NTAP Service Evaluation Matrix

This matrix is used by the FAA's Near-Term Approval Process (NTAP) team to evaluate UTM services. Service providers must sign an MOA with the FAA in order to begin the review process. For more information, please email aus-utm@faa.gov. The material in this document should be regarded as guidance. Service providers may propose alternative criteria, or alternative means of demonstrating a given criterion, than what is provided in this document.

Submission Review Process Overview:
1. AUS-440 will review applicant submissions or existing data provided to FAA.
2. AUS-440 will verify applicant provided information and data that would meet referenced standards and criteria. AUS-440 recommends approval or further review (including if sufficient information not provided)
3. If the applicant proposes an alternative means of compliance, AUS-440 will include other LOBs/SOs as appropriate in the review of the declaration.
4. If applicants are using a combination of standards, AUS-440 will review to ensure the combination can be used to meet the corresponding performance requirements.
5. Any combination of aggregate simulation and flight test data will be reviewed. Test and evaluation data may be generated in an automated or operational test environment as applicable. Detailed test results and test cards are not expected. USSs providing strategic conflict detection and conformance monitoring must submit a test report from an accepted test harness source.

Applicant: Click or tap here to enter text.
Exemption No.: Click or tap here to enter text.
Name of UTM service: Click or tap here to enter text.
Type of service: e.g. USS; specific kind of SDSP; C2 link service
Date of Review: Click or tap to enter a date.
Review Personnel: Click or tap here to enter text.

Third-Party Service

Type of Service	Criteria	Example Demonstration	Standard Reference ID (If Applicable)	Means of Demonstration (Including alternative means of compliance or demonstration)	Criteria is Satisfied?
Any Service	Documentation of the respective roles and responsibilities of the operator and the 3PSP.	Service-level agreement (SLA) and Concept of Use (CONUSE)		Click or tap here to enter text.	☐

	The 3PSP has version controls and a defined software update process. (GEN0015)	QMS or service provision manual; ISO 9001 certificate		Click or tap here to enter text.	☐
	If the service conforms to a design assurance standard, evidence of relevant processes.	Requirements Traceability Matrix (RTM) is responsive to the appropriate standard and selected level of design assurance		Click or tap here to enter text.	☐
	A hazard analysis of the service has been conducted.	Failure Mode and Effects Analysis (FMEA) and/or Functional Hazard Analysis (FHA)		Click or tap here to enter text.	☐
	A deployed instance of the service exists.	API or user interface credentials		Click or tap here to enter text.	☐
	The 3PSP provides information to the applicant in an agreed-to message format and at an agreed-to update rate.	SLA		Click or tap here to enter text.	☐
	The 3PSP indicates any specific equipment the applicant is required to use.	SLA		Click or tap here to enter text.	☐
	The 3PSP provides an indication of normal operation.	SLA		Click or tap here to enter text.	☐
	The 3PSP immediately alerts the applicant operator of any malfunction, degradation, or failure condition.	SLA		Click or tap here to enter text.	☐
	The 3PSP keeps all service data, including surveillance information and data related to the operation of the service, for at least 45 days. The 3PSP makes this data available to the FAA within 3 business days of receiving a request from the FAA.	SLA / Data Governance Agreement(s)		Click or tap here to enter text.	☐
	The service alerts the operator of any malfunction, degradation, or failure condition events during the operation.	Averment (declaration) or SLA		Click or tap here to enter text.	☐
	The equipment used for the operations, including both the 3PSP's equipment and the operator's equipment, is fully interoperable to meet the functional and performance requirements of the service.	Description of relevant equipment and summary test results (e.g. regression testing output) used to verify proper interoperability		Click or tap here to enter text.	☐
	The service has a means for the FAA to monitor and/or test its performance.	Description of available means		Click or tap here to enter text.	☐

