Transport Canada Transports Canada

APPLICATION FOR A SPECIAL FLIGHT OPERATIONS CERTIFICATE (SFOC) FOR THE OPERATION OF A UNMANNED AIR VEHICLE (UAV) SYSTEM IN CANADIAN AIRSPACE

This form can either be filled in on screen then printed, signed and submitted to the appropriate regional office OR, be printed then completed in BLOCK CAPITALS using black or dark blue ink and submitted to the appropriate regional office

References:

1. *Aeronautics Act*;
2. *Canadian Aviation Regulations*;
3. Staff Instruction SI 623-001 SI Issue No. 02;
4. Advisory Circular AC 600-004 Issue No. 02; and
5. TP 15263 Knowledge Requirements for Pilots of Unmanned Air Vehicle Systems under 25 Kg.

(*) Indicates there is a Note in the Amplifying Note section

SECTION 1 – BASIC INFORMATION				
1. Application date (yyyy-mm-dd)	2. Type of application * Select one of the following: ◯ Simplified ◯ Complex ◯ Compliant		Select one of the following: ◯ Site-Specific ◯ Standing	
3. Name and address of the Company or Private Operator *				4. Nationality * ◯ Canadian UAV Operator ◯ Foreign UAV Operator
SECTION 2 – PERSONNEL INFORMATION				
5. APPLICANT *				
6. Title	7. First name	8. Middle name(s)	9. Last name	
10. Position title		11. Candian Civil Licence Number *		
12. Email		13. Telephone number (999-999-9999)	14. Cell (999-999-9999)	
15. Alternate contact phone number(s) *				
16. OPERATION MANAGER * (Operation Manager's qualifications to be attached with the application)				
☐ Same as Applicant				
17. Title	18. First name	19. Middle name(s)	20. Last name	
21. Position title		22. Candian Civil Licence Number *		
23. Email		24. Telephone number (999-999-9999)	25. Cell (999-999-9999)	
26. Alternate contact phone number(s) *				
27. GROUND SUPERVISOR * (On site Ground Supervisor's qualifications to be attached with the application)				
☐ Same as Applicant ☐ Same as Operation Manager				
28. Title	29. First name	30. Middle name(s)	31. Last name	
32. Email		33. Telephone number (999-999-9999)	34. Cell (999-999-9999)	
35. Alternate contact phone number(s) *				

Canada

36. PRIMARY UAV PILOT * (All UAV Pilot's qualifications to be attached with the application)			
☐ Same as Applicant ☐ Same as Operation Manager ☐ Same as Ground Supervisor			
37. Title	38. First name	39. Middle name(s)	40. Last name
41. Position title		42. Candian Civil Licence Number *	
43. Email		44. Telephone number (999-999-9999)	45. Cell (999-999-9999)
46. PRIMARY VISUAL OBSERVER * (All Visual Observer's qualifications to be attached with the application)			
47. Title	48. First name	49. Middle name(s)	50. Last name
51. SYSTEM MAINTAINER * (All Visual Observer's qualifications to be attached with the application)			
☐ Same as Applicant ☐ Same as Operation Manager ☐ Same as Ground Supervisor			
52. Title	53. First name	54. Middle name(s)	55. Last name

SECTION 3 – UAV INFORMATION (if multiple UAV's, add their information in Section 6)			
56. **UAV System**	**UAV #1**	**UAV #2**	**UAV #3**
57. UAV Manufacturer *			
58. UAV Name			
59. UAV Serial Number *			
60. UAV Maximum Take-Off Weight (MTOW)			
61. Command and Control Frequency *			
62. Modifications done on the UAV System * (Description to be attached with the application)	◯ Yes ◯ No	◯ Yes ◯ No	◯ Yes ◯ No
63. Maintenance procedure in place *	◯ Yes ◯ No	◯ Yes ◯ No	◯ Yes ◯ No

SECTION 4 – LIABILITY INSURANCE INFORMATION	
64. Insurance company name	65. Name of insured *
66. Policy number	67. Policy value
68. Effective date (yyyy-mm-dd)	69. Expiry date (yyyy-mm-dd)

SECTION 5 – OPERATIONAL INFORMATION			
70. Type and purpose of the operation * (use Section 6 if required)			
71. VLOS * ☐	72. BVLOS * ☐	73. 400 feet AGL and below *	74. Above 400 feet AGL *
75 Dates, alternate dates and times of the proposed operation *		76. Day only * ☐	77. Day and night * ☐
78. Location(s) of the operation * (use Section 6 if required)			
79. Permission from the land owner(s) * ◯ Yes ◯ No		80. Permission from the event organizer(s) * ◯ Yes ◯ No ◯ N/A	
81. FIR/ATC/FSS/Aerodrome Operator Coordination * (Coordination procedures to be attached with the Site Survey/Plan of Operation) ◯ Yes ◯ No ◯ N/A		82. Type of Airspace * ☐ Class A ☐ Class B ☐ Class C ☐ Class D ☐ Class E ☐ Class F ☐ Class G	

83. **Site Survey/Plan of Operation** (For standing applicants, provide a template of a site survey/plan of operation and any guidance material for staff) *

84. **Security Plan** (For standing applicants, provide your procedures for a security plan and any guidance material for staff) *

85. **Emergency Plan** (For standing applicants, provide your procedures for an emergency plan and any guidance material for staff) *

SECTION 6 – ADDITIONAL INFORMATION (continue on an additional sheet if necessary)

86. Additional Information *

SECTION 7 – FALSE DECLARATION STATLEMENT

87. Paragraph 7.3(1)*(a)* of the ***Aeronautics Act*** states: "No person shall knowingly make any false representation for the purpose of obtaining a Canadian aviation document or any privilege accorded thereby. An individual who is convicted of this type of offence is punishable on summary conviction to a fine not exceeding $5,000 or to imprisonment for a term not exceeding one year, or to both a fine and imprisonment. A corporation that is convicted of this type of offence is punishable on summary conviction to a fine not exceeding $25,000. Aviation Enforcement also has the option of assessing a punitive suspension of a Canadian Aviation Document (CAD) rather than proceeding by summary conviction or indictment, and depending on the circumstances and other factors surrounding the offence, may take this course of action.

