

Introduction

This document summarizes the qualifications of the Rochester Institute of Technology (RIT) to conduct operations of a synthetic aperture radar (SAR) in accordance with FCC regulations and good operating practice.

The desired license is for operation of a Ku-band SAR from a small DJI Matrice 600 drone (UAS). The SAR instrument radiation pattern will be oriented for imaging the ground near the location of the drone vehicle. All operations will be below the FAA's maximum allowable altitude of 400' above ground level (AGL).

Imaging research will be in support of RIT's educational program and US government sponsored grants from the USDA and DoD.

Geographic Areas of Operation

The proposed areas of operation include areas south of the RIT campus (away from the Greater Rochester International Airport), plus an agricultural station near Geneva NY, and the Virginia Coast Reserve (VCR) in Virginia. RIT regularly conducts UAS operations in these areas.

The location polygons are defined below:

Near to RIT Campus (Mendon Ponds Park)

N43-02-44.83, W77-34-07.84
N43-01-00.70, W77-35-08.03
N42-59-47.55, W77-34-39.79
N42-59-49.00, W77-33-24.25
N43-02-20.05, W77-32-30.19

Cornell Geneva Field Station

N42-52-59.37, W77-00-55.37
N42-52-40.62, W77-00-54.52
N42-52-37.55, W77-00-23.90
N42-53-02.88, W77-00-04.69

Virginia Coast Reserve

N37-30-27.14, W75-48-21.89
N37-23-57.40, W75-52-27.01
N37-20-03.49, W75-43-24.60
N37-27-33.84, W75-38-44.28

Institutional Processes

RIT has the institutional processes to monitor and effectively manage a wide variety of research projects. In FY 2018, RIT had secured \$78M in sponsored research funding with 94 current researchers having achieved over \$1m or more in sponsored funding since 2000.

Specifically within RIT's Remote Sensing Lab within the Center for Imaging Science (operator of the UAS), we conduct approximately \$3M per year in remote sensing research focused on imaging the earth's environment in the visible, near infrared, and thermal infrared (and now RF) spectral regions. We use modeling tools, field measurements, and synthetic image generation to understand how remotely sensed data can be used to study environmental processes and provide security.

Demonstrated Expertise in Spectrum Management

RIT currently operates a campus radio station WITR broadcasting FM at 89.7 Mhz. RIT also operates and maintains amateur radio repeater K2GTX.

K2GTX

VHF	147.075+ PL 110.9
UHF	442.075+ PL110.9
AllStar Node	42601
EchoLink Node	25308
IRLP Node	5800