



Federal Aviation
Administration

Air Traffic Organization UAS COA Process “Feasibility of the COA”

Roger Trevino, Moderator
Service Center Panel
National UAS Conference
San Diego, California
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What We Will Cover



- Service Center Advocates & Responsibilities
- Concept of Operations
- Feasibility with Three Examples
- Questions & Answers

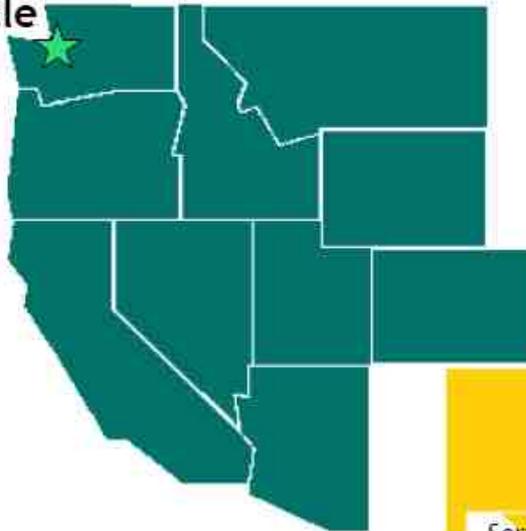
FAA Air Traffic Organization Service Areas



Western

Service Area Office in
ATM Regional Office

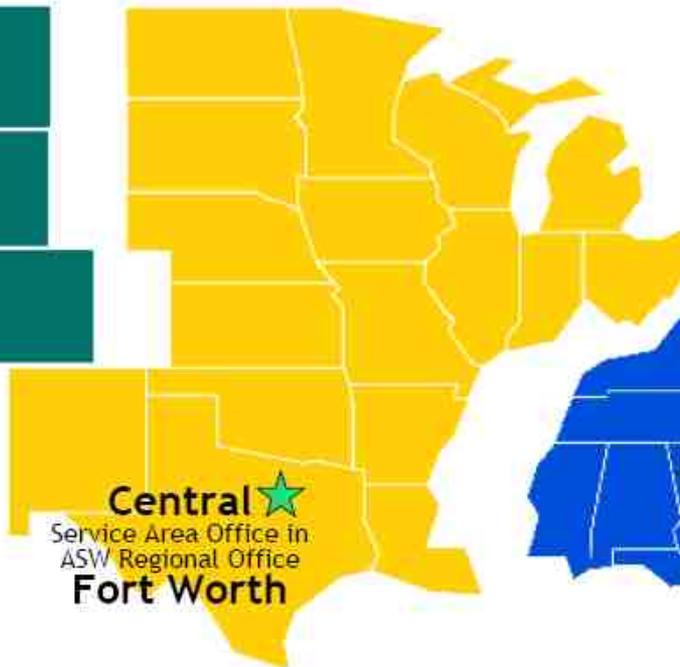
Seattle



Central

Service Area Office in
ASW Regional Office

Fort Worth



Eastern

Service Area Office in
ASO Regional Office

Atlanta



Service Center Customer Advocates

Eastern Service Center

Steve Brown

- Joint Military, USAF, USN, USMC
- (404) 305-5611
- Steven.Brown@faa.gov

Lynda Otting & Melinda Giddens

- Non-military UAS (civil and public)
- (404) 305-5577 & (404) 305-5610
- Lynda.G.Otting@faa.gov & Melinda.A.Giddens@faa.gov

Pete Acevedo

- USA, NASA, Law Enforcement, UAS
- (404) 305-5598
- Peter.K.Acevedo@faa.gov



Service Center Customer Advocates

- **Central Service Center**
 - **Roger Trevino**
 - Team Supervisor
 - 817-321-7721
 - Roger.Trevino@faa.gov
 - **Carl Youngblood**
 - Operational Support Specialist, UAS
 - 817-321-7722
 - Carl.CTR.Youngblood@faa.gov
 - **Michael Rizzo**
 - ATREP, UAS
 - 817-321-7733
 - Michael.Rizzo@faa.gov
 - **Roger McGrath**
 - Environmental/Airspace Specialist, UAS
 - 817-321-7735
 - Roger.McGrath@faa.gov



Service Center Customer Advocates

- **Western Service Center**

- **Mark Dillon**

- Global Hawk, Predator, UAS Operations in California, Nevada, Arizona, Utah, Pacific Ocean
 - 425-203-4522
 - Mark.CTR.Dillon@faa.gov

