



**Federal Aviation Administration
Air Traffic Organization
(FAA ATO)**

**Low Altitude Authorization and Notification Capability
(LAANC)**

**USS Onboarding Test Procedure and Report
Version 5.0**

19 February 2021

Page Intentionally Blank

REVISION HISTORY

Version	Description	Date
1.0	Release Version.	2/26/18
1.1, 1.2, & 1.3	Skipped for constant versioning across program documents.	12/4/18
1.4	Revised for new rules, procedure adjustments, § 44809 operator capability, and other editorial corrections.	3/22/19
1.4.1	Updated Scenarios: 4, 9, 10 and other editorial changes.	4/23/19
1.5	LAANC v1.5 O&M (Scenario 11) and Scenario 2 updates.	6/24/19
2.x & 3.x	Skipped for baselining and alignment of FAA-USS Documents (i.e., Performance Rules, ICD, Test Procedure).	N/A
4.0	Tests updated in alignment with new rules, revisions, and other editorial changes and corrections made to the Performance Rules and ICD. Overhauled procedure and report format and structure.	3/12/20
4.1	<ul style="list-style-type: none"> • Section 3.3: Addition of close operation to FAA checklist; minor edits. • Changed nautical mile unit abbreviation from “nmi” to “NM”. • Scenario #1, Step 19: Addition of close operation test location; cross-reference linking. • Scenario #5: Reordered reasonable filtering test steps; changes IAW with Rule [3.7c] changes; terminology edits. • Scenario #7, Step 24: Revised guidance to perform close operation during test window. • Scenario #8: Reordered reasonable filtering test steps; changed test location for Rule [3.7e]; changes IAW with Rule [3.7c] changes; terminology edits. • Scenario #9: Removal of test guidance note for optional test of the PT NSUFR. 	4/17/20
5.0	Updated in alignment with USS Performance Rules and API Specification for 2021 USS implementation and onboarding.	2/19/21

CONTENTS

Revision History	i
Contents	ii
Figures	iii
1 Introduction	1
1.1 Background	1
1.2 Purpose	1
1.3 Scope	1
2 Test Overview	2
2.1 FAA-USS Documents	2
2.2 Test Guidance	2
2.3 Test Recording	3
3 Onboarding Test Event Log	4
3.1 Test Event Details	4
3.2 Test Scope	4
3.3 Test Setup Checklist	4
3.4 Product Details	5
4 General Test Notes	6
5 Final Test Results & Signature	7
6 Onboarding Tests	8
Scenario #1	9
Scenario #2	15
Scenario #3	28
Scenario #4	35
Scenario #5	43
Scenario #6	47
Scenario #7	49
Scenario #8	56
Scenario #9	61
Scenario #10	68
Scenario #11	72

FIGURES

Figure 1: Scenario #2, Step 1 Tom Bass Regional Park I Houston, TX	15
Figure 2: Scenario #2, Step 2 Walker Park Elkhart, IN.....	17
Figure 3: Scenario #2, Step 3 Grapevine, TX	18
Figure 4: Scenario #2, Step 4 Fort Riley Airspace Manhattan, KS	19
Figure 5: Scenario #2, Step 5 Wolf Trap, VA	20
Figure 6: Scenario #2, Step 6 SUA: P-67 Kennebunkport, ME.....	21
Figure 7: Scenario #2, Step 7 SUA: R-4001A Oliver Beach, MD	22
Figure 8: Scenario #2, Step 9a 10 NM Linear Extent Banner, WY	24
Figure 9: Scenario #2, Step 9b 10 NM (diameter) Circular Area Banner, WY	25
Figure 10: Scenario #2, Step 10 Laughlin Ranch Golf Club Bullhead City, AZ	26
Figure 11: Scenario #3 South Park Lawrence, KS	28
Figure 12: Scenario #4 Diablo Creek Golf Course Concord, CA.....	35
Figure 13: Scenario #4 PT NSUFR Concord, CA	38
Figure 14: Scenario #5 David T. Kennedy Park Miami, FL	43
Figure 15: Scenario #6 Old Tampa Bay, FL.....	47
Figure 16: Scenario #7 Cross Country Course, Iowa State University Ames, IA.....	49
Figure 17: Scenario #8 Rutledge, PA	56
Figure 18: Scenario #9 D’Andrea Golf & Country Club Sparks, NV	61
Figure 19: Scenario #9 PT NSUFR Concord, CA	63
Figure 20: Scenario #9 Shadow Mountain Sports Complex Sparks, NV.....	66
Figure 21: Scenario #10 Ventura Country Club Orlando, FL	68

Page Intentionally Blank

1 INTRODUCTION

1.1 Background

As the Federal Aviation Administration (FAA) and industry move toward integration of Unmanned Aerial Systems (UAS) into the National Airspace System (NAS), small UAS (sUAS) – defined as UAS that weigh less than 55 pounds – are governed by two legal frameworks for their operational requirements in the NAS: 14 CFR Part 107 and 49 U.S.C. § 44809(a)(5) (referred to hereinafter simply as “§ 44809”). Low Altitude Authorization and Notification Capability (LAANC) provides sUAS operators an automated, streamlined, and efficient solution to receive airspace authorization in controlled airspace from Air Traffic (AT) in accordance with applicable sUAS regulations and laws. LAANC includes a collaboration between the FAA and industry UAS Service Suppliers (USSs).

1.2 Purpose

This document correlates the USS Performance Rules to USS Onboarding test activities, designed to verify that a USS is ready to participate as a provider of LAANC services. This USS Test Procedure and Report is tailorable to accommodate the operation types and delivery platforms a USS intends to provide for their business model.

1.3 Scope

The scope of this document is to provide interested applicants and existing partner USSs with the current onboarding tests, which must be passed as part of the FAA’s approval to operate as a LAANC service provider. LAANC is expected to implement additional features and capabilities in the future, beyond what is contained in this document. As additional features and capabilities are developed and implemented in LAANC, it will be communicated to current and prospective USSs as well as the public.

LAANC capabilities in this phase of deployment include:

- support for Part 107 automatic approval authorizations, using altitude maps established by the FAA around airport facilities;
- a mechanism for Part 107 Further Coordination authorizations;
- support for § 44809 automatic approval authorizations, using the same altitude maps used for Part 107 authorizations, and;
- providing sUAS operations information to AT personnel.

2 TEST OVERVIEW

2.1 FAA-USS Documents

The following FAA-USS reference documents are utilized to test USS compliance:

- LAANC USS Performance Rules
- USS-FAA LAANC API Specification
- LAANC USS Onboarding Test Procedure and Report

2.2 Test Guidance

USSs may support all LAANC operation types or any combination of operation types to support their business model, including: Part 107 Auto-Approval (AA), Part 107 Further Coordination (FC), and § 44809 Auto-Approval. According to the desired operation type(s) of a USS, the USS will be tested against the corresponding scenarios listed below*:

Table 1: Test Scenario Matrix

Scenario #	Part 107 Auto-Approval	Part 107 Further Coordination	§ 44809 Auto-Approval
1	✓	✓	✓
2	✓	✓	✓
3	✓		✓
4	✓		✓
5	✓		✓
6	✓		✓
7		✓	✓
8		✓	
9		✓	
10	✓	✓	
11	✓	✓	✓

The USS's test system should be configured to connect to the FAA's designated onboarding test environment. Sources for FAA information should be configured to actual authoritative sources, per the USS Performance Rules (e.g., Class Airspace, SUAs, etc.). The exception to this is the UASFM source and PT NSUFR source, which are specifically utilized for onboarding test purposes, reflected below:

- Main website: <https://laancussob-faa.opendata.arcgis.com/>
- Primary Test UASFMs: (FAA will provide URL before test)
- Secondary Test UASFMs: (FAA will provide URL before test)
- Primary Test PT NSUFRs: (FAA will provide URL before test)
- Secondary Test PT NSUFRs: (FAA will provide URL before test)

Note: In certain test scenarios, USSs will switch between the Primary and Secondary – UASFM and PT NSUFR – sources in order to successfully demonstrate certain functionality of their system handling data changes. The appropriate mechanisms must be built into the USS system to quickly change UASFM URLs and load maps for test demonstration purposes.

* **All variant products (e.g., Web-Based, Android, iOS) are subject to the same level of testing.**

2.3 Test Recording

The FAA's Test Team will utilize this document to administer and record the results of the test scenarios & steps, in accordance with the operation types offered by a USS (See Table 1, above). Each test step with USS Performance Rules under test includes a "Results" field to indicate "Pass", "Fail", or "N/A" for the test step. Test steps that do not apply during a test event (for example, § 44809 tests when only Part 107 is being tested) will be marked "N/A"; unless the whole scenario does not apply, in which case all checkboxes will be left blank and noted in the test report.

All test steps (both those with and without rules under test) include a section for test notes to describe USS system behavior or unique test elements; as well as any FAA recommendations, actions, and/or remedies for successful alignment with the FAA's expectations for LAANC providers.

3 ONBOARDING TEST EVENT LOG

This section begins documentation and recording of a USS’s test event(s).

3.1 Test Event Details

The table below details the information for a USS’s test event(s).

USS	Click or tap here to enter text.
USS Representatives	Click or tap here to enter text.
FAA Representatives	Click or tap here to enter text.
Date & Time	Click or tap here to enter text.
Test Format	Choose an item.
Test Type	Choose an item.

3.2 Test Scope

The table below indicates the USS operation types and platform types under evaluation.

USS Operation Types:	USS Platform Types:
<input type="checkbox"/> 14 CFR Part 107 Auto-Approval	<input type="checkbox"/> Web-Based
<input type="checkbox"/> 14 CFR Part 107 Further Coordination	<input type="checkbox"/> Android Click or tap here to enter text.
<input type="checkbox"/> 49 U.S.C. § 44809 Auto-Approval	<input type="checkbox"/> iOS Click or tap here to enter text.

3.3 Test Setup Checklist

The table below indicates items the FAA Test Team will verify are in place before proceeding to the Test Scenarios.

Test Initialization Checklist:
<input type="checkbox"/> Verify connection to USS. <input type="checkbox"/> Cancel/close all open authorizations (<i>required for accurate O&M testing</i>). <input type="checkbox"/> Confirm time with USS to switch the onboarding data sets. <input type="checkbox"/> TFR to be used: [Scenario #2, Step 8] <input type="checkbox"/> PT NSUFR date & time to be used: i. [Scenario #4, Step 18] ii. [Scenario #9, Step 19] <input type="checkbox"/> (If applicable) Create/direct FC operation for close operation test: i. [Scenario #7, Step 24]

3.4 Product Details

Additional USS product details for FAA awareness and record keeping.

1. **Anticipated launch date of USS product(s):** Click or tap here to enter text.
2. **Will USS product(s) be available to the public:** Click or tap here to enter text.
3. **Other details:** Click or tap here to enter text.

4 GENERAL TEST NOTES

This section details any general or overarching notes from FAA testing that may not be directly applicable to a specific test scenario & step or may apply to several areas throughout the test procedure.

Notes:

5 FINAL TEST RESULTS & SIGNATURE

This page contains the Final USS Onboarding Test Results and authorized approval signatures from the FAA and USS.

Final Test Results

- Pass | USS is *Approved*** to participate in operational LAANC system.
- Fail | USS is *Not Approved*** to participate in operational LAANC system.
- Final Outcome *Pending* | Further Testing Required**

If final outcome pending, note sections below to be tested in a future test event:

Click or tap here to enter text.

Signatures Approving Test Event and Documented Outcomes

FAA: _____

Date: _____

USS: _____

Date: _____

6 ONBOARDING TESTS

This section contains the USS Onboarding test scenarios for evaluation of a USS's operation types and platform types. Each scenario contains test steps directing a series of actions to be performed for system evaluation. Test steps correlate to specific USS Performance Rules under test or other procedural directions required as part of the test administration and evaluation process.

Each test step is contained in an individual table with fields to reflect the following:

- **Test Step** – Test step number within the test scenario.
- **Test Actor** – Simulated actor to perform the test step. Actors are:
 - Operator
 - USS
 - FAA: Tester
 - FAA: AT (Air Traffic)
- **Test Procedure** – The procedure to be performed for evaluation. This field may contain:
 - “*Notes*” to aide in the demonstration of the step.
 - “*Criteria Notes*” to further understand the evaluation criteria.
- **Rule(s)** – A list of the USS Performance Rule(s) that are under evaluation for the test step.
- **Results** – Contains checkboxes for “Pass”, “Fail”, and “N/A”.
 - Results are specific to the operation type under test (i.e., Part 107, § 44809) or are general for operation type agnostic tests.
- **Test Notes** – FAA test team notes specific to the step; IAW Section 2.3 Test Recording.

Test scenarios are accompanied with figures depicting the area under test, location of authorizations, and other features of the test such as airspace boundaries, SUAs, and NSUFRs. Authorizations are depicted as yellow circular areas or polygons; the authorizations are for demonstration only and do not have defined coordinates or other geometric properties that a USS needs to exactly replicate. Note: Figure 8 and Figure 9 accurately represent the 10 nautical mile (NM) extent under test; however, the authorization shapes and locations do not need to be exactly replicated.

Scenario #1 Operator Account & Required Information

Scenario Overview

This scenario applies to the following LAANC operation types:

Part 107 Auto-Approval	Part 107 Further Coordination	§ 44809 Auto-Approval
✓	✓	✓

This scenario checks:

- User identification and authentication
- Required data sources and endpoints
- Various required statements and safeguards

Test Steps

Test Step	Test Procedure
Step 1.	Demonstrate how an operator logs into your application.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 2.	Explain user account management and reasonably secure identification methods.	[3.1b]
	<p>Criteria Notes: The FAA considers username/password mechanisms sufficient. A device association alone is not sufficient; someone other than the operator could use it. Include notes on special mechanisms in the Test Notes below.</p> <p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 3.	Explain the process by which LAANC data records will be made available to the FAA on request.	[3.9.5d] [3.9.5e]
	<p>Criteria Notes: This is expected to be a manual process. Please describe any special processes, other than using USS contact information on file, that the FAA should use. Also describe the anticipated format of provided data and timeliness of response.</p> <p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 4.	Demonstrate operator access to the LAANC association statement.	[3.1c]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 5.	Demonstrate operator access to the FAA Privacy Statement hyperlink.	[3.1d]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Step 6. For each of the following information types (Steps 6a-6i):

- i. Identify the authoritative data source, and
- ii. How frequently your system retrieves the data.