SECTION 8 – DECLARATION

88. I, the applicant, agree that the UAV system will be operated in accordance with the Special Flight Operations Certificate (SFOC). *

I hereby certify that the Staff Instruction SI 623-001 has been read and understood.

I hereby certify that each pilot has been trained and is qualified to safely operate the UAV system.

I hereby declare that to the best of my knowledge the information entered on this application is accurate.

Signature _____ Date (yyyy-mm-dd) _____

☐ The applicant is over 18 years of age

89. I have enclosed the following supporting documentation (**** Mandatory Documents to be attached with this application)**

☐ ** Copy of Liability Insurance Certificate	☐ ** Operation Manager's Qualification Details	☐ ** Ground Supervisor's Qualification Details	☐ ** UAV Pilot(s) Qualification Details
☐ ** Visual Observer's Qualification Details	☐ ** Manufacturer UAV Specifications & Limitations	☐ ** Site Survey/Plan of Operation	☐ ** Security Plan
☐ ** Emergency Plan	☐ ** Proof of Corporation (if applicable)	☐ ** UAV Operations and Maintenance Procedures	☐ ** Description of UAV System Modifications (if applicable)
☐ Rest. Operator Certificate Aero. (Radio Licence)	☐ Property Owner's Permission	☐ Event Organiser's Permission	☐ Operations Manual(s)
☐ Training Manual(s)	☐ Standard Operating Procedures	☐ Check List(s)	☐ Operational Flight Plan
☐ UAV Pilot Flight Log(s)	☐ UAV Maintenance Log(s)	☐ UAV Incident/Accident Safety Reporting Form	☐ Medical Certificate/Declaration

☐ Others: List any other document attached with this application: _____

Canada

SECTION 9 – CONTRAVENTION OF LEGISLATIONS

90. Section 602.41 of the CARs is a designated provision. Penalties may be assessed in the amount of $5,000 for individuals and $25,000 for corporations for failure to obtain an SFOC.

Section 603.66 of the CARs is a designated provision. Penalties may be assessed in the amount of $3,000 for an individual and $15,000 for a corporation for failure to comply with the conditions of an SFOC.

SECTION 10 – SUBMISSION INSTRUCTIONS

91. When completed, send this SFOC request form to the appropriate region:

Atlantic Region – casa-saca@tc.gc.ca

Quebec Region – csva-vsca@tc.gc.ca

Prairie and Northern Region – PNRSpecialFlightOps@tc.gc.ca

Pacific Region – tc.aviationservicespac-servicesaviationpac@tc.gc.ca

Ontario Region – tc.aviationservicesont-servicesaviationont.tc@tc.gc.ca

For any questions regarding the application, please forward your question(s) to the appropriate regional office:

Atlantic Region – casa-saca@tc.gc.ca

Quebec Region – TC.QUESecuritedesdrones-dronesafetyQUE.TC@tc.gc.ca

Prairie and Northern Region – PNRSpecialFlightOps@tc.gc.ca

Pacific Region – tc.aviationservicespac-servicesaviationpac@tc.gc.ca

Ontario Region – tc.aviationservicesont-servicesaviationont.tc@tc.gc.ca

SECTION 11 – AMPLIFYING NOTES

92. The Certificate applicant must read the SI 623-001 and AC 600-004 for guidance on terms, and definitions, general operating rules, risk management, liability insurance requirements, radiotelephone operator certificate requirements and general information. The following amplifying notes contained in this application form have been included to help the Certificate applicant fill the SFOC application form. The SI 623-001 and AC 600-004 remain the main reference documents.

It is the Certificate applicant's responsibility to provide sufficient information and risk mitigation measures to permit the Inspector to adequately assess the safety of the proposed operation. Failure of the applicant to demonstrate the ability to conduct safe operations will result in significant delays or a denial of the issuance of an SFOC.

The Certificate applicant is required to submit the SFOC application **a minimum of 20 working days** to the date of the proposed operation. This level of service timeframe assumes that TC received a comprehensive, complete and accurate SFOC application containing all required information. SFOC application for BVLOS UAV operation and/or UAV operation above 400 feet AGL might require more time to process.

If the SFOC application clearly indicates that the minimum requirements have not been met or if the Inspector requires more information, then the Inspector will not process the application until such time as the application is complete or the applicant can show competency. Once an application has been returned to the applicant, the applicant will need to amend the application and resubmit it. **This will result in the application losing its place in the processing queue.**

DEFINITIONS:

The following **definitions** are used in this document and are only applicable to UAV operations conducted under an SFOC:

(a) **Canadian Aviation Documents** – means any licence, permit, accreditation, certificate or other document issued by the Minister under Part I of the *Aeronautics Act* to or with respect to any person, or in respect of any aeronautical product, aerodrome, facility or service.

- An SFOC is a Canadian Aviation Document.

(b) **Command and Control Link –** means the data link between the UAV and the control station for the purposes of managing the flight.

(c) **Crew Member** – means a person assigned to duties essential to the operation of the unmanned air vehicle system during flight time.

(d) **Maximum Take-off Weight** – means the weight of the aircraft at the time of the operation, including the weight of any payload (e.g. a camera) and fuel.

(e) **Owner** – in respect of an aircraft, means the person who has legal custody and control of the aircraft.

(f) **Operator** – in respect of an aircraft, means the person that has possession of the aircraft or the UAV system, as owner, lessee or otherwise.

