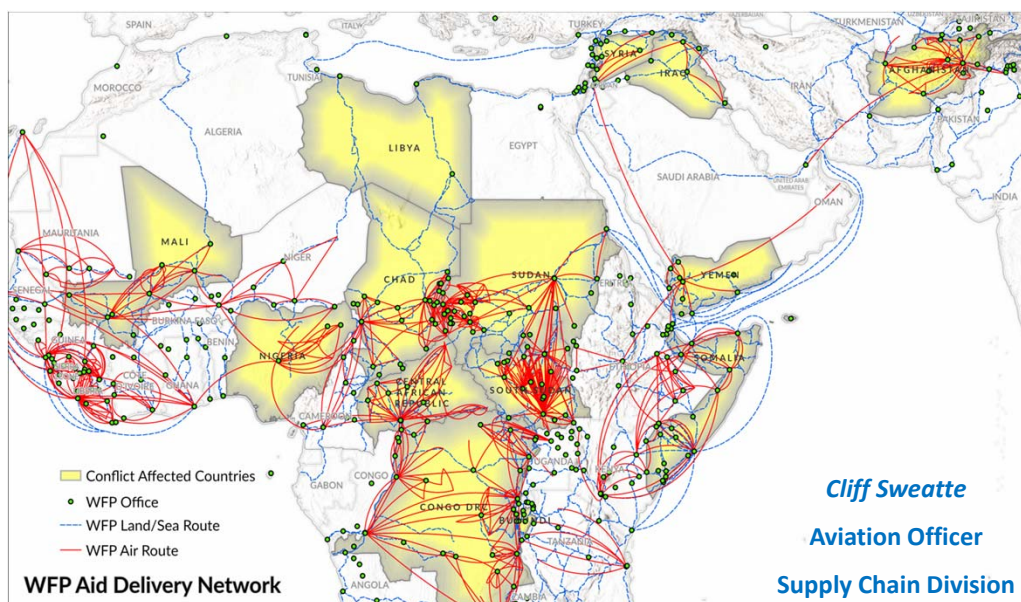


WFP Aviation



Cliff Sweatte
Aviation Officer
Supply Chain Division

WFP Overview

Strengths

- Decades of Aviation Experience, Lead - Global Logistics Cluster
- Common Services Platform for Aviation & Logistics

RPAS/UAS Initiatives

- RPAS Cargo Delivery – Coordination with ICAO, IATA & CAAs for a 1.5 MT payload RPAS operation in multiple States.
- Prepositioning UAS at UN Humanitarian Response Depots and Regional Bureaus

UAS Coordination Cell (Aviation Service, Aviation Safety & TEC)

Footprint

- 83 Countries, 6 Regional Bureaus, 15 Aviation Field Operations
- 2017: 327K Pax, 34K MT of Cargo, 3,079 Food Airdrops 80K MT