Test Step	Test Procedure	Rule(s)
Step 6a.	UAS Facility Maps (UASFMs)	[3.2.2a] [3.2.2k] [3.2.2j]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 6b.	Full-Time National Security UAS Flight Restrictions (FT NSUFRs)	[3.2.2b] [3.2.2k] [3.2.2j]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 6c.	Part-Time National Security UAS Flight Restrictions (PT NSUFRs)	[3.2.2c] [3.2.2k] [3.2.2j]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 6d.	Class Airspace	[3.2.2d] [3.2.2k] [3.2.2j]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 6e.	Airports	[3.2.2e] [3.2.2k] [3.2.2j]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 6f.	Stadiums	[3.2.2f] [3.2.2k] [3.2.2j]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 6g.	Washington D.C. FRZ	[3.2.2g] [3.2.2k] [3.2.2j]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 6h.	Special Use Airspace	[3.2.2h] [3.2.2k] [3.2.2j]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 6i.	Airspace Schedule	[3.2.2i] [3.2.2k] [3.2.2j]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 7.	Explain the process by which your system checks for currency of the authoritative sources of information types used by LAANC.	[3.2.2l]
	Criteria Note: If the USS downloads the full dataset in its entirety, then Rule [3.2.2l] is "N/A". Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 8.	If your application reads NOTAMs and/or TFRs, identify the source and frequency.	[3.4.4a] [3.4.4b]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 9.	If your application reads Special Use Airspaces, identify the source and frequency.	[3.4.4a] [3.4.4b]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 10.	Describe how your application checks to block spurious or illegitimate submissions.	[3.7a]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 11.	Describe how your application will continue to function in the contingency situation that FAA LAANC systems are unavailable.	[3.8a]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 12.	Explain how you will notify the Enterprise Control Center (ECC) of scheduled outages at least 24 hours in advance.	[3.9.5a]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 13.	Explain how you will notify the ECC of unscheduled outages within 1 hour of detection.	[3.9.5b]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 14.	Explain and describe how the USS intends to provide the FAA with user accounts for their service(s).	[3.9.5c]
	<p>Criteria Notes: Explain how the USS will comply with this rule. The user accounts will be included as part of the final checklist sent by the FAA Contracting Officer prior to commencing LAANC services.</p> <p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 15.	Describe the method and how often your system will check the FAA's operational status and system versions.	[3.9.1a]
	<p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 16.	Describe the method and how often your system will query operational statistics of previously submitted operations from the FAA.	[3.9.2a]
	<p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 17.	Describe the method and how often your system will query open authorizations from the FAA.	[3.9.3a]
	<p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 18.	Describe the method and how often your system will query transitions of specified operations (i.e., operation history) from the FAA.	[3.9.4a]
	<p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 19.	<p>Does your system offer the 'close operation' capability?</p> <p>If offered, this will be evaluated in [Scenario #3, Step 23] (Auto-Approval) and/or [Scenario #7, Step 27] (Further Coordination).</p> <p>Notes: Closing an operation allows the operator to terminate an operation after the operation start time has begun, but prior to the submitted end time. Closing an operation indicates to AT that the operation has completed prior to the filed operation end time.</p>
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 20.	Confirm the USS has developed and delivered their Data Protection Plan to the FAA.	[3.10a]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Scenario #2

Basic Geospatial Processing

Scenario Overview

This scenario tests the required geospatial processing based on data sources required for all LAANC provided airspace authorization as required within the Performance Rules.

This scenario applies to the following LAANC operation types:

Part 107 Auto-Approval	Part 107 Further Coordination	§ 44809 Auto-Approval
✓	✓	✓

This scenario checks:

- Correlating airspace to UASFM
- Blocking in Prohibited SUAs
- Blocking where LAANC is disabled
- Blocking in Restricted SUAs
- Blocking Enabled fields
- Processing TFR NOTAMS
- Blocking adjacent airspace without a UASFM
- Blocking authorization areas that are too large
- Blocking in the DC FRZ
- Application of Airspace Schedules

Test Steps

STEP 1. AIRSPACE CORRELATION: The area of the test operation is Tom Bass Regional Park I in Houston, TX. The test operation is under the HOU UASFM.

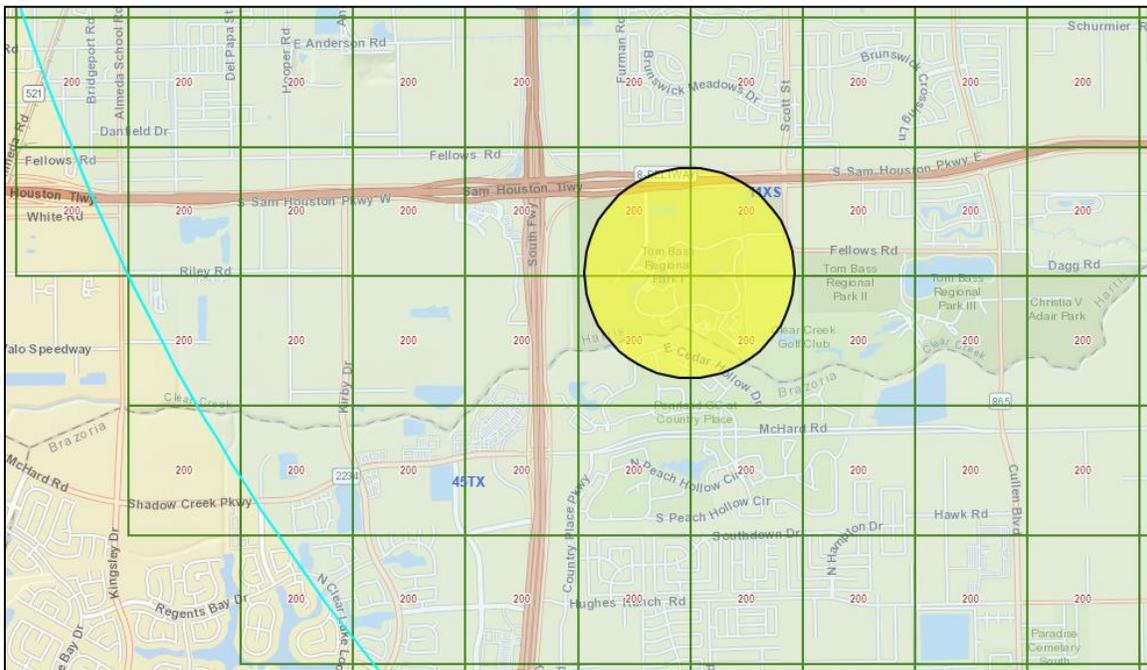


Figure 1: Scenario #2, Step 1 | Tom Bass Regional Park I | Houston, TX

Test Step	Test Procedure	Rule(s)
Step 1a.	Demonstrate how an operator using your application will select this location and initialize a basic airspace authorization for a flight maximum altitude of 200'.	[3.4.3b]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure
Step 1b.	Submit the operation to the FAA.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 1c.	Record the LAANC Reference Code(s).
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 1d.	Verify on the FAA side that the submission is received with the correct content (HOU).	[3.2.1a]
	<i>Note: This area correlates correctly to HOU, not IAH.</i> Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

STEP 2. LAANC READY FLAG DISABLED: The area of the test operation is Walker Park (and the St Joseph River) in Elkhart, IN. The test operation is under the EKM UASFM.

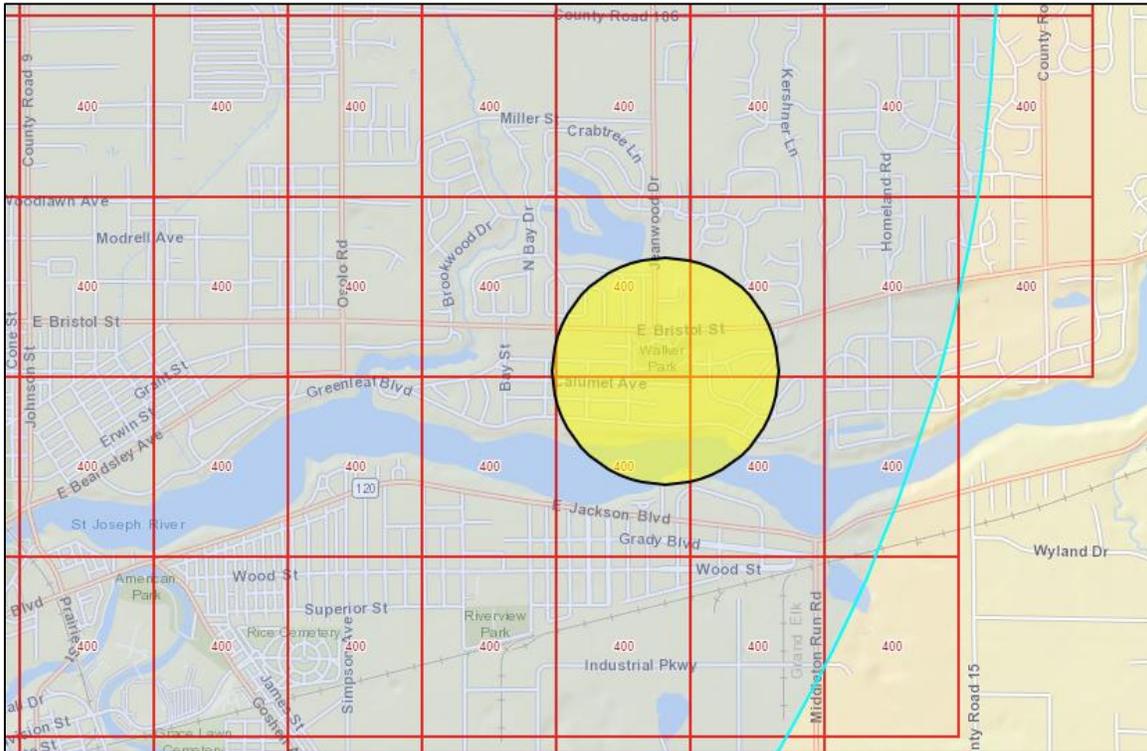


Figure 2: Scenario #2, Step 2 | Walker Park | Elkhart, IN

Test Step	Test Procedure	Rule(s)
Step 2a.	Demonstrate how your application will display or notify to an operator that this location is not available for an airspace authorization through LAANC.	[3.3.5a]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

STEP 3. ENABLED FIELDS: The area of the test operation is Grapevine, TX. The test operation is under the DFW UASFM.

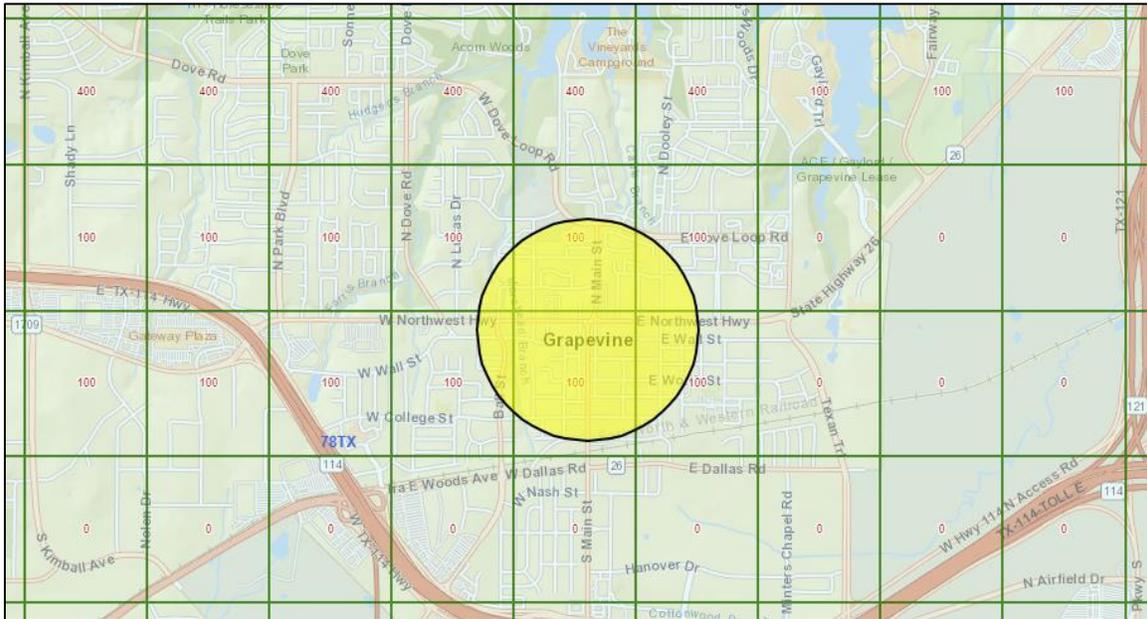


Figure 3: Scenario #2, Step 3 | Grapevine, TX

Test Step	Test Procedure	Rule(s)
Step 3a.	Initialize a basic airspace authorization for a flight maximum altitude of 400'.	[3.3.1a] [3.3.5b]
	Demonstrate how your application will inform the operator their request is not eligible for further coordination. <i>Note: This location has Enabled fields of "107-AA" and "44809-AA", thereby only allowing auto-approved submissions.</i>	
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

STEP 4. ADJACENT SURFACE AIRSPACE (without a UASFM): The area of the test operation is around Fort Riley Blvd in Manhattan, KS. The test operation is under the spillover of the MHK UASFM (northeast airspace), but it is in FRI airspace (southwest airspace, which has no UASFM).

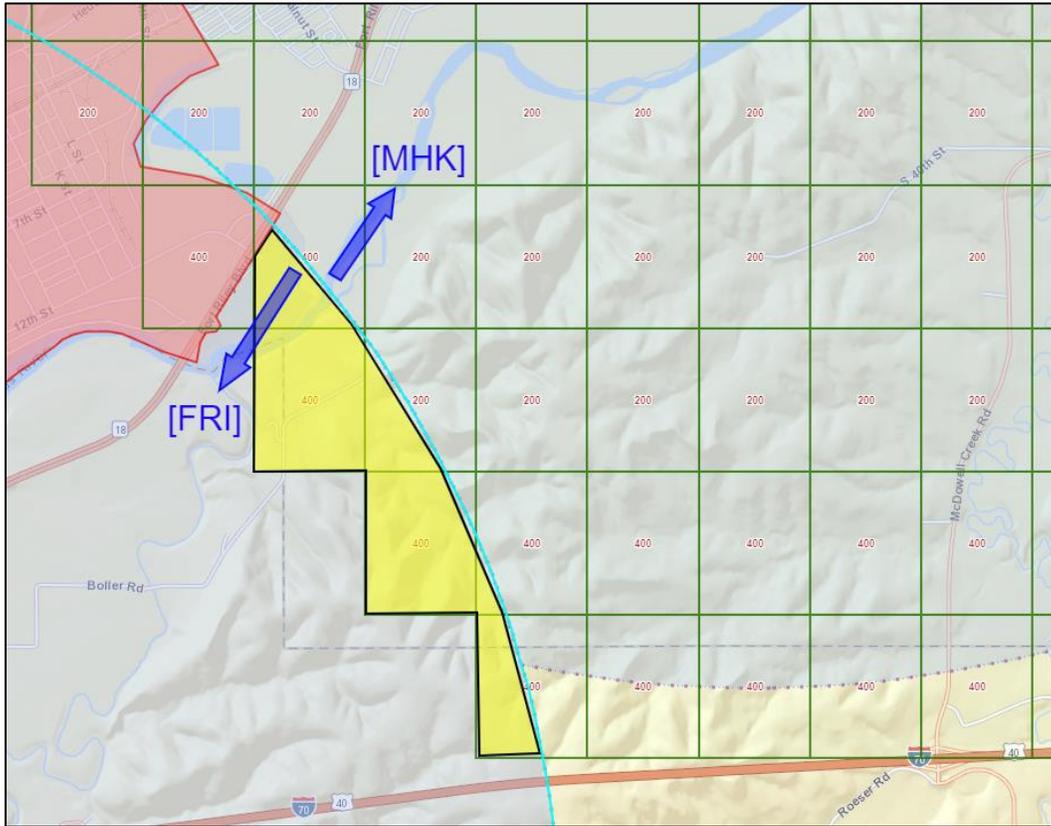


Figure 4: Scenario #2, Step 4 | Fort Riley Airspace | Manhattan, KS

Test Step	Test Procedure	Rule(s)
Step 4a.	Demonstrate how your application will block an operator from submitting information for operations located within a surface airspace that has no UASFM but falls under an enabled UASFM grid for adjacent airspace.	[3.3.4c]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

STEP 5. DC FRZ: The area of the test operation is Wolf Trap, VA. The test area is to the east of Washington-Dulles Airport and within the Washington D.C. Flight Restriction Zone (FRZ).

