Guidance for Coordinating Cross-LOB Safety Risk Assessments
AVP-300-17-003

Purpose

The purpose of this document is to provide guidance for conducting safety risk assessments on issues that cross multiple Federal Aviation Administration (FAA) Lines of Business (LOB)/Staff Offices when the organizations seek involvement from the FAA Safety Management System (SMS) Executive Council and/or the FAA SMS Committee. These cross-organizational safety risk assessments are conducted in accordance with the current version of FAA Order 8040.4, Safety Risk Management Policy.

Scope

This guidance applies to all FAA organizations seeking FAA SMS Executive Council and/or FAA SMS Committee involvement in conducting cross-LOB safety risk assessments.

Approval:  

[Signature]
FAA SMS Committee Chair
## REVISION HISTORY

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<tr>
<th>Revision Number</th>
<th>Description of Change</th>
<th>Effective Date</th>
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<tr>
<td>1</td>
<td>Aligned document to FAA Order 8040.4B (including latest Hazard Identification, Risk Management &amp; Tracking (HIRMT) criteria); updated stakeholder roles and responsibilities; revised process flow. Includes review by Aviation Safety SMS (AVSSMS) Coordination Group and FAA SMS Committee.</td>
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Safety Risk Management (SRM) is a core component of the Safety Management System (SMS). It provides a formalized, proactive approach to system safety in which safety risk is identified, analyzed, assessed, and controlled to an acceptable level. Before conducting SRM, an organization first has to determine if the SRM process should be applied. In general, SRM is conducted when potential and previously unidentified hazards and/or ineffective controls are discovered through Safety Assurance activities and when making planned changes to the aerospace system.\(^1\) SRM is used to evaluate the need for, and to develop, safety risk controls in the aerospace system. Effective SRM requires early and ongoing involvement by appropriate stakeholders.

Depending on the issue under consideration, the safety risk assessment may be conducted by an individual or small group within a single organization. Other times, a cross-organizational team of stakeholders, or SRM Team, should be formed to adequately address the scope and complexity of the issue.

The purpose of this document is to provide guidance for conducting safety risk assessments on issues that cross multiple Federal Aviation Administration (FAA) Lines of Business (LOB)/Staff Offices when the organizations seek involvement from the FAA SMS Executive Council and/or the FAA SMS Committee. These cross-organizational safety risk assessments are conducted in accordance with the current version of FAA Order 8040.4, Safety Risk Management Policy. Please note that organizations often establish SRM Teams without engaging the FAA SMS Executive Council and/or the FAA SMS Committee. In this case, the organizations’ SRM processes are employed. Organization-specific SRM processes are consistent with, but may not be exactly the same as, the process described in the current version of FAA Order 8040.4.

This document describes:

- The triggers that indicate the need for a cross-LOB safety risk assessment;
- Cross-LOB safety risk assessment roles and responsibilities;
- Process steps for coordinating cross-LOB safety risk assessments; and
- A mechanism for escalating disagreements throughout the process.

### Triggers for Cross-LOB Safety Risk Assessments

There are two basic triggers that may indicate the need for a cross-LOB safety risk assessment. The first trigger is an FAA-level safety issue, and the second trigger is a planned change.

1. **FAA-Level Safety Issues**

An LOB/Staff Office may identify potential FAA-level safety issues for FAA-level cross-LOB safety risk assessment and escalate them to the FAA SMS Committee for consideration.

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\(^1\) Aerospace System is defined in this document using the definition in the current version of FAA Order 8040.4, Safety Risk Management Policy: U.S. airspace, all manned and unmanned vehicles operating in that airspace, all U.S. aviation operators, airports, airfields, air navigation services, pilots, regulations, policies, procedures, facilities, equipment, and all aviation-related industry.
FAA-level safety issues are potential hazards or ineffective controls identified from the Safety Assurance processes and are considered potentially systemic and most effectively treated by cross-organizational teams. An issue is considered a potential FAA-level safety issue if it could affect more than one FAA LOB/Staff Office or if its mitigations require more than one FAA LOB/Staff Office to implement. A benefit to an LOB/Staff Office submitting an issue for consideration at the FAA level is that the issue is sure to receive the proper executive-level visibility and support of the FAA SMS Executive Council and FAA SMS Committee.

Potential FAA-level issues or concerns that may trigger the need to conduct a safety assessment include, but are not limited to:

- Safety issues assigned by the FAA SMS Committee;
- Safety issues that are present within the National Airspace System (NAS), although its safety risk have not been accepted, it is expected to have high risk (e.g., it is identified as a result of an accident/incident or it is assumed to have high risk);
- Safety issues that have high risk and a potentially systemic outcome (e.g., the outcome crosses LOBs or the outcome impacts an industry segment rather than an individual certificate holder);
- Any safety issue on which an FAA organization’s management elects to conduct an FAA-level assessment;
- Data analyses that point to an issue, concern, or potential hazard in the system (e.g., analyses driven by Aviation Safety Information Analysis and Sharing (ASIAS));
- Issues identified by industry or system users; and
- New controls deemed necessary by the FAA as a result of internal FAA safety recommendations or recommendations from other government entities such as the National Transportation Safety Board (NTSB) or Congress.

The FAA SMS Committee, and if needed, the FAA SMS Executive Council, approves and prioritizes FAA-level safety issues for safety risk assessment. Safety risk assessments approved by the FAA SMS Committee and/or the FAA SMS Executive Council are routed to the FAA SMS Committee-chartered Safety Collaboration Team (SCT) to perform the safety risk assessments.

