NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 8900.532

National Policy

Effective Date:
12/11/19

Cancellation Date:
12/11/20

SUBJ: Safety Assurance System (SAS) Phase 3 Assessment Determination Matrix

1. Purpose of This Notice. This notice provides guidance on the use of the Assessment Determination matrix associated with SAS Phase 3 Module 5, Analysis, Assessment, and Action (AAA). Appendix A of this notice includes a revision to changes that are associated with the redesigned Assessment Determination matrix to Volume 10, Chapter 6, Section 1.

2. Audience. The primary audience for this notice includes the Flight Standards Division Manager, Office Manager (OM), Frontline Manager (FLM), Principal Inspector (PI), and Certification Project Manager (CPM) who have oversight responsibility for certificate holders and applicants certificated to operate in accordance with Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145. The secondary audience includes Safety Assurance Office personnel other than those listed above and Safety Standards offices.

3. Where You Can Find This Notice. You can find this notice on the MyFAA employee website at https://employees.faa.gov/tools_resources/orders_notices. Inspectors can access this notice through the Flight Standards Information Management System (FSIMS) at http://fsims.avs.faa.gov. Operators can find this notice on the FAA's website at http://fsims.faa.gov. This notice is available to the public at http://www.faa.gov/regulations_policies/orders_notices.

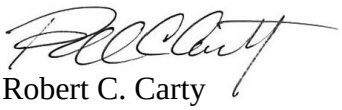
4. Background. During SAS Phase 3, Flight Standards Service will be enhancing SAS automation with a new risk profile to assist the PI, CPM, and management with Risk-Based Decision Making (RBDM). The first step towards implementing the new risk profile is the integration of a risk matrix in the "Assessment Determination." The Assessment Determination risk matrix was developed based on the severity descriptions and likelihood thresholds described in FAA Order 8040.4, Safety Risk Management Policy.

a. The new Assessment Determination risk matrix is scheduled to be released in SAS automation in January or February of 2020. If you started your AAA prior to the release of the new Assessment Determination risk matrix, then you will complete your assessment using the old Assessment Determination matrix.

b. Appendix A, Revision to Order 8900.1, Volume 10, Chapter 6, Section 1, contains procedures on how to determine your assessment values using the new Assessment Determination risk matrix. The Assessment Determination risk matrix is based on whether you

are assessing a Performance or Design. Tables 10-6-1C and 10-6-1D guide the PI and CPM on which value to select.

5. Disposition. We will incorporate the information in this notice into Order 8900.1, Volume 10, Chapter 6, Section 1 before this notice expires. Direct questions concerning the information in this notice to the Safety Analysis and Promotion Division at 9-AFS-900-SAFE@faa.gov.



Robert C. Carty
Deputy Executive Director, Flight Standards Service

Appendix A. Revision to Order 8900.1, Volume 10, Chapter 6, Section 1

VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 6 ANALYSIS, ASSESSMENT, AND ACTION

Section 1 Safety Assurance System: Module 5 Analysis and Assessment

10-6-1-1 GENERAL. This chapter includes information about the Analysis, Assessment, and Action (AAA) process for Performance Assessments (PA) and Design Assessments (DA). PAs determine if the certificate holder's or applicant's system performs as intended by regulations in such a way that a safety risk is being managed to an acceptable level. DAs determine if the certificate holder's or applicant's system design meets the standards for acceptance or approval. This process uses data collected by aviation safety inspectors (ASI). The principal inspector (PI) or certification project manager (CPM) may use data from other sources to help make the assessment. The action process requires the PI/CPM to determine and document the appropriate course of action based on the result of the analysis and assessment.

NOTE: The AAA process described in this chapter aligns with the Compliance Action requirements of Volume 14, Chapter 1, Sections 1 and 2. The action choices listed in Volume 10, Chapter 6, Section 2 are all acceptable methods of addressing noncompliance at its source. Volume 10 and Volume 14 guidance must be followed to document Compliance Actions in the Safety Assurance System (SAS).

NOTE: Security is an important feature of the SAS automation. If you, as a SAS user, detect a security breach or there is an indication of a security risk, you should immediately notify the office SAS Security Auditor or SAS Administrator. See Volume 10, Chapter 1, Section 1, Subparagraph 10-1-1-5I, Security Risks, for more information.

