# CAP National Radar Analysis Team (NRAT)

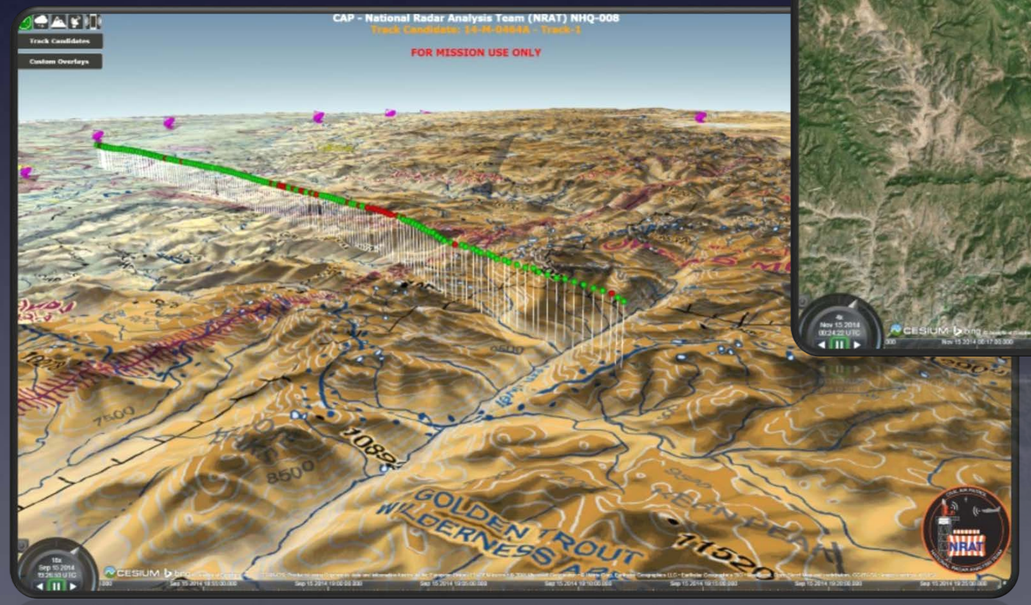
NHQ-008

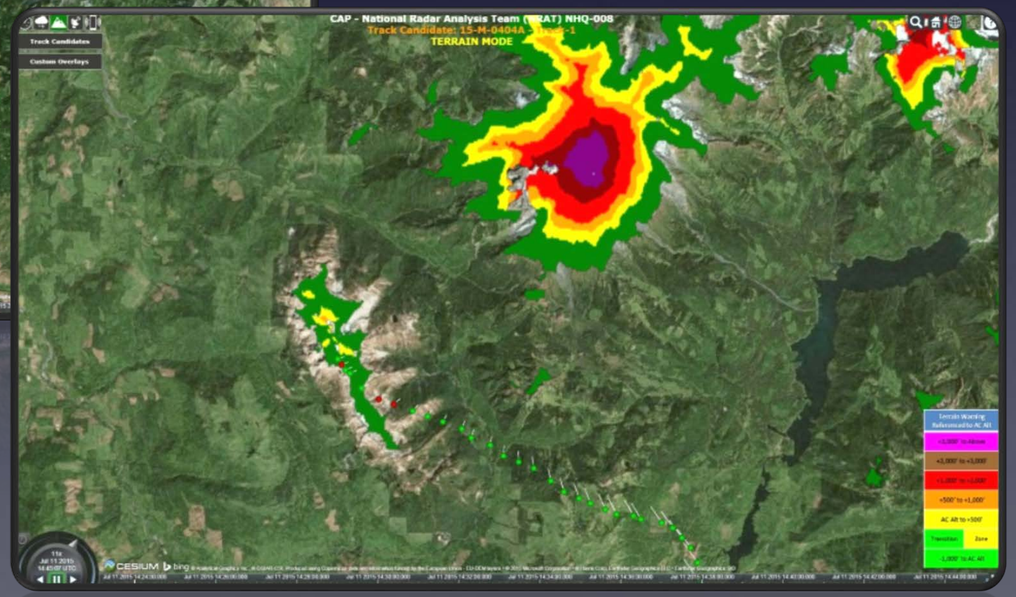
## Saving Lives Through Innovation

## 2017 Update

- The Team Goals
- Accomplishments
- The Way Ahead

Presented By:
LtCol. John Henderson





# CAP National Radar Analysis Team (NRAT)

## What the Team is All About

## Save More Lives - Reduce the “Crash to Rescue” Time

## Team Goals

1) Create the SAR radar forensics “A” team
   - The best radar data analysts
   - Software development team with very unique skill sets

2) Develop enhanced SAR analysis tools
   - Fast access to radar data and environmental data - Dedicated CAP feeds
   - Advanced track analysis and briefing tools – Mission SandBox and Flight Plan System

3) Crash Detection System - (ICARUS) - In Final Stages of Development
   - Alerts of possible crashes within minutes of impact
   - Generation of alert analysis package

# CAP National Radar Analysis Team (NRAT)

## The Team

LtCol. John Henderson
Vice-Commander
Radar Data Analyst
Software Developer
AF/CAP Experience - 36 Years
SAR Missions - 600+