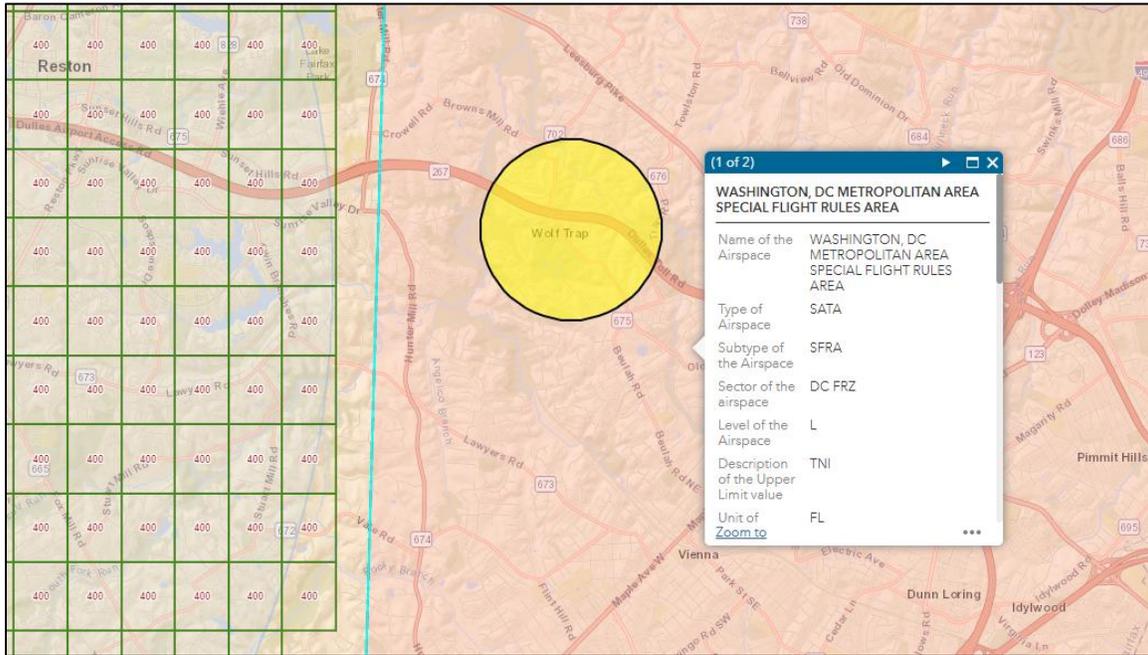


Figure 5: Scenario #2, Step 5 | Wolf Trap, VA

Test Step	Test Procedure	Rule(s)
Step 5a.	Demonstrate how your application will block an operator from submitting information for operations located within the Washington D.C. FRZ.	[3.4.4e] [3.4.4i]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

STEP 6. PROHIBITED AREA: The area of the test operation is Kennebunkport, ME. This operation is encompassed by prohibited airspace, P-67.

Note: This prohibited-type airspace is usually segregated from airport surface airspace. However, there are many restricted-type and other types of airspaces that may overlap with UASFM as LAANC continues to expand (see, for example, NJM UASFM and R-5306C) which may apply to sUAS.

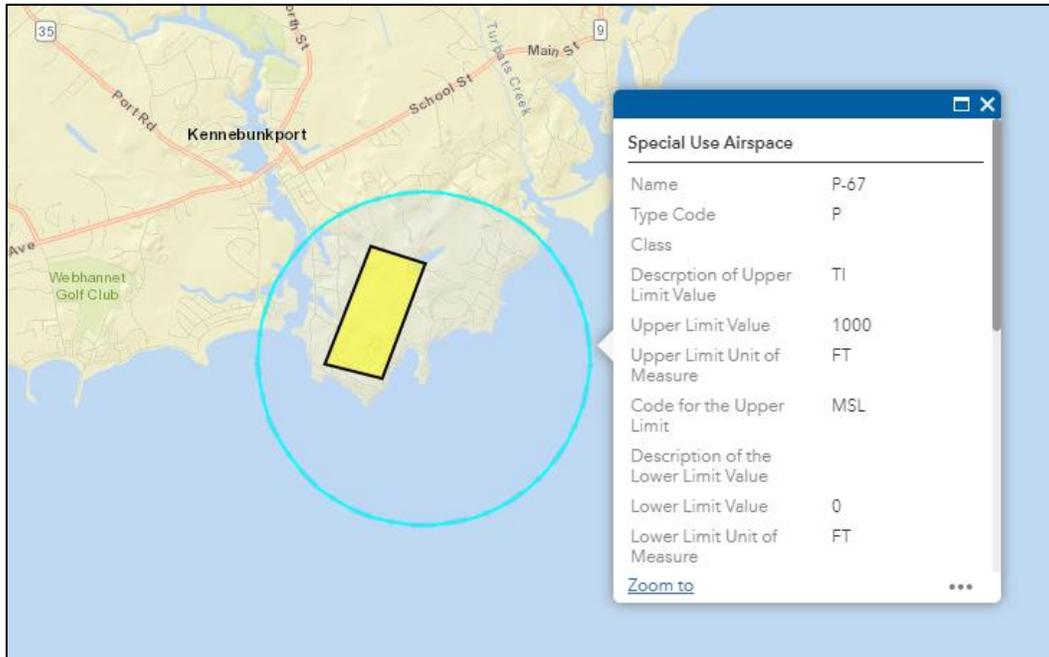


Figure 6: Scenario #2, Step 6 | SUA: P-67 | Kennebunkport, ME

Test Step	Test Procedure	Rule(s)
Step 6a.	Demonstrate how your application will block an operator from submitting information for operations located within P-67 near Kennebunkport, ME.	[3.4.4e] [3.4.4j]
	Criteria Notes: This test step verifies how the USS product presents and blocks prohibited airspace. Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

STEP 7. RESTRICTED AREA: The area of the test operation is Oliver Beach, MD. This operation is under the MTN UASFM and is encompassed by restricted airspace, R-4001A.

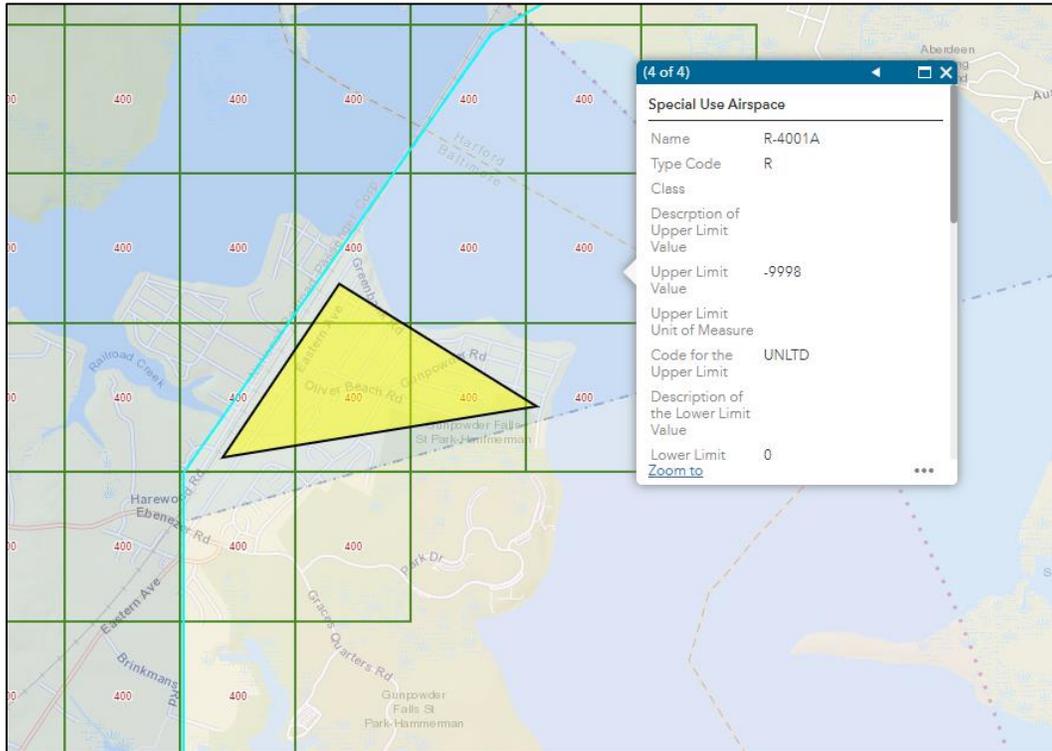


Figure 7: Scenario #2, Step 7 | SUA: R-4001A | Oliver Beach, MD

Test Step	Test Procedure	Rule(s)
Step 7a.	Demonstrate how your application will advise or block an operator, as appropriate, from submitting information for operations located within R-4001A.	[3.4.d] [3.4.e]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	[3.4.j] [3.4.m]
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

STEP 8. TFR NOTAMS: Temporary Flight Restrictions (TFR) are issued for special events, VIP movement, and security/emergency response. Exact location or issuance is generally not known more than a few days, or hours, in advance.

Test Step	Test Procedure
Step 8a.	The FAA Test Team will select an active TFR from an official source, such as https://tfr.faa.gov .
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure
Step 8b.	The operator will select a location of operation within the identified TFR during its effective time.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 8c.	Demonstrate how your application informs operators of general NOTAM-based restrictions (including TFRs).	[3.4.4c] [3.4.4d] [3.4.4]
	<p>Criteria Notes:</p> <ul style="list-style-type: none"> It is not required by the USS Performance Rules to ingest NOTAMs. If TFR NOTAMs are not processed, demonstrate how operators are directed to review them on their own. 	
	<p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

STEP 9. AUTHORIZATION AREA TOO LARGE: The area of the test operation is Banner, WY. The test operation is under the SHR UASFM. Authorization areas larger than 10 NM in linear extent (or circular diameter) must be blocked.

Note: This location has an area larger than 10 NM across without any zero altitude grids.

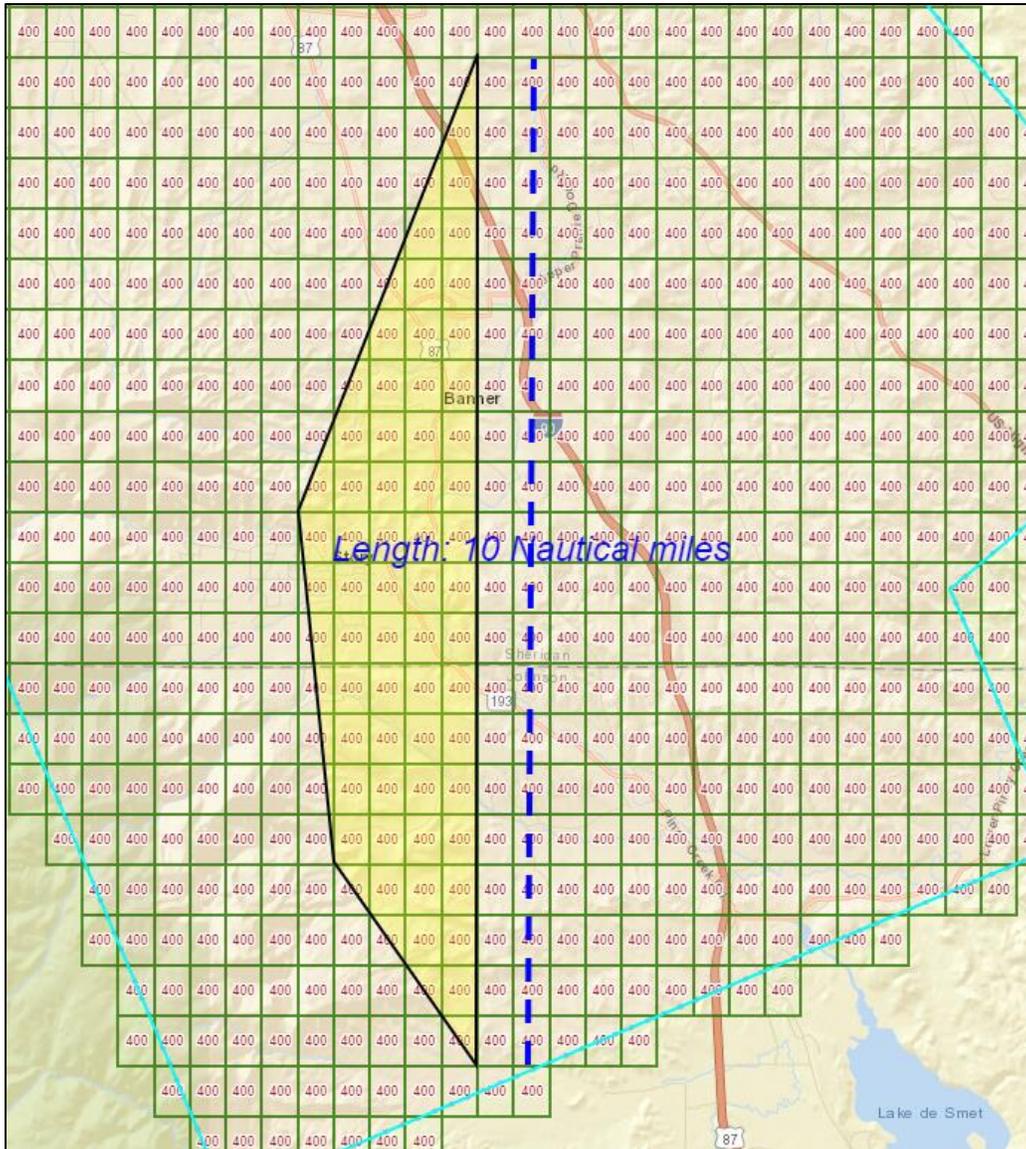


Figure 8: Scenario #2, Step 9a | 10 NM Linear Extent | Banner, WY

Test Step	Test Procedure	Rule(s)
Step 9a.	If USS application supports polygon authorization area submissions, attempt to create and submit an authorization area that has at least 10 NM between any two vertices (not necessarily adjacent).	[3.7b]
	<p><i>Note: For reference – each UASFM grid is 0.5 NM.</i></p> <p>Demonstrate that the authorization is blocked.</p> <p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