(g) **Payload Operator** – means the person (s) trained to operate the payload system, and in some cases, manage the flight profile.

(h) **Pilot-in-Command (PIC)** – means, in relation to an aircraft, the pilot having responsibility and authority for the operation and safety of the aircraft during flight time.

(i) **Sense and Avoid –** means the capability to see, sense or detect, conflicting traffic or other hazards and take appropriate action. (The International Civil Aviation Organization refers to "detect and avoid").

(j) **Special Flight Operations Certificate –** is a Canadian aviation document required for operating an unmanned air vehicle system.

(k) **Unmanned Air Vehicle** – means a power-driven aircraft, other than a model aircraft, that is designed to fly without a human operator onboard.

- Unmanned air vehicles exclude fireworks, kites, rockets and large unoccupied free balloons.

(l) **UAV Operator –** means the person that has possession of the UAV system, as owner, lessee or otherwise.

(m) **Visual line-of-sight (VLOS) –** means unaided (corrective lenses and/or sunglasses exempted) visual contact with the UAV sufficient to be able to maintain operational control of the aircraft, know its location, and be able to scan the airspace in which it is operating to decisively see and avoid other air traffic or objects.

(n) **Visual Observer –** means a trained crew member who keeps the UAV within visual line-of-sight and who assists the pilot in the duties associated with collision avoidance and complying with the applicable rules of flight.

NOTES:

SECTION 1 – 2. Type of Application

- The Certificate applicant must clearly identify which process they are applying under - **Simplified** or **Complex** or **Compliant**. Failure to do so will result in delays in receiving approval. To ensure proper use of TC resources, Inspectors receiving SFOC applications that do not clearly identify the process will immediately return the application.
- The Certificate applicant must also clearly identify if the request is for a **Site-Specific** SFOC or for a **Standing** SFOC. Failure to do so will result in delays in receiving approval. To ensure proper use of TC resources, Inspectors receiving SFOC applications that do not clearly identify the type of SFOC will immediately return the application.
- The Certificate applicant will be issued an SFOC application number once the application is complete. All subsequent correspondence with the respective regional office in regards to that SFOC application shall be referred to the SFOC application number for that specific SFOC application.
- For the validity period of an SFOC, please refer to SI 623-001 Section 7.4.
- For extensions or amendments to SFOC, please refer to SI 623-001 Section 7.6.
- The applicant must indicate in the Additional Information section (Section 6) if an SFOC has previously been issued from a previous SFOC application containing the exact same information as with the new application. If so, and only the dates are different, please provide the SFOC RDIMS number for reference.
- The applicant shall provide the qualifications for the following personnel; the operation manager, the ground supervisor, the UAV pilot(s), the visual observer(s) (if applicable) and UAV system maintainer (if applicable).
- As per SI 623-001 Section 7.2 (see Note), the UAV system regulatory recommendations approved by the TC Canadian Aviation Regulatory Committee require UAV operators to become "Compliant". As such all Certificate applicants are strongly encouraged to work towards becoming compliant to ensure their operations can be continued with minimal interruption once future regulatory development is completed.

(a) For a **Site-Specific Restricted Simplified** or **Restricted Complex SFOC** application (SI 623-001 Section 7.2), the applicant shall provide the following information:

(i) A proof of corporation (if applicable);

(ii) A proof of liability insurance coverage (copy of the liability insurance certificate);

(iii) Evidence that the UAV pilot(s) have the required training and qualifications to conduct the planned operation safely for the intended UAV operation as per SI 623-001 Section 4.1 and Section 10.4 or 11.6 (as applicable);

(iv) Evidence that the UAV operator has an adequate management organization that is capable of exercising supervision and operational control over persons participating in the operation as per SI 623-001 Section 6.32 and Section 10.4(2)(d) or 11.6(2)(d) (as applicable);

(v) Operation and maintenance procedures as per SI 623-001 Section 10.4(2)(b), (c) and (d) or Section 11.6(2)(b), (c), and (d) (as applicable);

(vi) A Site survey/Plan of operation as per SI 623-001 Section 6.19 and 8.10;

(vii) A Security plan as per SI 623-001 Section 8.7;

(viii) An Emergency Plan as per SI 623-001 Section 8.8; and

(ix) The manufacturer UAV specifications, limitations and a description of the modifications if applicable.

- A permission from the owner(s) of the property on which a UAV intends to take-off/launch from and/or land/recover on is required. **The Inspector might request a proof of that permission before issuing the SFOC (see SI 623-001 Section 8.7(b) and AC 600-004 Section 4.1(9))**.
- If the Specific SFOC is for a public event such as; a sporting event, a cultural event, a social event, etc., the applicant shall also have the permission from the event organiser(s). **The Inspector might request a proof of that permission before issuing the SFOC**.
- If the application is for more than one (1) geographic site for the same proposed UAV operation for the same dates, each proposed site shall have a separate Site Survey/Plan of Operation along with their respective permissions from owner(s) and event organiser(s) as applicable.
- Under the *Radiocommunication Act*, a Restricted Operator Certificate - Aeronautical (ROC-A) is required for 2-way radio communication on a VHF frequency with an Air Traffic Service (ATS) unit and/or a Flight Service Station (FSS) and/or an aerodrome/heliport operator and/or another aircraft. If the UAV pilot is in radio communication with an ATS/FSS Unit, it is recommended that all UAV crew members (e.g. pilots, visual observers, payload operators and chase pilots) monitor the frequency to improve situational and navigational awareness.