The organization that raised the safety issue is referred to as the Initiating Organization. The Initiating Organization enters issue information into the Hazard Identification, Risk Management & Tracking (HIRMT) tool prior to formally requesting an SRM Team at the FAA SMS Committee. If the FAA SMS Committee (or FAA SMS Executive Council, if necessary) determines the need for an FAA-level cross-LOB safety risk assessment, the Initiating Organization and the FAA SMS Committee work together to identify the Office of Primary Responsibility (OPR). Table 1, Roles and Responsibilities of Key Cross-LOB Safety Assessment FAA Stakeholders, contains more information regarding the roles and responsibilities of the OPR, and Step 3 in the process details the identification and selection of an OPR.

The FAA SRM process (current version of FAA Order 8040.4) is designed to ensure that hazards are identified and the safety risk associated with those hazards is managed to acceptable levels throughout the aerospace system. Therefore, the SRM process would be used for FAA-level safety issues to identify hazards and mitigate to an acceptable level the safety risk of cross-organizational issues that are found to exist as a result of incidents or negative trends in the system. Issues that are not selected for assessment with FAA SMS Committee involvement are still tracked in HIRMT and managed by the Initiating Organization,
and it is expected that the organization would apply its own SRM processes to address the issue.

2. Planned Changes

Chartered by the FAA SMS Committee, the SCT considers significant planned changes affecting NAS operations for potential safety risk assessments. Examples of planned changes include:

- Recommended or proposed aerospace system improvements, including new technologies; and
- Impending or urgent changes to the aerospace system causing existing safety risk controls to no longer be adequate.

To prevent these changes from introducing hazards and/or causing potential unacceptable safety risk to the NAS, the FAA SMS Committee engages the SCT to conduct safety risk assessments on the significant, cross-organizational planned changes, for which a decision is yet to be made on funding or implementation. The benefit of doing safety work such as this early in the planning stages is that decision makers are made aware of potential hazards/safety risk before they dedicate additional resources to moving further into planning and implementing a change and any requisite mitigation strategies. The result should be more information for decision making and more efficient use of resources.

The SCT manages safety risk assessments of these planned changes on behalf of the FAA SMS Executive Council and the FAA SMS Committee.

### Stakeholder Roles and Responsibilities

The aerospace system involves a complex interaction between different technical and human-centered sub-systems which are operated by many different types of organizations or stakeholders. A stakeholder is a group or individual that is affected by, or is in some way accountable for, the outcome of an undertaking; a stakeholder can also be described as an interested party having a right, share, or claim in a product or service or in its success in possessing qualities that meet that party’s needs and/or expectations. Table 1, Roles and Responsibilities of Key Cross-LOB Safety Risk Assessment FAA Stakeholders, details roles and responsibilities of specific stakeholders in the FAA; more specific roles and responsibilities are detailed within the document.

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<thead>
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<th>Stakeholder</th>
<th>Roles and Responsibilities</th>
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<tr>
<td>FAA SMS Executive Council</td>
<td>- Sets the strategic direction for safety management, including SMS and United States (U.S.) State Safety Program (SSP) implementation, across the FAA</td>
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<td>- Provides executive-level guidance and conflict resolution for FAA safety management-related issues</td>
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<td>- Meets at regular intervals to exchange safety information and address safety issues</td>
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2 In the Acquisition Management Process, this occurs prior to the Concept and Requirements Readiness Decision.
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<tr>
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| **FAA SMS Committee** | • Resolves any issues that the FAA SMS Committee raises, which may include disagreements or requests for additional resources related to SRM activities  
• Reports to the FAA SMS Executive Council  
• Provides assistance to FAA organizations regarding safety management  
• Meets at regular intervals and at the discretion of the FAA SMS Committee Chair to exchange safety management information  
• Approves, or otherwise addresses, FAA-level safety issues recommended for safety risk assessment  
• Recommends FAA-level safety issues to the FAA SMS Executive Council for allocation of resources to conduct safety risk assessments, when necessary  
• Assigns an OPR for assessing and addressing cross-organizational issues  
• Approves the scope and overarching plan for FAA-level safety assessments  
• Resolves disagreements between FAA organizations regarding safety management, including disagreements related to SRM  
• Escalates disagreements that cannot be resolved at the FAA SMS Committee level to the FAA SMS Executive Council |
| **Safety Collaboration Team (SCT)** | • Provides cross-organizational SRM consultation services to pre-decisional NAS change concepts for the benefit of FAA decision makers and/or program office SRM  
• Oversees the facilitation of subject matter experts that conduct SRM on planned changes or FAA-level safety issues in accordance with the current version of FAA Order 8040.4  
• Provides periodic status updates regarding SCT activities to the FAA SMS Committee  
• Provides technical expertise for assessment of safety issues (including FAA-level safety issues) when requested |
| **Office of Accident Investigation and Prevention, Safety Management and Research Planning Division (AVP-300)** | • Manages the FAA SMS and its supporting policies, processes, and tools in support of the Associate Administrator for Aviation Safety (AVS-1), the FAA SMS Executive Council, and the FAA SMS Committee  
• Chairs the FAA SMS Committee  
• Develops technical source materials and supporting safety management guidance  
• Manages and supports the Hazard Identification, Risk Management & Tracking (HIRMT) tool  
• Manages the identification of cross-organizational safety issues at the FAA level on behalf of the FAA SMS Committee  
• Coordinates safety risk assessment efforts for FAA-level safety issues, tracks approved safety risk mitigations, and measures safety performance for the FAA  
• Uses HIRMT to create, track, and close issues; monitor the implementation status of mitigations; and produce reports for FAA management to facilitate communication and accountability of safety issues  
• Ensures that the FAA-level safety issue assessment activities are managed through the SRM/Safety Assurance processes on behalf of the FAA |
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| **Office of Primary Responsibility (OPR)**    | • Provides assistance/expertise to FAA organizations regarding safety risk management and use of HIRMT  
  • Serves as the organization that manages and tracks the issue or change through closure (Note: There is only one OPR assigned to each safety issue.)  
  • Leads and manages the safety risk assessment and presents findings and recommendations to decision makers  
  • Identifies the appropriate management officials to accept safety risk and approve mitigations  
  • Coordinates any necessary approvals and safety risk acceptance decisions, and enters results and decisions into HIRMT  
  • Updates information in HIRMT, as necessary, to provide status based on the monitoring plan  
  • Provides status updates to the FAA SMS Committee  
  • Includes two main roles —the OPR Manager and the OPR Point of Contact (POC)                                                                                              |
| **OPR Manager**                                | • Accepts/rejects role as OPR on behalf of the responsible organization  
  • Confirms OPR POC  
  • Approves assessment scope, draft system analysis, and safety risk acceptance plan for safety risk assessments (Note: this is completed outside of HIRMT)  
  • Signs off on the Safety Risk Assessment Report (via signed memo with Safety Risk Assessment Report attached) indicating that SRM Team adhered to the process and the technical content is accurate and valid |
| **OPR Point of Contact (POC)**                 | • Leads the SRM Team to complete and document the safety risk assessment effort  
  • Enters information into HIRMT  
  • Identifies an SRM Team Facilitator and SRM Team members (with assistance from the FAA SMS Committee)  
  • Identifies the risk accepter and mitigation owners (with OPR Manager assistance, as needed)  
  • Documents the scope of the assessment and drafts the system analysis and safety risk acceptance plan  
  • Updates HIRMT after each SRM step  
  • Ensures that the SRM Team developed the Safety Risk Assessment Report properly, systematically identified hazards, and assessed the safety risk appropriately  
  • Works with the appropriate management official(s) to ensure that the SRM Team proposed valid safety risk mitigations, which include risk mitigation implementation and monitoring plans  
  • Acquires signatures for safety risk mitigation approvals and safety risk acceptance, following existing organizational processes for approvals and acceptances, as appropriate |