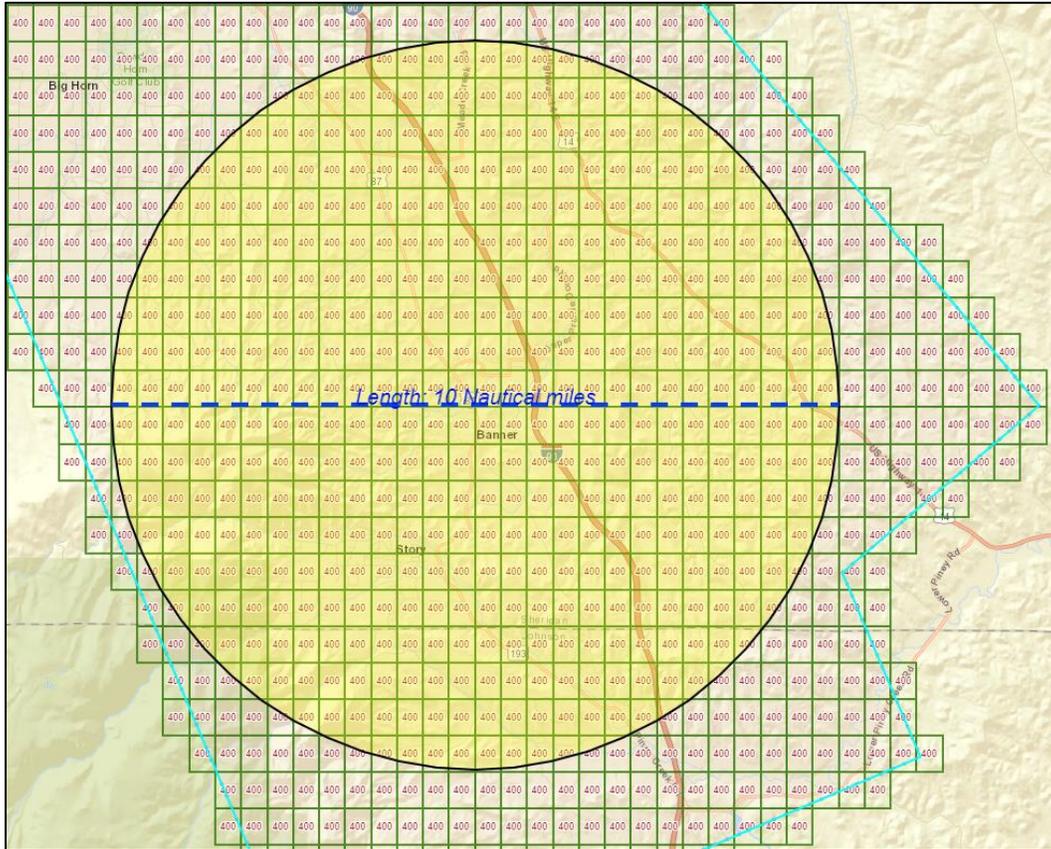


Figure 9: Scenario #2, Step 9b | 10 NM (diameter) Circular Area | Banner, WY

Test Step	Test Procedure	Rule(s)
Step 9b.	<p>If USS application supports point/radius authorization area submissions, attempt to create and submit an authorization area that stretches across the airspace.</p> <p>Note: For reference – each UASFM grid is 0.5 NM.</p> <p>Demonstrate that the authorization is blocked.</p>	[3.7b]
	<p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

STEP 10. AIRSPACE SCHEDULE: The area of the test operation is Laughlin Ranch Golf Club in Bullhead City, AZ. The test operation is under the IFP UASFM. Locations with an Airspace Schedule must be applied to each operation submitted.

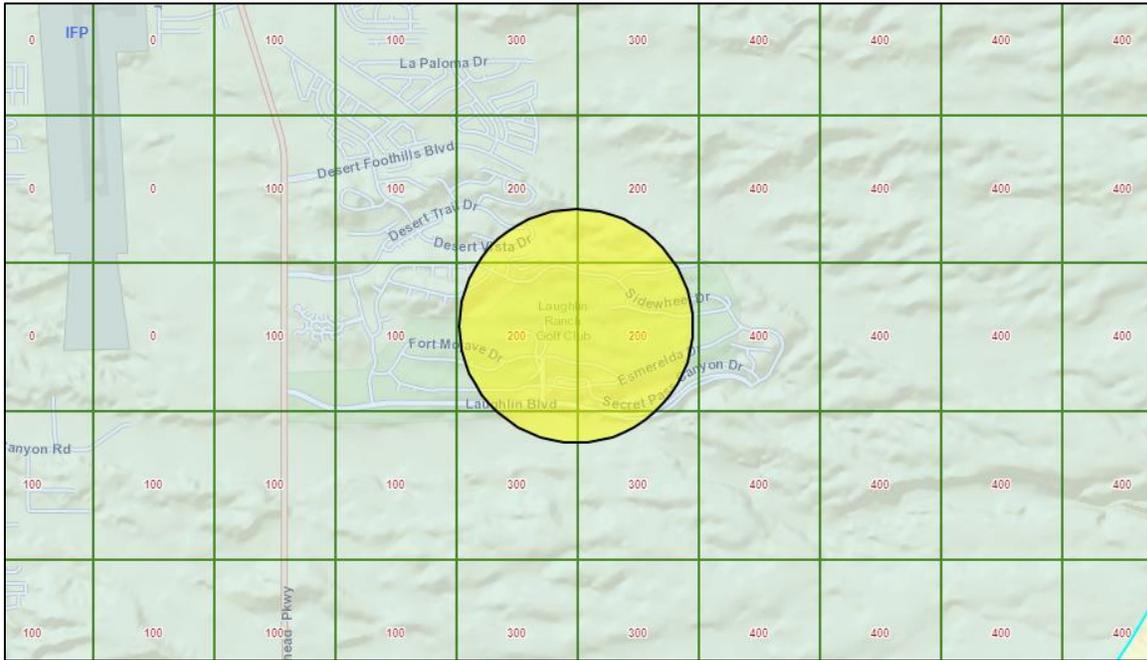


Figure 10: Scenario #2, Step 10 | Laughlin Ranch Golf Club | Bullhead City, AZ

Test Step	Test Procedure	Rule(s)
Step 10a.	Demonstrate how an operator using your application will initialize an authorization in this area for a flight maximum altitude of 200', from 1730-1830 (UTC-7).	[3.1a]
	<p>Note: This airspace is controlled from 0800-1800, local time (i.e., UTC-7), daily. This location does not observe daylight saving time.</p> <p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 10b.	Demonstrate how your application manages authorization requests with an Airspace Schedule.	[3.3.4b] [3.4.3a]
	<p>Criteria Notes:</p> <ul style="list-style-type: none"> Per the scope of LAANC and Part 107 / § 44809, no operational information outside controlled airspace is relevant to an authorization. Furthermore, the FAA cannot accept information outside controlled airspace in deference to privacy afforded the operator. Therefore, USSs should only submit operations or (temporal) portions of operations – that are during active airspace hours – to the FAA. <p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 10c.	Submit the operation to the FAA.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 10d.	Record the LAANC Reference Code(s).
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 10e.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]
	Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

Scenario #3

Auto Authorizations, Validity Checks, & Operator Advisement

Scenario Overview

This scenario applies to the following LAANC operation types:

Part 107 Auto-Approval	Part 107 Further Coordination	§ 44809 Auto-Approval
✓		✓

This scenario checks:

- Part 107 Auto-Approval authorization
- Class E notification
- § 44809 Auto-Approval authorization
- Stadium restrictions
- Advance submission time period
- Cancel operation
- Exceeding 400 feet
- Close operation (*if offered*)
- Flying at night

Test Steps

The area of the test operation is South Park in Lawrence, KS. The test operation is under the LWC UASFM.

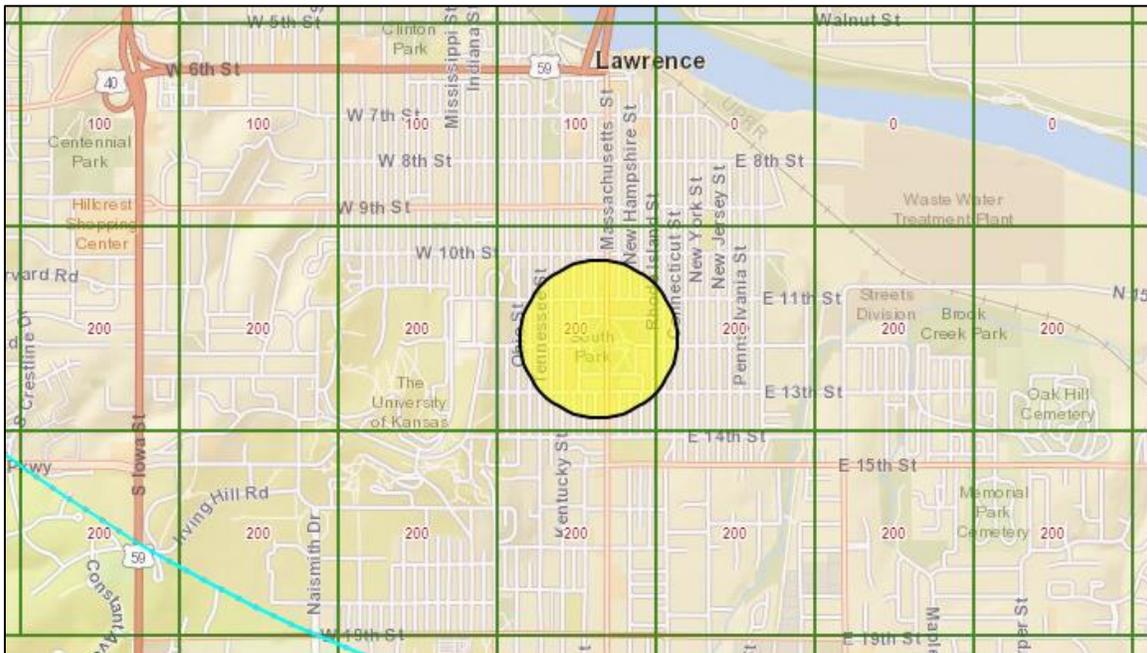


Figure 11: Scenario #3 | South Park | Lawrence, KS

Test Step	Test Procedure	Rule(s)
Step 1.	Demonstrate how an operator using your application will initialize a basic airspace authorization in this area for a flight maximum altitude of 200'.	[3.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 2.	Demonstrate how your application identifies the operation as eligible for auto-approved authorization.	[3.3.1a] [3.3.5a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	[3.3.5b]
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	[3.4a]
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 3.	How far in advance could an operator make the authorization submission?	[3.4.1b]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 4.	Demonstrate how your application checks against operations exceeding 400 feet.	[3.4.4e] [3.4.4f]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 5.	Demonstrate how your application advises operators of civil twilight periods and associated requirements. Criteria Notes: No person may operate a sUAS during periods of civil twilight unless the aircraft has lighted anti-collision lighting visible for at least 3 statute miles that has a flash rate sufficient to avoid a collision. <u>Civil twilight refers to the following:</u> (1) Except for Alaska, a period of time that begins 30 minutes before official sunrise and ends at official sunrise; (2) Except for Alaska, a period of time that begins at official sunset and ends 30 minutes after official sunset; and (3) In Alaska, the period of civil twilight as defined in the Air Almanac.	[3.4.4k]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 6.	<p>§ 44809 Only – Demonstrate how your application blocks § 44809 operators from flying at night.</p> <p>Criteria Notes: LAANC requires § 44809 operations at night to be blocked. The FAA has not designated a specific method for determining nighttime, but USSs should demonstrate a defensible algorithm for periods of nighttime excluding civil twilight.</p>	[3.4.4e] [3.4.4h]
	<p>Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 7.	<p>Part 107 Only – Demonstrate how your application advises operators of Part 107 night operations.</p> <p>Criteria Notes:</p> <ul style="list-style-type: none"> No person may operate a sUAS under Part 107 at night unless: (1) the operator has completed the required FAA training/testing, and (2) the aircraft has lighted anti-collision lighting visible for at least 3 statute miles that has a flash rate sufficient to avoid a collision. The FAA has not designated a specific method for determining nighttime, but USSs should demonstrate a defensible algorithm for periods of nighttime excluding civil twilight. 	[3.4.4g]
	<p>Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 8.	<p>Demonstrate how the Class E caveat is provided to the operator.</p> <p>Note: It is strongly recommended to provide a link to an aviation weather source that includes Meteorological Aerodrome Report (METAR) and Terminal Aerodrome Forecasts (TAF).</p>	[3.4.5a]
	<p>Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
	<p>Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 9.	Demonstrate how your application explicitly checks for stadium UAS restrictions and alerts operators accordingly.	[3.4.4n]
	<p>Criteria Notes:</p> <ul style="list-style-type: none"> The FAA has specified the source for stadium locations (see USS Performance Rules), but there is no standard source for event start and end times. USSs may propose a defensible source and application of this information or take a more conservative approach and make operators aware of stadium flight limitations, regardless of event times (directing the operators to check for relevant events on their own). Stadium flight limitation minimums include: operation is within 3 NM of an FAA-designated stadium and that operations are not permitted within 1-hr before/after the event time start/end. 	
	<p>Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p> <p>Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 10.	Submit the operation to the FAA.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 11.	Record the LAANC Reference Code(s).
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 12.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]
	<p>Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p> <p>Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 13.	How and when does your application indicate a successful auto-approved authorization?	[3.4.1a]
	<p>Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p> <p>Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 14.	Demonstrate the authorization text provided to the operator.	[3.5a] [3.5b]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	[3.6a]
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	[3.6b]
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 15.	Demonstrate the operator's access to the 12-character operation reference code.	[3.4.6a] [3.4.6b]
	Criteria Notes: <i>The operation reference code is extremely important to AT. It is the common operation identifier shared between AT and the operator. Accordingly, the FAA is looking for USS design features that make it easy for operators to access the reference code, understand its significance, and use it (if needed) in communication with AT.</i>	
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 16.	Demonstrate how an operator will quickly access the operation-specific authorization information in a form that can be produced.	[3.5c] [3.6c]
	Criteria Notes: <i>This could be within an application, or in a record such as an email. It must appear, with the required text, as an individual item (such as on-screen document) that can be selected and displayed.</i>	
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 17.	Demonstrate how the operator will manually cancel the authorization.	[3.4.8a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure
Step 18.	Submit the manual cancellation.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 19.	Verify on the FAA side that the operation has been manually cancelled.	[3.2.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

****Steps 20-24 to be performed ONLY if the Close Operation capability is offered.****

Test Step	Test Procedure
Step 20.	Submit a new, similar operation with an operation start time of 2 minutes in the future with a duration of 15+ minutes.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 21.	Record the LAANC Reference Code(s).
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 22.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

Test Step	Test Procedure
Step 23.	Demonstrate how the operator will close the operation. <i>Notes: Closing an operation allows the operator to terminate an operation after the operation start time has begun, but prior to the submitted end time. Closing an operation indicates to AT that the operation has completed prior to the filed operation end time.</i>
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 24.	Verify that the close message was received.
Test Actor	Test Notes:
FAA: AT	Click or tap here to enter text.

Scenario #4
NSUFR Blocking, Operation Changes, Invalidated, & Rescinded

Scenario Overview

This scenario applies to the following LAANC operation types:

Part 107 Auto-Approval	Part 107 Further Coordination	§ 44809 Auto-Approval
✓		✓

This scenario checks:

- Blocking in a NSUFR:
 - (1) Full-Time (FT)
 - (2) Part-Time (PT)
- Operator changes
- Detect invalid authorization [data source change]
- Cancel invalid operation
- Rescinded operation

Test Steps

The area of the test operations are near Diablo Creek Golf Course in Concord, CA. The test operations are under the CCR UASFM.

