

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

CERTIFICATE OF WAIVER OR AUTHORIZATION

ISSUED TO

**Lockheed Martin Orlando, Responsible Person: Delquawn Hardy
Waiver Number: 107W-2017-02160**

ADDRESS

**5600 W Sand Lake Road MP200
Orlando, FL 32819**

This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATIONS AUTHORIZED

Small unmanned Aircraft Systems (sUAS) operations at the Lockheed Martin Electronics Test Site, Orlando, Florida, beyond the visual line of sight of the Remote Pilot in Command (PIC) and Visual Observer (VO).

LIST OF WAIVED REGULATIONS BY SECTION AND TITLE

**14 CFR § 107.31 Visual line of sight aircraft operation
14 CFR § 107.33(b) and (c)(2) Visual observer**

STANDARD PROVISIONS

1. A copy of the application made for this certificate shall be attached to and become a part hereof.
2. This certificate shall be presented for inspection upon the request of any authorized representative of the Administrator of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations.
3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein.
4. This certificate is nontransferable.

NOTE—This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.

SPECIAL PROVISIONS

Special Provisions Nos. 1 to 23, inclusive, are set forth on the attached pages.

This Certificate of Waiver is effective from August 1, 2017 to August 31, 2021 and is subject to cancellation at any time upon notice by the Administrator or an authorized representative.

BY DIRECTION OF THE ADMINISTRATOR

General Aviation and Commercial Division, AFS-800

**SPECIAL PROVISIONS ISSUED TO
Lockheed Martin Orlando**

General.

The FAA's Flight Standards Service has reviewed your application to ensure compliance with the requirements of 14 CFR§ 107.200. The Administrator finds that the proposed sUAS operation can be conducted safely under the provisions of this Certificate of Waiver (Waiver) as listed below, because you have established adequate mitigations for risks involved with operating the sUAS in the manner you described. Adherence to the provisions of this Waiver establishes a level of safety that ensures safe operations within the national airspace system.

This Waiver may be canceled at any time by the Administrator, the person authorized to grant the Waiver, or the representative designated to monitor a specific operation. As a general rule, this Waiver may be canceled when it is no longer required, there is an abuse of its provisions, or when unforeseen safety factors develop. Failure to comply with any provision listed below is a violation of the terms of this Waiver and may serve as justification for cancellation.

List of Regulations Waived by Section and Title. The following regulations are waived:

14 CFR § 107.31, Visual line of sight aircraft operation, is waived to allow operation of the small unmanned aircraft (sUA) beyond the direct visual line of sight of the remote PIC and VO.

14 CFR § 107.33(b) and (c)(2), Visual observer, are waived to allow sUAS operations beyond the direct visual observation of the VO.

Common Special Provisions. The Responsible Person is directly responsible for safety of operations conducted under this Waiver and will ensure the remote PIC, manipulator of the controls, and VO complies with all provisions of this Waiver.

1. The Responsible Person listed on the Waiver is responsible to the FAA for the safe conduct of the operations. Prior to conducting operations that are the subject of this Waiver, the responsible person:
 - a. Must ensure the remote PIC and all personnel involved in the operation are informed of the terms and provisions of this Waiver and the strict observance of the terms and provisions herein;
 - b. Must ensure the remote PIC and all personnel involved in the operation are informed and familiar with part 107 regulations not waived; and
 - c. The above must be documented and presented for inspection upon request from the Administrator or an authorized representative;
2. This Waiver must not be combined with any other waiver(s), authorization(s), or exemption(s) without specific authorization from the FAA;
3. The FAA has the authority to cancel or delay any or all flight operations if the safety of persons or property on the ground or in the air, are in jeopardy or there is a violation of the terms of this Waiver;
4. A copy of this Waiver must be available during sUAS operations that are the subject of this Waiver;

