

From: Janet Werth

To: Doug Young  
Date: May 12, 2020

Subject: Request for Info - File # 0645-EX-ST-2020

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Message:

Below please find STR's responses to the questions asked on 4/29/2020.

Submit answers to the two questions from the FAA below:

The Futaba S-Bus Radio Controller (Futaba) has been successfully used to control earlier versions of this UAV under test. Test plans have been developed and reviewed by both AFRL and Fort Devens. Test plans include safety plans/procedures.

Since the UAS is flying autonomously, is the RF link a safety mitigation for backup?

The Futaba will control the aircraft during the initial flights. Subsequent flights (July through August) the Futaba will be used as a safety backup.

A series of tests with incremental learning are planned from June through November. The first test flights (June 16-18) are focused on familiarity with the aircraft flight characteristics. These initial tests will be performed by a flight instructor using the Futaba. Operations will remain well under the manufacturers specified limits. Subsequent flights will use the ground control station over a 2385 to 2390 MHz radio link to monitor the aircraft health and status continuously and to upload commands as the primary control. The Futaba will be used as a redundant safety control.

Is there a lost link procedure, and what is the UAS behavior and determination for judging if a loss of link has occurred?

If there is a sustained link loss between the UAS and the ground control station, the safety pilot would assume control of the UAS via the Futaba. If there is a sustained link loss of the Futaba, the UAS would return to home.

The Futaba has an LED indicator confirming the link (initializing, no signal, receiving signals). For testing from July through November there will be redundant communications to the aircraft. If both communications to the aircraft are lost, the aircraft is designed to return to pre-programmed Home location.