A. Purpose. The PI/CPM analyzes collected data and makes an assessment determination about whether to approve, accept, or reject the performance or design of a certificate holder's or applicant's programs.

B. Scope. In Analysis and Assessment, the PI/CPM will:

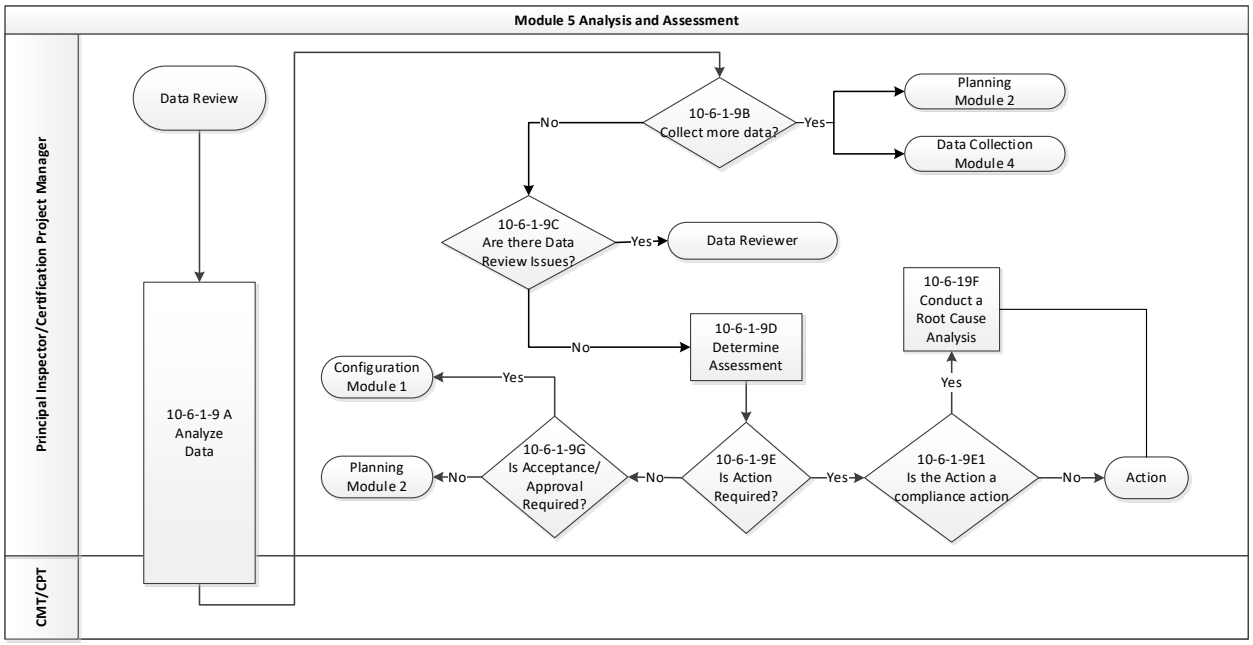
- Analyze data,
- Determine if there is enough data,
- Decide if there are data review issues,
- Make an assessment,
- Conduct a Root Cause Analysis,
- Decide if action is required, and
- Determine if acceptance/approval is required.

10-6-1-3 RESERVED.

10-6-1-5 BACKGROUND. SAS encompasses certification, routine surveillance, and certificate management processes for the Federal Aviation Administration (FAA) to perform oversight of certificate holders. It assesses the safety of Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145 certificate holders' operating systems using system safety principles, Safety Attributes, and risk management (RM). SAS also assesses the requirement to provide service at the highest level of safety in the public interest. The Analysis and Assessment Module contains the processes for making a decision about whether to approve, accept, or reject the performance or design of a certificate holder's or applicant's programs.

10-6-1-7 ANALYSIS AND ASSESSMENT.

Figure 10-6-1A. Module 5 Analysis and Assessment Process Flowchart



10-6-1-9 PROCEDURES. This section describes the steps for the Analysis and Assessment process of the AAA. All assessments are due at the end of the quarter; however, the PI/CPM has up to 30 days after the end of the quarter to complete the assessment.

