

| | | | |
|-----------------------------|----------------------------|---|-------------------------------|
| | | ASN | 2012-ESA-55-COA-R |
| | | Case Status | APPROVED |
| | | Date Created | 07/23/2012 |
| | | Date Submitted | 07/23/2012 |
| Proponent Organization | | Sponsor | Virginia Tech |
| | | Attn Of | Dr. Kevin Kochersberger |
| | | Address | Mechanical Engineering (0238) |
| | | Address2 | 114 Randolph Hall |
| | | City | Blacksburg |
| | | State | VA |
| | | Postal Code | 24061 |
| | | Telephone | (540) 231-5589 |
| | | Email | kbk@vt.edu |
| Declaration | | Declaration(a) | Yes |
| | | Declaration(b) | Yes |
| Point of Contact | | Representative | Kevin Kochersberger |
| | | Address | Mechanical Engineering |
| | | Address2 | 114 Randolph Hall |
| | | City | Blacksburg |
| | | State | VA |
| | | Postal Code | 24061 |
| | | Telephone | (540) 231-5589 |
| | | Email | kbk@vt.edu |
| 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 | |
| | | Operational Summary | |
| | Location | State | VA |
| | | County | Montgomery |
| | | Nearest Airport | RADFORD AAP |
| | | AOR | Virginia |
| | Class Of Airspace | Class-A | |
| | | Class-B | |
| | | Class-C | |
| | | Class-D | |
| | | Class-E | |
| | | Class-G | Yes |
| System Description | | Aircraft Type | 102154764 - RMAX |
| | | Aircraft Type And Model Description Attachment | 0 |
| | | Control Station Attachment | 1 |
| | | Communications System Attachment | 1 |
| | | List Certified Components (TSO) Attachment | 1 |
| | | Other Attachment | 0 |
| Performance Characteristics | | Climb Rate (feet/Minute) | 200 |
| | | Descent Rate (feet/Minute) | 200 |
| | | Turn Rate (Degrees/Second) | 45.0 |
| | Cruise Speed | Maximum | 20 |
| | | Minimum | 0 |
| | | Approach Speed | 2 |
| | Operating Attributes | Maximum MSL | 2200 |
| | | Minimum MSL | 2000 |
| | | Gross Takeoff Wt | 207.0 |
| | | 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 | No |
| | | Moving map indicator (Command Station) | No |
| | | Tracking capability | No |
| | | 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 | No |
| | | Data Link Attachment | 0 |
| | | Control Link(s) | No |
| | | 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 | 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 | 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 | 200 Feet |
| | | Horizontal | 0.1 Nautical Miles |
| | | Airborne based (Chase Aircraft) | No |
| | | Ground based | Yes |
| | | 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 | No |
| | | Control station recording | No |
| | | 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 | The pilot has four years experience flying RC helicopters from 10 lbs to 200 lbs. He has logged approximately 10 hours flying the Yamaha RMAX |
| | | 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 | The helicopter pilot possesses a valid 2nd class medical certificate prior to the issuance of the COA |
| | | Duty Time Restrictions | The pilot will be restricted to flight operations that do not exceed eight hours in a 24 hour period |
| | | Single UAS Control | Yes |
| | | | |
| | | UAS Description | The pilot is responsible for operating the Yamaha RMAX during takeoff, landing and cruise flight. During some of these periods, the helicopter will be flying in the autonomous mode and the pilot will be responsible for taking manual control of the helicopter when needed. |
| | | 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 | The observer has been briefed on aircraft identification by a licensed commercial pilot. |
| | | 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) | 2 |
| | | Currency Status | The observer possesses a valid 2nd class medical certificate prior to the issuance of the COA |
| | | Duty Time Restrictions | The observer will be restricted to duties that do not exceed eight hours in a 24 hour period |
| | | Single UAS Control | Yes |
| | | | |
| | | UAS Description | The observer is responsible for observing the Yamaha RMAX during takeoff, landing and cruise flight. The observer will be located within 1 m of the pilot so that voice communication is effective between the observer and pilot |
| | | 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 | | | | | | | | |

Total Map Attachment 1

| Maximum | Minimum | Radius | SUA Description | | |
|---------|--------------|--------|-----------------|------|------|
| | 37-11-58.00N | | 80-34-58.00W | 2200 | 2000 |

20

0

0.1