

# BACKGROUND

## **DSMs, NIDAS, and the ISFS**

- The Integrated Surface Flux System(ISFS) is a network of surface weather stations
- The Data Sampling Module(DSM) is a box containing a Pi, PCB, sensor and power panels
- DSM runs the NCAR In-situ Data Acquisition Software(NIDAS)
- DSM can be accessed through various means in the field, including Pi's onboard wifi
- Currently wifi must be turned on/off through Pi terminal
- Leaving wifi on is inconvenient, a power drain, and a security vulnerability



### **ISFS Tower at M2HATS**

- DSM Box
- Sonic Anemometer/Gas Analyzer
- **3**Temperature for **2**
- 4 Ubiquiti link
- **5** Temperature/Relative Humidity
- 6 Electronics for 2

# **OBJECTIVES**

## Wifi Control through Buttons

- Enable/disable wifi radio with press of button on PCB
- Turn LED on/off to indicate wifi status
- Program runs in background without interfering with other DSM operations
- Integrate with pre-existing NIDAS utilities

# Hardware Control for In-Field Data Acquisition

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![](_page_0_Picture_26.jpeg)

I would like to thank my mentor Gary Granger, all of the EOL-ISF team, the SUPER coordinators, and the

![](_page_0_Picture_28.jpeg)

# RESULTS

"on": "rfkill unblock wifi; systemctl restart hostapd", "off": "rfkill block wifi"

"on": "echo 'p1 turn on'", "off": "echo 'p1 turn off'"

**Example json command format** 

**QR Code to wificontrol branch of NIDAS Git repository.** button\_action **located in /src/nidas/apps** 

## **Future Work**

• Read status of wifi directly, rather than using LED

- Integrate button\_action with existing pio utility
- Have wifi turn back off automatically after a
- Address security uses created by running as root
- Create a button interface outside the box so case
- doesn't need to be opened to turn wifi on/off