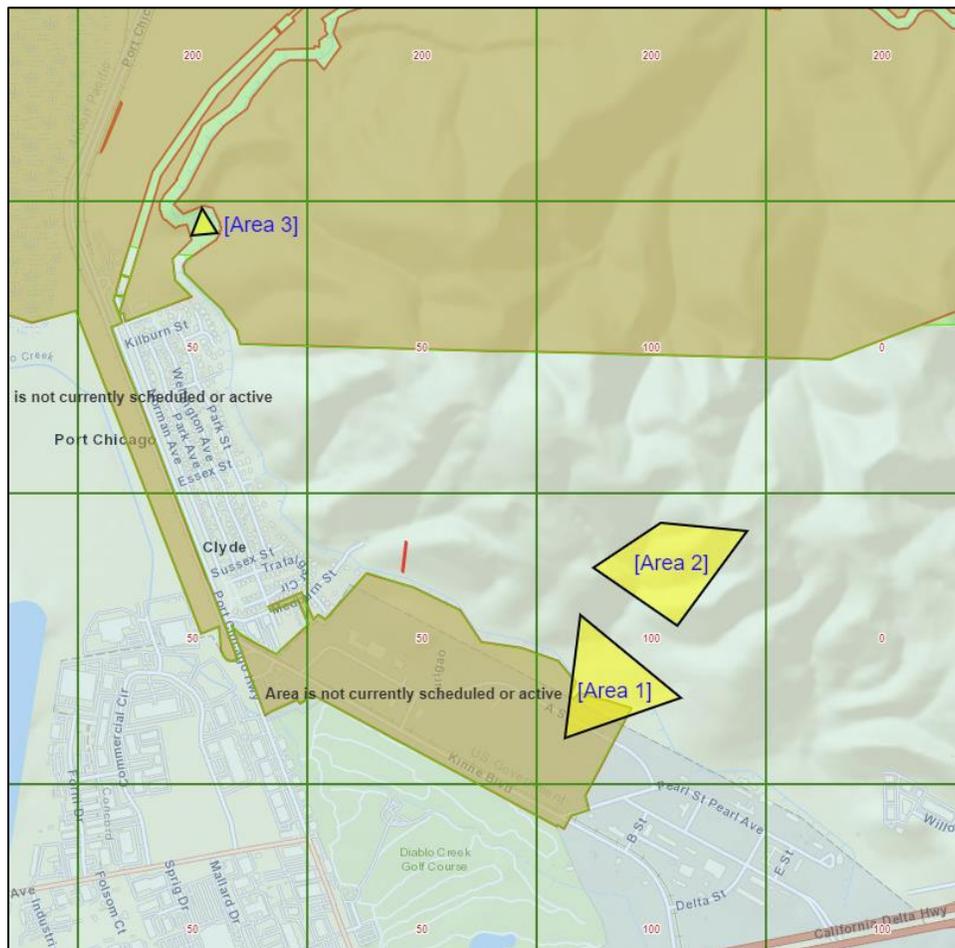


Figure 12. Scenario #4 | Diablo Creek Golf Course | Concord, CA

Test Step	Test Procedure	Rule(s)
Step 1.	Demonstrate how an operator using your application will initialize an airspace authorization in this area to include part of the FT NSUFR [Area 1], for a flight maximum altitude of 100'.	[3.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 2.	Demonstrate how your application explicitly checks and blocks for FT NSUFRs.	[3.4.4e] [3.4.4i]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 3.	Adjust the area of operation outside of the FT NSUFR [Area 2] and submit the operation to the FAA.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 4.	Record the LAANC Reference Code(s).
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 5.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 6.	Demonstrate how the operator can change something about the operation (time, altitude, etc.).	[3.4.7a]
	<p>Criteria Notes:</p> <ul style="list-style-type: none"> The FAA prefers implementations that use the change endpoints (see API Specification) so that the operation reference code is preserved, which helps all parties track what are truly distinct operations versus revisions of the same operation. However, it is acceptable to implement change functions by manually cancelling an operation and creating a new one with modified parameters. 	
	<p>Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p> <p>Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure
Step 7.	Submit the change to the FAA.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 8.	If a new operation is created, record the LAANC Reference Code(s).
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 9.	Verify on the FAA side that the change is received with the correct content.	[3.2.1a] [3.4.7b]
	<p>Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p> <p>Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

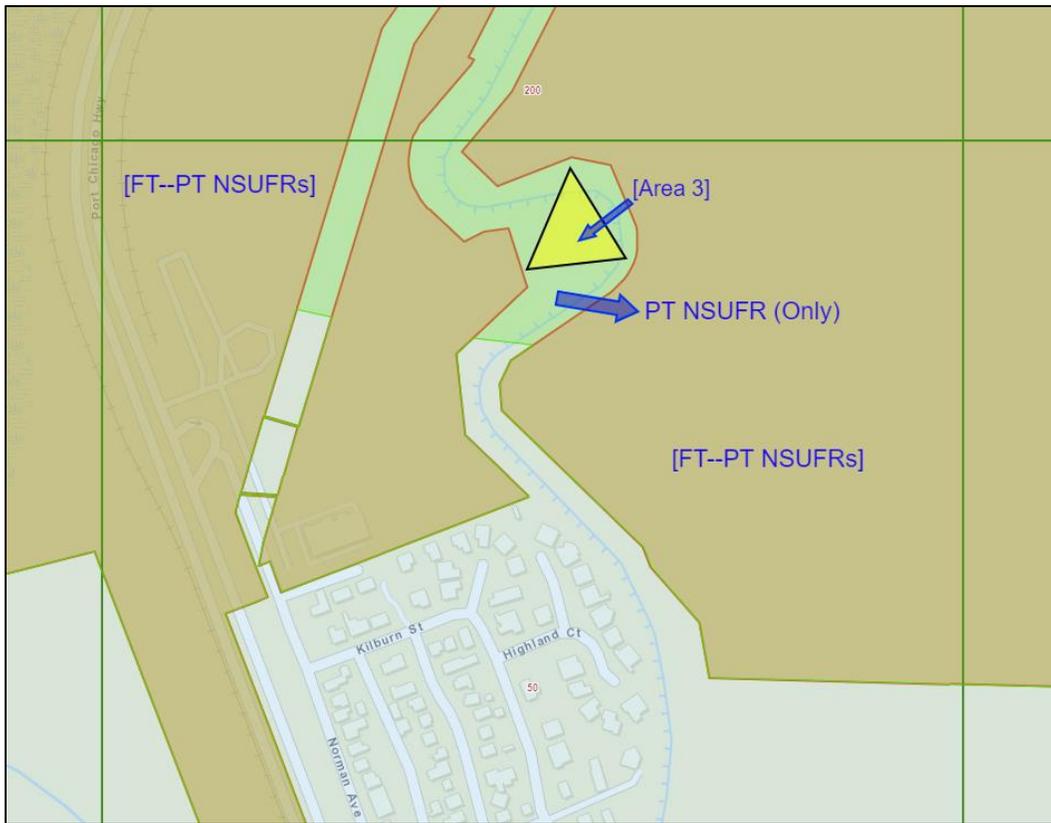


Figure 13: Scenario #4 | PT NSUFR | Concord, CA

Test Step	Test Procedure
Step 10.	<p>Initialize and submit a separate airspace authorization in [Area 3] above, covered by the PT NSUFR (but not covered by the FT NSUFR), for a flight maximum altitude of 50'.</p> <p>Notes:</p> <ul style="list-style-type: none"> The date & time of the operation must fall within the current PT NSUFR active window, per the secondary PT NSUFR source. In Figure 13, [Area 3] is fully encompassed by the PT NSUFR. The [FT--PT NSUFR] areas depicted in the figure represent areas covered by both FT & PT NSUFRs.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 11.	Record the LAANC Reference Code(s).
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)								
Step 12.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]								
	<table border="1"> <tr> <td>Results Part 107:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td>Results § 44809:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> </table>		Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A
	Results Part 107:		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A					
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A							
Test Actor										
FAA: AT	Test Notes: Click or tap here to enter text.									

Test Step	Test Procedure
Step 13.	<p>Switch to the secondary test UASFM source and the secondary PT NSUFR source; load the datasets into the USS system.</p> <p>Notes:</p> <ul style="list-style-type: none"> The secondary test UASFM source will change the altitude limit to 50' for the Operation in [Area 2]; the secondary PT NSUFR source will set the PT NSUFR to "Active" for the Operation in [Area 3].
Test Actor	Test Notes:
USS	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)								
Step 14.	How does your system handle map changes that invalidate prior authorizations?	[3.2.1a] [3.4.10a]								
	<p>Criteria Notes: A proper response in this case is to detect the conflict and prompt the operator, via the strongest available mechanisms, to cancel the invalid operations.</p> <table border="1"> <tr> <td>Results Part 107:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td>Results § 44809:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> </table>		Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A
	Results Part 107:		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A					
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A							
Test Actor										
USS	Test Notes: Click or tap here to enter text.									

Test Step	Test Procedure	Rule(s)								
Step 15.	Demonstrate how soon operator contact is initiated and how the operator is directed to cancel the invalid operations, confirming that the prior authorizations are invalid.	[3.4.10b] [3.4.10c] [3.4.10d]								
	<table border="1"> <tr> <td>Results Part 107:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td>Results § 44809:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> </table>		Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A
	Results Part 107:		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A					
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A							
Test Actor										
USS	Test Notes:									

Test Step	Test Procedure
Step 16.	Cancel the invalid operations.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)								
Step 17.	Verify that the invalid operations are cancelled on the FAA side.	[3.4.10d]								
	<table border="1"> <tr> <td>Results Part 107:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td>Results § 44809:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> </table>		Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A
	Results Part 107:		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A					
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A							
Test Actor										
FAA: AT	Test Notes: Click or tap here to enter text.									

Test Step	Test Procedure	Rule(s)						
Step 18.	Initialize a new authorization in [Area 3], to include part of the PT NSUFR, for a flight maximum altitude of 50'.	[3.4.4e] [3.4.4i]						
	<i>Note: The date & time of the operation must fall within the current PT NSUFR active window, per the secondary PT NSUFR source.</i>							
	Demonstrate how your application explicitly checks and blocks for PT NSUFRs.							
	<table border="1"> <tr> <td>Results Part 107:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td>Results § 44809:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> </table>		Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass
Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A					
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A					
Test Actor								
Operator	Test Notes: Click or tap here to enter text.							

Test Step	Test Procedure
Step 19.	Initialize and submit a new operation with a flight maximum altitude of 50' in [Area 2], outside of the FT NSUFR (reference Figure 12).
Test Actor	
Operator	Test Notes: Click or tap here to enter text.

Test Step	Test Procedure
Step 20.	Record the LAANC Reference Code(s).
Test Actor	
FAA: Tester	Test Notes: Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)								
Step 21.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]								
	<table border="1"> <tr> <td>Results Part 107:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td>Results § 44809:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> </table>		Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A
	Results Part 107:		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A					
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A							
Test Actor										
FAA: AT	Test Notes: Click or tap here to enter text.									

Test Step	Test Procedure
Step 22.	Rescind the operation on the FAA side.
Test Actor	Test Notes:
FAA: AT	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)								
Step 23.	Demonstrate the USS system's ability to receive LAANC messages from the FAA.	[3.2.1a]								
	<table border="1"> <tr> <td>Results Part 107:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td>Results § 44809:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> </table>		Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A
	Results Part 107:		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A					
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A							
Test Actor	Test Notes:									
USS	Click or tap here to enter text.									

Test Step	Test Procedure	Rule(s)								
Step 24.	Demonstrate how soon operator contact is initiated and how the operator is directed to acknowledge the operation in confirmation that it was rescinded.	[3.4.9a]								
	<p>Criteria Notes:</p> <ul style="list-style-type: none"> The FAA is concerned that the urgency of processing rescinded operations is communicated to the operator. AT cannot be sure that the operation will not fly until the pilot confirms by acknowledging the operation. As the original authorization start time approaches, this could become a critical air traffic issue for controllers. USSs should design their applications accordingly to get the operator's attention (e.g., notification, text message, email, automatic phone call, etc.) and strongly direct them to acknowledge the rescinded operation. 									
	<table border="1"> <tr> <td>Results Part 107:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td>Results § 44809:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> </table>		Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A
	Results Part 107:		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A					
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A							
Test Actor	Test Notes:									
USS	Click or tap here to enter text.									

Test Step	Test Procedure	Rule(s)								
Step 25.	Demonstrate how your application will prompt an operator to acknowledge outstanding rescinded authorizations.	[3.4.9b]								
	<p>Criteria Notes: See step above.</p> <table border="1"> <tr> <td>Results Part 107:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td>Results § 44809:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> </table>		Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A
	Results Part 107:		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A					
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A							
Test Actor	Test Notes:									
USS	Click or tap here to enter text.									

Test Step	Test Procedure
Step 26.	Acknowledge the operation.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)								
Step 27.	Verify that the rescinded operation is acknowledged on the FAA side.	[3.2.1a] [3.4.9c]								
	<table border="1"> <tr> <td>Results Part 107:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td>Results § 44809:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> </table>		Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A
	Results Part 107:		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A					
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A							
Test Actor										
FAA: AT	Test Notes: Click or tap here to enter text.									

Test Step	Test Procedure
Step 28.	Switch back to the primary test UASFM source and primary PT NSUFR source and load the maps into the USS system.
Test Actor	
USS	Test Notes: Click or tap here to enter text.

Scenario #5

Crossing Airspace Boundary & Overlapping Authorizations

Scenario Overview

This scenario applies to the following LAANC operation types:

Part 107 Auto-Approval	Part 107 Further Coordination	§ 44809 Auto-Approval
✓		✓

This scenario checks:

- Crossing airspace boundary [Controlled-Uncontrolled]
- Temporally overlapping authorizations exceed allowable spatial distance
- Excessive number of temporally overlapping authorizations

Test Steps

The area of the test operation is David T. Kennedy Park in Miami, FL. The test operation is under the MIA UASFM.

Note: At the surface level, MIA airspace has an irregularly shaped boundary that passes over the park.

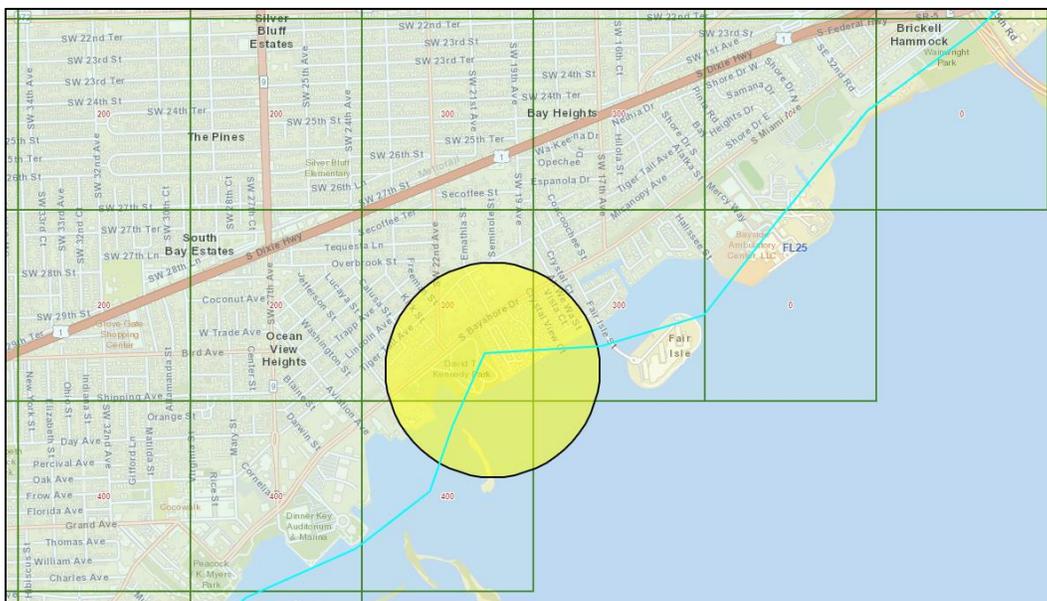


Figure 14: Scenario #5 | David T. Kennedy Park | Miami, FL

Test Step	Test Procedure	Rule(s)								
Step 1.	Demonstrate how an operator using your application will initialize an authorization in this area for a flight maximum altitude of 300'.	[3.1a]								
	<table style="width: 100%; border: none;"> <tr> <td style="padding: 2px 5px;">Results Part 107:</td> <td style="padding: 2px 5px;"><input type="checkbox"/> Pass</td> <td style="padding: 2px 5px;"><input type="checkbox"/> Fail</td> <td style="padding: 2px 5px;"><input type="checkbox"/> N/A</td> </tr> <tr> <td style="padding: 2px 5px;">Results § 44809:</td> <td style="padding: 2px 5px;"><input type="checkbox"/> Pass</td> <td style="padding: 2px 5px;"><input type="checkbox"/> Fail</td> <td style="padding: 2px 5px;"><input type="checkbox"/> N/A</td> </tr> </table>	Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	
	Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A						
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A							
Test Actor	Test Notes:									
Operator	Click or tap here to enter text.									