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3 The current version of the *Guidance for Managing Aerospace System Level Safety Issues in HIRMT* contains further information regarding HIRMT roles and responsibilities.

4 The appropriate management official within the OPR selects the OPR Manager. In general, the OPR Manager should be the decision maker within the OPR that has the biggest stake in the issue/change, and he/she would be in the best position to address the issue or is most affected by the proposed change. Existing organizational roles and responsibilities will likely help to determine the appropriate OPR Manager.
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<td>• Uses the Process for Escalation of SRM-Related Issues (described later in this document) to escalate the issue if any disagreements among organizations related to the assessment occur before, during, or after the SRM Team meets</td>
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<tr>
<td>Initiating Organization</td>
<td>• Serves as the organization that identifies a safety issue and raises it to the FAA SMS Committee for support to conduct a cross-LOB safety risk assessment. In some cases, the Initiating Organization becomes the OPR for the safety risk assessment. (Note: organizations can establish SRM Teams without engaging the FAA SMS Committee. However, the FAA SMS Committee is a resource to facilitate the coordination of the assessment and the establishment of an SRM Team, particularly for those that are cross-LOB.)</td>
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| SRM Team                        | • Comprises a diverse group of representatives, stakeholders, and subject matter experts from the various organizations affected by the safety issue or change<sup>5</sup>  
  • Examines potential safety risk of the issue or change and the causes of that risk  
  • Conducts SRM on the issue or change in accordance with the current version of FAA Order 8040.4  
  • Determines the appropriate breadth and depth of the safety analysis based on the presence of, or potential for, hazards and safety risk  
  • Objectively assesses the safety risk of the issue or change  
  • Documents the team’s safety findings in a Safety Risk Assessment Report as an input to decision making  
  • Develops the Proposed Safety Risk Mitigations Addendum to attach to the Safety Risk Assessment Report |
| SRM Team Observer               | • Attends meetings because they have particular knowledge or experience related to the issue/change being assessed or they are trying to gain experience with the SRM process  
  • Does not participate in SRM Team member discussions or decisions, unless specifically called upon by the SRM Team to contribute  
  • Does not participate in Safety Risk Assessment Report reviews or provide comments regarding the report |
| SRM Team Facilitator            | • Works with the OPR to help scope the safety risk assessment and moderates SRM Team deliberations  
  • Requests briefings and collects all available and relevant safety information regarding the issue or change, as necessary, before the SRM Team convenes  
  • Provides all relevant information about the safety issue or change to SRM Team members prior to the SRM Team kickoff meeting  
  • Notifies all identified SRM Team members of meetings and coordinates logistics for the meetings  
  • Ensures the SRM Team complies with the SRM process  
  • Limits his or her influence on the safety risk assessment  
  • Guides participants in objectively examining and identifying potential safety hazards and mitigating the safety risk associated with those hazards  
  • Engages the team to develop a thorough safety risk assessment by soliciting expert advice and building consensus whenever possible |

<sup>5</sup> The SRM Team may include stakeholders external to the FAA. *Step 7: Determine and Secure SRM Team Members*, provides more information regarding external stakeholders.
### Stakeholder Roles and Responsibilities

**Stakeholder**

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|                                    | • Cultivates discussion among team members about potential hazards, risks, and mitigations  
• Performs or delegates the functions of timekeeper in order to manage start times and breaks  
• Coordinates review of Safety Risk Assessment Report and Proposed Safety Risk Mitigations Addendum within SRM Team and delivers final report and addendum to OPR  
• Works with SCT Secretariat to coordinate peer review of Safety Risk Assessment Report and Proposed Safety Risk Mitigations Addendum within SCT Core membership  
• Mediates and assists SRM Team members in working through differences of opinion  
• Remains neutral to the outcome  