- **Rex MacLean**

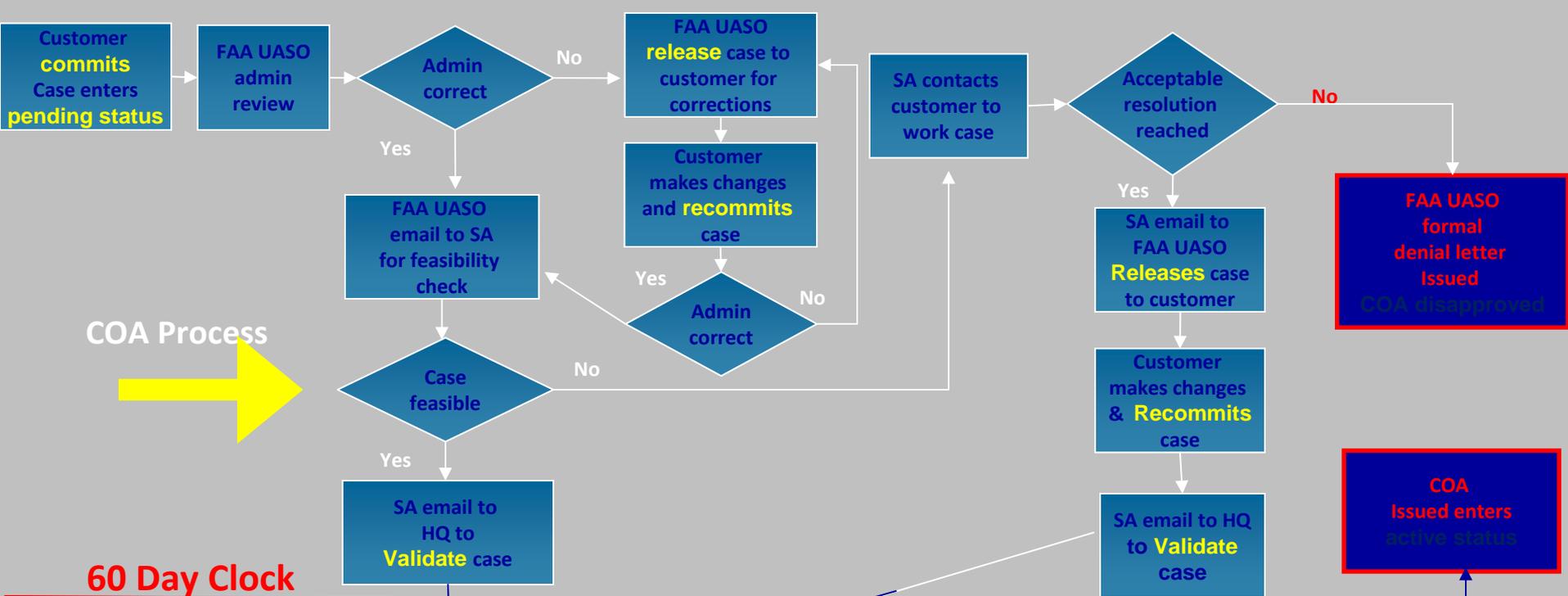
- UAS operations Alaska, Northwest and Colorado
 - 775-223-9676
 - Rex.MaClean@faa.gov