	The service implements and operates an Information Security Management System.		ISO 27001 or Equivalent	Click or tap here to enter text.	☐
	The 3PSP should operate and implement a Privacy Information Management System(s). (GEN0010)	SLA / Data Governance Agreement(s)	ISO 27701 or Equivalent	Click or tap here to enter text.	☐
	The 3PSP should operate and implement a Quality Management System.	SLA / Data Governance Agreement(s)	ISO 9001 or Equivalent	Click or tap here to enter text.	☐
	The 3PSP should describe data governance processes and procedures between the Operator, FAA, and 3PSP.	SLA / Data Governance Agreement(s)		Click or tap here to enter text.	☐
	The 3PSP should log service specific metrics required to allow the FAA to assess the performance, efficacy, and potential future requirements of the service implementation and support event reconstruction upon authorized request.	SLA / Data Governance Agreement(s)		Click or tap here to enter text.	☐
	The 3PSP should describe the means and methods that relevant service data is logged and stored.	SLA / Data Governance Agreement(s)		Click or tap here to enter text.	☐
	The 3PSP should timestamp all logged data in UTC time (without local adjustment) corresponding to the time at which service-related events occurred.	SLA / Data Governance Agreement(s)		Click or tap here to enter text.	☐
	The 3PSP should utilize a data storage format that supports common export methods.	SLA / Data Governance Agreement(s)		Click or tap here to enter text.	☐
Services supporting DAA	The system has the capability to detect cooperative and non-cooperative crewed aircraft.	Averment		Click or tap here to enter text.	☐
	The DAA system is designed to maintain the well-clear boundary as defined in ASTM F3442/F3442M–23, Standard Specification for Detect and Avoid System Performance Requirements, dated February 28, 2023.	Averment. Specify use of simulation and/or flight test, and the encounter set used for simulations. Aggregate/ summary results presented as (e.g.) a distribution.		Click or tap here to enter text.	☐
	Logic risk ratios consistent with ASTM F3442/F3442M-23	Averment and aggregate/summary results of simulations or other testing.		Click or tap here to enter text.	☐
	If applicable, relevant surveillance volumes are defined and verified based on the applicable requirements in RTCA DO-381, Minimum Operational	Averment, Requirements Traceability Matrix (RTM) and (e.g.) maps, charts or graphics showing the		Click or tap here to enter text.	☐

	Performance Standards (MOPS) for Ground Based Surveillance Systems (GBSS) for Traffic Surveillance, dated March 26, 2020.	viewshed, surveillance volume, declaration volume, and operational volume.		
	If applicable, surveillance processing capabilities meet the requirements of ASTM F3623-23, Standard Specification for Surveillance Supplemental Data Service Providers (SDSP), dated December 25, 2023.	Averment and RTM	Click or tap here to enter text.	☐
	DAA alerting functions meet the applicable requirements in either F3442/F3442M-23, or in RTCA DO-365C, Minimum Operational Performance Standards (MOPS) for Detect and Avoid (DAA) Systems, dated September 15, 2022.	Averment and RTM	Click or tap here to enter text.	☐
	If applicable, the applicable requirements are satisfied in RTCA DO-396, Minimum Operational Performance Standards for Airborne Collision Avoidance System sXu (ACAS sXu), dated December 15, 2022.	Averment and RTM. Simulations use a defined encounter set. Aggregate/ summary results presented as (e.g.) a distribution.	Click or tap here to enter text.	☐
	The operator has accounted for its own latencies, including known latencies in the C2 link, and time to respond to information or guidance from the 3PSP.	Averment and completed timing budget for end-to-end DAA system	Click or tap here to enter text.	☐
	Use of ASTM F3442/F3442M-23 and/or ASTM WK69690 is verified through a test method process consistent with ASTM WK62669, New Test Method for Detect and Avoid, dated -----, 2023.	Averment and RTM.	UNPUBLISHED STANDARD	
C2	The service meets the applicable requirements of RTCA DO-377, Minimum Aviation System Performance Standards for C2 Link Systems Supporting Operations of Unmanned Aircraft Systems in U.S. Airspace, dated March 21, 2019.	Averment and RTM	Click or tap here to enter text.	☐
Weather	The service meets the applicable requirements of ASTM F3673-23, Specification for Weather Supplemental Data Service Provider (SDSP) Performance, dated January 9, 2024.	Averment and RTM	Click or tap here to enter text.	☐

USS	The USS should describe general security, data protection, safety, and software assurance practices for the service..	SLA		Click or tap here to enter text.	☐
	The USS may utilize existing definitions for service functions and states that align with published standards. The USS shall operate and implement an Information Security Management System(s). (GEN0005)	Averment	ASTM F3548-21	Click or tap here to enter text.	☐
	The USS should utilize an industry accepted time synchronization method and provide information on their 1) timing latency bounds and 2) timing synchronization reliability. **Data:** The USS should demonstrate timing source differential and reliability of time synchronization through testing and evaluation.	SLA and Test & Evaluation Data	ASTM F3548-21 GEN 0100	Click or tap here to enter text.	☐
	The USS should provide data retention information, including retention and archival policies and procedures of data related to incidents. **Data:** The USS should demonstrate a means to delete, retain, and provide data to support incident analysis and archival.	SLA / Data Governance Agreement(s)	ASTM F3548-21 GEN 0200	Click or tap here to enter text.	☐
	The USS should describe available means and methods to interoperate with other USS(s) for testing purposes.	Inter-USS Test Suite or Equivalent Test & Evaluation Data	ASTM F3548-21 GEN 0300	Click or tap here to enter text.	☐
	The USS should describe available means and methods to interoperate with other USS(s) on both deployed and undeployed versions of software.	Inter-USS Test Suite or Equivalent Test & Evaluation Data	ASTM F3548-21 GEN 0305	Click or tap here to enter text.	☐
	An interoperability test instance should provide a means for injection or generation of test data in a geographic test location within the interoperable environment.	Inter-USS Test Suite or Equivalent Test & Evaluation Data	ASTM F3548-21 GEN 0310	Click or tap here to enter text.	☐
	The USS should describe all failed or degraded functions states where an alert or notification is sent to the operator.	SLA / Test & Evaluation Data	ASTM F3548-21 GEN 0400	Click or tap here to enter text.	☐