**Technical Writer**

- Records meeting notes  
- Documents SRM Team findings and proposed safety risk mitigation strategies  
- Assists the SRM Team with writing the Safety Risk Assessment Report and Proposed Safety Risk Mitigations Addendum  
- Develops the necessary reports and communications materials to deliver the results to management  
- Assists Facilitation Team, as needed, during all phases of conducting the safety risk assessment

**Risk Accepter**

- Provides signature to certify acknowledgement and acceptance of the safety risk associated with the issue/change that is expected to remain once mitigations or NAS changes are fully implemented  
- Agrees to follow and execute a comprehensive monitoring plan to verify the predicted residual safety risk

**Risk Mitigation Implementer**

- Provides approval signature representing commitment to implement the safety risk mitigations in accordance with the associated controls identified in the Proposed Safety Risk Mitigations Addendum

The remainder of this document describes the process for coordinating cross-LOB safety risk assessments for FAA-level safety issues and planned changes, which involve the FAA SMS Committee and/or FAA SMS Executive Council.

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6 The term Technical Writer does not imply that an OPR must use a job series 1083 employee to complete these tasks. Instead, it refers to a person given the role of note taker and documenter.

7 The person authorized to accept risk on behalf of the organization varies based on the level of risk being accepted. Refer to the Safety Risk Acceptance Criteria for Issues or Changes That Cross LOBs/Staff Offices table in the current version of FAA Order 8040.4, Safety Risk Management Policy for more information.
Process for Coordinating Cross-LOB Safety Assessments

Figure 1, *Process for Coordinating Cross-LOB Safety Risk Assessments*, depicts the process flow described in this document.
Step 1: Document Potential Issue/Change in HIRMT

HIRMT is the FAA’s official tool for collecting, managing, and reporting on Aerospace System Level (ASL) safety issues containing hazards and risk mitigations. A safety issue that meets one or more of the following criteria is considered an ASL issue and must be reported in and managed through HIRMT:

1. The safety issue is tracked and managed by the FAA SMS Committee;
2. The safety issue is present in the NAS\(^8\), its safety risk has not been accepted, and it is expected to have high risk (e.g., it is identified as a result of an accident or incident or it is assumed to have high risk but an assessment has not been completed);
3. The safety issue has high risk and has a potentially systemic outcome (e.g., the outcome crosses LOBs or the outcome impacts an industry segment rather than an individual certificate holder); and/or
4. Any safety issue that an FAA organization’s management elects to track in HIRMT.\(^9\)

Since the FAA SMS Committee tracks and manages FAA-level safety issues and planned changes (criterion #1 above), they are considered ASL issues. Therefore, HIRMT will be used to document and track FAA-level safety issues and planned changes that are considered for cross-LOB safety risk assessment by the FAA SMS Executive Council and/or the FAA SMS Committee.

As stated in the *Triggers for Cross-LOB Safety Risk Assessments* section, the organization that raised the safety issue is referred to as the Initiating Organization. In this step, the Initiating Organization, with assistance from AVP-300 if necessary, enters a description for the required fields of the potential FAA-level safety issue or planned change into HIRMT.\(^10\) The Issue Summary Document Template can be used to gather the issue information. Once the Initiating Organization enters the information into HIRMT, it informs the FAA SMS Committee chair and requests time to brief the issue to the FAA SMS Committee.

Step 2: Request Cross-LOB Safety Risk Assessment Team

In this step, the Initiating Organization that is requesting cross-organizational resources to support an FAA-level SRM activity uses the Request for Cross-LOB SRM Team Briefing Template to formally request an SRM Team at the FAA SMS Committee. The briefing should include:

- Description of issue/change;
- List of stakeholders (internal and external to the FAA);
- Summary of safety assessments/analyses conducted to date including
  - A description of the tools or methods that were used to identify and analyze the issue, and
  - Any other group(s) that worked on or is currently working on addressing the issue;

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\(^8\) Changes being processed through the NAS Change Proposal (NCP) may be considered to be present in the NAS, if they are in the live test and evaluation phase.

\(^9\) The organization should consider the risk and visibility of a safety issue when determining if it should be entered into HIRMT.

\(^10\) To become a user and be granted access to HIRMT, individuals are required to complete the HIRMT user training. For more information regarding HIRMT and to obtain access to the tool, please refer to the HIRMT site on the FAA intranet at https://hirmt.faa.gov or contact the HIRMT Help Desk at 9-natl-hirmt-helpdesk@faa.gov.
• Data/information that is available to support a safety assessment (e.g., accidents and/or incidents directly related to the issue);
• Preliminary safety risk assessment and evaluation of impact of the issue/change on the aerospace system;
• Request for resources (including specific expertise necessary to conduct the SRM activity);
• Proposed milestones and schedule for the SRM Team;
• Any other information that is pertinent and would help decision makers to decide whether to sponsor an FAA-level cross-LOB SRM activity; and
• Next steps, assuming approval (including any further approvals necessary (e.g., FAA SMS Executive Council)).

The Initiating Organization uploads the briefing template into the HIRMT tool as supporting documentation and works with AVP-300 to be added to the agenda of an upcoming FAA SMS Committee meeting to present the briefing. The FAA SMS Committee determines whether or not to provide resources to establish an FAA-level SRM Team. If the FAA SMS Committee decides resources should be provided, it will task the SCT with establishing an SRM Team.