A. Analyze Data (see flowchart process step 10-6-1-9A). During this step, the PI/CPM analyzes data and reports to make an assessment determination. Because the Principal Maintenance Inspector (PMI) and Principal Avionics Inspector (PAI) share certificate holders, they should collaborate to complete the AAA process. The following is a list of data and reports the PI/CPM can use to assist with making the assessment determination.

1) Safety Performance Analysis System (SPAS). Provides detailed information for the selected element, system, or subsystem.

2) Findings Report. The Findings Report defaults to questions with unfavorable responses from all the associated Data Collection Tools (DCT) within that assessment. The

report includes all related PI Custom Data Collection Tools (C DCT), En Route inspections, random inspections (RI), and Dynamic Observation Reports (DOR).

3) Historical Data Report. This report lists all of the previous assessment results.

4) Responses Listed by Question Attribute. This report is organized by question and response type. When automation reads an unfavorable response from the "Procedures" questions, which may contain both regulations and guidance, it records it as "Regulatory." To determine if the finding is regulatory- or guidance-based, PIs will need to review the DCT. Not all unfavorable responses require Compliance Action. PI instructions should direct ASIs to include the regulation (if the finding is regulatory) in the comment section if they answer "unfavorable." The other Safety Attribute questions (i.e., Responsibility, Authority, Controls, Process Measurement, Interfaces, and Safety Ownership) may be nonregulatory.

5) Response Listed by DCT Report. This report lists all of the DCT responses associated with an assessment. Part 145 PIs can view the parts 121 and 135 DCTs rolled up in the AAA by selecting the assessment performed at the Essential Maintenance Provider (EMP) during coordinated surveillance.

6) Certificate Holder Assessment Tool (CHAT) Report. The CHAT Report contains the certificate holder or applicant risk indicators and associated actions, and it is used to identify systemic issues and prevent duplication of previous actions.

7) SAS Standard Reports. SAS Standard Reports allow users to generate reports matching selected criteria for each module in SAS. A list of reports is available from the SAS Menu and located in the SAS Automation User Guide (AUG).

8) Operations Research Analyst (ORA) Reports. The PI/CPM may request an ORA to generate reports to assist with the analysis of the data. For example, the PI/CPM may request an ORA to help analyze data from a Commercial Aviation Safety Team (CAST) Safety Enhancement (SE) report.

9) Other Reports. Additional reports, such as the SAS Compliance and Enforcement Action Comprehensive Report, are available in the "Short Term Solutions" tab on the SAS Assistance, Feedback, or Enhancement (SAFE) task management site. Additional reports are also available on the "Consolidated Analytics" site, which can be accessed through the "Short Term Solutions" site. The Consolidated Analytics site can be accessed from the SAS home page and contains reports created by the Flight Standards Service analytical community, which may help with making more accurate assessment determinations and/or selecting the most effective course of action.

B. Collect More Data? (see flowchart process step 10-6-1-9B). The PI/CPM reviews the data to determine if enough data exists to make an assessment determination. If the data is sufficient, then see step 10-6-1-9D, Determine Assessment. If more data is needed, then the PI/CPM has two options:

1) If the PI/CPM determines that additional DCTs are needed, then the PI/CPM goes to the Comprehensive Assessment Plan (CAP) and adds the DCTs. When this step occurs, the assessment is automatically extended an additional quarter.

2) If the PI/CPM determines the ASI needs to collect more data on an existing DCT, then the PI/CPM sends the DCT back to Data Collection with an explanation of what the ASI needs to accomplish. When this step occurs, the assessment is not automatically extended an additional quarter.

C. Are There Data Review Issues? (see flowchart process step 10-6-1-9C). If there is enough data to make an assessment, then see step 10-6-1-9D, Determine Assessment. If the PI/CPM determines the data does not allow them to make an assessment determination, then the PI/CPM returns the DCT to the Data Quality Reviewer (DQR) with a detailed explanation of what items need to be addressed. The DQR returns the DCT to the ASI who collected the data.