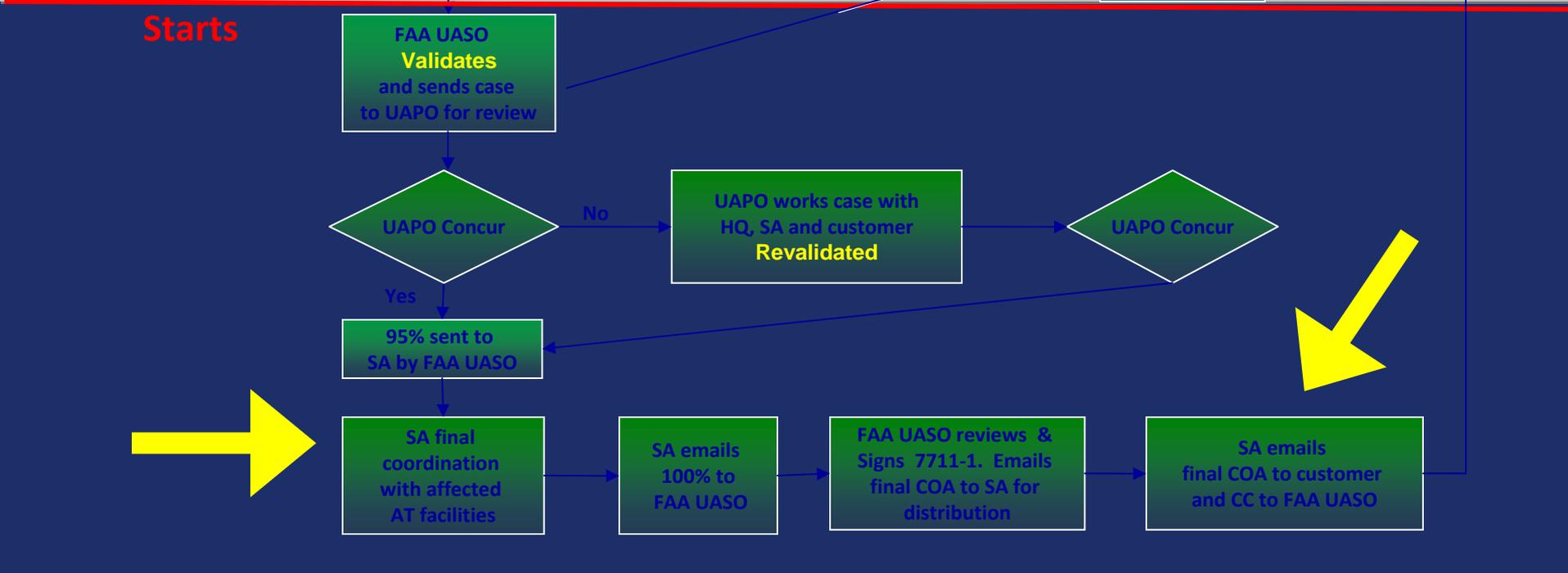
Service Center Responsibilities

- Service Center is involved in the process three different times
 - Initial feasibility check—is this doable?
 - 95% solution to an approved COA—what did we miss?
 - Approved COA—verify for accuracy and distribute to proponent and affected ATC facility(s)
- Today, we're focusing on the initial feasibility check





**60 Day Clock
Starts**



Concept of Operations

Aeronautical Concept of Operations/COA application—provide details

Flight plan info: takeoff/landing locations, route of flight (corridor), loiter orbits, planned altitudes

Describe how the mission will integrate into NAS

Provide coordinates for everything (locations, turn points, lost link wpts, ops area, etc.) either on chart or spreadsheet

Use VFR Sectional charts followed by other types, as needed

Chair-fly the mission from take-off to landing

What classes of airspace will be involved (departure-enroute-arrival)?

Will a chase aircraft be required or just ground observers?

Will route of flight avoid populated areas?

Will the operations area be in restricted/warning areas?

Are lost link, lost comm, emergency scenarios planned for?

Concept of Operations (ctd)

Lost Link, Lost Comm, and Emergency Procedures sections need as much detail as possible

Chair-fly each of these scenarios for all segments of flight

“If..., then...” technique works best

Take scenario to logical conclusion—RTB/flight termination

Feasibility check associated with lost link, etc.

Are the procedures specific enough for this operation?

Are the procedures dependent upon UAS location?

Is there a flight termination capability?

Will the procedures keep the UA in the operations area?

Do the procedures make sense from an air traffic perspective?

Bottom line: air traffic controllers need predictability

Concept of Operations (Cont.)

Develop ConOps IAW the latest FAA policies and guidance to the max extent possible—refer to 08-01, Section 8 “Flight Ops”

Deviations may require mitigations, increasing complexity

Deviations may require a safety case...depending

If operation is complex, Service Center coordination w/impacted ATC facility(s) will occur

LOA/MOU may be required by ATC facility

SOP may be required by airport

Bottom Line: ConOps/COA application needs to tell the story to FAA

Feasibility

Class of airspace being requested (Class B = No)

Joint-use arpt: manned vs. unmanned de-confliction

Operations: restricted/warning area, ATCAA, NAS

Route of flight to operating area

- Avoid populated areas (yellow on VFR sectional)

- Impacts to nearby airports—departures, arrivals, congestion

- Impacts to jet routes, victor airways, Q and T routes

- Impacts to MTRs & VFR fly-ways

- Impacts to air traffic control facilities—peak traffic periods

Divert and termination procedures

Foot stomp: Try to meet 08-01 policies to the max extent possible.