**Step 3: Determine and Secure OPR**

Once decision makers approve the establishment of an FAA-level SRM Team, the next step is to determine and secure the appropriate OPR that will be responsible for managing the assessment activities on behalf of the FAA. In general, the candidate OPR would typically be the organization that has the largest stake in the issue or change and/or is in the best position to address the issue.

The FAA SMS Committee, with assistance from the Initiating Organization, identifies the appropriate candidate OPR for FAA-level safety issues and planned changes. First, the FAA SMS Committee Chair informally reaches out to the appropriate manager in the candidate OPR, provides an overview of the project and OPR roles and responsibilities, achieves OPR interest (ideally), and provides notice that a formal request memo will be sent to OPR management. The FAA SMS Committee Chair may delegate this initial contact to the appropriate manager in the Initiating Organization, SCT Leadership, or another member of the FAA SMS Committee.

Once initial contact with the candidate OPR has been made, SCT Leadership uses the OPR Request Memo Template to formally request confirmation of the OPR, the OPR Manager, and the OPR POC.

The FAA SMS Committee also tasks the SCT to manage the safety risk assessment of the FAA-level cross-LOB safety issue. SCT Leadership reaches out to the OPR POC to offer assistance with the SRM process and HIRMT.

**Step 4: Transfer HIRMT Responsibilities to OPR**

In this step, AVP-300 documents the OPR role and the safety issue within HIRMT and routes the HIRMT safety issue file to the pre-determined OPR organization for acceptance. AVP-300 will include a copy of the accepted OPR request template as documentation. At this point, HIRMT responsibilities have been transferred to and accepted by the OPR within HIRMT. The OPR is now responsible for reporting the status of the identified safety issue in HIRMT, throughout the lifecycle of the issue.
Step 5: Conduct Initial Planning

Initial Planning is necessary to document what the SRM Team is trying to accomplish and define a timeline for the assessment so that a high-level plan can be communicated to stakeholders.

In this step, the OPR POC, with assistance from the SCT if needed, documents a brief description of the issue/change, describes the preliminary scope of the assessment, and identifies stakeholders and participating organizations. The OPR POC develops a schedule that includes high-level milestones for planning, conducting, documenting, and obtaining approvals for the safety risk assessment and uses the Issue/Change Summary Briefing Template to document this information. The template is used as a summary outreach briefing when requesting participation on the SRM Team.

The OPR POC, with assistance from the SCT, then identifies the SRM Team Facilitator(s) and Technical Writer.

Step 6: Establish Scope and Draft System Analysis and Risk Acceptance Plan

The OPR POC (with assistance from the SCT, and/or the SRM Team Facilitator, as needed) documents the scope of the assessment and drafts the system analysis and risk acceptance plan. The OPR POC (with participation from the SCT, as needed) meets with the SRM Team Facilitator to plan the SRM Team meetings. Preparation meetings are used to define:

- The proposed issue/change;
- The draft system state(s) in which the issue/change is/will be operational;
- Assumptions (not existing controls) that may influence the analysis;
- The components of the 5M Model;
- Sources of relevant data/information related to the issue/change; and
- A draft safety risk acceptance plan.11

The purpose of the system analysis step is to understand and describe the system to the extent necessary to identify potential hazards. It is a comprehensive approach to examining an issue or change in terms of what it affects and what is affected by the issue or change. The OPR POC can use the 5M Model to capture the information needed to bound and describe the system and aid in the hazard identification process. When defining the components of the 5M Model (see 5M Model Template), the OPR adheres to the following guidelines:

- **Mission:** Define the purpose of the NAS change proposal or system/operation being assessed, in detail. There should be agreement on the language for the issue or change that the SRM Team is tasked to assess. Ensure that the language is unambiguous, concise, and clearly reflective of the issue or change.
- **Human:** Define the human operators, maintainers, and affected stakeholders. First, identify organizations that are affected by the issue or change, and then proceed to identify subject matter experts from each of those organizations. There may be times when it is not feasible to obtain participation from some or part of the identified stakeholders. In those cases, other avenues of collecting input or data may be used, such as telephone interviews, worksheets, surveys, etc.

11 The draft risk acceptance plan must meet the risk acceptance criteria in FAA Order 8040.4.
• **Machine**: Define the equipment used in the system that is related to the issue or change, including hardware, firmware, software, human-to-system interfaces, system-to-system interfaces, and avionics.

• **Management**: Define the documents that are relevant to the issue or change (e.g., directives, policies, Standard Operating Procedures, Letters of Agreement).

• **Media**: Define the environment in which the system is operated and maintained (i.e., the elements of the NAS that are affected by the issue or change).

The safety risk acceptance plan includes the safety risk acceptance criteria (such as a risk matrix and the severity and likelihood definitions that will be used), designation of authority to make the required safety risk decisions involved, and assignment of the relevant decision makers. FAA Order 8040.4 allows flexibility to account for existing LOB/Staff Office processes and structure. Therefore, the OPR can choose to use criteria other than the severity and likelihood definitions and risk matrix in 8040.4. The draft risk acceptance plan specifically describes the criteria the team will use to determine risk acceptability, as well as the levels of management that are expected to accept the risk.

After the assessment scope, draft system analysis, and draft safety risk acceptance plan are complete, the OPR POC forwards them to the OPR Manager for review and approval, as applicable (see Approval of Assessment Scope, Draft System Analysis and Risk Acceptance Plan Briefing Template). The OPR documents that the assessment scope, draft system analysis, draft safety risk acceptance plan, and approval are complete by uploading the completed templates to the safety issue record in HIRMT noting OPR Manager’s approval.