Maj. Mark Young
ADSB Data Specialist
CAP Experience - 15 Years

2Lt. Mark Keene
Radar Data Analyst
AF/CAP Experience - 16 Years

2Lt. Joe Berry
Radar Data Analyst
AF/CAP Experience - 29 Years

Col. Greg Cortum
Commander
CAP Experience - 17 Years

2Lt. Argon Helm
Software Programmer
AF/CAP Experience - 26 Years

2Lt. Joe Ashworth
Radar Data Analyst
FAA/CAP Experience - 19Years

Capt. Joshua Bedel
AFRCC Liaison
AF/CAP Experience – 8 years

SM. Rick Austin
Radar Data Analyst
FAA/CAP Experience - 21 Years

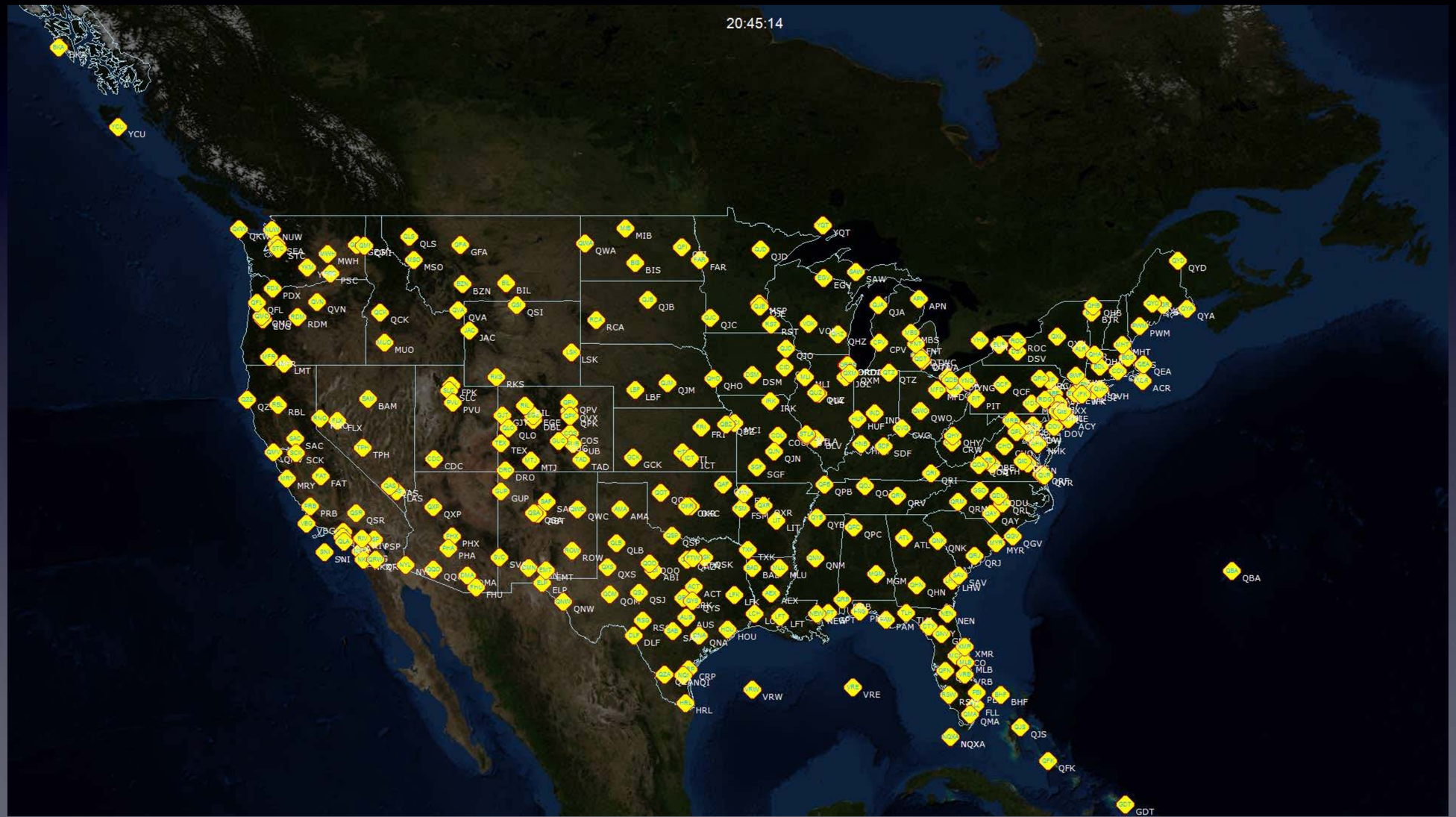
2Lt. Robert Roane
Radar Data Analyst - Advisor
FAA/CAP Experience - 21 Years

Capt. Guy Loughridge
Radar Data Analyst
Software Programmer
CAP Experience - 13 Years
SAR Missions - 500+