Test Step	Test Procedure	Rule(s)							
Step 2.	Demonstrate how your application manages operations that cross a surface airspace boundary.	[3.3.4a] [3.3.4b] [3.3.4d]							
	<p>Criteria Notes:</p> <ul style="list-style-type: none"> Per the scope of LAANC and Part 107 / § 44809, no operational information outside controlled airspace is relevant to an authorization. Furthermore, the FAA cannot accept information outside controlled airspace in deference to privacy afforded the operator. Therefore, USSs should trim operational volumes to the airspace boundary before submission to the FAA. 								
	<table border="0"> <tr> <td>Results Part 107:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td>Results § 44809:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> </table>	Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A
Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A						
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A						
Test Actor	Test Notes:								
USS	Click or tap here to enter text.								

Test Step	Test Procedure
Step 3.	Submit the operation to the FAA.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 4.	Record the LAANC Reference Code(s).
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)								
Step 5.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]								
	<table border="0"> <tr> <td>Results Part 107:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> <tr> <td>Results § 44809:</td> <td><input type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> <td><input type="checkbox"/> N/A</td> </tr> </table>	Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	
	Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A						
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A							
Test Actor	Test Notes:									
FAA: AT	Click or tap here to enter text.									

Test Step	Test Procedure	Rule(s)
Step 6.	Create an auto-approved operation under the VRB UASFM [Vero Beach, FL] (over 100 NM away), which occurs with an overlapping time period and same operator (name and phone number) with the approved operation.	[3.7d]
	Demonstrate that the submission is blocked.	
	Note: A message should be generated to inform the user of the reason for the block.	
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 7.	Return to the Miami airspace – Create additional auto-approved operations, all with overlapping time periods with the first auto-approved operation above, until there are 5 simultaneous approved operations.
	Note: The authorizations may or may not (spatially) overlap.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 8.	Demonstrate that a message is displayed when an auto-approved submission is made with an overlapping time period with another non-pending operation.	[3.7e]
	Criteria Notes:	
	<ul style="list-style-type: none"> • Message must be substantially similar to: “There are one or more operations for this operator and time period. The operator should cancel all operations that will not be used before the operation start time.” • There should be a message generated after each overlapping operation submission, resulting in a total four (4) messages. 	
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
<p>Step 9.</p>	<p>Demonstrate that the 6th auto-approved operation with an overlapping time period is blocked.</p> <p>Notes:</p> <ul style="list-style-type: none"> • <i>Blocking before the 6th submission is permissible, but not required.</i> • <i>A message should be generated to inform the user of the reason for the block.</i> 	<p>[3.7c]</p>
	<p>Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
	<p>Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
<p>USS</p>	<p>Click or tap here to enter text.</p>	

Scenario #6

Crossing Adjacent Airspace Boundaries

Scenario Overview

This scenario applies to the following LAANC Operation Types:

Part 107 Auto-Approval	Part 107 Further Coordination	§ 44809 Auto-Approval
✓		✓

This scenario checks:

- Crossing adjacent [LAANC enabled] airspace boundaries
- Sequential LAANC reference codes

Test Steps

The area of the test operation is Old Tampa Bay, FL. The test operation falls under PIE (southwest airspace) and TPA (northeast airspace) UASFMs. The airspace boundary between the two intersects the operational area.

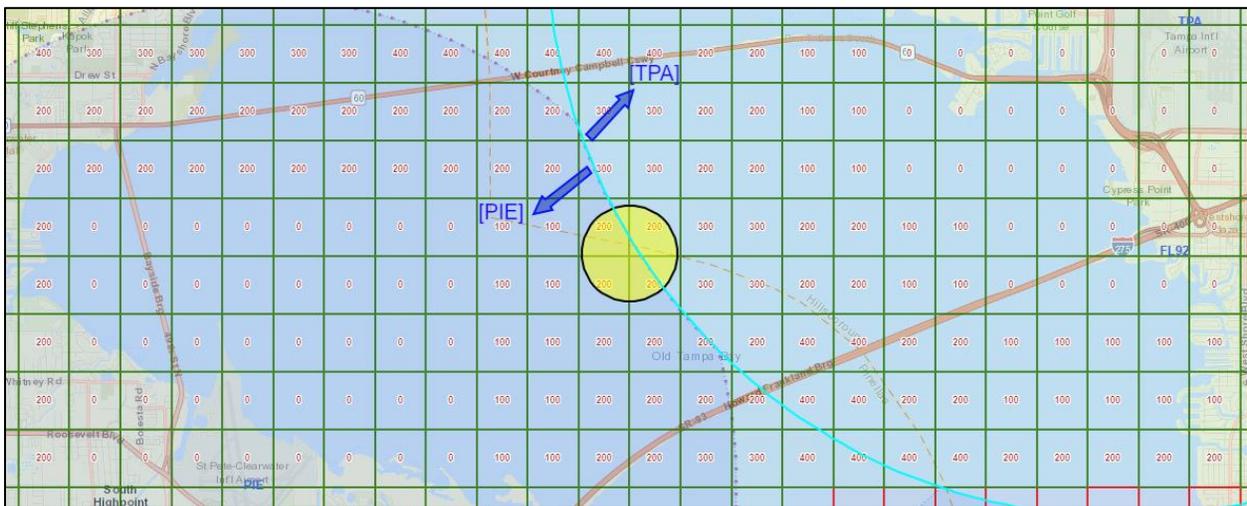


Figure 15: Scenario #6 | Old Tampa Bay, FL

Test Step	Test Procedure	Rule(s)								
Step 1.	Demonstrate how an operator using your application will initialize an authorization in this area for a flight maximum altitude of 200'.	[3.1a]								
	<table style="width: 100%; border: none;"> <tr> <td style="border: none; padding: 2px 5px;">Results Part 107:</td> <td style="border: none; padding: 2px 5px;"><input type="checkbox"/> Pass</td> <td style="border: none; padding: 2px 5px;"><input type="checkbox"/> Fail</td> <td style="border: none; padding: 2px 5px;"><input type="checkbox"/> N/A</td> </tr> <tr> <td style="border: none; padding: 2px 5px;">Results § 44809:</td> <td style="border: none; padding: 2px 5px;"><input type="checkbox"/> Pass</td> <td style="border: none; padding: 2px 5px;"><input type="checkbox"/> Fail</td> <td style="border: none; padding: 2px 5px;"><input type="checkbox"/> N/A</td> </tr> </table>	Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A	
	Results Part 107:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A						
Results § 44809:	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail	<input type="checkbox"/> N/A							
Test Actor	Test Notes:									
Operator	Click or tap here to enter text.									

Test Step	Test Procedure	Rule(s)
Step 2.	Demonstrate how your application manages operations that cross a surface airspace boundary between two facilities that have UASFMs.	[3.3.3a] [3.3.3b] [3.3.4a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 3.	Submit the operation to the FAA.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 4.	Record the LAANC Reference Code(s).
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 5.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)	
Step 6.	Verify the LAANC Reference Codes have two unique authorization numbers as the last digit.	[3.4.6c]	
	<i>Criteria Notes: Per the USS Performance Rules, this is a single “operation” that has been divided into two “authorizations”. The operation reference codes should reflect this association. One authorization should be “ABC123456XX0” and the other “ABC123456XX1”.</i>		
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A		
	Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A		
Test Actor	Test Notes:		
FAA: Tester	Click or tap here to enter text.		

Scenario #7

FC Authorizations, Validity Checks, & Operator Advisement

Scenario Overview

This scenario applies to the following LAANC operation types:

Part 107 Auto-Approval	Part 107 Further Coordination	§ 44809 Auto-Approval
	✓	✓

This scenario checks:

- § 44809 UASFM altitude blocking
 - (No Further Coordination support)
 - Part 107 Further Coordination authorization
 - Exceeding 400 feet
 - Flying at night
 - Stadium restrictions
- Further Coordination timeline
 - Contacting Air Traffic
 - Class E notification
 - Cancel (manual) operation
 - Close operation (*if offered*)

Test Steps

The area of the test operation is the Cross Country Course at Iowa State University in Ames, IA. The test operation is under the AMW UASFM.

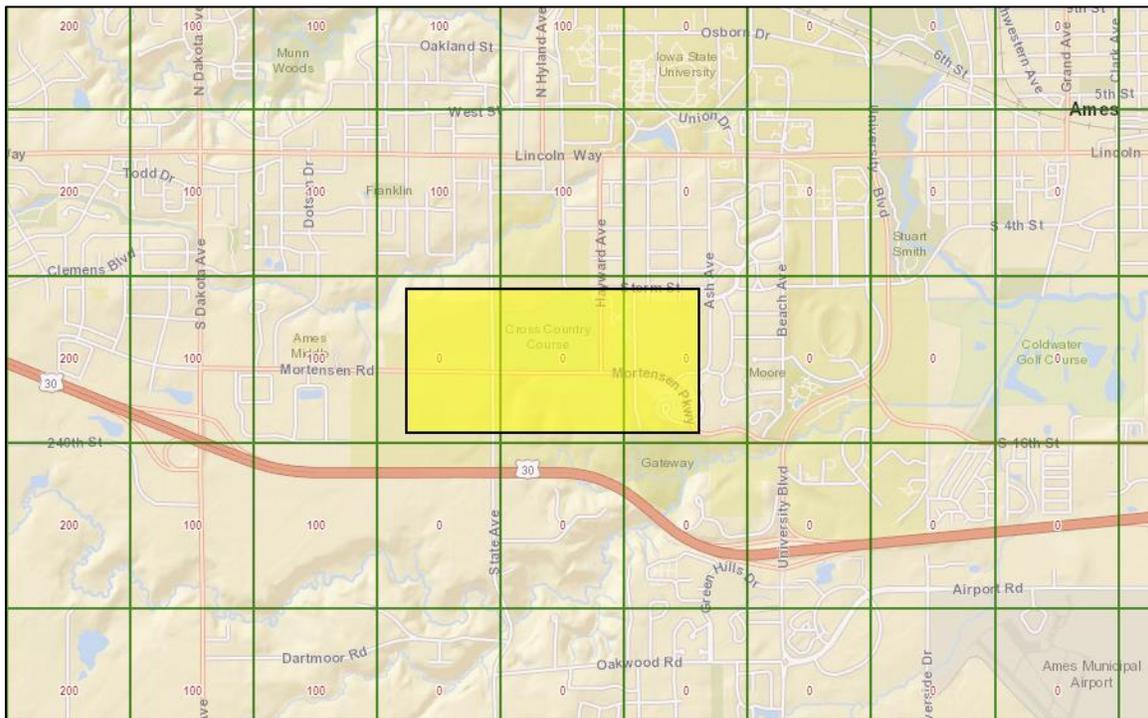


Figure 16: Scenario #7 | Cross Country Course, Iowa State University | Ames, IA

Test Step	Test Procedure	Rule(s)
Step 1.	<p>§ 44809 Only – Initialize an authorization in this area for a flight maximum altitude of 100’.</p> <p>Demonstrate how your application informs the operator their request exceeds the altitude limit on the UASFM.</p>	<p>[3.1a] [3.4a]</p>
	<p>Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 2.	<p>§ 44809 Only – Demonstrate how your application blocks the operator from submitting a request which exceeds the UASFM altitude limits.</p>	<p>[3.4a]</p>
	<p>Results § 44809: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 3.	<p>Initialize an authorization in this area for a flight maximum altitude of 100’.</p> <p>Demonstrate how your application identifies the operation as eligible for further coordination.</p>	<p>[3.3.1a] [3.3.5a] [3.3.5b] [3.4a]</p>
	<p>Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 4.	<p>Demonstrate or explain how your application checks against operators exceeding 400 feet.</p>	<p>[3.4.4e] [3.4.4f]</p>
	<p>Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 5.	Demonstrate how your application advises operators of civil twilight periods and associated requirements. Criteria Notes: <i>No person may operate a sUAS during periods of civil twilight unless the aircraft has lighted anti-collision lighting visible for at least 3 statute miles that has a flash rate sufficient to avoid a collision.</i>	[3.4.4k]
	<u>Civil twilight refers to the following:</u> (1) <i>Except for Alaska, a period of time that begins 30 minutes before official sunrise and ends at official sunrise;</i> (2) <i>Except for Alaska, a period of time that begins at official sunset and ends 30 minutes after official sunset; and</i> (3) <i>In Alaska, the period of civil twilight as defined in the Air Almanac.</i>	
Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A		
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 6.	Demonstrate how your application advises operators of Part 107 night operations. Criteria Notes: <ul style="list-style-type: none"> <i>No person may operate a sUAS under Part 107 at night unless: (1) the operator has completed the required FAA training/testing, and (2) the aircraft has lighted anti-collision lighting visible for at least 3 statute miles that has a flash rate sufficient to avoid a collision.</i> <i>The FAA has not designated a specific method for determining nighttime, but USSs should demonstrate a defensible algorithm for periods of nighttime excluding civil twilight.</i> 	[3.4.4g]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 7.	Demonstrate how your application explicitly checks for stadium UAS restrictions and alerts operators accordingly. Criteria Notes: <ul style="list-style-type: none"> <i>The FAA has specified the source for stadium locations (see USS Performance Rules), but there is no standard source for event start and end times.</i> <i>USSs may propose a defensible source and application of this information or take a more conservative approach and make operators aware of stadium flight limitations, regardless of event times (directing the operators to check for relevant events on their own).</i> <i>Stadium flight limitation minimums include: operation is within 3 NM of an FAA-designated stadium and that operations are not permitted within 1-hr before/after the event time start/end.</i> 	[3.4.4n]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 8.	How does your application inform operators of the manual timeline of further coordination?	[3.4.2e]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 9.	How far in advance could an operator make the further coordination request submission?	[3.4.2d]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 10.	Submit the operation to the FAA.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 11.	Record the LAANC Reference Code.
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 12.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 13.	How does your application indicate a successful submission and discourage operators from contacting AT?	[3.4.2f]
	<p>Criteria Notes: <i>The FAA is concerned with minimizing nuisance phone calls to AT towers. Therefore, USSs are expected to clearly communicate to operators the manual nature of further coordination and that they should expect lengthy response times or possibly no response at all. The tower should not be called concerning further coordination requests that have been submitted.</i></p> Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 14.	Approve the authorization request on the FAA side.
Test Actor	Test Notes:
FAA: AT	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 15.	How does your system receive LAANC messages from the FAA?	[3.2.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 16.	Verify that the approval message was received.	[3.4.2a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 17.	How does your application indicate an approved further coordination request to the operator?	[3.1a] [3.4.2a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 18.	Demonstrate the authorization text provided to the operator.	[3.5a] [3.5b]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 19.	Demonstrate how the Class E caveat is provided to the operator. <i>Note: It is strongly recommended to provide a link to an aviation weather source that includes Meteorological Aerodrome Report (METAR) and Terminal Aerodrome Forecasts (TAF).</i>	[3.4.5a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 20.	Demonstrate the operator's access to the 12-character operation reference code. <i>Criteria Notes: The operation reference code is extremely important to AT. It is the common operation identifier shared between AT and the operator. Accordingly, the FAA is looking for USS design features that make it easy for operators to access the reference code, understand its significance, and use it (if needed) in communication with AT.</i>	[3.4.6a] [3.4.6b]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 21.	Demonstrate how the operator will manually cancel the authorization.	[3.4.8a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure
Step 22.	Submit the manual cancellation.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 23.	Verify on the FAA side that the operation has been manually cancelled.	[3.2.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

****Steps 24-28 to be performed ONLY if the Close Operation capability is offered.****

Test Step	Test Procedure
Step 24.	Submit an operation at least 24 hours in the future that will be active during the Onboarding Test for evaluation of the close operation capability.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 25.	Record the LAANC Reference Code(s).
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 26.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]
	Approve the authorization request on the FAA side.	
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

Test Step	Test Procedure
Step 27.	Demonstrate how the operator will close the operation. <i>Notes: Closing an operation allows the operator to terminate an operation after the operation start time has begun, but prior to the submitted end time. Closing an operation indicates to AT that the operation has completed prior to the filed operation end time.</i>
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 28.	Verify that the close message was received.
Test Actor	Test Notes:
FAA: AT	Click or tap here to enter text.