Once the OPR Manager’s acceptance is obtained, the OPR POC and SRM Team Facilitator coordinate to develop a briefing package to provide to the SRM Team members (see Step 9).

**Step 7: Determine and Secure SRM Team Members**

SRM Teams should include representatives from the various organizations affected by the issue or change. It is important that the team be diverse and include stakeholders and experts who are expected to be involved in various capacities throughout the SRM process, while maintaining the right amount of participants to ensure the team can be efficiently managed. Team members should be given authority by their management to speak on behalf of their organization.

The OPR POC (with assistance from the SCT, if needed) identifies the skills and expertise required to conduct the safety risk assessment. Though the size and makeup of the cross-LOB SRM Team will vary according to the type and complexity of the issue/change, the following types of experts should be considered for involvement on the team (note that this list is not all-inclusive):

- Employees directly responsible for the issue or change being analyzed/assessed;
- Employees with current knowledge of and experience or operational proficiency with the issue or change;
- Hardware or software engineering or automation experts to provide knowledge on equipment performance;
- Air traffic controllers and pilots;
- SRM specialist (facilitator) to guide the methodology;
- Human factors specialist;
- Medical specialist;
• Quality Assurance expert to help ensure the safety performance measures are auditable/measurable; and
• Employees skilled in collecting and analyzing hazard and error data and using specialized tools and techniques (e.g., operations research, data, human factors, failure mode analysis).

As stated previously, in order to conduct a thorough assessment, it is important to have all necessary expertise on the SRM Team. At times, this means that the FAA might request participation from entities outside the agency, including product/service provider organizations for which the FAA has oversight responsibility. In such cases, the OPR should consult with the appropriate official or organization in the FAA regarding data protection and Freedom of Information Act (FOIA) requirements. This is especially advisable if the SRM Team will have access to data/information that is not publicly available. In addition, the OPR should confer with the FAA Office of the Chief Counsel (AGC) to avoid any potential legal/statutory issues. Note that coordinating participation from external stakeholders may require additional time and documentation.

To ensure the quality of participation from team members, it is important that all team members have a basic understanding of SRM prior to commencing the SRM Team meetings. The OPR POC verifies that all FAA team members have reviewed the FAA SRM Overview Briefing (FAA27000023) in the electronic Learning Management System (eLMS) as a prerequisite for participating on the team. A similar overview should be provided to any external team participants.

The OPR POC determines expectations of team members regarding level of effort required to support the team. Expectations include:

• **Face-to-face meetings:** Estimate how many meetings the SRM Team is expected to attend in person, the location(s) of the meetings, and the duration of the meetings required to accomplish the team objectives.
• **Teleconferences:** Estimate the frequency of expected teleconferences, duration of the calls, and timeframe they are expected to occur (e.g., every two weeks for 1 hour, June-October 2018).
• **Work outside of meetings:** Estimate the type (e.g., collection of data) and amount of work that the team member will be expected to complete in between the meetings and teleconferences (e.g., It is anticipated that the team member will spend 10 hours per week devoted to this activity outside of the face-to-face meetings and teleconferences.).

In addition to expectations about the level of effort, the OPR POC identifies any other factors that organizations may consider when selecting team members and specific participant roles, which may include:

• The team member’s ability to represent his/her organization’s perspective;
• The team member’s objectivity sufficient to consider safety risk outside of his/her LOB/Staff Office;
• The team member’s ability to consider safety risk at a LOB/Staff Office level and system level;
• The impact on the organization of a team member being away from normal duties;
• The team member’s ability to interface with other organizations; and
• The balance of personality traits of all team members.
Next, the OPR POC reaches out to existing contacts within organizations (e.g., Aviation Safety Safety Management System (AVSSMS) Coordination Group, FAA SMS Committee), provides the contacts with an overview of the project, and requests recommendations for people who might be a good fit for the team. The outcome of this coordination is a list of possible candidates for each team member position.

The OPR POC then informally reaches out to the candidates and provides them with an overview of the project and expectations of team members. If the candidate is interested in participating on the team, the OPR POC works with the candidate to informally reach out to the candidate’s manager, provide an overview of the project, and discuss expectations of the team member and the team member’s management. If the manager agrees that the candidate should participate on the team, the OPR POC notifies the manager that a formal request memo will be sent to acquire the team member’s participation.

The OPR POC formally requests team member participation by emailing a completed Resource Request Memo Template to managers of all recruited team members. The OPR POC then fills out the SRM Team Composition document that contains names and experience levels of SRM Team members. The OPR POC then sends the SRM Team Composition document to the SCT, the FAA SMS Committee Chair, and appropriate managers within the stakeholder organizations. The OPR POC uploads the completed SRM Team Composition document in HIRMT for documentation purposes.

**Step 8: Ensure Management Awareness of Team Membership**

It is important to ensure that LOB/Staff Office leadership is aware of who in the organization is participating in the safety risk assessment.

For FAA-level safety issues and planned changes, the FAA SMS Committee Chair presents high-level milestones, an associated schedule, and the SRM Team Composition document to the FAA SMS Executive Council for awareness.

**Step 9: Develop Detailed Schedule and Communicate with SRM Team**

Once the SRM Team members are secured, the OPR POC (with assistance from the SRM Team Facilitator) develops a detailed schedule using the Safety Risk Assessment Schedule Template.

The OPR POC and the SRM Team Facilitator meet to prepare and develop a briefing package for the SRM Team kickoff meeting. The briefing package includes:

- A briefing on the agenda for the meeting;
- A summary of the goals and objectives for the SRM Team;
- An overview of the FAA SRM Process (see FAA SRM Process Briefing);
- SRM Team ground rules;
- The assessment method(s) by which the SRM Team will identify hazards; and
- A draft of the system analysis and a description of the safety issue or change proposal, if available (from Step 6).