# CAP National Radar Analysis Team (NRAT)

## Team Accomplishments

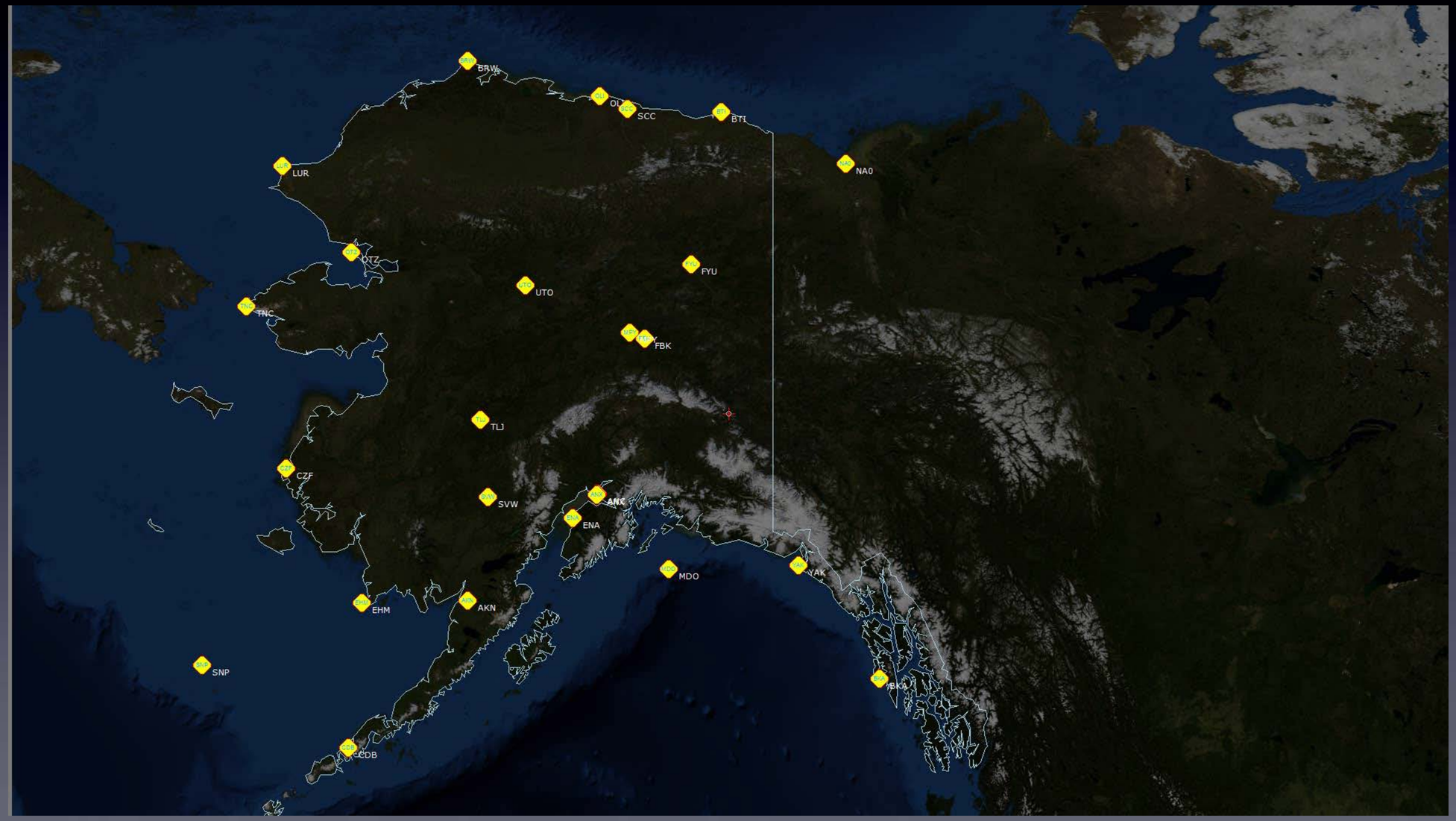
## CONUS Rader Data



# CAP National Radar Analysis Team (NRAT)

## Team Accomplishments

## Alaska Rader Data



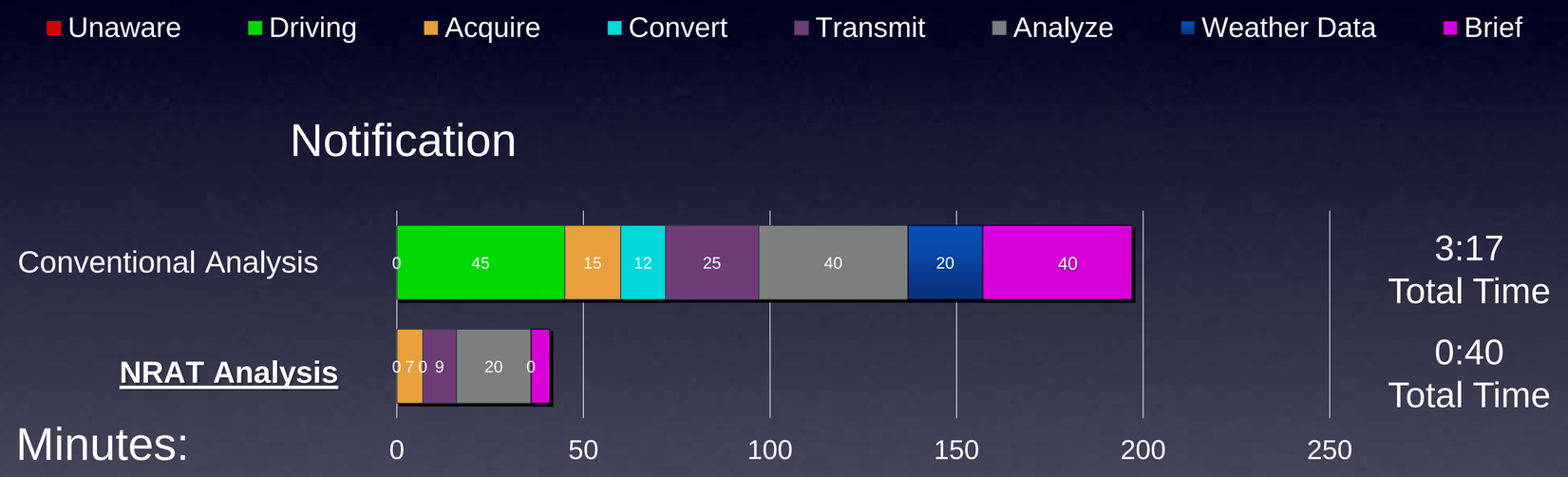
# CAP National Radar Analysis Team (NRAT)

## Team Accomplishments

## Hawaii Rader Data

# CAP National Radar Analysis Team (NRAT)

## Conventional Analysis vs. Current NRAT




Times based on CAP averages

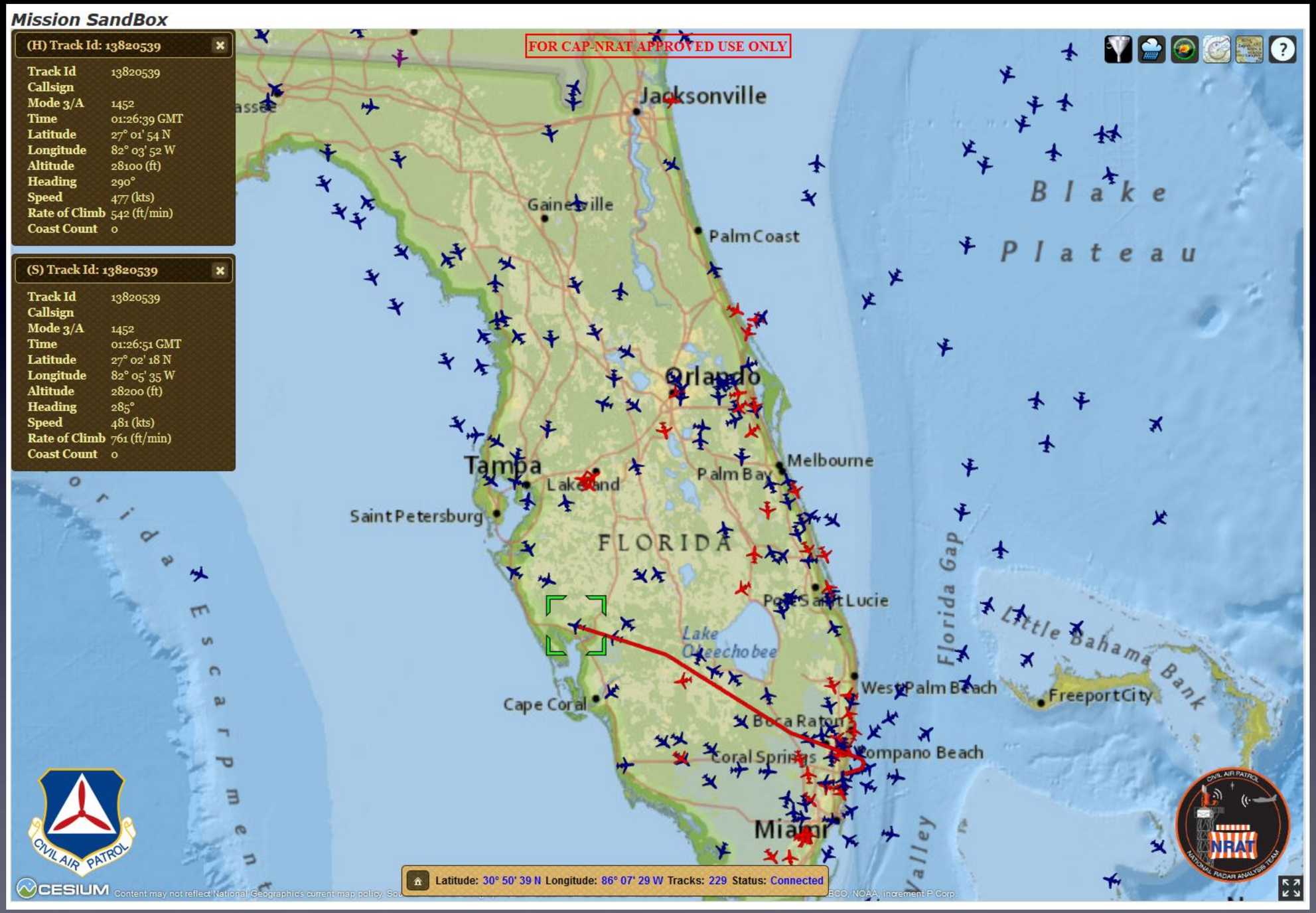
# CAP National Radar Analysis Team (NRAT)