Feasibility

Where one wants to fly is extremely important

See 08-01, Section 8 “Flight Ops”

Three scenarios follow:

Difficult/not feasible: COA application for Georgia Tech in Atlanta

Easy: COA application for Shadow ops at Huntsville, AL

Moderate/feasible: Northeast Colorado COA application

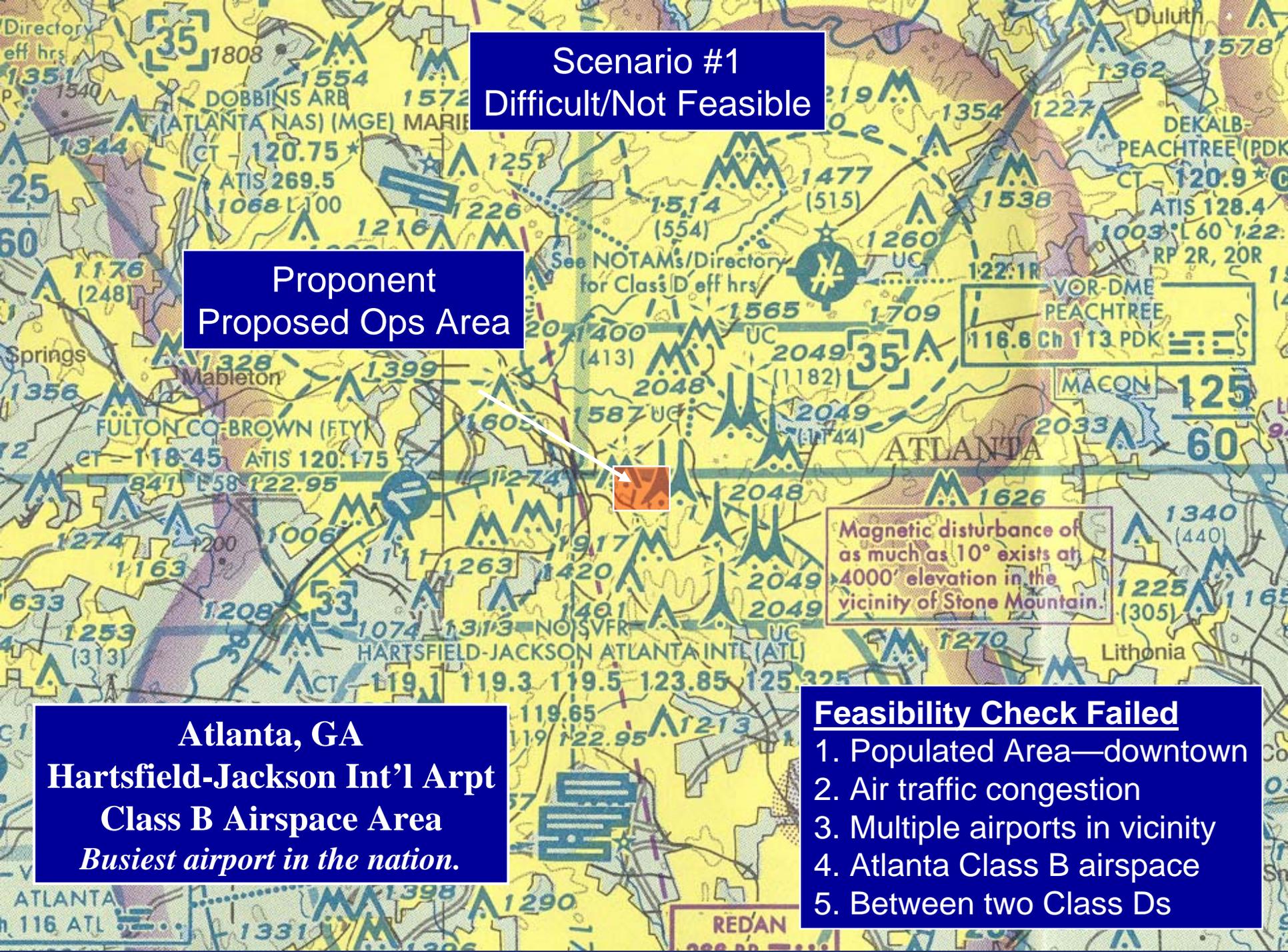
**Scenario #1
Difficult/Not Feasible**

**Proponent
Proposed Ops Area**

**Atlanta, GA
Hartsfield-Jackson Int'l Arprt
Class B Airspace Area
*Busiest airport in the nation.***

- Feasibility Check Failed**
1. Populated Area—downtown
 2. Air traffic congestion
 3. Multiple airports in vicinity
 4. Atlanta Class B airspace
 5. Between two Class Ds

Magnetic disturbance of as much as 10° exists at 4000' elevation in the vicinity of Stone Mountain.