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12 For external stakeholders, the OPR POC uses the External Stakeholder Resource Request Template.
The SRM Team Facilitator provides the briefing package, in addition to the meeting invitation and directions to the meeting, to the SRM Team sufficiently in advance of the initial meeting.

**Step 10: Conduct SRM**

The SRM Team conducts the safety risk assessment in accordance with the current version of FAA Order 8040.4 by following the 5-Step SRM Process (see [FAA SRM Guidance: The 5-Step Process](#)).

HIRMT is intended to be used as a process tool to guide teams through the SRM steps and to aid in safety risk assessment documentation as they progress through the SRM process. As the team progresses through SRM, the OPR POC enters information and uploads relevant supporting documentation into HIRMT after each SRM step.

Typically, the SRM Team completes all five SRM steps while convened together for a few days to conduct the safety risk assessment. However, the results are organized and delivered to management in two separate documents. SRM steps one through four (System Analysis; Identify Hazards; Analyze Safety Risk; Assess Safety Risk) are delivered in a Safety Risk Assessment Report and approved by management prior to delivering the results of SRM step five (Control Safety Risk) in a Proposed Safety Risk Mitigations Addendum. The reason for two separate documents is so management can focus on first agreeing that the risk was characterized and assessed appropriately. After agreement on the evaluation of risk, management can then focus on whether the proposed mitigations are appropriate.

In this step, the SRM Team, with assistance from the SRM Team Facilitator and Technical Writer, produces the draft Safety Risk Assessment Report (see [FAA Safety Risk Assessment Report Template](#)). The results of the safety risk assessment should be presented to the team to verify that the SRM Team members’ discussions have been correctly recorded.

Once the draft Safety Risk Assessment Report is complete, the SRM Team reviews it and reaches concurrence (desired) on the results. SRM Team members provide comments on the draft Safety Risk Assessment Report to the OPR POC using the [Comment Matrix Template](#). The OPR POC leads a sub-team to resolve team comments. Comments and resolutions are provided back to the commenters.

The SRM Team should strive to reach consensus, but there may be instances in which not all SRM Team members agree on the results of the safety risk assessment. In those cases, the team documents the results of the assessment, records the comments and other opinions, and delivers the results to the decision maker. Records of comments and other opinions are appended to the Safety Risk Assessment Report, if necessary, using the [Record of Comments and Other Opinions Template](#).

The SRM Team Facilitator mediates and assists SRM Team members in working through differences of opinion. He or she should be able to remain neutral during these discussions, and recognize, acknowledge, and use differences of opinion to help the SRM Team consider different points of view.

**Step 11: Review and Finalize Safety Risk Assessment Report**

Once the OPR POC deems the Safety Risk Assessment Report complete, a peer review is conducted to assure the report is complete and accurate and that the appropriate process was followed during the development of the report. Individuals, other than those who have
conducted the SRM activity, should perform the peer reviews. These individuals should have similar expertise as the SRM Team members.

Following peer review, the SCT designates an FAA senior technical expert(s) to review the draft Safety Risk Assessment Report for completeness and accuracy and to assure that the appropriate process was followed. A statement is added to the Safety Risk Assessment Report to attest that a peer review was conducted. For example, “[insert name of technical reviewer(s)] reviewed the Safety Risk Assessment Report and concurs that the appropriate process was followed and the report appears to be complete and accurate.”

Approval/Finalization of Safety Risk Assessment Report

After the peer review is conducted, the OPR POC approves the Safety Risk Assessment Report. Safety Risk Assessment Report approval indicates that the report was developed properly, that hazards were systematically identified, and that safety risk was appropriately assessed. Safety Risk Assessment Report approval does not constitute acceptance of the safety risk associated with the issue/change or approval to implement the mitigations/change.

Approval signatures are not part of the Safety Risk Assessment Report. Instead, the signatures are recorded separately on a memo with the Safety Risk Assessment Report attached. To finalize the Safety Risk Assessment Report, the OPR Manager signs the memo accompanying it, indicating agreement that the findings are valid and accurate and the process was followed (see Safety Risk Assessment Report Signature Memo Template). The OPR POC uploads the Safety Risk Assessment Report and applicable signature pages into HIRMT for documentation purposes.

Step 12: Develop Proposed Safety Risk Mitigations Addendum

After the Safety Risk Assessment Report is approved and applicable signatures are obtained, the SRM Team finalizes and delivers the proposed safety risk mitigations, with accompanying implementation and monitoring plan, to be attached to the Safety Risk Assessment Report as an addendum (see Proposed Safety Risk Mitigations Addendum Template). For efficiency, the SRM Team might develop, document, and finalize the proposed safety risk mitigations concurrently with Safety Risk Assessment Report development; however, the addendum is delivered to decision makers separately to ensure that the assessment is reviewed and approved independently from the proposed safety risk mitigations.

Once the SRM Team finalizes the Proposed Safety Risk Mitigations Addendum, the OPR forwards the addendum to the appropriate management official(s) to confirm that valid safety mitigations were proposed, and that an effective implementation and monitoring plan was prepared (see Step 13).

Step 13: Obtain Approval of Proposed Mitigations/Risk Acceptance

The OPR determines who needs to approve the mitigations and accept safety risk. If the OPR cannot make that determination, the OPR works with the FAA SMS Committee and/or the SCT to determine the appropriate management official(s) to approve mitigations or accept safety risk.

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13 The FAA SMS Committee acknowledges that affected stakeholders may require an independent peer review within their respective organizations.