D. Determine Assessment (see flowchart process step 10-6-1-9D). The PI/CPM will make an assessment determination based on the analysis of data and factors such as certificate holder or applicant ability to manage risk associated with the safety impact, likelihood, and the certificate holder's or applicant's compliance attitude. See Table 10-6-1C, Performance Assessment Determination, and Table 10-6-1D, Design Assessment Determination, for the determination value. The following information guides the PI/CPM on how to make the assessment determination. If findings exist, then consider the following:

1) Safety Impact. Safety impact is based on the PI/CPM's estimation of the worst reasonable outcome that may result from the unfavorable findings. The safety impact is a bottom-line determination, which considers all findings to determine the effect and extent of any failure(s) within the system, subsystem, or element. Table 10-6-1A, Safety Impact Level, provides some examples of outcomes for each level of safety impact.

Table 10-6-1A. Safety Impact Level

Safety Impact	Examples of Outcomes
Significant Safety Impact	One or more fatalities, severe injuries and/or severe damage.
Moderate Safety Impact	Moderate injuries and/or substantial damage.
Minor Safety Impact	Minor injuries and/or light damage.

NOTE: Outcomes could include situations other than injuries or damage, such as a degraded safety culture or intentional noncompliance.

2) Likelihood. The likelihood is based on how often findings may recur if no action is taken by the certificate holder. Similar unfavorable findings in current and/or previous assessments are important factors to consider in the selection of a likelihood. Frequent or Occasional likelihoods could indicate a systemic hazard. Table 10-6-1B, Likelihood Thresholds, provides some examples of thresholds for Frequent, Occasional, and Remote likelihoods.

Table 10-6-1B. Likelihood Thresholds

Likelihood	Description	Number of Annual Occurrences
Frequent	Expected to occur routinely.	Expected to occur more than 10 times per year.
Occasional	Expected to occur often.	Expected to occur between 4 and 9 times per year.
Remote	Expected to occur infrequently.	Expected to occur between 1 and 3 times per year.

NOTE: The number of annual occurrences should be adjusted to the scope of the certificate holder's operation.

3) Regulatory Compliance. The PI/CPM must determine if any of the findings involve regulatory noncompliance and make the appropriate selection (Regulatory or Non-Regulatory) in the automation.

4) Justification. The PI/CPM must provide justification for their selection in the Assessment Determination Justification field. The justification should include enough information to support the PI/CPM selection. The FLM/OM verifies if the assessment determination, justification, and action selections are appropriate.

E. Is Action Required? (see flowchart process step 10-6-1-9E). The PI/CPM determines if action is required, including action to address regulatory noncompliance. See Volume 10, Chapter 6, Section 2 for Action Choices. If action is required, then see step 10-6-1-9F, Conduct a Root Cause Analysis. If no action is required, then see step 10-6-1-9G, Is Acceptance/Approval Required?

NOTE: If "corrected on the spot" has been selected in response to an instance of regulatory noncompliance, then the PI/CPM selects "Regulatory Compliance Action" and documents the item on the Action Item Tracking Tool (AITT) under "Manage Corrective Actions and Events."

F. Conduct a Root Cause Analysis (see flowchart process step 10-6-1-9F). The assessment determination value alone does not determine the PI/CPM action(s). The PI/CPM must complete a root cause analysis to determine an appropriate corrective action plan (CAP). When conducting a root cause analysis, see Volume 14 Chapter 1, Section 2.

G. Is Acceptance/Approval Required? (see flowchart process step 10-6-19G).

1) The PI/CPM should close the assessment and approve or accept the program if they determine that the certificate holder's or applicant's performance or design meets the requirements. (See Volume 10, Chapter 2, Section 1.)

2) If the CPM determines the applicant's performance or design does not meet the requirements, then the CPM may plan future Element Performance Assessments (EPA) or C DCTs prior to issuing the certificate. (See Volume 10, Chapter 3, Section 1.)

3) If the PI determines the certificate holder's performance or design does not meet the requirements, then the PI may plan future EPAs, Element Design Assessments (EDA), or C DCTs prior to approving the program. (See Volume 10, Chapter 2, Section 1 and Volume 10, Chapter 3, Section 1.)

10-6-1-11 PA AND DA DETERMINATION TABLES. Tables 10-6-1C and 10-6-1D below are created to assist PIs/CPMs with assessment determination options and the affirmation status, safety impact and the likelihood descriptions, and if action is required. The primary difference between the PA determination options and the DA determination options is that a moderate safety impact and a remote likelihood results in an assessment determination of **4Y** for PAs and an assessment determination of **4O** for DAs.