Scenario #8

NSUFR Blocking, Subdivided Operations, FC Denied, & Overlapping Authorizations

Scenario Overview

This scenario applies to the following LAANC operation types:

Part 107 Auto-Approval	Part 107 Further Coordination	§ 44809 Auto-Approval
	✓	

This scenario checks:

- Blocking in a FT NSUFR
- Subdividing operation types
- Further Coordination request denied
- Temporally overlapping authorizations exceed allowable spatial distance
- Excessive number of temporally overlapping authorizations

Test Steps

The area of the test operation is in the Rutledge, PA (near Philadelphia, PA). The test operation is under the PHL UASFM.

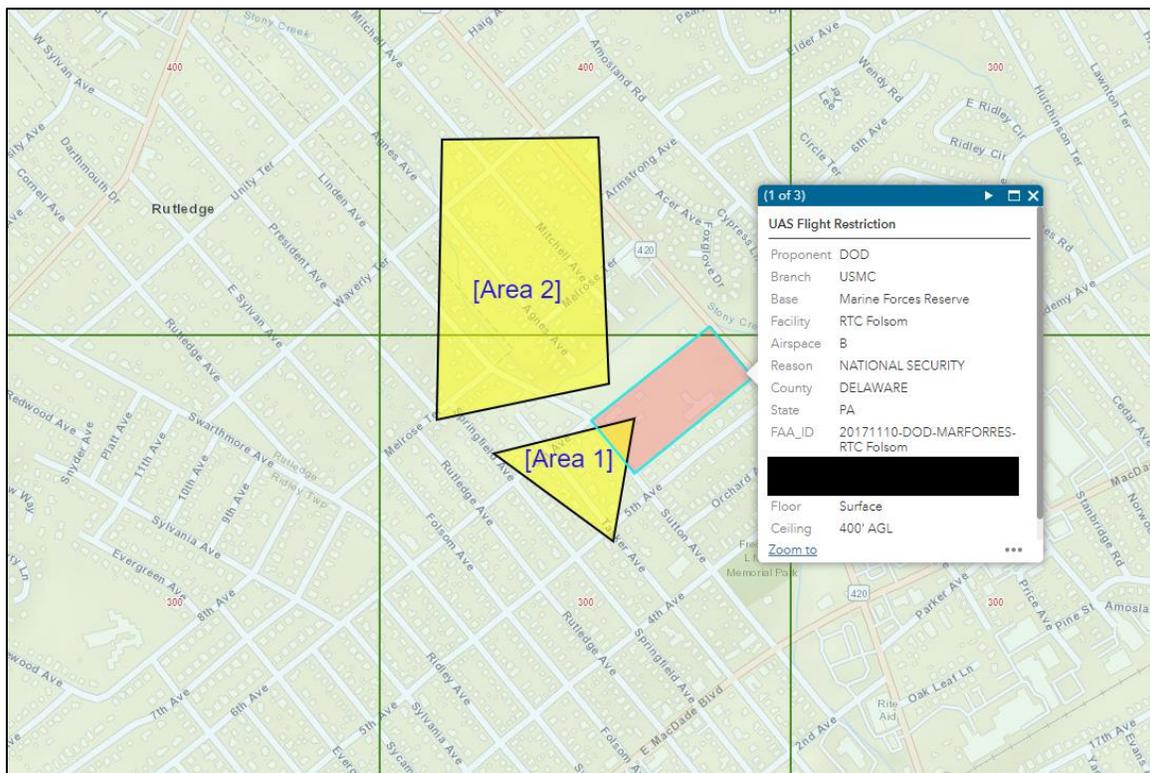


Figure 17: Scenario #8 | Rutledge, PA

Test Step	Test Procedure	Rule(s)
Step 1.	Demonstrate how an operator using your application will initialize an airspace authorization in [Area 1], to include part of the FT NSUFR, for a flight maximum altitude of 300'.	[3.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 2.	Demonstrate how your application explicitly checks and blocks for FT NSUFRs.	[3.4.4e] [3.4.4i]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 3.	Adjust the area of operation outside of the FT NSUFR and initialize an airspace authorization in [Area 2] for a flight maximum altitude of 400'.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 4.	Demonstrate if your application subdivides the operation into two adjacent operational volumes; one for auto-approval, and one for further coordination.	[3.3.3a] [3.3.3b]
	<i>Criteria Notes: Subdividing the operation is preferred by the FAA, so that AT only needs to manually approve parts of the operation that require it. However, it is permissible by the USS Performance Rules to submit this operation as a single Further Coordination.</i>	
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 5.	Demonstrate how your application identifies the operation as eligible for further coordination.	[3.3.1a] [3.4a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 6.	Submit the operation to the FAA.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 7.	Record the LAANC Reference Code.
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 8.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

Test Step	Test Procedure
Step 9.	Deny the authorization request on the FAA side.
Test Actor	Test Notes:
FAA: AT	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 10.	Verify that the denial message was received.	[3.4.2a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: Tester	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 11.	Demonstrate how your application indicates a denied further coordination request and advises the operator not to submit an operation with the same input parameters as the one that was denied.	[3.4.2a] [3.4.2g]
	Criteria Note: <i>Advisement to the operator must be substantially similar to the suggested message accompanying Rule [3.4.2g].</i>	
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 12.	<p>Create a further coordination request under the IPT UASFM [Williamsport, PA] (over 100 NM away), which occurs with an overlapping time period with the approved operation.</p> <p>Demonstrate that the submission is blocked.</p> <p>Notes:</p> <ul style="list-style-type: none"> If only a single FC request was created in Step 4, create and submit a new operation such that it can be approved (i.e., an approved authorization in PHL is required to demonstrate this step). A message should be generated to inform the user of the reason for the block. 	[3.7d]
	<p>Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure
Step 13.	<p>Return to the Philadelphia airspace – Create additional operations, all with overlapping time periods with the first operation above, until there are 5 simultaneous non-pending operations.</p> <p>Criteria Notes:</p> <ul style="list-style-type: none"> If the USS offers both Part 107 Auto-Approval and Part 107 Further Coordination, then this step must have at least one Further Coordination authorization. Otherwise, Auto-Approved authorizations may also be included. A Further Coordination operation that has a denied authorization and an approved authorization is considered a non-pending operation. <p>Note: The authorizations & requests may or may not (spatially) overlap.</p>
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 14.	<p>Demonstrate that a message is displayed when a Further Coordination submission is made with an overlapping time period with another non-pending operation.</p> <p>Criteria Notes:</p> <ul style="list-style-type: none"> Message must be substantially similar to: “There are one or more operations for this operator and time period. The operator should cancel all operations that will not be used before the operation start time.” There should be a message generated after each overlapping operation submission, resulting in a total four (4) messages. 	[3.7e]
	<p>Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 15.	Demonstrate that the 6 th operation with an overlapping time period is blocked. Notes: <ul style="list-style-type: none"> • <i>Blocking before the 6th submission is permissible, but not required.</i> • <i>A message should be generated to inform the user of the reason for the block.</i> 	[3.7c]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Scenario #9

FC Timeline, Crossing Airspace Boundary, & Invalidated

Scenario Overview

This scenario applies to the following LAANC operation types:

Part 107 Auto-Approval	Part 107 Further Coordination	§ 44809 Auto-Approval
	✓	

This scenario checks:

- Part 107 Further Coordination submission timeline
- Crossing airspace boundary [Controlled-Uncontrolled]
- Blocking in a PT NSUFR (*if not already completed*)
- Invalid authorization detection [data source change]
- Cancel (invalid/automatic) operation

Test Steps

The area of the test operations are Sparks, NV and Concord, CA (*if required*). The test operations are under the RNO UASFM and CCR UASFM, respectively .

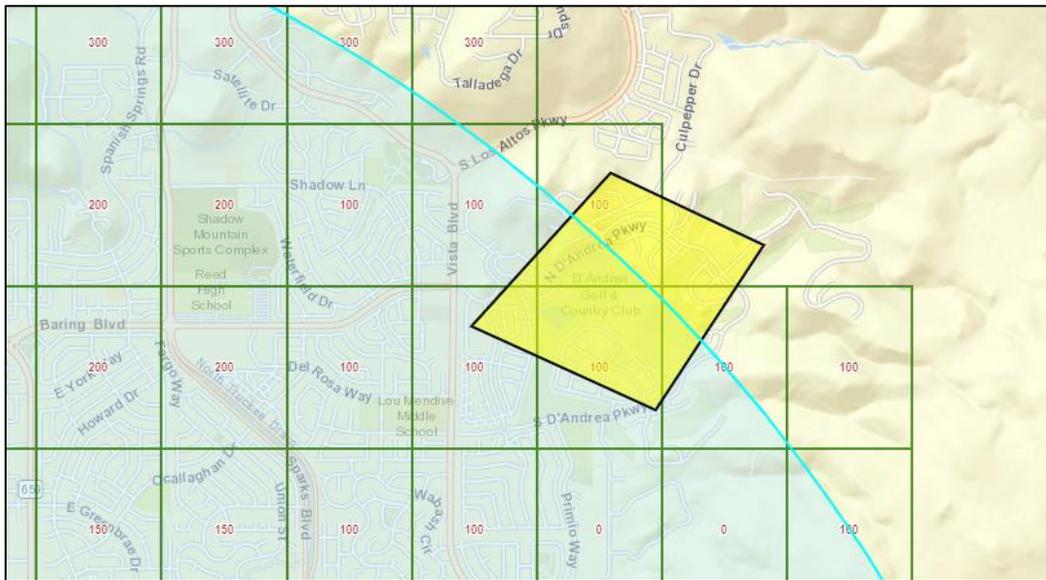


Figure 18: Scenario #9 | D'Andrea Golf & Country Club | Sparks, NV

Test Step	Test Procedure	Rule(s)
Step 1.	Demonstrate how an operator using your application will initialize an authorization over D'Andrea Golf & Country Club for a flight maximum altitude of 200'.	[3.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 2.	Demonstrate how your application will block a further coordination request less than 24 hours in the future.	[3.4.2b]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 3.	Demonstrate how your application manages operations that cross a surface airspace boundary.	[3.3.4a] [3.3.4b] [3.3.4d]
	Criteria Notes: <ul style="list-style-type: none"> Per the scope of LAANC and Part 107, no operational information outside controlled airspace is relevant to an authorization. Furthermore, the FAA cannot accept information outside controlled airspace in deference to privacy afforded the operator. Therefore, USSs should trim operational volumes to the airspace boundary before submission to the FAA. 	
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 4.	Submit the further coordination request to the FAA.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 5.	Record the LAANC Reference Code.
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 6.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

Test Step	Test Procedure
Step 7.	Approve the authorization request on the FAA side.
Test Actor	Test Notes:
FAA: AT	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 8.	Verify that the approval message was received.	[3.4.2a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: Tester	Click or tap here to enter text.	

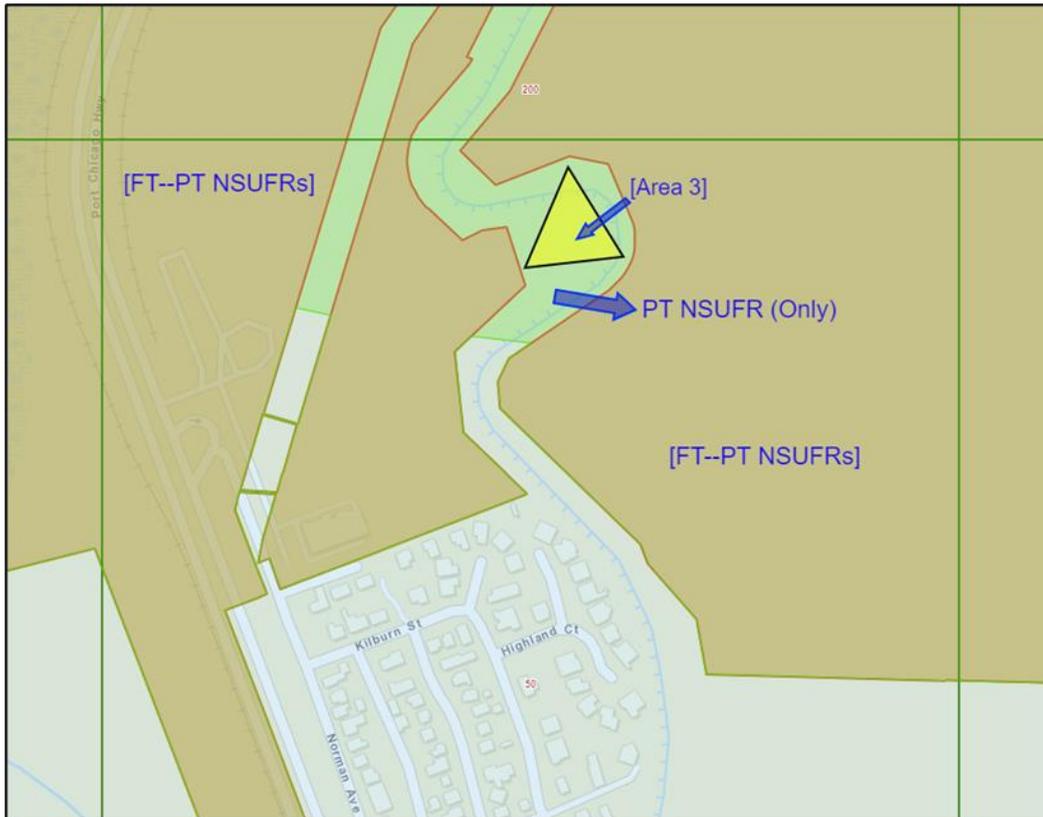


Figure 19: Scenario #9 | PT NSUFR | Concord, CA

Test Step	Test Procedure
Step 9.	Initialize and submit a separate further coordination request for a flight maximum altitude of 200'.
	The operation is under the CCR UASFM in [Area 3] above, covered by the PT NSUFR (but not covered by the FT NSUFR) – see Scenario #4 for reference. Note: <ul style="list-style-type: none"> The date & time of the operation must fall within the current PT NSUFR active window, per the secondary PT NSUFR source. In Figure 19, [Area 3] is fully encompassed by the PT NSUFR. The [FT--PT NSUFR] areas depicted in the figure represent areas covered by both FT & PT NSUFRs.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 10.	Record the LAANC Reference Code(s).
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 11.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

Test Step	Test Procedure
Step 12.	Approve the authorization request on the FAA side.
Test Actor	Test Notes:
FAA: AT	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 13.	Verify that the approval message was received.	[3.4.2a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: Tester	Click or tap here to enter text.	