## Mission Success – Since Team Formation

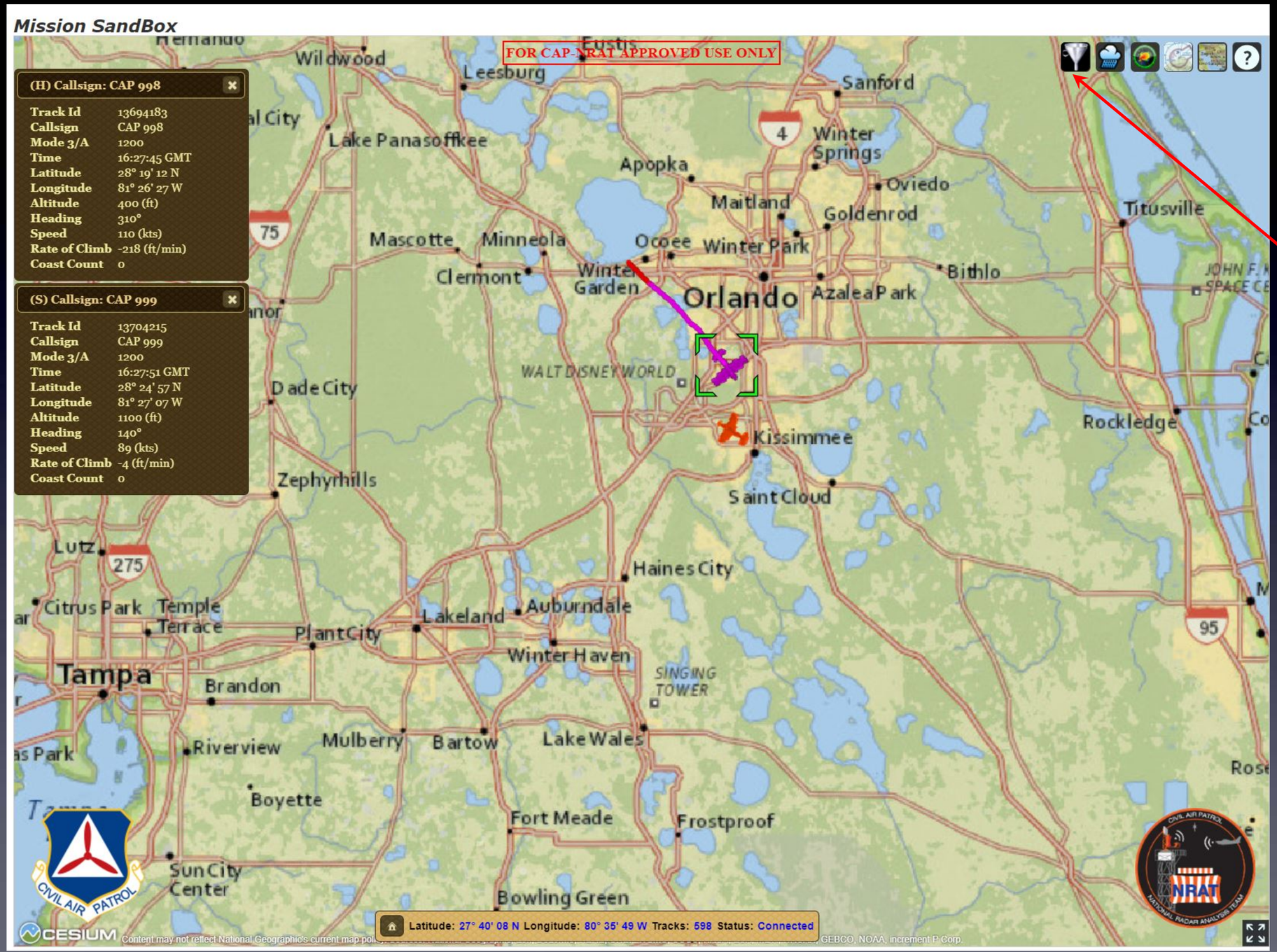
| AFRCC – Credited – 1 Jan 2009 to 01 Aug 2017 | |
|---|---|
| Aircraft SAR Missions - | **498** |
| Finds - | **215** |
| Saves - | **31** |
| Exercises - | **3** |

| AFRCC – Credited - 2017 | |
|---|---|
| Aircraft SAR Missions - | **56** |
| Finds - | **30** |
| Saves - | **6** |
| Exercises - | **2** |