Table 10-6-1C. Performance Assessment Determination Information

Performance Assessment Determination Value	Regulatory/ Non-Regulatory	Performance Affirmed or Not Affirmed	Description	Action Required?
7R (7 Red)	Non-Regulatory	Performance Not Affirmed	Findings observed which had a significant safety impact and are likely to reoccur frequently.*	System Reconfiguration by Certificate Holder or Applicant Necessary
7R (7 Red)	Regulatory			
6O (6 Orange)	Non-Regulatory	Performance Not Affirmed	Findings observed which had a moderate safety impact and are likely to reoccur frequently* or which had a significant safety impact and are likely to reoccur occasionally.*	Action Required; Consider System Reconfiguration
6O (6 Orange)	Regulatory			
5O (5 Orange)	Non-Regulatory	Performance Not Affirmed	Findings observed which had a moderate safety impact and are likely to recur occasionally* or which had a significant safety impact and have a remote likelihood of recurring.	Action Required; Consider System Reconfiguration
5O (5 Orange)	Regulatory			
4Y (4 Yellow)	Non-Regulatory	Performance Affirmed with Mitigation	Findings observed which had a moderate safety impact and have a remote likelihood of recurring.	Action Required
4Y (4 Yellow)	Regulatory			

3Y (3 Yellow)	Non-Regulatory	Performance Affirmed with Mitigation	Findings observed which had a minor safety impact and are likely to recur frequently.*	Action Required
3Y (3 Yellow)	Regulatory			
2Y (2 Yellow)	Non-Regulatory	Performance Affirmed with Mitigation	Findings observed which had a minor safety impact and are likely to recur occasionally.*	Action Required
2Y (2 Yellow)	Regulatory			
1G (1 Green)	Non-Regulatory	Performance Affirmed with Mitigation	Findings observed which had a minor safety impact and have a remote likelihood of recurring.	Action Required
1G (1 Green)	Regulatory			
No Findings (0 Green)	Non-Regulatory	Performance Affirmed	No Findings.	No Action Required

*Frequent or Occasional likelihoods could indicate a systemic hazard.

Table 10-6-1D. Design Assessment Determination

Design Assessment Determination Value	Regulatory Compliance	Performance Affirmation	Description	Action Required?
7 Red **(7R)**	Non-Regulatory	Design Not Accepted/Approved	Findings observed which had a significant safety impact and are likely to recur frequently.*	System Reconfiguration by Certificate Holder or Applicant Necessary
7 Red **(7R)**	Regulatory			
6 Orange **(6O)**	Non-Regulatory	Design Not Accepted/Approved	Findings observed which had a moderate safety impact and are likely to recur frequently* or which had a significant safety impact and are likely to recur occasionally.*	Action Required; Consider System Reconfiguration
6 Orange **(6O)**	Regulatory			
5 Orange (**5O**)	Non-Regulatory	Design Not Accepted/Approved	Findings observed which had a moderate safety impact and are likely to recur occasionally* or which had a significant safety impact and have a remote likelihood of recurring.	Action Required; Consider System Reconfiguration
5 Orange (**5O**)	Regulatory			
4 Orange (**4O**)	Non-Regulatory	Design Not Accepted/Approved	Findings observed which had a moderate safety impact and have a remote likelihood of recurring.	Action Required
4 Orange (**4O**)	Regulatory			
3 Yellow (**3Y**)	Non-Regulatory	Design Accepted/Approved	Findings observed which had a minor safety impact and are likely to recur frequently.*	Action Required
3 Yellow (**3Y**)	Regulatory	Design Not Accepted/Approved		
2 Yellow (**2Y**)	Non-Regulatory	Design Accepted/Approved	Findings observed which had a minor safety impact and are likely to recur occasionally.*	Action Required
2 Yellow (**2Y**)	Regulatory	Design Not Accepted/Approved		
1 Green (**1G**)	Non-Regulatory	Design Accepted/Approved	Findings observed which had a minor safety impact and have a remote likelihood of recurring.	Action Required
1 Green (**1G**)	Regulatory	Design Not Accepted/Approved		
No Findings (**0G**)	Non-Regulatory	Design Accepted/Approved	No Findings.	No Action Required

*Frequent or Occasional likelihoods could indicate a systemic hazard.

10-6-1-13 through 10-6-1-29 RESERVED.