(b) For a **Standing Restricted Simplified SFOC** or **Restricted Complex SFOC** application (SI 623-001 Section 7.5), the applicant shall provide the following information:

(i) Provide a proof of corporation (if applicable);

(ii) Provide a proof of liability insurance coverage;

(iii) Evidence that the UAV pilot(s) are appropriately trained, qualified, proficient and current to safely operate the UAV in the operating environment as per SI 623-001 Section 4.1 and Section 10.4 (also see Appendix B for guidance);

(iv) Evidence that the UAV operator has an adequate management organization that is capable of exercising supervision and operational control over persons participating in the operation as per SI 623-001 Section 6.32 and Section 10.4 (also see Appendix D for guidance);

(v) Manual(s) that includes the following (SI 623-001 Sections 10.4(b), (c), (d) and Appendix D(4)):

(i) Operation and maintenance procedures;
(ii) Site survey/Plan of operation procedures;
iii) Security plan procedures;
(iv) Emergency plan procedures;
(v) Other documents as required (e.g. Training Manual, SOPs, Operational Flight Plan, etc.).

(vi) The manufacturer UAV specifications, limitations and a description of the modifications if applicable;

(vii) The UAV operator shall have successfully completed a minimum number of SFOC applications that lead to the successful and safe conduct of UAV operations where all SFOC conditions were met. The minimum number of successful UAV operations shall be sufficient to clearly demonstrate to Transport Canada that the Applicant can operate safely within the conditions of an SFOC.

• A Standing SFOC will not be issued until the UAV operator has gained sufficient experience.

• A Standing SFOC will not be issued unless the UAV operator demonstrates a history of safe operations.

• Standing SFOCs will not be issued to initial Certificate applicants.

• Self-administered training is not approved for a **Region-Wide Standing Restricted Complex SFOC** to operate a UAV within controlled airspace, within controlled zones, within five (5) nautical miles (9.3 km) from the centre of any aerodrome (excluding heliports) listed in the Canada Flight Supplement (CFS) or Water Aerodrome Supplement (WAS) and within three (3) nautical miles (5.6 km) from the centre of any heliport listed in the CFS or WAS.

• A Standing SFOC with restrictions such as; day only operations, below a specific altitude, outside build up areas, outside controlled airspace, etc. could be issued to an operator who does not meet all the requirements for a Region-Wide Standing SFOC (Simplified or Complex) or as requested by the applicant.

• Under the *Radiocommunication Act*, a Restricted Operator Certificate - Aeronautical (ROC-A) is required for 2-way radio communication on a VHF frequency with an Air Traffic Service (ATS) unit and/or a Flight Service Station (FSS) and/or an aerodrome/heliport operator and/or another aircraft. If the UAV pilot is in radio communication with an ATS/FSS Unit, it is recommended that all UAV crew members (e.g. pilots, visual observers, payload operators and chase pilots) monitor the frequency to improve situational and navigational awareness.

(c) For a **Compliant SFOC** application (SI 623-001 Section 9), the Applicant shall demonstrate that:

(i) All pilots are appropriately qualified as per SI 623-001 Appendix B;

(ii) A small UAV system meets the Design Standard as per SI 623-001 Appendix C;

(iii) The UAV operator is compliant as per SI 623-001 Appendix D.

SECTION 1 – 3. Company Name or Private Operator

(a) Please identify whether the company is incorporated or "operating as". You shall provide a copy or proof of corporation if the company is incorporated.

• If operating as, the SFOC will be issued in the name of the operator and under the name of the company operating as.

(b) For Foreign UAV operator, please refer to SI 623-001 Appendix L.

(c) The Certificate holder must have custody and control of the UAV as the owner or lessee and be the holder of the third party liability insurance policy.

SECTION 1 – 4. Nationality

For foreign UAV operator requirements, please refer to SI 623-001 Appendix L – International Operations.

SECTION 2 – 5. Applicant

(a) The Certificate **applicant** is the person to whom the SFOC will be issued. This person is responsible for the ensuring that all personnel and equipment are compliant with regulations and conditions of the application and the SFOC. The Applicant may delegate duties but remains at all times responsible for all facets of the operation. A person's name is required for legal/liability reasons (SI 623-001 Section 6.32 and 8.1).

(b) If a business entity is applying, then identify through a formal letter from the legal authority who from the company is designated to apply for an SFOC on behalf of the company. The letter shall be attached with the application.

(c) Persons associated with the operation of the UAV system, responsible for taking safety related actions or making safety related decisions about the operation (i.e. UAV operator, pilots, maintainers and visual observers) must be a minimum of 18 years of age.

(d) A crew member means a person assigned to duties essential to the operation of the unmanned air vehicle system during flight time. A crew member is:

(i) A UAV pilot;

(ii) A UAV observer;

(iii) A UAV ground supervisor; or

(iv) A UAV maintenance technician.

• Transport Canada does not approve Letter of Consents nor signed responsibility waivers as a valid reason to have non-related persons inside the minimum lateral safety distance of 100 feet (30 meters) from the UAV.

SECTION 2 – 11. Canadian Pilot Civil Licence Number

Please refer to SI 623-001 Section 10.4(2)(a) or Section 11.6(2)(a) (as applicable) and Appendix B (1)(f).

SECTION 2 – 15. Alternate Contact Phone Number(s)

If applicable, add any other alternate contact phone numbers where the Applicant could be reached.

SECTION 2 – 16. Operation Manager

(a) The **Operation Manager** is the person associated with the operation of the UAV system, responsible for taking safety related actions or making safety related decisions about the operation (i.e. UAV operator, pilots, maintainers and visual observers) and must be a minimum of 18 years of age (SI 623-001 Section 8.2).

(b) Provide a description of how/why this person is qualified to act as the Operation Manager. The intent is not to confine a UAV operator to a mandatory management structure, including positions titles. A UAV operator may or may not use position titles such as Operation Manager and Ground Supervisor within their organization. However, someone must have operational control over the operation and someone must be responsible for supervision of the operation area. It must be clearly indicated in the SFOC application who has been designated these responsibilities. In small operations, the Operation Manager and the Ground Supervisor could be the same person.