Test Step	Test Procedure
Step 14.	Switch to the secondary test UASFM source and the secondary PT NSUFR source; load the datasets into the USS system. <i>Note: The secondary test UASFM source will turn the LAANC ready flag to zero [0] for the grid cell of the authorization in Sparks, NV; the secondary PT NSUFR source will set the PT NSUFR to "Active" for the authorization in Concord, CA.</i>
Test Actor	Test Notes:
USS	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 15.	How does your system handle map changes that invalidate prior authorizations?	[3.2.1a] [3.4.10a]
	Criteria Notes: A proper response in this case is to detect the conflict and prompt the operator, via the strongest available mechanisms, to cancel the invalid operation. Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 16.	Demonstrate how soon operator contact is initiated and how the operator is directed to cancel the invalid operation in confirmation that a prior authorization is invalid.	[3.4.10b] [3.4.10c]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS		

Test Step	Test Procedure
Step 17.	Cancel the invalid operation.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 18.	Verify that the invalid operation is cancelled on the FAA side.	[3.4.10d]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 19.	Initialize an authorization in this area to include part of the PT NSUFR [Area 2], for a flight maximum altitude of 200'. <i>Note: The date & time of the operation must fall within the current PT NSUFR active window, per the secondary PT NSUFR source.</i> Demonstrate how your application explicitly checks and blocks for PT NSUFRs.	[3.4.4e] [3.4.4i]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

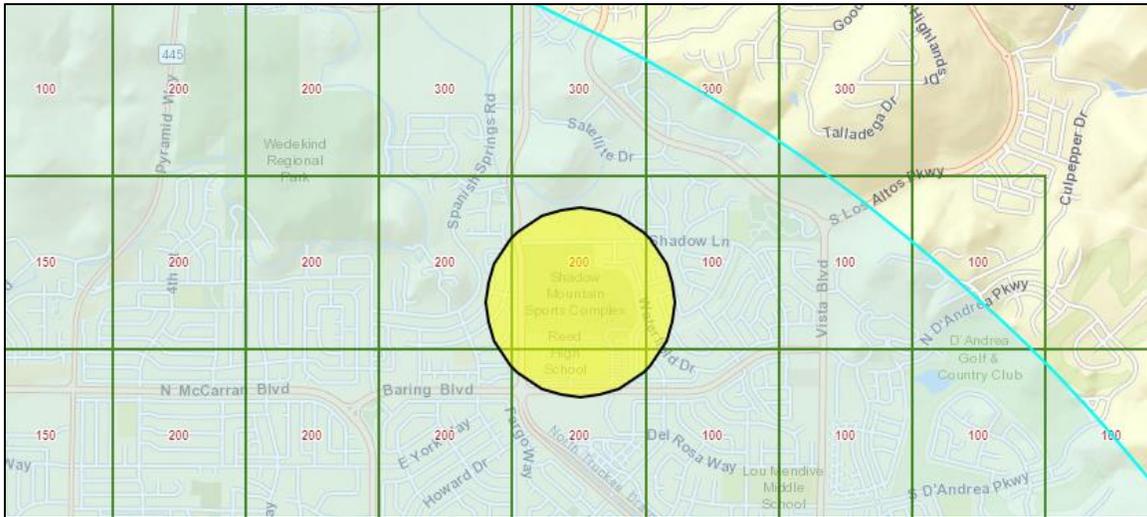


Figure 20: Scenario #9 | Shadow Mountain Sports Complex | Sparks, NV

Test Step	Test Procedure
Step 20.	Initialize a new authorization at Shadow Mountain Sports Complex for a flight maximum altitude of 250', set for 24 hours plus [+] several minutes in the future.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 21.	Submit the further coordination request to the FAA.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 22.	Record the LAANC Reference Code.
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 23.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 24.	How does your application automatically cancel unanswered requests at the 24-hour mark? <i>Criteria Notes: Per the USS Performance Rules, further coordination requests that have been unanswered by 24 hours prior to the start time should be automatically cancelled. This clears the request from both systems and provides acknowledgement to AT that the USS/operator do not expect a response, and that the operation was never authorized.</i>	[3.4.2c]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 25.	Verify that the request / operation is automatically cancelled at the 24-hour mark.	[3.2.1a] [3.4.2c]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: Tester	Click or tap here to enter text.	

Scenario #10
Crossing Adjacent Airspace Boundaries, Partial Approval, & Rescinded

Scenario Overview

This scenario applies to the following LAANC operation types:

Part 107 Auto-Approval	Part 107 Further Coordination	§ 44809 Auto-Approval
✓	✓	

This scenario checks:

- Crossing adjacent [LAANC enabled] airspace boundaries
- Sequential LAANC reference codes
- Sub-divided operation with mixed authorizations
- Rescinded operation

Test Steps

The area of the test operation is Ventura Country Club in Orlando, FL. The test operation is under the ORL and MCO UASFM.



Figure 21: Scenario #10 | Ventura Country Club | Orlando, FL

Test Step	Test Procedure	Rule(s)
Step 1.	Demonstrate how an operator using your application will initialize an authorization in this area for a flight maximum altitude of 300’.	[3.1a]
	<p>Note: Part of the operation requires further coordination with ORL (max 200’) and part can be auto-approved under the MCO UASFM (max 400’).</p> <p>Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
Operator	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 2.	Demonstrate how your application manages operations that cross a surface airspace boundary between two facilities that have UASFMs.	[3.3.3a] [3.3.4a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 3.	Submit the operation to the FAA.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 4.	Record the LAANC Reference Code(s).
Test Actor	Test Notes:
FAA: Tester	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 5.	Verify on the FAA side that the submission is received with the correct content.	[3.2.1a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 6.	Verify the LAANC Reference Codes have two unique authorization numbers as the last digit.	[3.4.6c]
	<p>Criteria Notes: Per the USS Performance Rules, this is a single “operation” that has been divided into two “authorizations”. The operation reference codes should reflect this association. One authorization should be “ABC123456XX0” and the other “ABC123456XX1”.</p>	
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: Tester	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 7.	Demonstrate how a partly approved / partly pending operation is indicated in your application.	[3.4.2a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 8.	Approve the ORL further coordination request.
Test Actor	Test Notes:
FAA: AT	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 9.	Verify that the approval message was received.	[3.4.2a]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: Tester	Click or tap here to enter text.	

Test Step	Test Procedure
Step 10.	Rescind the ORL authorization (resulting from further coordination) on the FAA side.
Test Actor	Test Notes:
FAA: AT	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 11.	Demonstrate how soon operator contact is initiated and how the operator is directed to acknowledge the ORL further coordination portion of the operation in confirmation that it was rescinded.	[3.4.9a]
	<p>Criteria Notes:</p> <ul style="list-style-type: none"> The FAA is concerned that the urgency of processing rescinded operations is communicated to the operator. AT cannot be sure that the operation will not fly until the pilot confirms by acknowledging the operation. As the original authorization start time approaches, this could become a critical air traffic issue for controllers. USSs should design their applications accordingly to get the operator's attention (e.g., notification, text message, email, automatic phone call, etc.) and strongly direct them to acknowledge the rescinded operation. 	
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure	Rule(s)
Step 12.	Demonstrate how your application will prompt an operator to acknowledge outstanding rescinded authorizations.	[3.4.9b]
	<p>Criteria Notes: See step above.</p>	
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
USS	Click or tap here to enter text.	

Test Step	Test Procedure
Step 13.	Acknowledge the rescission of the ORL further coordination authorization.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 14.	Verify that the appropriate part of the rescinded operation is acknowledged on the FAA side.	[3.2.1a] [3.4.9c]
	Results Part 107: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	
Test Actor	Test Notes:	
FAA: AT	Click or tap here to enter text.	

**Scenario #11
Operations and Maintenance (O&M)**

Scenario Overview

The FAA will call the API endpoints related to the items listed below and will record the results returned by the USS. See the API Specification for specific field details.

This scenario applies to the following LAANC operation types:

Part 107 Auto-Approval	Part 107 Further Coordination	§ 44809 Auto-Approval
✓	✓	✓

This scenario checks:

- System Health and Version(s) Check
- Operational Statistics
- Open Authorization Queries
- Operation History Queries

Test Steps

Test Step	Test Procedure
Step 1.	The FAA will manually call its own endpoint related to System Health and Version Check(s).
Test Actor	Test Notes:
FAA	Click or tap here to enter text.

Test Step	Test Procedure
Step 2.	The FAA will manually call the USS endpoint related to System Health and Version Check(s).
Test Actor	Test Notes:
FAA	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 3.	Compare the content of the results to ensure they match. Notes: <ul style="list-style-type: none"> • Results Recorded fields are shown in the table below. • Discrepancies in the UasfmDataset and/or PtNsufrDataset (due to use of Primary & Secondary sources for testing) and will not be penalized. 	[3.9.1b]
Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A		
Test Actor	Test Notes:	
FAA	Click or tap here to enter text.	

Step 3 Results Recorded:

System Health and Versions
status
ussSystemVersion
ussApiVersion
ussUasfmDataset
ussUasfmDatasetLastEditDate
ussClassAirspaceDataset
ussClassAirspaceDatasetLastEditDate
ussAirportsDataset
ussAirportsDatasetLastEditDate
ussFtNsufrDataset
ussFtNsufrDatasetLastEditDate
ussPtNsufrDataset
ussPtNsufrDatasetLastEditDate
ussStadiumsDataset
ussStadiumsDatasetLastEditDate
ussFrzDataset
ussFrzDatasetLastEditDate
ussAPSuaDataset
ussAPSuaDatasetLastEditDate
ussAPAirScheduleDataset
ussAPAirScheduleDatasetLastEditDate

Test Step	Test Procedure
Step 4.	FAA test team will choose a Reference Code for an authorization that was approved earlier in the test session <i>but</i> has not Completed or been De-Authorized.
Test Actor	Test Notes:
FAA	Click or tap here to enter text.

Test Step	Test Procedure
Step 5.	Manually close or cancel the authorization so that the authorization reaches a termination state.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 6.	Verify the authorization has reached its termination state.
Test Actor	Test Notes:
FAA	Click or tap here to enter text.

Test Step	Test Procedure
Step 7.	Delete the authorization.
Test Actor	Test Notes:
Operator	Click or tap here to enter text.

Test Step	Test Procedure
Step 8.	<p>Verify the authorization is deleted.</p> <p>Note:</p> <ul style="list-style-type: none"> Operators can request their LAANC Data to be destroyed by the USS. Authorizations can only be destroyed if they are in a termination state. Steps 5-7 simulate the expected sequence of events for the destruction of LAANC data. Deletion of LAANC authorizations will <u>only</u> increase the “countLaancCallSuccess”. Other counts are calculated as described in the API Specification and are not impacted by the deletion of an authorization.
Test Actor	Test Notes:
FAA	Click or tap here to enter text.

Test Step	Test Procedure
Step 9.	The FAA will manually call its own endpoint related to Operational Statistics to collect the statistics for the USS being tested since the beginning of the test event.
Test Actor	Test Notes:
FAA	Click or tap here to enter text.

Test Step	Test Procedure
Step 10.	The FAA will manually call the USS endpoint related to Operational Statistics to collect the statistics since the beginning of the test event.
Test Actor	Test Notes:
FAA	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 11.	Compare the content of the results to ensure they match.	[3.9.2b] [3.10b]
	<p>Criteria Notes: Verify the counts match the submissions made throughout the Test Scenarios, according to the API Specification.</p> <p>Note: Results Recorded fields are shown below.</p> <p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
FAA	Click or tap here to enter text.	

Step 11 Results Recorded:

Operational Statistics
count107OperationsSubmitted
count107AaSubmitted
count107FcSubmitted
count107FcApproved
count107FcDenied
countAutoCancelled
count107FcExpired ¹
count107Rescinded
count107RescindAck
count107Cancelled
count107InvalidCancel
count107Close
count44809OperationsSubmitted
count44809AaSubmitted
count44809Rescinded
count44809RescindAck
count44809Cancelled
count44809InvalidCancel
count44809Close
countLaancCallSuccess ²

Test Step	Test Procedure
Step 12.	The FAA will manually call its own endpoint related to Open Authorizations for the USS being tested.
Test Actor	Test Notes:
FAA	Click or tap here to enter text.

Test Step	Test Procedure
Step 13.	The FAA will manually call the USS endpoint related to Open Authorizations.
Test Actor	Test Notes:
FAA	Click or tap here to enter text.

¹ LAANC AP count only.
² Includes submitted, cancelled, rescind acknowledged, updated, and deleted.

Test Step	Test Procedure	Rule(s)
Step 14.	Compare the content of the results to ensure they match and are ordered according to the order in which the original operations submissions were received.	[3.9.3b]
	<p>Criteria Notes: Verify the open authorizations count matches the transmissions made throughout the Scenarios, according to the API Specification.</p> <p>Note: Results Recorded fields are shown below.</p> <p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
FAA	Click or tap here to enter text.	

Step 14 Results Recorded:

Open Authorizations
operation
submissionType
submissionCategory
state
operation
submissionType
submissionCategory
state
...

Test Step	Test Procedure
Step 15.	FAA test team will choose a Reference Code for an authorization that was processed earlier in the test session.
Test Actor	Test Notes:
FAA	Click or tap here to enter text.

Test Step	Test Procedure
Step 16.	The FAA will manually call its own endpoint related to Operation History for the selected Reference Code.
Test Actor	Test Notes:
FAA	Click or tap here to enter text.

Test Step	Test Procedure
Step 17.	The FAA will manually call the USS endpoint related to Operation History for the selected Reference Code.
Test Actor	Test Notes:
FAA	Click or tap here to enter text.

Test Step	Test Procedure	Rule(s)
Step 18.	Compare the content of the results to ensure they match.	[3.9.4b]
	<p>Criteria Notes: Verify the operational history matches for an operation for an FAA selected Reference Code.</p> <p>Results: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A</p>	
Test Actor	Test Notes:	
FAA	Click or tap here to enter text.	

Step 18 Results Recorded:

Operation History
submissionType
submissionCategory
submissionDateTime
status
approvalDateTime
changeDateTime
denialDateTime
rescindDateTime
cancelDateTime
ackRescindDateTime
closeDateTime