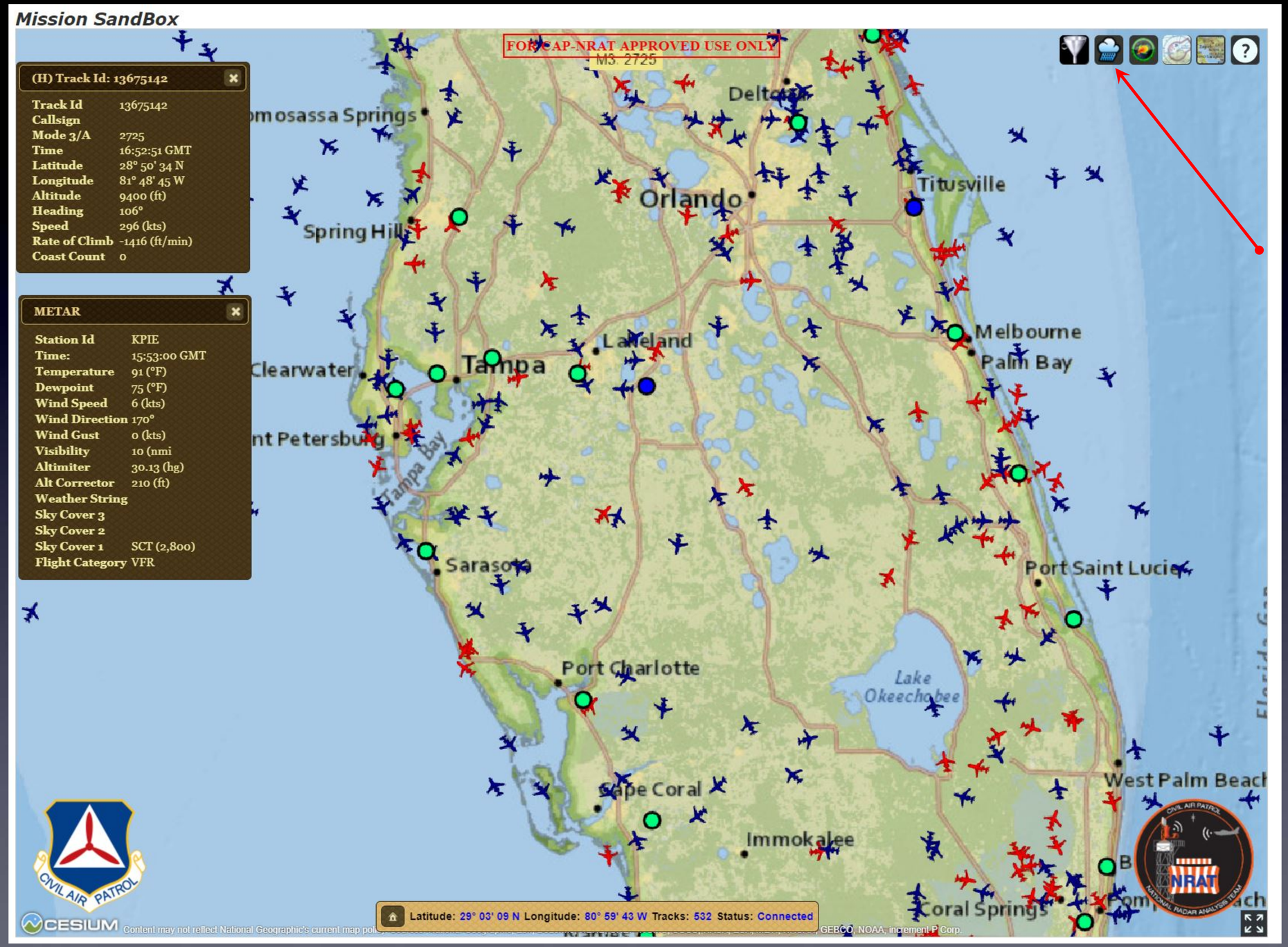
# Mission SandBox



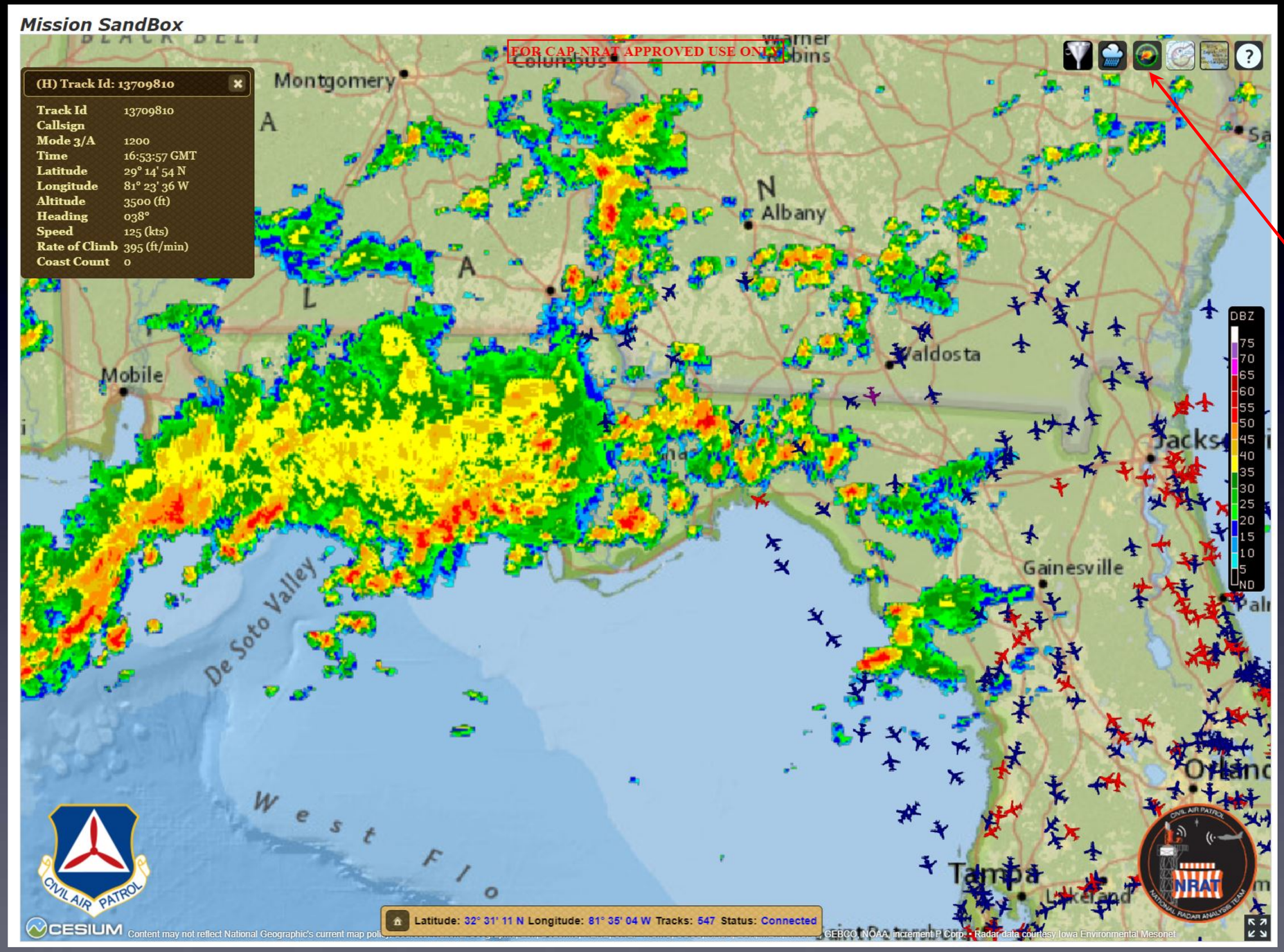
# Mission SandBox – Track Isolation



# Mission SandBox – METAR Weather Data

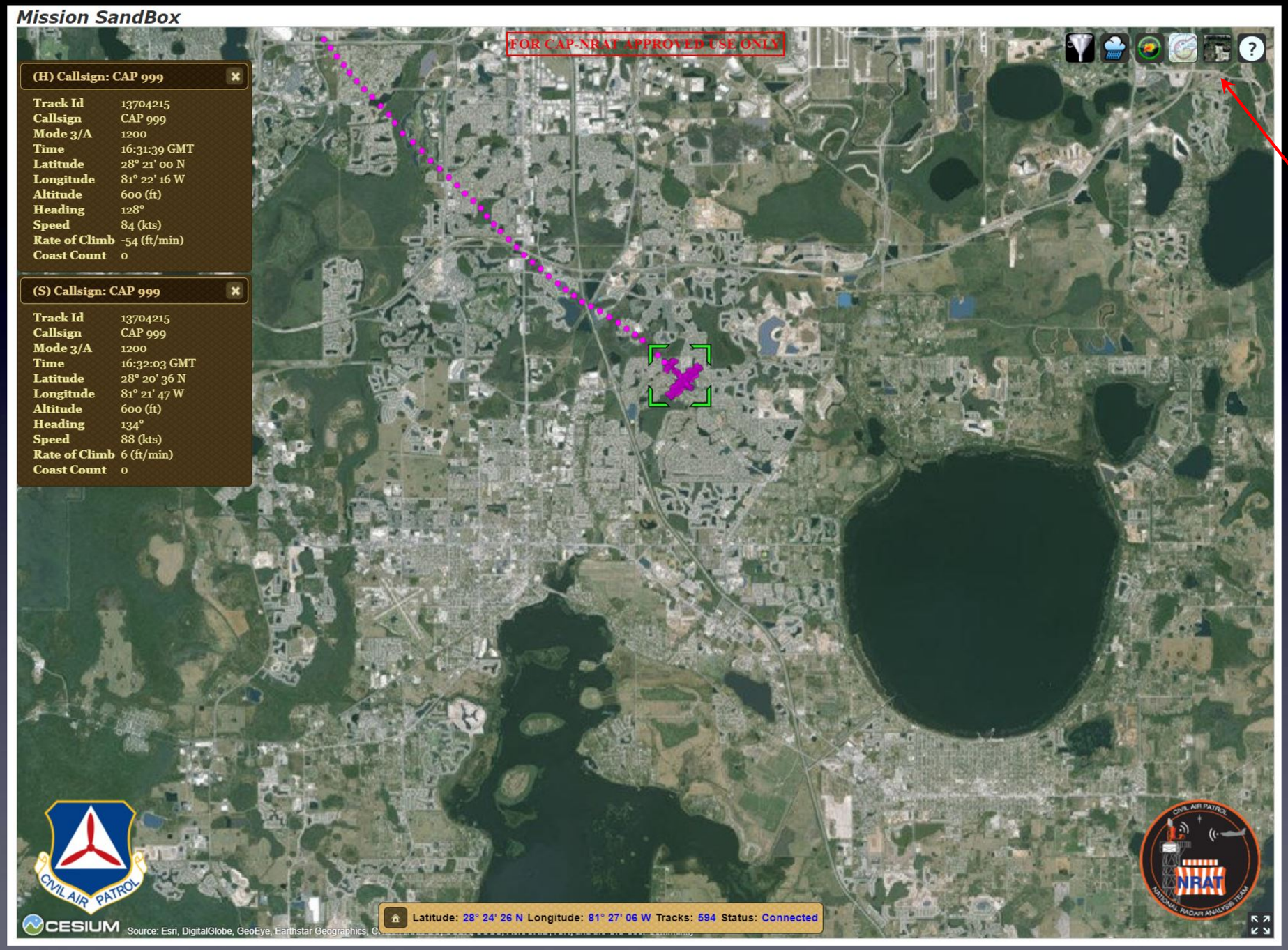