Scenario #2 Easy Application

Shadow Operations Area R-2104 A-E

Launch/Recovery

Class D

R-2104 C/E
SFC-30K' MSL

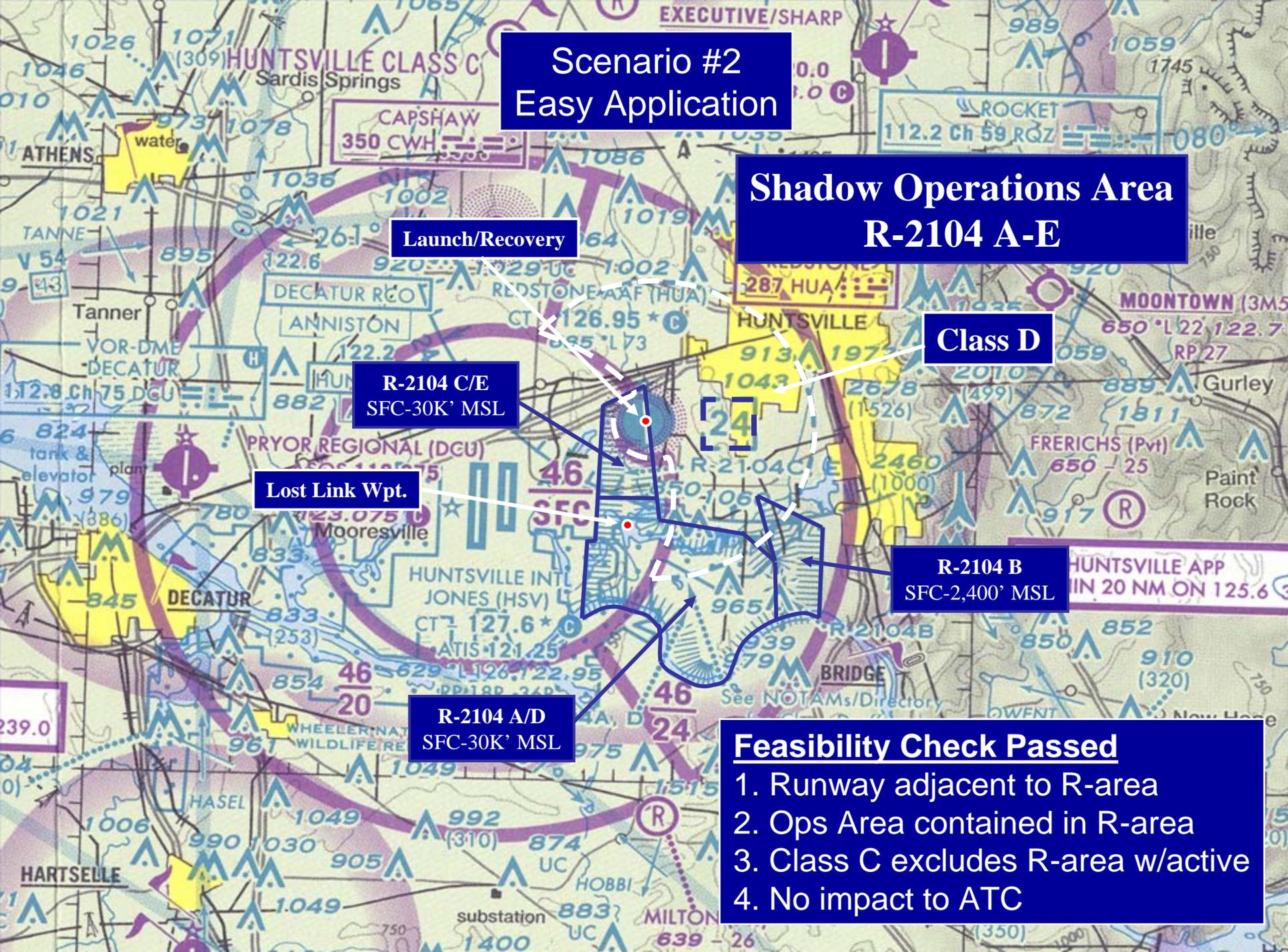
Lost Link Wpt.