UAS/RPAS Solutions

Live Aerial Assessment

High Altitude Platform Station - HAPS

Mobile Towers for Point to Point Connectivity

Delivery of Smaller Materials

Operation Centric – Risk Based Approval Process

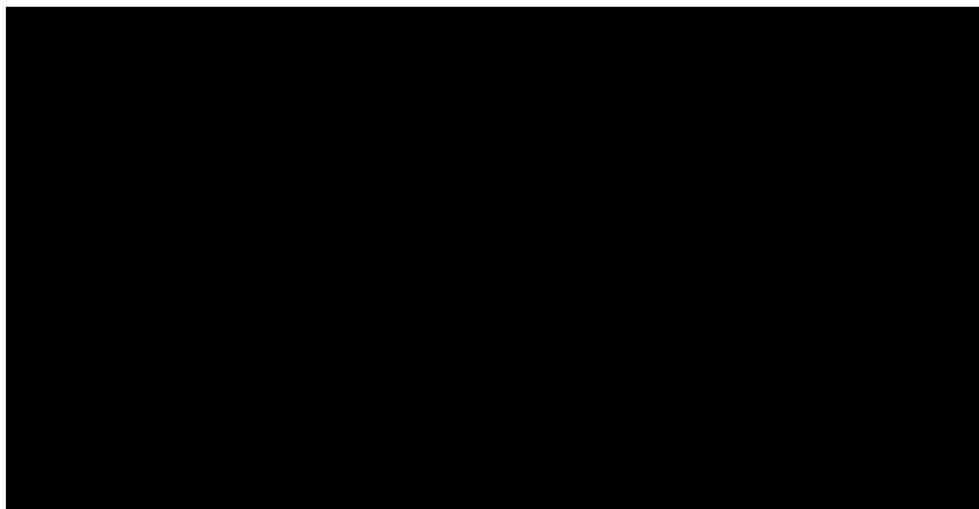
RPAS Large Cargo Delivery

Engagements

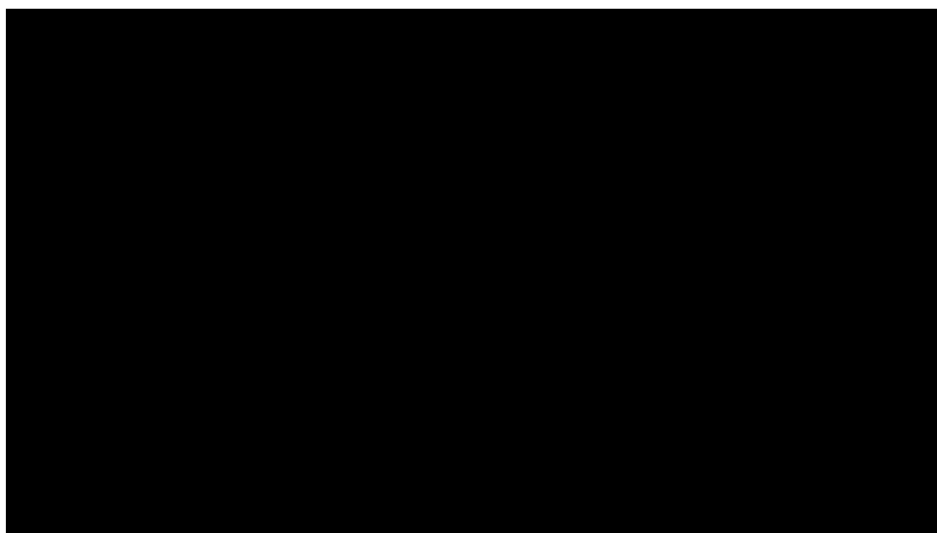
Super Typhoon Haiyan



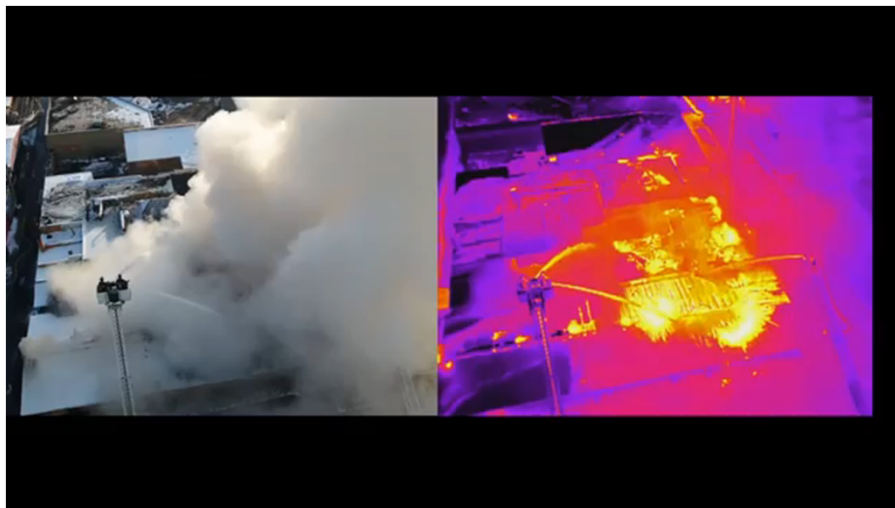
Puerto Rico Response - Loon



Puerto Rico Response – AT&T

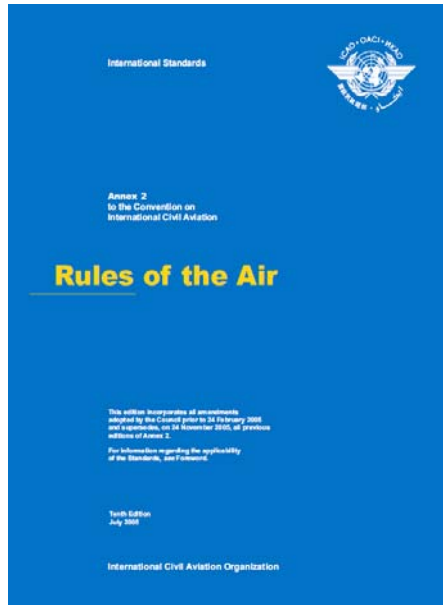


First Response Imagery



Wildfire Surveillance Operation

ANNEX 2 - APPENDIX 4



➤ RPA shall not be operated across the territory of a contracting State without a special authorization issued by each State in which the flight is to operate.

➤ This authorization may be in the form of agreements between the States involved.

REQUEST FOR AUTHORIZATION FORM

Appendix A
REQUEST FOR AUTHORIZATION FORM

Note: For details on completing this form, and for definitions of acronyms and abbreviations, see section on Information Required for the Assessment of Authorization following this form.

RPA operator information

1. Name of RPA operator _____

2. State of RPA operator _____

3. Mailing address: _____

4. Contact numbers: Int. _____ cell _____ fax _____

5. Email: _____

6. State of the RPA operator, RPA operator certificate number _____
(attach copy of RPA operator certificate)
Alternative documents (attach copy): _____

RPA information

7. State of Registry and aircraft registration (attach copies of certificate of registration and certificate of airworthiness).
Alternative airworthiness documents (attach copy): _____

8. Aircraft radio station licence number (attach copy of aircraft radio station licence) _____

9. Noise certificate (attach copy of certificate) _____

Remote pilot(s) and RPA observer(s) information

