

## **The Boeing Company**

### **Request for FCC License Exhibit**

Rockwell Collins RT-1990(A) C VHF/UHF Transceiver/ARC-210  
Independent Research and Development

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by

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### **Why a FCC license is necessary**

The Boeing Company requests a FCC license in order to test Rockwell Collins ARC-210 RT-1990(A) C radio system. Boeing was awarded US Navy government contract, N00019-18-C-1012, to develop MQ-25 Unmanned Aircraft Systems (UASs) that will require implementation of this radio system onboard. This license will allow testing of this radio system on a Boeing-owned and operated UAS prior to integration of the radio into the final MQ-25 UAS that will be delivered to the US Navy.

### **Purpose of Operation**

The purpose of the ARC-210 RT-1990(A) C system is to provide telecommand data to an Unmanned Aircraft Systems (UAS). The telecommand data is used for flight control of the UAS.

### **Test Description**

The ARC-210 RT-1990(A) C will be operated within a 322 kilometer radius from MidAmerica St Louis Airport in Saint Clair County, Illinois. The RT-1990(A) C will be used for launch, flight and recovery of an Unmanned Aircraft System (UAS) in the St Louis, Missouri region. The RT-1990(A) C is a half-duplex system with a ground RT-1990(A) C radio issuing flight commands to an airborne RT-1990(A) C on the UAS. Once the UAS receives the flight commands, it will acknowledge receipt of the commands and adjust its flight accordingly. The frequency used is for uplink to the UAS and downlink from the UAS. Boeing is requesting five UHF frequencies (two primary, three backup/secondary).

### **Timely Response Appreciated**

Boeing will greatly appreciate a determination as quickly as possible to meet the directive schedule.

## Location

MidAmerica St. Louis Airport

St. Clair County, Illinois

38° 32' 56"N

89° 49' 12"W

WGS84/NAD83

322 kilometer radius 40,000 foot flight

envelope

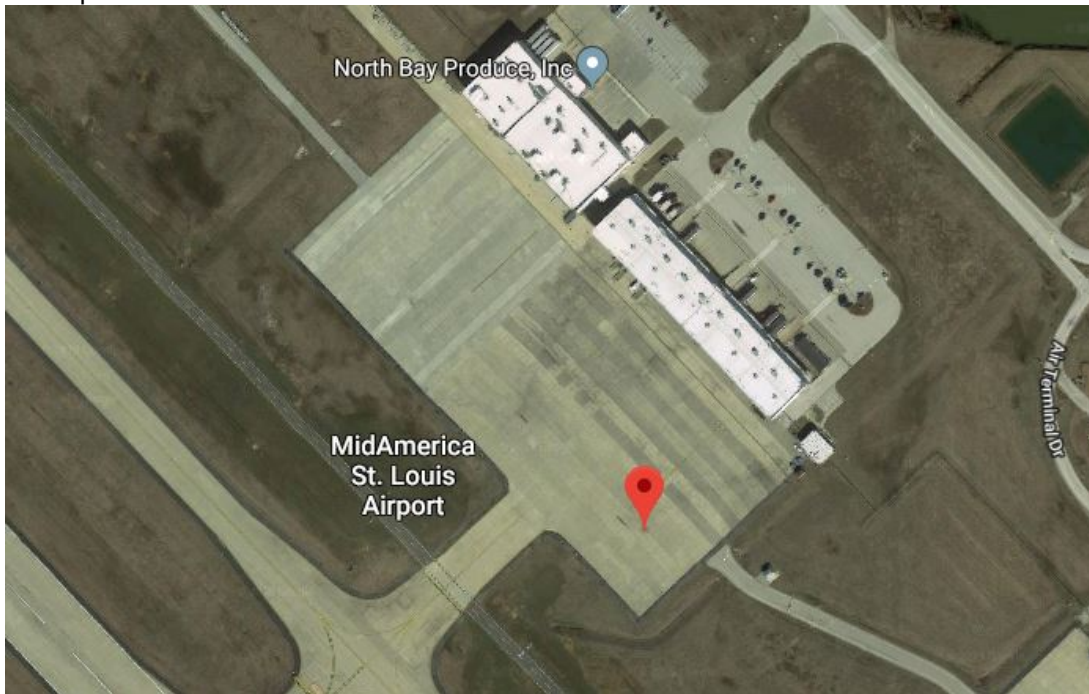


Figure 1 – MidAmerica St. Louis Airport

## Schedule

The requested FCC license is to be effective for 2-years upon a grant from the FCC. Boeing is requesting a start date of May 1, 2019. Operations will be anytime, 24 hours a day, 7 days a week, within a 322 kilometer radius of given location as necessary.

## Stop Buzzer Contact Information

The equipment will be operated by Boeing employees.

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## Frequencies, Power and Emission

Frequency	Power	Emission
247.7500 MHz	23 watts (mean)	25K9F1D
319.8750 MHz	23 watts (mean)	25K9F1D
341.0000 MHz	23 watts (mean)	25K9F1D
366.1250 MHz	23 watts (mean)	25K9F1D
394.3875 MHz	23 watts (mean)	25K9F1D

## Equipment and Antenna Parameters

Unmanned Aircraft Systems (UAS) – Airborne System

Transmitter Manufacturer	Rockwell Collins
Transmitter Part Number	RT-1990(A)C/ARC-210
Frequency Band	225-399.975 MHz (tunable is 25 kHz increments)
Emission	25K9F1D
Antenna Manufacturer	Cobham
Antenna Model Number	3380-8012-0008
Antenna Type	Blade
Antenna Gain	0 dBi
Antenna Polarization	Vertical

Ground Station

Transmitter Manufacturer	Rockwell Collins
Transmitter Part Number	RT-1990(A)C/ARC-210
Frequency Band	225-399.975 MHz (tunable is 25 kHz increments)
Emission	25K9F1D
Antenna Manufacturer	Antenna Products
Antenna Model Number	DPV-51
Antenna Type	UHF Collinear Antenna
Antenna Gain	4 dBi
Antenna Polarization	Vertical