5. The Responsible Person listed on this Waiver must maintain a current list of pilots by name and remote pilot certificate number used in the Waiver holder's operations. This list must be presented for inspection upon request from the Administrator or an authorized representative;
6. The Responsible Person listed on this Waiver must maintain a current list of sUA by registration number(s) used in the Waiver holder's operations. This list must be presented for inspection upon request from the Administrator or an authorized representative;
7. All operations under this Waiver must use one or more VO;

Visual Line of Sight Operations and Visual Observer Special Provisions. sUAS operations may be conducted outside the visual line of sight of the remote PIC and VO provided:

8. All planned launches and recoveries of the sUA must be within visual line of sight of the remote PIC;
9. The Responsible Person listed on this Waiver must ensure each remote PIC is trained and proficient in a manner consistent with how the sUAS will be operated under this Waiver. All training and demonstration for any remote PIC and VO must be documented and made available upon request by the Administrator or an authorized representative. Training operations may only be conducted under the standard requirements of part 107 (without waiver). The training must include:
 - a. sUA limitations;
 - b. sUA programming;
 - c. sUA Operational procedures;
 - d. Abnormal and contingency procedures;
 - e. Evasive and Emergency procedures;
 - f. Crew Resource Management;
 - g. sUA flight training; and
 - h. A demonstration of sUA ground and flight skills;
10. All sUA operated under this Waiver must be capable of semi-autonomous operations as described in the waiver application. Prior to conducting operations that are the subject of this Waiver, the remote PIC must verify, and during operations, the sUA must follow a pre-programmed flight path as described in the waiver application;
11. Prior to operations that are the subject of this Waiver, the remote PIC must determine the Control link with the sUA has performance capabilities that exceed the planned ranges for the proposed operation. At all times during operations that are the subject of this Waiver, the remote PIC must maintain Command and Control link with the sUA;
12. The sUAS ground control station must be configured to audibly or visually alert the remote PIC of degraded system performance and loss of Control link with the sUA;
13. As described in the waiver application, the sUAS ground control station must display in real-time, sUA altitude, sUA position, sUA direction of flight information, and sUA flight mode. This information must be available at all times to the remote PIC;
14. The sUAS must have pre-programmed and actively available contingency and emergency profiles which ensure the sUA remains within the Lockheed Martin Electronics Test Site;

15. Communication between the remote PIC, and VO, must allow for the remote PIC to maneuver the sUA with sufficient time to:
 - a. Give way to all other aircraft;
 - b. React to any unforeseen operational or mechanical failure without creating a hazard to other people, other aircraft, or property in the event of a loss of control of the sUA for any reason; and
 - c. To maintain compliance with this Waiver and un-waived provisions of part 107;
16. If communication between the VO and the remote PIC is by use of an electronic device:
 - a. The device must be continuous full-duplex;
 - b. The remote PIC's device must be hands-free; and
 - c. There must be a reliable, back-up communication method;
17. As described in the waiver application, flights under this Waiver are only authorized during daylight hours;
18. As described in the waiver application, flights under this Waiver are only authorized at or below 100 feet above ground level;
19. As described in the waiver application, sUA ground speed is limited to no more than 6 statute miles per hour (5 nautical miles per hour);
20. As described in the waiver application, the sUA must always be within visual line of sight of both the remote PIC and VO unless:
 - a. The visual line of sight is obscured by trees;
 - b. The sUA altitude is below the tops of the trees; and
 - c. The sUA does not fly beyond the range where either the remote PIC or VO would be able to see intruding, non-participating aircraft;
21. The sUA must be equipped with high visibility markings or lighting visible during the daytime from a distance of no less than one statute mile;
22. Not less than 24 hours prior to conducting operations that are the subject of this Waiver, a Notice to Airmen (NOTAM) must be filed. The NOTAM must include location, altitude, and/or operating area, time and nature of the activity, and number of sUA flying in the operating area; and
23. Operations conducted under this Waiver are limited to the area described in the waiver application, as follows:

The Lockheed Martin Electronics Test Site (ETS)
19040 Cocoa Water Plant Road
Orlando, FL 32834