11. Type of licence or certificate and number (attach copy of licence or certificate)		12. Experience of remote pilot or RPA observer (attach description)
(a)	(b)	(c)
(d)	(e)	(f)
(g)	(h)	(i)
(j)	(k)	(l)

App A-1

App A-2
Manual on Remotely Piloted Aircraft Systems (RPAS)

(a)	(b)	(c)
(d)	(e)	(f)

RPA performance characteristics (including appropriate units of measurement)
(attach picture or sketch of RPA)

13. Type of aircraft: _____ 14. Maximum take-off mass: _____ 15. Wake turbulence category: _____

16. Number and type of engine(s): _____ 17. RPA dimensions (wing span/rotor diameter): _____ 18. Maximum speed: _____

19. Minimum speed: _____ 20. Cruising speed: _____

21. Typical and maximum climb rates: _____ 22. Typical and maximum descent rates: _____

23. Typical and maximum turn rates: _____ 24. Maximum aircraft endurance: _____

25. Other relevant performance data or information to declare (maximum operating altitude): _____

26. CNS capabilities (including alternate means of communication with remote pilot station(s))
Communications: CPDLC ☐ VHF ☐ UHF ☐ SATCOM ☐ HF ☐ Telephone: landline ☐ mobile phone ☐
Navigation: DME ☐ VOR ☐ GNSS ☐ ADF ☐ ILS ☐ GBAS ☐ RNAV ☐ RNP ☐ RVSM ☐
Surveillance: transponder mode(s) _____ ADS-B ☐ ADS-C ☐ ACAS ☐
Other: _____

27. Detect and avoid capabilities: _____

Operations

28. Purpose of operation: _____

29. Aircraft identification to be used in radio/telemetry, if applicable: _____

30. Type of flight(s): _____ 31. Duration/frequency of flight(s): _____

32. Flight rules: 1 ☐ V ☐ Y ☐ Z ☐ 33. Type of operation: VLOS ☐ BVLOS ☐

34. Number and location(s) of remote pilot station(s): _____

35. Handover procedures between remote pilot stations: _____

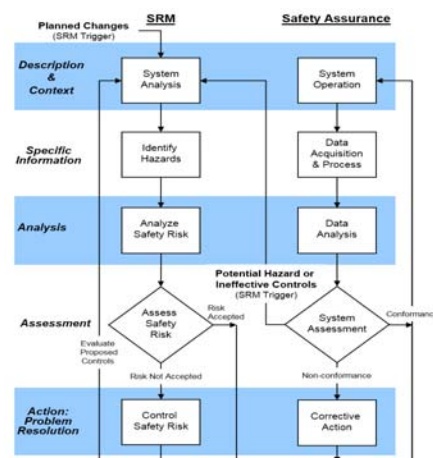
36. Point of departure: _____ 37. Point of destination: _____