# Mission SandBox – NEXRAD Weather Data

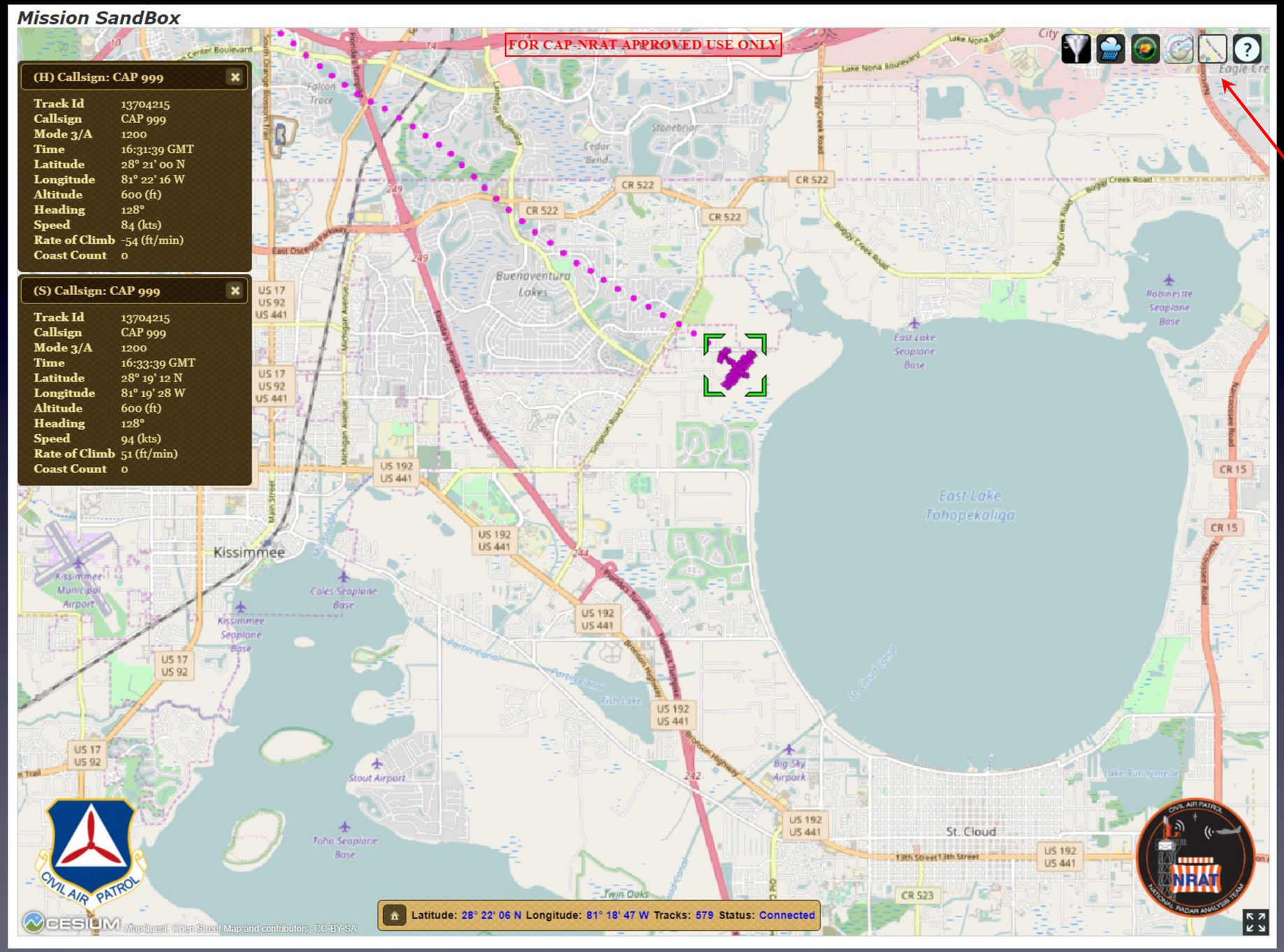


# Mission SandBox – Sectional Overlay

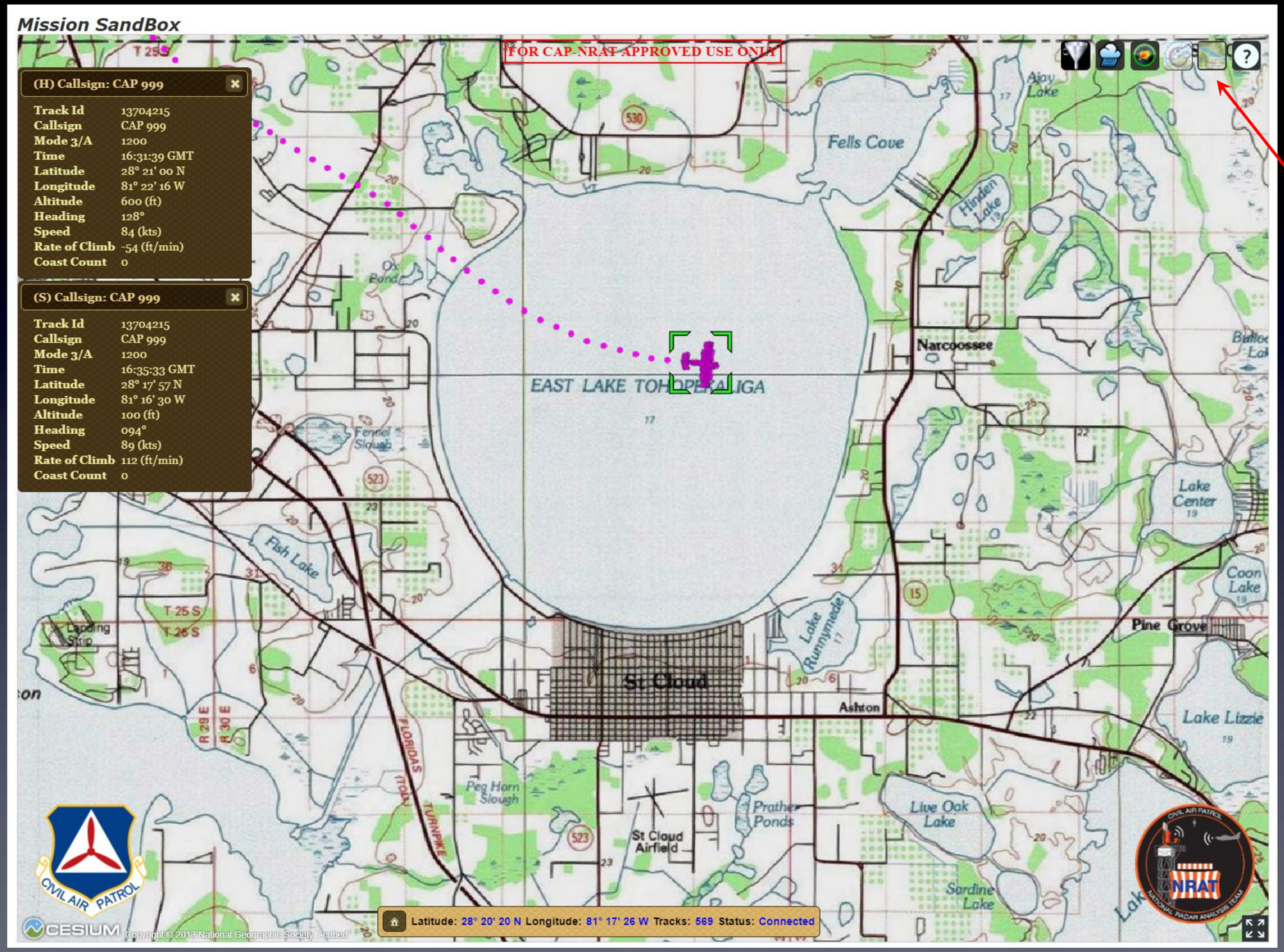
# Mission SandBox – Satellite Imagery



# Mission SandBox – Street Map



# Mission SandBox – Topo Map



# Mission SandBox – Mission Page Entry Point

National Radar Analysis Team

Civil Air Patrol

Log out

Home | Mission - Tools | Mission Chat | Missions | Mission Archive | Team Info

Menu

Logged In Now

3 online users
- IC-W-26_480783
- IC-T-01_766808
- John Henderson

Last Visitors

!!!