14 The FAA SMS Committee acknowledges that affected stakeholders may require additional approvals based on their organizational requirements. For example, in the ATO, the ATO Chief Safety Engineer would also approve the Safety Risk Assessment Report.
If there is disagreement with the OPR regarding mitigations or safety risk acceptance, then the item is raised to the FAA SMS Committee. If the FAA SMS Committee cannot resolve the disagreement, it is then elevated to the FAA SMS Executive Council for decision.

The OPR POC is responsible for coordinating mitigation approvals and safety risk acceptance. The OPR POC briefs the appropriate management official(s) for the Risk Accepter and Risk Mitigation Implementer(s) to request approval of the proposed safety mitigations and safety risk approvals (see Request for Approval of Proposed Mitigations Briefing Template).

The OPR POC then obtains the appropriate signatures for each mitigation and acceptance of safety risk by the appropriate organizations on a memo that accompanies the final Safety Risk Assessment Report and Proposed Safety Risk Mitigations Addendum (see Proposed Safety Risk Mitigations Addendum Signature Memo Template). By signing the memo, the Risk Accepter certifies acknowledgment of and acceptance of the safety risk associated with the issue/change that is expected to remain once the safety risk mitigations and/or change(s) are implemented. The Risk Accepter's signature also indicates a commitment to follow the documented monitoring plan to verify the predicted residual safety risk. Signature by the Risk Mitigation Implementer(s) indicates commitment to implement the safety risk mitigations/controls in accordance with the associated Proposed Safety Risk Mitigations Addendum.

Once approvals and signatures are obtained, the OPR POC uploads the templates and applicable signatures into HIRMT for documentation purposes. Note: if there is disagreement on the mitigations or the responsibility for implementing them, the issue can be escalated according to the process outlined in the following section, Process for Escalation of SRM-Related Issues.

**Process for Escalation of SRM-Related Issues**

Chapter 2, Section 1.j of the current version of FAA Order 8040.4, *Safety Risk Management Policy*, states:

A safety issue may affect multiple LOBs and/or Staff Offices. Under such circumstances, all affected FAA organizations must be part of the process. Effective SRM requires early and ongoing involvement by appropriate members of all affected FAA organizations. In the event that a disagreement arises among FAA organizations regarding SRM that cannot be resolved, the issue should be raised for resolution to the FAA SMS Committee.

Based on this requirement in the policy, the following process was developed to escalate an issue related to SRM to the appropriate levels of FAA and/or LOB/Staff Office management. This process can be used for issues with SRM sponsored by the FAA SMS Committee or SRM conducted by organizations independent of the FAA SMS Committee, as long as the issue meets the criteria in Step 1.
Step 1: OPR Determines If Issue Meets Escalation Criteria

If there are any disagreements among organizations related to the safety risk assessment before, during, or after the SRM Team meetings, the OPR POC should first determine if the issue should be elevated to the FAA SMS Committee. All attempts should be made to resolve the issue at the OPR/LOB level; however, there may be times when it needs to be escalated. In order to be escalated, the issue needs to meet all four of the following criteria:

1. Crosses FAA organizations;
2. Contains hazards that are high risk, are medium risk with uncertainty about the risk, or are based on numerous assumptions;
3. Is an active issue (e.g., awaiting response from product/service provider; awaiting results of investigation; gathering further information through an FAA-sponsored study); and
4. Has some disagreement surrounding it that is causing the issue to remain unresolved. Some examples are:
   - Disagreement on mitigations
   - Failure to implement mitigations
   - Disagreement on the process or methodology used
   - Disagreement on safety risk assessment
   - Disagreement as to whether to apply resources
   - Disagreement over ownership of hazard and/or controls
**Step 2: OPR Submits Issue to FAA SMS Committee Chair**

If the issue meets the four criteria in Step 1, the OPR POC works with his/her representative on the FAA SMS Committee to complete the [Safety Issue Escalation Template](#), which is submitted to the FAA SMS Committee Chair. For each new issue submitted, the FAA SMS Committee Chair reviews the submittal to ensure that it meets the minimum escalation criteria.

**Step 3: FAA SMS Committee Reviews/Resolves**

The FAA SMS Committee Chair brings the issue to the attention of the FAA SMS Committee. Depending on the urgency of the issue, this can be done at a regularly scheduled FAA SMS Committee meeting or at a special meeting called to discuss the issue.

The OPR POC works with his/her representative on the FAA SMS Committee and the FAA SMS Committee Chair to make sure that the right subject matter experts are brought in for the discussions with management if more information is needed on a particular issue. The FAA SMS Committee discusses the submission with the appropriate experts within the LOBs/Staff Offices to assist in resolving the issue. The FAA SMS Committee decides whether the disagreement can be resolved at the FAA SMS Committee level or if it needs to be escalated to the FAA SMS Executive Council. The FAA SMS Committee makes every attempt to resolve the issue. If the OPR is not present at the meeting, the FAA SMS Committee Chair notifies the OPR POC of the resolution or decision to escalate further.

**Step 4: FAA SMS Executive Council Reviews/Resolves**

If the FAA SMS Committee cannot reach a resolution, the FAA SMS Committee Chair raises the unresolved issue to the FAA SMS Executive Council for resolution. Depending on the urgency of the issue, this can be done at a regularly scheduled FAA SMS Executive Council meeting or at a special meeting called to discuss the issue.

The FAA SMS Committee Chair ensures that the LOBs/Staff Offices involved provide appropriate subject matter experts needed for discussions at the FAA SMS Executive Council meeting. The FAA SMS Committee Chair communicates the results of the FAA SMS Executive Council meeting with the FAA SMS Committee members and OPR, who in turn share the information with their organizations.