SECTION 2 – 22. Canadian Pilot Civil Licence Number

Please refer to SI 623-001 Section 10.4(2)(a) or Section 11.6(2)(a) (as applicable) and Appendix B (1)(f).

SECTION 2 – 26. Alternate Contact Phone Number(s)

If required, add any other alternate contact phone numbers where the Operation Manager could be reached. That could include a satellite phone number in remote areas where land lines and cellular phone services are either unreliable or not available (SI 623-001 Section 6.13(6), Section 8.3 and Section 9.7(d)(vi)).

SECTION 2 – 27. Ground Supervisor

The **Ground Supervisor** is the person responsible for on-site supervision of the operation and must be a minimum of 18 years of age. The ground supervisor may be the same person as the operation manager and/or certificate holder if they will be on-site for all operations.

SECTION 2 – 35. Alternate Contact Phone Number(s)

If required, add any other alternate contact phone numbers where the Ground Supervisor could be reached. That could include a satellite phone number in remote areas where land lines and cellular phone services are either unreliable or not available (SI 623-001 Section 6.13(6), Section 8.3 and Section 9.7(d)(vi)).

SECTION 2 – 36. Primary UAV Pilot

(a) **UAV Pilot(s)** shall be qualified, properly trained and proficient to assure safe integration within national airspace and must be a minimum of 18 years of age (SI 623-001 Section 4.1(2), SI 623-001 Section 10.4(2)(a)(i), Section 11.6(2)(a)(i) and Appendix B, AC 600-004 Section 4.3, Section 5.3 and TP 15263).

- Please indicate if the payload of the UAV is operated by a separate Payload Operator of by the UAV Pilot.

(b) The Certificate applicant shall clearly indicate that the UAV pilot(s) are qualified to conduct safe flight operations for the intended flying operation. Here is a list of accepted documents:

(i) Copy of a Canadian Civil Licence;

(ii) Copy of a Pilot/UAV Pilot certificate or letter of completion from an existing training facility or online course based on the TP 15263;

- For self-administered training, it is essential to document the knowledge items covered, the time spent on each item, the references used and the date of completion of all items.

(iii) Copy of UAV on-type training certificate (if applicable);

(iv) Copy of pilot flying log book;

(v) Copy of a Restricted Operator Certificate - Aeronautical (ROC-A) - (if applicable) (SI 623-001 Section 4.3, Section 6.8(3)(c)) and Section 6.9; and

- This certificate is required for 2-way radio communication on a VHF frequency with an Air Traffic Service (ATS) unit and/or a Flight Service Station (FSS) and/or an aerodrome/heliport operator and/or another aircraft whether aeronautical mobile service communication is conducted via land or mobile stations.

(vi) Medical Declaration or a Category 4 Medical Declaration/Certificate http://wwwapps.tc.gc.ca/wwwdocs/Forms/26-0297E_1308-07_E.pdf.

- This document is not a pre-requisite nor a requirement for an SFOC. But it might be a requirement in the near future.

SECTION 2 – 42. Canadian Pilot Civil Licence Number

Please refer to SI 623-001 Section 10.4(2)(a) or Section 11.6(2)(a) (as applicable) and Appendix B (1)(f).

SECTION 2 – 46. Primary Visual Observer

(a) For operations within VLOS, **Visual Observer(s)** will be required unless a safety case can be provided that shows how the risks can otherwise be mitigated (SI 623-001 Section 2.5(1)(bb) and Section 6.2(1)(a)).

(b) See SI 623.001 Section 4.1(3) for a complete description of the visual observer's roles.

(c) Visual observer(s) shall be qualified as per the standards set forth in SI 623-001 Section 4.1(3)(f) and must be a minimum of 18 years of age.

- A UAV operator shall document the procedures to train/qualify Visual Observer(s) on site prior to UAV operations.

SECTION 2 – 51. System Maintainer

(a) The **System Maintainer(s)** shall be appropriately trained and qualified to maintain the UAV system, including the aircraft, control station components (e.g. hardware, software and firmware) and command and control links in a fit for flight condition.

- The maintenance, including airworthiness of the UAV, is the responsibility of the UAV operator.

(b) See SI 623.001 Section 4.1(5) for a complete description of the system maintainer's roles.

(c) System maintainer shall be qualified as per the standards set forth in SI 623-001 Section 4.1(5) and must be a minimum of 18 years of age.

- Where the system maintainer is self-taught, it is expected that the applicant will provide a summary of the information and materials used to conduct the self-teaching.

SECTION 3 – 57. UAV Manufacturer

(a) Provide the name of the UAV manufacturer for each UAV own by the UAV operator for the proposed operation.

(b) Provide the UAV manufacturer specifications and limitations for each UAV owned by the UAV operator for the proposed operation.

(c) For home-built UAV(s), provide UAV specifications and limitations with supporting documents (i.e. test results, components manufacturer design specifications, etc.).

SECTION 3 – 59. UAV serial number(s)

- Provide the UAV manufacturer serial number for each UAV owned by the UAV operator for the proposed operation.
- For home-built UAV(s), the Certificate applicant shall have a form of identification and/or naming convention for its UAV(s) in lieu of a serial number.
- The UAV(s) should be clearly marked with the Certificate applicant's name, address, and telephone number.

SECTION 3 – 61. Command and Control Frequency

As per SI 623-001 Section 6.7 and 6.8, a coordination with Industry Canada is required if the UAV operator intends to use a frequency that is not from the licence-exempt radio frequency list.

SECTION 3 – 62. Modifications done on the UAV System

The Certificate applicant shall indicate which modifications have been done on the UAV System(s), if they were done in accordance with the manufacturer instructions, by whom, where, when and if the modifications are changing anything on the overall performances of the UAV(s).