	The USS should describe notification and alerting requirements, methods, latency, and reliability of the alert or notification. **Data:** The USS should demonstrate reliability of failure notification or alerts.				
	The USS should describe if the alert or notification is provided to the operator, aircraft, or other systems. The USS should describe notification and alerting requirements, methods, latency, and reliability of the alert or notification for each applicable transmission. **Data:** The USS should demonstrate latency and reliability.	SLA / Test & Evaluation Data	ASTM F3548-21 GEN 0405	Click or tap here to enter text.	☐
	The USS should describe the means and methods utilized to account for numerical precision in calculations, specific to services relying on geospatial volume precision of UAS within a 3D or 4D volume. **Data:** The USS should demonstrate minimum precision values at their closest points to indicate intersecting.	SLA / Test & Evaluation Data	ASTM F3548-21 GEN 0500	Click or tap here to enter text.	☐
USS Operational IntentSCD	The UAS Service Supplier (USS) should define and describe the requirements and the means by which a UA conforms to a sufficient degree of strategic deconfliction, if applicable.	Averment	ASTM F3548 Definitions for Operational Intent states may be referenced.	Click or tap here to enter text.	☐
	The service processes operational intent requests based on FAA guidance (Order 7110.65Z) on priority levels, if applicable.	Averment		Click or tap here to enter text.	☐
	The USS should describe the methods used to construct operational intent volumes utilizing CONOP specific UAS performance characteristics. The USS should describe how the values utilized to generate these volumes were	Averment / Test & Evaluation Data RTM	ASTM F3548-21 OPIN 0005-010	Click or tap here to enter text.	☐

	chosen. **Data:** The USS should provide evidence of the expected reliability of the operational intent volume utilizing CONOP specific UAS performance characteristics. **Data:** The USS should describe the expected reliability of the operational intent volume as a total percent of expected flight time."The USS should describe the methods used to construct operational intent volumes utilizing CONOP specific UAS performance characteristics. The USS should describe how the values utilized to generate these volumes were chosen. The USS shall provide evidence of the expected reliability of the operational intent volume utilizing the UAS performance characteristics chosen. (OPIN0005)				
	The USS shall describe the methods used to determine operational intent volumes in the Accepted, Activated, Nonconforming, contingent and Ended USS states. The USS shall demonstrate off-nominal 4D volumes are not included.	Averment / Test & Evaluation Data RTM	ASTM F3548-21 OPIN 0015	Click or tap here to enter text.	☐
	The USS shall describe the maximum allowable vertices and operational intent volumes present for the CONOPs operational area. The USS shall demonstrate maximum allowable vertices allowed.	Averment / Test & Evaluation Data RTM	ASTM F3548-21 OPIN 0020	Click or tap here to enter text.	☐
	The USS shall describe the methods used to determine operational intent volumes in the Accepted, Activated, Nonconforming, Contingent and ended USS states. The USS shall demonstrate	Averment / Test & Evaluation Data RTM	ASTM F3548-21 OPIN 0025-0030	Click or tap here to enter text.	☐