39. Route: _____ 40. Cruising level: _____

Operation-centric, risk-based approach



Operational approval is contingent upon acceptance by the CAA of a safety case that sufficiently identifies and address risks, hazards, and mitigations of the proposed operations

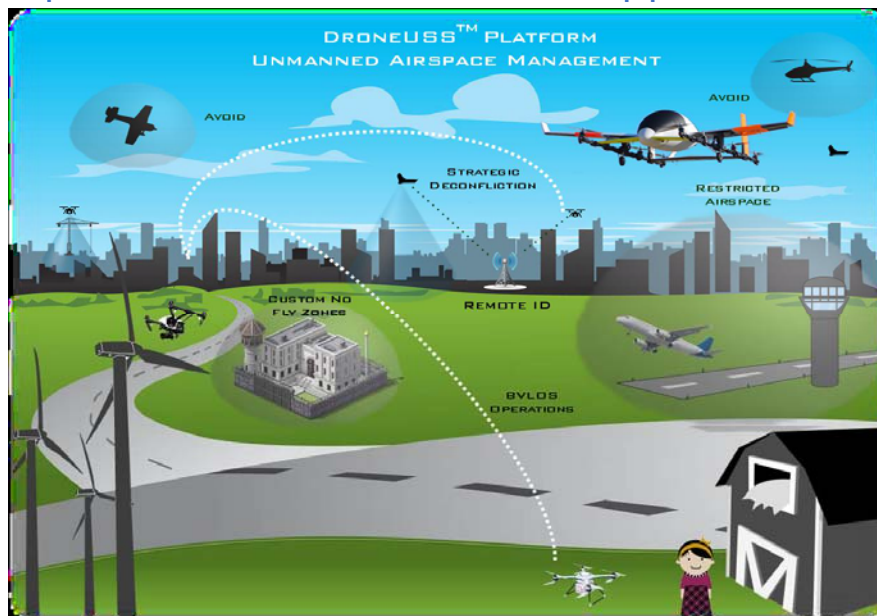


RPAS flight planning should include provisions for any emergencies and contingencies:

- Emergency landing/ditching locations
- Loss of C2 Link
- Interception operations



Operation-centric, risk-based approach



INTEGRATION OF RPAS OPERATIONS INTO ATM

Right-of-way: RPA are obliged to comply with the Annex 2 right-of-way rules

RPAS operators will need to file flight plans in accordance with Annex 2

RPAS operator should define lost C2 link procedures that are acceptable to the ANSP and regulator

It may be difficult for ANSPs, pilots of manned aircraft and other remote pilots to acquire visual contact with the RPA due to low conspicuity



CROSS-ARCTIC HIGH SEAS SCIENTIFIC & SEARCH AND RESCUE ARCTIC UAS OPERATIONS & COMMUNICATIONS PLAN

Operator Contact Information: Phone: _____ Email: _____
SATCOM or Telephone #: _____ (For Vessel Launches) Radio Call Sign: _____
Vessel #: _____ Vessel Phone: _____ VSAT: _____ Iridium: _____

A. 7 Days prior: Distribute email, including authorization from appropriate civil aviation authorities (CAAs), to air traffic service (ATS) providers and appropriate government authorities (e.g., FAA, NavCanada, Transport Canada, U.S. Coast Guard, State Department, Defense Department, etc.). Area commercial aircraft operators shall also be notified of the pending operation.

B. 7 Days to 24 Hours in advance: Contact appropriate ATS provider, phone # _____

to request a Notice to Airmen (NOTAM) be issued for the operation area. Emergency and National Disaster Operations authorizations may not be able to comply with standard NOTAM issuance timelines.

C. 1 Day prior (NLT 2200 hours): Provide operation area manned aircraft operator's schedule for next day.

D. By _____ (local time) on day of flight, prior to flight: Participating manned aircraft operators will confirm their flight plan(s).