SECTION 3 – 63. Maintenance procedures in place

(a) The Certificate applicant shall indicate if there is a maintenance program in place for the UAV(s) and if the UAV(s) are maintained in accordance with the UAV manufacturer's approved maintenance manual (SI 623-001 Section 10.4(2)(b) or Section 11.6(2)(b) (as applicable)).

(b) System maintainer must be trained on the maintenance of the UAV system and must be a minimum of 18 years of age (SI 623-001 Section 4.1(5), Section 10.4(2)(a)(iii) and Section 11.6(2)(a)(iii) (as applicable)).

SECTION 4 – 65. Name of Insured

(a) Please refer to SI 623-001 Section 6.31.

(b) The Certificate holder must have custody and control of the UAV as the owner or lessee and be the holder of the third party liability insurance policy.

- SFOCs will not be issued to the Applicant without a proof of a valid liability insurance contract.

SECTION 5 – 70. Type and Purpose of the Operation

It is not sufficient to indicate that the type and purpose of the operation is for aerial photography. For Specific SFOC and Standing SFOC, the Applicant shall indicate the reason(s) for UAV operations such as; agricultural, land survey, real estate, film industry, cultural event, sporting event, research and development, building inspection, construction site, mining, environment, land slide, ice monitoring, etc. (CAR 623.65(d)(3)(d) and SI 623-001 Section 8.4).

SECTION 5 – 71. VLOS

UAV(s) shall only be operated within visual line-of-sight (VLOS) under VFR conditions unless specifically approved otherwise in an SFOC (SI 623-001 Section 2.5(1)(aa)).

SECTION 5 – 72. BVLOS

(a) Only UAV operators that have previously been issued a Compliant UAV Operator SFOC are eligible to apply for a BVLOS SFOC for operations outside of the restricted airspace associated with a UAV Test range.

(b) UAV operations will not be permitted in non-segregated airspace (airspace shared with manned aviation), BVLOS of the UAV pilot or visual observer, without an acceptable sense and avoid system to reduce the possibility/potential of a mid-air collision (SI 623-001 Section 6.2). Sense and avoid systems, or proposed mitigating measures in lieu of having a sense and avoid system, shall be tested/evaluated within restricted airspace prior to applying for a BVLOS SFOC for operations outside of restricted airspace.

(c) Due to the increased complexity of proposed BVLOS operations, certificate applicants should expect the approvals for any such SFOCs to take longer than the standard approval times.

(d) Only site-specific SFOC will be issued for BVLOS operation (SI 623-001 Appendix H – Conditions for BVLOS Operations for Small UAVs).

(e) No permanent SFOC will be issued for BVLOS UAV operations.

SECTION 5 – 73. 400 feet AGL and below

(a) The Certificate applicant must enter the altitude required for the operation.

(b) All UAV operations should be 400 feet AGL and below (SI 623-001 Appendix H (8)).

(c) UAV operations near airports/aerodromes/heliports/water aerodromes and/or within controlled airspace could be imposed a maximum operating altitude lower than 400 feet AGL by the Inspector or the Air Traffic Control unit.

SECTION 5 – 74. Above 400 feet AGL

(a) The Certificate applicant must enter the altitude required for the operation.

(b) A Standing SFOC will not be issued for UAV operations above 400 feet AGL unless a risk assessment has been completed and additional mitigation measures have been included in the SFOC application. Any such risk assessment shall be forwarded to the Transport Canada Regional office for endorsement prior to approving the SFOC.

(c) Any UAV operations conducted above 400 feet AGL will require its own specific Complex type SFOC.

(d) The Certificate applicant shall propose alternate means of mitigating any collision risks (e.g. ground based radar in remote areas, etc. - see SI 623-001 Appendix H - Conditions for Ground-Based Radar) which the Minister deems acceptable (SI 623-001 Section 6.2).

(e) Due to the increased complexity of proposed operations above 400 feet AGL, Certificate applicants should expect the approvals for any such SFOCs to take longer than the standard approval times.

SECTION 5 – 75. Dates, alternate dates and times of the proposed operation

The Certificate applicant must provide the dates, alternate dates and times of the proposed operation (CAR 623.65(d)(3)(e)) and SI 623-001 Section 8.5).

• For the validity period of an SFOC, please refer to SI 623-001 Section 7.4.

• For SFOC extensions or amendments, please refer to SI 623-001 Section 7.6.

SECTION 5 – 76. Day Only

Day operations shall be conducted between thirty (30) minutes before sunrise and thirty (30) minutes after sunset.

• Sunrise and sunset tables are available on many web sites.

SECTION 5 – 77. Day and Night

The Certificate applicant shall comply with the SI 623-001 Appendix H - Conditions for Night VFR Flights - to have night operation approved on the SFOC.

• Also see SI 623-001 Section 6.5 for LED and NVG Night operations.

SECTION 5 – 78. Location(s) of the operation

For a site Specific SFOC, the Certificate applicant shall provide the full civic address of the location including the postal code and, the latitude and longitude coordinates of the proposed flying area in Degrees Minutes Seconds (e.g. XX°XX'XX.XX"N, YY°YY'YY.YY"W).

• If a civic address does not exist at the specific location, providing the closest civic address will help the Inspector locate the site faster.

SECTION 5 – 79. Written permission from the owner(s)

(a) The Certificate applicant shall obtain permission from the owner(s) of the property on which a UAV intends to take-off/launch from and/or land/recover on (see SI 623-001 Section 8.7(b) and AC 600-004 Section 4.1(9)).

(b) Use of Public lands such as roads and parks requires consent from the appropriate authority.

(c) The Certificate applicant must be aware of the need to observe the regulation imposed by the **Trespass Act** when conducting take-offs and landings of their UAV. Although operations **over** private land may be legally permitted as aeronautical operations under the Aeronautics Act, taking off from or landing on private property, positioning of the operator on private property or retrieving a UAV that may have strayed onto private property, will require property owner's permission.