	transition of states.				
	A USS should only modify or render non-discoverable operational intents that it created.. (OPIN0035)	Needs Development Inter-USS Test Suite or Equivalent Test and Evaluation Data	ASTM F3548-21 OPIN 0035	Click or tap here to enter text.	☐
	The USS shall describe the methods, procedures, and requirements to transition operational intent volumes in the event the operational intent is cancelled by the operator or equivalent system. The USS shall demonstrate the expected latency and reliability of this transition.	Averment / Test & Evaluation Data RTM	ASTM F3548-21 OPIN 0040	Click or tap here to enter text.	☐
USS Strategic Conflict Detection	The USS should describe the method, procedures, and requirements for handling non responsive USS shown in all states (Activated, Nonconforming, Contingent, Ended or Equivalent) when requesting operational intent of other operators. A managing USS shall (SCD0005) apply the lowest bound priority status to any relevant operational intent in the accepted state for which the relevant USS is determined to be down and does not respond to a request for the details of an operational intent.	Inter-USS Test Suite or Equivalent Test & Evaluation DataInterUSS, N/A since USSs will not be marked down in the DSS RTM	ASTM F3548-21 SCD 0005-0010	Click or tap here to enter text.	☐
	The USS should describe the method and requirements to maintain awareness of new or modified operational intents relevant to existing operational intents.For the entire time an operational intent is in the Activated, Nonconforming, or Contingent states, the managing USS shall (SCD0080) maintain awareness of new or modified operational intents relevant to the managed operational intent.	Averment / RTMNeeds Development	ASTM F3548-21 SCD 0080	Click or tap here to enter text.	☐
	The USS should describe the method of operation priority handling.	Averment / RTM	ASTM F3548-21 SCD 0015-0070	Click or tap here to enter text.	☐
	The USS shall notify UAS personnel or the operator's automation system of any conflicts created by a new or modified OI. The USS shall describe the max time to	Averment / Test & Evaluation Data RTM	ASTM F3548-21 SCD 0090	Click or tap here to enter text.	☐

	make the notification.				
	The USS should notify UAS personnel or the operator's automation system if they become aware of any conflicts with an existing operational intent that arose from a new or modified operational intent. **Data:** The USS should describe the max time to make the notification."When a managing USS becomes aware that a new or modified operational intent conflicts with an existing operational intent it manages, that USS shall (SCD0095) send a notification reporting the conflict to UAS personnel or the operator's automation system associated with the operational intent within ConflictingOIMaxUserNotificationTime seconds, 95 % of the time.	Inter-USS Test Suite or Equivalent Test & Evaluation DataN/A since conflicts are not permitted and USSs will not be marked down in the DSS RTM	ASTM F3548-21 SCD 0095	Click or tap here to enter text.	☐
	The USS shall not transition operational intents to nonconforming or contingent states for strategic conflict detection. These states are reserved for Conformance Monitoring services. A managing USS shall (SCD0100) only transition an operational intent to the Nonconforming and Contingent states if it is also serving the role of CMSA.	Averment InterUSS, N/A since no CMSA (Conformance Monitoring for Situational Awareness)	ASTM F3548-21 SCD 0100	Click or tap here to enter text.	☐
USS Aggregate Conformance Monitoring	The USS should describe the means and methods to detect persistent issues with operator conformance, specifically for nonconforming operational intent volumes that may impact strategic deconfliction. The USS should detail analysis activities to determine any root cause and corrective action for persistent issues.	Averment	ASTM F3548-21 Section 5.5	Click or tap here to enter text.	☐
	The USS should describe the methods, procedures, and requirements to monitor operational intent conformance, including the evaluation process and periods to be evaluated to monitor aggregate	SLA / Test & Evaluation Data RTM	ASTM F3548-21 ACM 005	Click or tap here to enter text.	☐

	conformance. **Data:** The USS should demonstrate proposed conformance requirements are met over a period of flight hours and days. For every flight conducted by an operator, within MaxAggConfMonAnalysisLatency day(s) of the end of the flight, a USS (ACM0005) shall evaluate all operational intents for flights conducted by that operator either within the last AggConfMonEvaluationPeriod days of the time of evaluation or that comprise the most recent AggConfMonEvaluationFlightHours flight hours by the operator, whichever includes a greater number of flights, to determine whether the conformance requirements (OPIN0005, OPIN0010) were met by the operator in aggregate over this period.			
	The USS should send a performance notification to the operator if a period of aggregate nonconformance is detected. **Data:** The USS should demonstrate the max time to make the notification."Whenever a period of aggregate nonconformance is detected (in accordance with requirement ACM0005), the USS shall (ACM0010) send a notification to the operator (a performance notification) within the period of time required by regulation (if applicable) or within MaxNonPerformanceNotificationLatency hours.	SLA / Test & Evaluation Data RTM	ASTM F3548-21 ACM 0010	Click or tap here to enter text.	☐
	The USS should send a performance notification to the operator that includes the period of time addressed and the aggregate performance against each requirement (flight hours, evaluation period, and analysis and notification	SLA / Test & Evaluation Data RTM	ASTM F3548-21 ACM 0015	Click or tap here to enter text.	☐

latency).A performance notification shall (ACM0015) include, at a minimum, the period of time the performance notification addresses and the aggregate performance against each applicable conformance requirement (OPIN0005, OPIN0010).				