E. 1 Hour prior:

1. Operator files an ICAO flight plan through appropriate CAA or ATS unit. Flight plans shall be submitted in accordance with Chapter 3 of ICAO Annex 2, *Rules of the Air*.

2. Receive weather briefing, review NOTAMS, and determine if there are any other flight plans on file for the operating area.

3. Check Receiver Autonomous Integrity Monitoring (RAIM) notices (http://www.nstb.tc.faa.gov/24Hr_RAIM.htm) or appropriate agency website.

4. Contact appropriate ATS unit via SATCOM or other acceptable means to confirm that any special use airspace or ALTRV is active.

F. 10 Minutes prior to UAS launch: In preparation for launch, broadcast a warning announcement on Marine Common FM Ch 16 and VHF _____ MHz common traffic advisory frequency (CTAF); e.g., "UAS flight operations _____"

HUMANITARIAN ASSISTANCE, DISASTER RESPONSE & DEVELOPMENT

WFP UAS OPERATIONS & COMMUNICATIONS/DECONFLICTION PLAN

Operator Contact Information: Phone: _____ Email: _____
SATCOM or Telephone #: _____ (For Vessel Launches) Radio Call Sign: _____
Vessel #: _____ Vessel Phone: _____ VSAT: _____ Iridium: _____

A. 7 Days prior: Distribute email, including authorization from appropriate civil aviation authorities (CAAs), to air Navigation Service Provider (ANSP) providers and appropriate government authorities (e.g., Civil Aviation Authority, Coast Guard, Ministry of Foreign Affairs, Ministry of Defense, etc.). Area commercial aircraft operators shall also be notified of the pending operation.

B. 7 Days to 24 Hours in advance: Contact appropriate ANSP provider, request a Notice to Airmen (NOTAM) be issued for the operation area. Emergency and National Disaster Operations authorizations may not be able to comply with standard NOTAM issuance timelines.

C. 1 Day prior: Provide operation area manned aircraft operator's schedule for next day.

D. By _____ (local time) on day of flight, prior to flight: Participating manned aircraft operators will confirm their flight plan(s).

E. 1 Hour prior:

1. Operator files an ICAO flight plan through appropriate CAA or with ANSP. Flight plans shall be submitted in accordance with Chapter 3 of ICAO Annex 2, *Rules of the Air*.

2. Receive weather briefing, review NOTAMS, and determine if there are any other flight plans on file for the operating area.

3. Check Receiver Autonomous Integrity Monitoring (RAIM), appropriate agency website or UAS app.

4. Contact appropriate ANSP unit via SATCOM or other acceptable means to confirm that any special use airspace or ALTRV is active.

F. 10 Minutes prior to UAS launch: In preparation for launch, broadcast a warning announcement on VHF _____ MHz common traffic advisory frequency (CTAF) or Marine Common FM Ch ____; e.g., "UAS flight operations are commencing from LAT/LONG of research vessel, or launch site." Maintain a listening watch on VHF _____ MHz (CTAF) and _____ MHz for any area traffic.

G. During flight operations: Periodically broadcast a warning announcement on VHF _____ MHz (CTAF); e.g., "UAS operations are in effect between the surface and _____ feet within 10 nautical miles of LAT/LONG."

H. Lost Link/Lost Comms (Emergency Comms): Comply with the lost link/lost comms procedures stipulated in their authorization. Operator will immediately contact appropriate ANSP unit via SATCOM and report the Lost Link condition, time, and LAT/LONG. Immediately broadcast on VHF _____ MHz (CTAF), and VHF _____ MHz or other acceptable means; e.g., "UAS flight operations are commencing emergency return at xxx feet AGL."

I. Coordination with State Aircraft protocols: Operator/research vessel will maintain continuous listening watch on Marine Common FM Ch 16 and the VHF and UHF 122.5 and 243.0 guard frequencies. All UAS operations will comply with Coast Guard and any other official SAR-participating aircraft or vessel requests.

: This plan assumes the Operator has obtained an authorization to operate from the appropriate CAA.

RPAS Cargo Delivery

Future Collaboration and Engagements





THANK YOU