• A proof of permission from the owner(s) of the property on which a UAV intends to take-off/launch from and/or land/recover on might be requested by the Inspector before issuing the SFOC.

SECTION 5 – 80. Written permission from the organizer(s)

The Certificate applicant shall also obtain permission from the event organizer(s) if the land owner is not the event organizer.

• A proof of permission from the event organizer(s) might be requested by the Inspector before issuing the SFOC.

SECTION 5 – 81. FIR/ATC/FSS/Aerodrome Operator Coordination

• A NOTAM will **NOT** normally be issued for UAV operations as compliance with the SFOC conditions should result in safe operations (SI 623-001 Section 6.14).

• The need to publish a NOTAM is determined by TC and **NOT** left to the discretion of the UAV operator or negotiated with the aerodrome operator or other parties. The UAV operator shall contact the TC Regional office as soon as possible if a NOTAM is required.

(a) The Certificate applicant shall refer to the SI 623-001 Section 6.3, Section 6.13 and Section 10.4(2)(c)(iii) and Section 11.6(2)(c)(iii) (as applicable).

• FIR/ATC/FSS/Aerodrome Operator coordination procedures shall be included with the Site Survey/Plan of Operation.

(b) The Certificate applicant shall make prior coordination with the appropriate Nav Canada Flight Information Region (FIR) for planned UAV operations in Class A, B, C, D and E airspace before any UAV operation.

• Coordination with the appropriate Air Traffic Control (ATC) unit or Flight Service Station (FSS) unit might also be required on top of the requirement to coordinate with the appropriate FIR office.

• Specific coordination instructions with the appropriate FIR/ATC/FSS/Aerodrome Operator will be included in the SFOC as required.

• When the UAV operator is required to communicate on a VHF radio frequency with an Air Traffic Service (ATS) unit and/or a Flight Service Station (FSS) and/or an aerodrome/heliport operator and/or another aircraft, (see SI 623-001 Section 4.1(c)(vi), Section 4.3, Section 6.8 and Section 6.9), then a valid Restricted Operators Certificate - Aeronautical (ROC-A) is required under the *Radiocommunication ACT*. It is recommended that all UAV crew members (e.g. pilots, visual observers, payload operators and chase pilots) monitor the VHF frequency to improve situational and navigational awareness.

(c) For UAV operation in Class F restricted airspace, the Certificate applicant must obtain written authorization from the controlling agency prior to the SFOC application (see SI 623-001 Section 6.11, Section 6.15 and Section 8.10(2)).

• The authorization from the controlling agency shall be attached with this application.

SECTION 5 – 82. Type of Airspace

(a) As part of the Site Survey/Plan of Operation, all Certificate applicants will identify the class(s) of airspace in which the operations are planned (SI 623-001 Section 8.10(2) and SI 623-001 Section 10.4(c)(iii)).

• A Standing SFOC will not be issued for UAV operations in Class A and B airspace.

(b) As per SI 623-001 Appendix H (9), the UAV operator shall coordinate with the air traffic services unit responsible for supplying air traffic services for the area of operation well in advance of proposed operations. **The validity an SFOC is often contingent upon such coordination.**

(c) Certificate applicants who wish to conduct operations in Class F Restricted airspace must indicate this fact in the SFOC application so that appropriate conditions can be added to the SFOC.

SECTION 5 – 83. Site Survey/Plan of Operation

(a) The Certificate applicant shall meet the requirements of a site survey/plan of operation (SI 623-001 Section 6.19, Section 10.4(2)(c) and (d), Section 11.6(2)(c) and (d) (as applicable) and Section 8.10). The site survey/plan of operation must clearly indicate the following:

(i) All information as described in Section 8.10;

(ii) The Class of airspace where the operation will take place;

(iii) The FIR/ATC/FSS/Aerodrome Operator coordination procedures;

(iv) Indicate all aerodromes/water aerodromes/heliports listed in the Canada Flight Supplement (CFS) or Water Aerodrome Supplement (WAS) whose intended UAV flight operations will be located within the control zones and/or the obstacle clearance circle (OCC) as appropriate. Include also the radio frequencies and telephone numbers of the air traffic control unit and/or the airport operator(s) (see example below); and

(v) The exact boundaries of UAV flying area in Degrees, Minutes, Seconds (XX°XX'XX.XX"N, YY°YY'YY.YY"W) along with the full civic address (if available).

Example of a Site Survey/Plan of Operation:

Class E Airspace

Montreal FIR 514-633-2883

Mirabel FSS 450-476-3141

Hydro-Québec Heliport– 3.1 nm, 122.77 MHz, 514-346-7550

St-Jérôme Airport, CSN3 – 3.2 nm, 122.77 MHz, 450-438-0855

Mirabel Airport, YMX – 3.5 nm, 119.1 MHz, 450-476-3141

Bell Helicopter Heliport – 6.1 nm, 119.1 MHz, 450-971-6500, CYR 624

Coordination with FIR and FSS – YES

Land Owner's Permission – YES

Maximum Flight Altitude – 150 feet

Property Limits

100-foot Lines

Emergency Exits

Secured Accesses

Flight Area

#1 - XX°XX'XX.XX"N / YY°YY'YY.YY"W

#2 - XX°XX'XX.XX"N / YY°YY'YY.YY"W

#3 - XX°XX'XX.XX"N / YY°YY'YY.YY"W

#4 - XX°XX'XX.XX"N / YY°YY'YY.YY"W

#5 - XX°XX'XX.XX"N / YY°YY'YY.YY"W

#6 - XX°XX'XX.XX"N / YY°YY'YY.YY"W

SECTION 5 – 84. Security Plan

(a) The Certificate applicant shall meet the requirements of a security plan (SI 623-001 Section 8.7).