R-2104 B
SFC-2,400' MSL

R-2104 A/D
SFC-30K' MSL

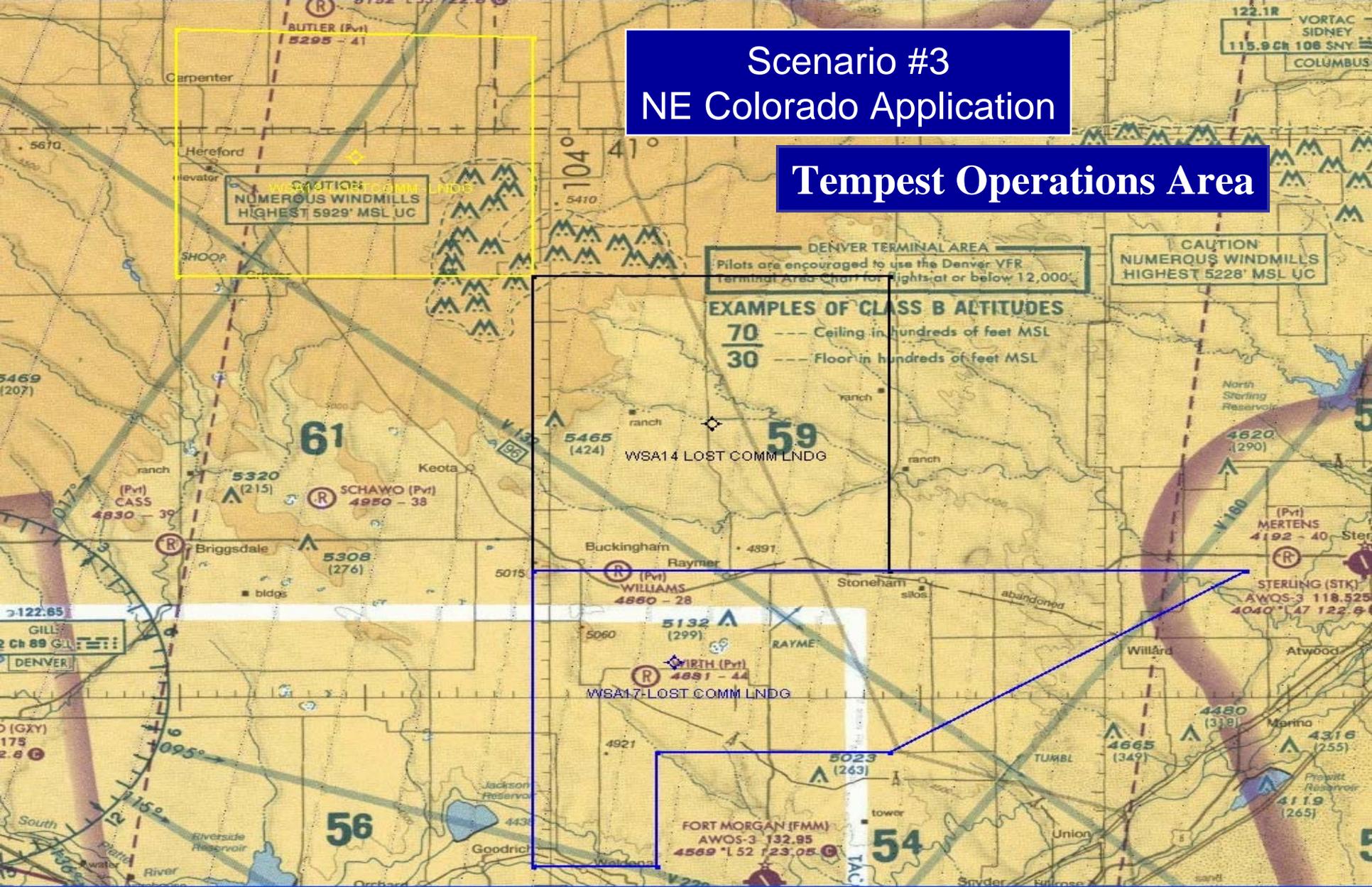
Feasibility Check Passed

1. Runway adjacent to R-area
2. Ops Area contained in R-area
3. Class C excludes R-area w/active
4. No impact to ATC



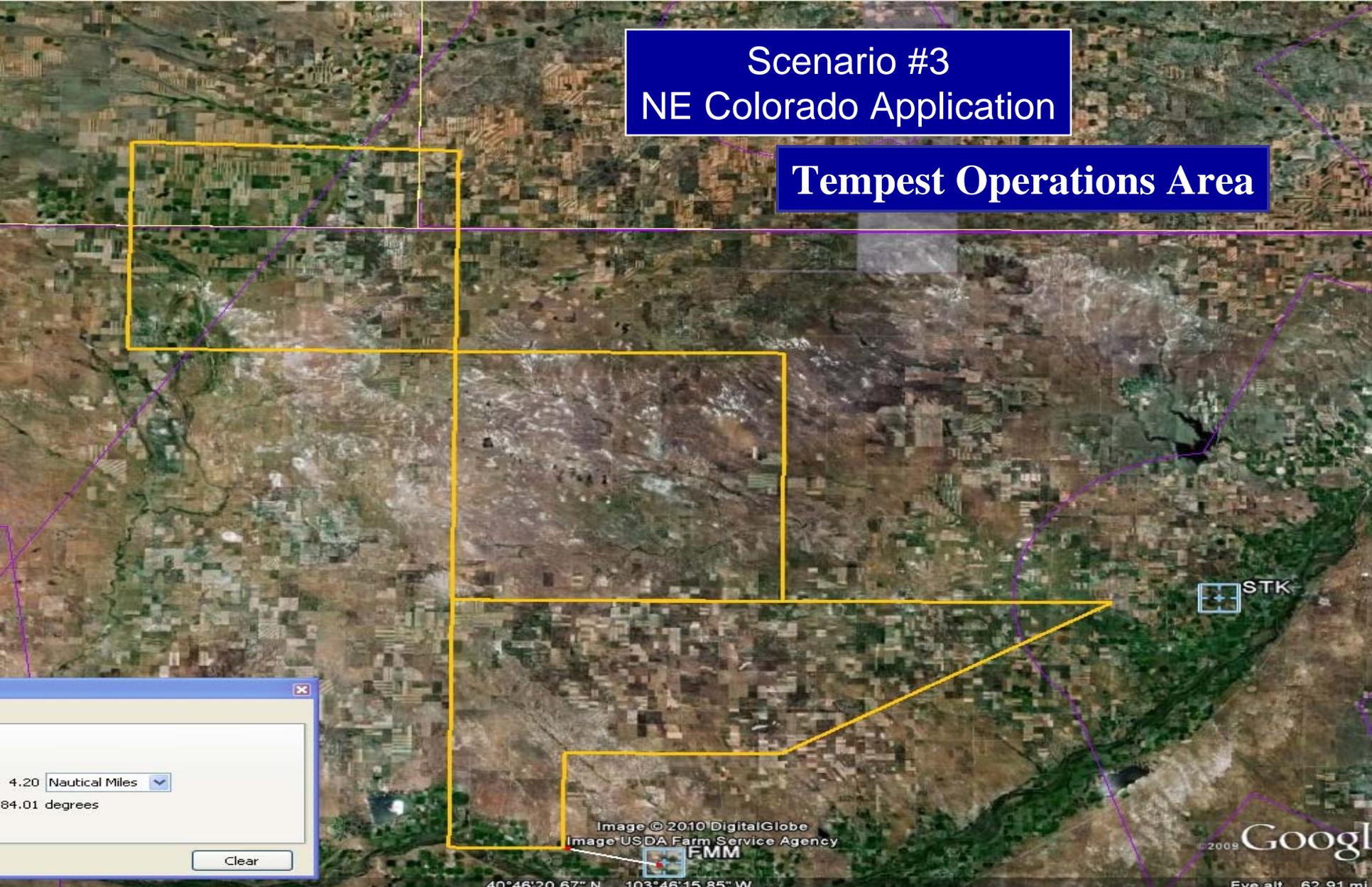
Scenario #3 NE Colorado Application

Tempest Operations Area

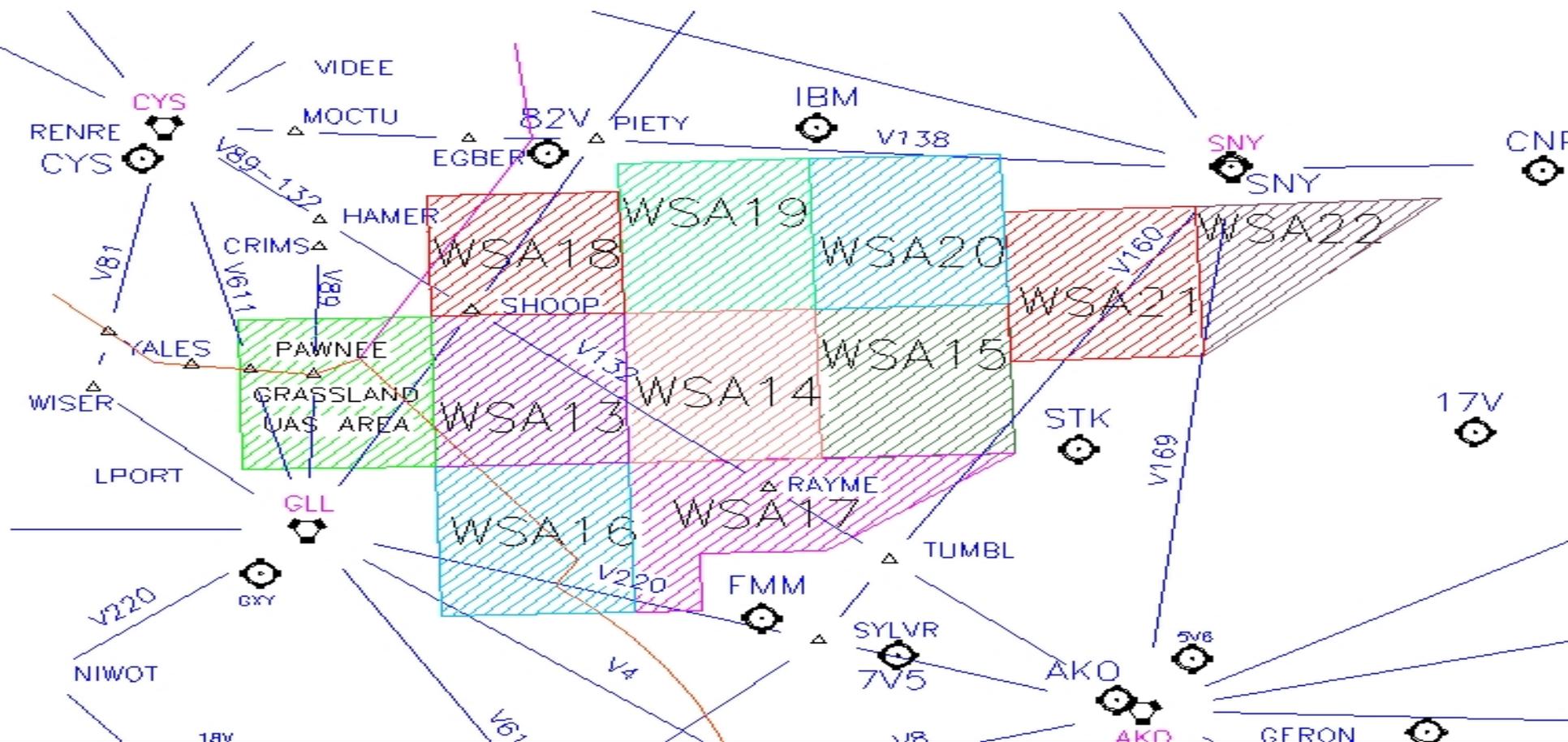


Scenario #3 NE Colorado Application

Tempest Operations Area



ARTCC Auto/Cad Program



NE Colorado Feasibility Results

1. Mitigation for IR-416 concerns covered in Special Provisions
2. Lost link provisions were specific—kept UAS in operations area
3. Determined that application is feasible for the UAS operation
4. Forward to HQ requesting “validation” of the application
5. HQ ATO “validates” and forwards to the Unmanned Aircraft Program Office (UAPO) for further processing



PROGRAM OFFICE PERSPECTIVE

- **After the Air Traffic Organization (ATO) Unmanned Aircraft Systems Office completes their comprehensive airspace analysis for a COA, the COA is then sent to the Unmanned Aircraft Program Office (UAPO).**
