	1200

		Turn Rate (Degrees/Second)	40
	Cruise Speed	Maximum	150
		Minimum	15
		Approach Speed	45
	Operating Attributes	Maximum MSL	1500
		Minimum MSL	0
		Gross Takeoff Wt	60.0
		Launch/Recovery Attachment	1
Airworthiness		FAA Type Certificate	
		If No FAA Certificate (Public Aircraft Only) Attachment	7
Procedures		Lost Link/Mission Procedures Attachment	1
		Lost Communications Procedures Attachment	2
		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	3
		Control Link(s)	Yes
		Control Link Attachment	2
		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	2
		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	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	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	1500 Feet
		Horizontal	2.5 Nautical Miles
		Airborne based (Chase Aircraft)	No
		Ground based	No
		Visual observation from one or more ground sites	Yes
		Forward or side looking cameras	No
		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	Yes
		Commercial	No
		Air Transport	No
		Unique Trained Pilot	Yes
		Unique Trained Pilot Description	All NASA UAS pilots have, as a minimum, passed the Private Pilot written exam. Four of the five pilots hold Private Pilot Land certifications, one pilot is instrument rated. Additionally, each NASA UAS pilot must posess a current Turbine Waiver Certification that is renewed annually. The guidelines and qualifications for holding a Turbine Waiver are defined and regulated by the Acadomy of Model Aeronautics. The skills for obtaining an AMA Turbine Waiver are defined in the AMA "Turbine Qualification Flight Attestation" document 510-D". All NASA UAS pilots are in good standing with current Turbine Waiver Certifications.
		DOD certified/trained	No
		Other Certified Training	No
		Trained on FAR Part 91 Requirement	Yes
		Medical Certification Class (FAA or DOD equivalent)	3
		Currency Status	All NASA UAS pilots have current class 3 medical certifications.
		Duty Time Restrictions	None
		Single UAS Control	No
		UAS Description	
		Total Numbers of UAS Controlled	2
	Observers	Private (Written)	Yes
		Private (Certified)	No
		Instrument	No
		Commercial	No

		Air Transport	No
		Unique Trained Pilot	No
		Unique Trained Pilot Description	All NASA UAS observers have, passed the Private Pilot written exam. Additionally, the observers have been trained by the project for proper traffic observation and communication procedures.
		DOD certified/trained	No
		Other Certified Training	No
		Trained on FAR Part 91 Requirement	Yes
		DOD Certified Training Attachment	0
		Medical Certification Class (FAA or DOD equivalent)	3
		Currency Status	All NASA UAS observers have current class 3 medical certifications.
		Duty Time Restrictions	None
		Single UAS Control	No
		UAS Description	
		Total Numbers of UAS Controlled	2
Special Circumstances		Special Circumstances	