(b) As per SI 623-001 Appendix H (59), no pilot shall operate the UAV over an open-air assembly of persons.

- Most UAVs do not meet any technical airworthiness standards meaning that there is no assurance of the reliability, airworthiness or capabilities of the UAV system. This increases the risks to persons and property on the ground.
- For numerous reasons, the potential hazard of UAVs being flown near or over the general public and large crowds of people is significant. A security plan must be developed and adhered to in order to protect people and to ensure that people do not interfere with the operation of the UAV.
- Built-up areas are considered areas with groups of buildings or dwellings including anything from small hamlets to major cities. Anything larger than a farmstead is considered a built-up area. Additionally, open or green space areas, such as a parks, parking lots or recreational areas, within a city or town are areas contained within built-up areas.

(c) Flight within 100 feet (30 meters) horizontally of persons not involved in the operation of the UAV will not be permitted unless alternate means of mitigating any collision risks with persons are in place (e.g. safety net, tethered UAV, etc.) and for which the Minister deems acceptable.

- This provides protection to person or property on the ground that are not part of the operation or have not accepted the risk of the UAV operating in their close proximity. It permits the use of the UAV closer than 100 feet (30 meters) from people or objects provided those people or objects are the specific reason for the operation and have accepted the risk associated with the operation (i.e. actors on a movie set, a vehicle used in a TV commercial, aerial inspection of buildings/structures, etc.). However, this would NOT include activities such as filming people at an outdoor concert or sporting event or any public event.
- Students in a school yard, workers, spectators, pedestrians, event participants, etc. are **NOT** considered as part of a UAV operation.

(d) The UAV shall not be operated within 100 feet (30 meters) horizontally of any public roadway, right of way, or public access or incursion within 100 feet (30 meters) horizontally of the UAV. The Certificate applicant shall demonstrate how the UAV flying area around the UAV will be secured and prevent any person not associated with the UAV operation from entering the secured area.

(e) Flight within 100 feet (30 meters) horizontally of buildings and occupied vehicles or vessels will not be permitted without the owner's consent and lack of objection from the occupants. The fact that flight within 100 feet (30 meters) of occupied vehicles (without the occupants' permission) also serves to preclude operation of the UAV within 100 feet (30 meters) of roads and rights of way unless the applicant can demonstrate how and under what authority they plan to prevent such incursions of the UAV.

- The Certificate applicant must contact the local civic authority to confirm if a permit or permission is required to partially or totally close a public road, a right of way, a street or park access, etc.

SECTION 5 – 85. Emergency Plan

The Certificate applicant shall meet the requirements of an emergency plan (SI 623-001 Section 8.8).

- It is expected that the emergency contingency plan will be well thought out and detailed in the SFOC application. Relying on calling 911 **would not** meet the standard expected of an emergency contingency plan.
- If the emergency contingency plan includes contacting 911, the Certificate applicant must identify that calling 911 is only related to the emergency contingency plan actions and that it is not appropriate to call 911 for aircraft-related emergencies (e.g. lost link, fly-away, damage to UAV, etc.)

SECTION 6 – 86. Additional Information

This section is for the Certificate applicant to add any justifications, comments, or any other pertinent information to obtain an SFOC for the proposed UAV operation.

SECTION 8 – 88. Declaration

The Certificate applicant shall sign and date the SFOC application form and also confirm that he/she is over 18 years of age. Failure to do so will result in delays in receiving approval. To ensure proper use of TC resources, Inspectors receiving SFOC applications that are not signed and dated will immediately return the application.

SECTION 8 – 89. Supporting Documentation

(a) The following documents are mandatory for a **Site-Specific Restricted Simplified** or **Restricted Complex SFOC** application:

(i) A proof of corporation (if applicable);

(ii) A proof of valid liability insurance coverage;

(iii) Operation manager's qualification details;

(iv) Ground supervisor's qualification details;

(v) UAV pilot(s) qualification details;

(vi) Visual observer(s) qualifications details (and/or qualifications procedures);

(vii) UAV operations procedures and UAV maintenance procedures;

(viii) UAV manufacturer's specifications & limitations;

(ix) Description of UAV system modifications (if applicable);

(x) A site survey/plan of operation;

(xi) A safety plan; and

(xii) An emergency plan.

- A copy of the land owner's permission and a copy of the event organizer's permission (if applicable) might be requested by the Inspector before issuing the SFOC.

Canada

(b) The following documents are mandatory for a **Region-Wide Standing Restricted Complex SFOC** application:

(i) A proof of corporation (if applicable);

(ii) A proof of valid liability insurance coverage;

(iii) Operation manager's qualification details;

(iv) Ground supervisor's qualification details;

(v) UAV pilot(s) qualification details;

(vi) Visual observer(s) qualifications details (and/or qualifications procedures);

(vii) UAV operations procedures and UAV maintenance procedures;

(viii) UAV manufacturer's specifications & limitations;

(ix) Description of UAV system modifications (if applicable); and

(x) UAV operator manual(s) (e.g. operation manual, training manual, maintenance manual, SOPs, etc.).

(c) The following documents may or may not be required for any SFOC application:

(i) A copy of the land owner's permission;

(ii) A copy of the event organizer's permission;

(iii) Restricted Operator Certificate - Aeronautical (ROC-A);

(iv) UAV pilot(s) flying log book;

(v) UAV maintenance log;

(vi) UAV flying manual;

(vii) The UAV statement or certificate of conformity;

(viii) UAV operator's UAV incident/accident reporting form and procedures;

(ix) UAV operator's SOPs;

(x) UAV operator's checklist(s); and

(xi) A Medical Declaration or a Category 4 Medical Declaration/Certificate.

Any other information pertinent to the safe conduct of the operation requested by the Minister (refer to CAR 623.65(d)(3)(k) and SI 623-001 Section 8.11) shall be provided upon request.

Canada