- **The UAPO assigns a COA to an Aviation Safety Inspector (ASI), who reviews and evaluates the COA.**

PROGRAM OFFICE PERSPECTIVE

- Each COA is processed on an individual basis and evaluated against type of aircraft, location of operation, and qualifications of support personnel.
- These COA's are similar to COA's authorized for airshows, aerobatic boxes, and military fly-by's.
- When evaluating a COA, the ASI follows the guidance in the Interim Operational Approval Guidance, 08-01. (Note: 08-01 is in the process of being revised.)



PROGRAM OFFICE PERSPECTIVE

- **When evaluating a COA, the ASI is concerned with safety among all aircraft and other airborne operations not reliably identifiable by RADAR, such as balloons, gliders, and parachutists.**
- **Over the past five years, the COA application process has evolved into a complex process requiring increased time for an ASI to review a COA application.**
- **The number of COA's have greatly increased. Currently, there are approximately 180 COA's waiting review and validation.**

PROGRAM OFFICE PERSPECTIVE

- **It takes on average, an ASI 10 hours to review a simple COA renewal.**
- **Some renewals COA's take more time, others less.**
- **An initial COA take more hours to process, and as with renewals, some take more time, and others less.**



PROGRAM OFFICE PERSPECTIVE

- **An ASI reads the documents submitted with the COA. Items reviewed include:**
 - ✓ **airworthiness of a UA, and the airworthiness statements (do they comply with the current guidance?)**
 - ✓ **the UA and if the proposed operation can safely operate in the NAS.**
 - ✓ **associated UA systems such as datalink, lost link, and possible interference with these systems.**
 - ✓ **the qualifications of the UA pilots, pilot in command, and observers, including medical certification, and currency.**

PROGRAM OFFICE PERSPECTIVE

- **The area is checked for instrument approaches and any possible interference and hazards to Air Carrier and General Aviation operations.**
- **Additionally, the area is checked for any possible hazards to persons and property on the ground.**



Remember: details, location, & patience



Questions?