Items found: 1

Overview | Pre-Brief | Chat | Chat Archive | Track Brief | SandBox | Files | BigBlueButton | No Tabs

Cirrus - SR22

**Mission:** *17-M-0019A*

**Mission Date:** 2017-01-07 17:17 Z

**AFRCC Controller:** TSgt. Jacquelyne Huie
**NRAT Primary Analyst:** Mark Keene
**Mission Status:** Open **Found Status:** Found

*Aircraft Information*

**N Number:** N7VK
**Manufacture:** Cirrus
**Model:** Cirrus - SR22
**FAA Model:** SR22
**Aircraft Year:** 2003
**Cruise Speed:** 180 KTS
**Rate of Climb - Sea Level:** 1,270 FPM **Rate of Climb - 10,000':** 650 FPM
**Service Ceiling:** 17,500 Feet
**Range:** 1,049 NM

**Souls on Board:** 2 **Survivors:** 2

Quick Edit a Wiki Page

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Search

Find

Search | Titles

Last-Visited Pages

1. Current SAR Missions
2. CAP-NRAT HomePage

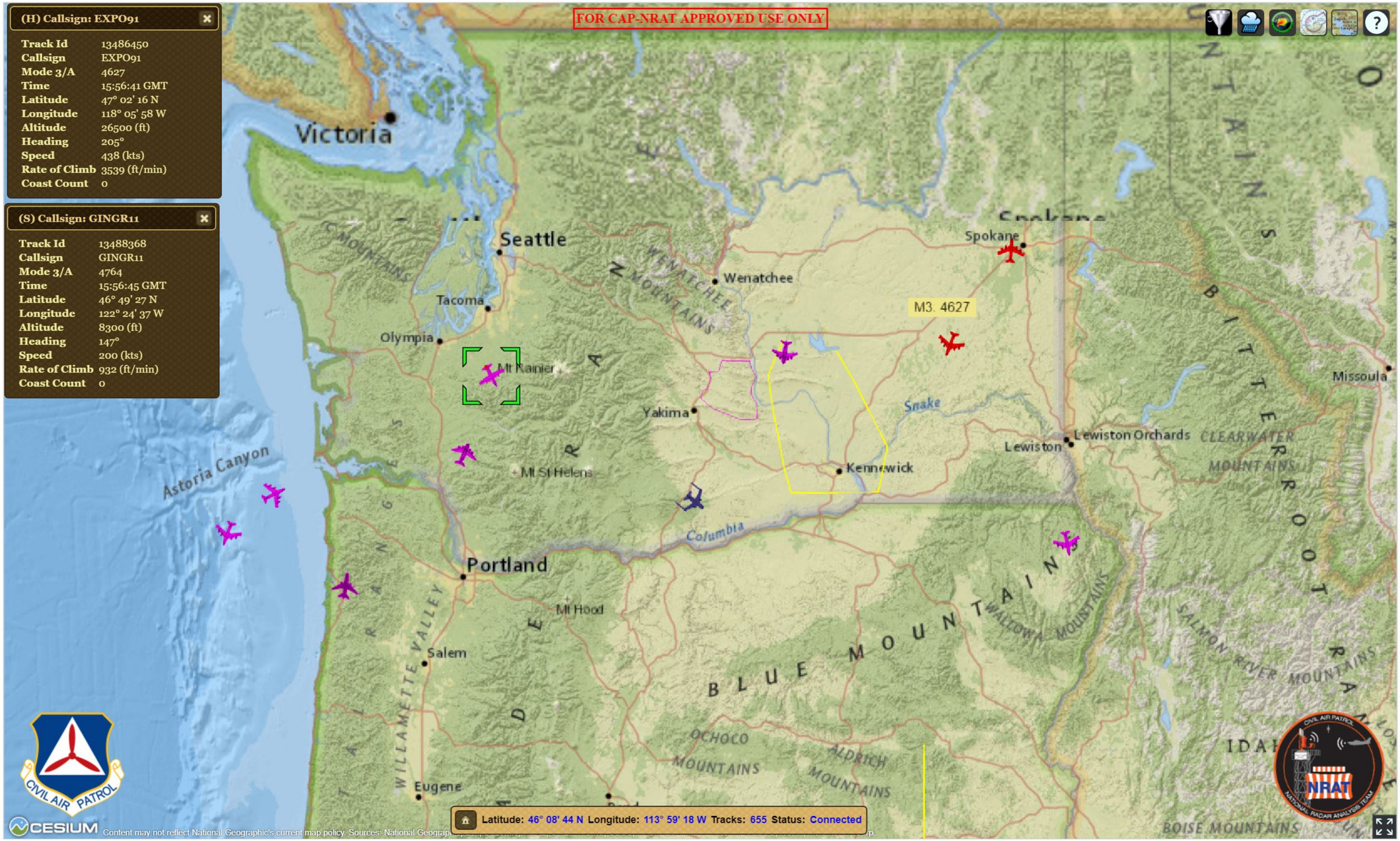
Newest Blog Posts

*No records to display*

# Mission SandBox – Mobility Guardian Support

## SandBox - Exercise Mobility Guardian

**Exercise Mobility Guardian - Unclassified Air Picture**



# Flight Plan Archive System

Number of rows: 25 ▼ Filter rows: Search this table

+ Options

| type | time 1 | aircraft_id | beacon_code | aircraft_type | departure_airport | arrival_airport | route | ETD | ETA |
|---|---|---|---|---|---|---|---|---|---|
| FP | 2017-08-04 15:13:17 | N2278C | | C172 | KFMY | KISM | KFMY..ROGAN..LAL..KISM/0109 | 2017-08-04 20:34:00 | 2017-08-04 21:36:49 |
| BC | 2017-08-04 14:44:00 | N2278C | 5560 | | KISM | ISM | | *NULL* | *NULL* |
| FP | 2017-08-04 13:55:57 | N2278C | | C172 | KISM | ISM | KISM..VIZTA..OCF..ISM/0230 | 2017-08-04 15:46:00 | 2017-08-04 17:02:05 |
| BC | 2017-08-04 13:14:00 | N2278C | 3434 | | KISM | ISM | | *NULL* | *NULL* |

Number of rows: 25 ▼ Filter rows: Search this table

# CAP National Radar Analysis Team (NRAT)

## Briefing Summary

- World Class Team
  - Most Experienced SAR Radar Forensics Team in the World
  - Forensics Software Development Group

- Updated Tools and Procedures
  - Faster Access to Enhanced Radar Data
  - Software Assistance in Blending Many Sources of Information
  - Comprehensive Analysis Results Briefing Packages

- The Future - ICARUS - Aircraft Crash Detection and Alerting
  - Near-Real-Time System
  - Designed to shorten “Crash to Rescue” Time - More Saved Lives