Standard Operating Procedure
Aircraft Certification Service Project Prioritization and Resource Management

Purpose:

This Standard Operating Procedure (SOP) describes the Aircraft Certification Service (AIR) process for prioritizing certification projects and managing certification project resources when local resources are not available or are working higher priority projects such as continued operational safety. The process for managing certification resources will henceforth be referred to as the AIR Resource Management Process.

Scope:

This SOP applies to AIR personnel involved in aircraft certification (ACOs and Oversight Offices) and to all activities AIR personnel perform in support of certification project prioritization and resource management. This SOP establishes the requirements and best practices for: 1) how to prioritize aircraft certification projects; 2) how to determine individual project task response times; and 3) how to obtain resources to certification projects when local resources are not available.

Note: This SOP does not apply to projects managed by the Military Certification Office (MCO). For projects managed by the MCO, see FAA Order 8110.101.

The following documents are used in this process and are available on the AIR QMS website or Regulatory Guidance Library (RGL):

- FAA Order 8110.4 Type Certification
- FAA Order 8100.15 Organization Designation Authorization (ODA)
- FAA Order 8110.42 Parts Manufacturer Approval Procedures
- QMS Procedure AIR-002-050 AIR Type Certification
- QMS Procedure AIR-001-080 AIR Parts Manufacturer Approval
- QMS Procedure AIR-002-050-W1 AIR Risk Based Targeting (RBRT) during Type Certification (TC) Process
- FAA Notice N 8110.115 Applying Risk Based Resource Targeting to Type, Amended Type and Amended Supplemental Type Certification

DOCUMENT APPROVAL		
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REVISION HISTORY		
Rev	**Description of Change**	**Effective Date**
0	Original	TBD

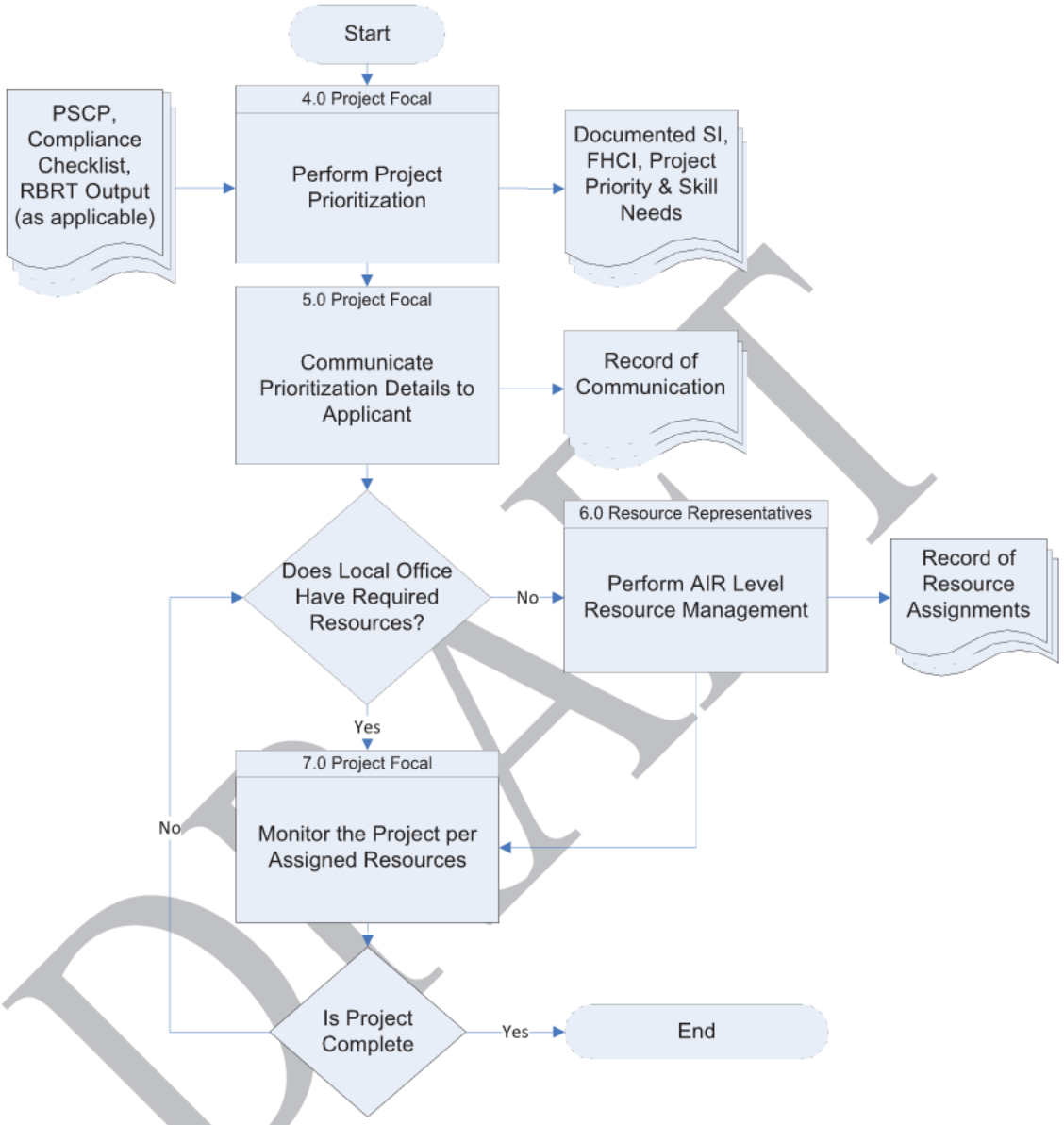

Figure 1: Aircraft Certification Service Project Prioritization and Resource Management Process Overview

1. Overview & Background:

1.1. Overview. This document provides requirements and best practices for prioritization of certification projects including Type Certificates (TC), Amended Type Certificates (ATC), Supplemental Type Certificates (STC), Amended Supplemental Type Certificates (ASTC) and Test & Computation Parts Manufacturer Approvals (PMA). This process begins after a complete application package has been submitted in accordance with 8110.4 or 8110.42. This application package may include a certification plan or PSCP, compliance checklist, and RBRT output (as applicable) per 8110.4 and AIR-002-050-W1 (when required). This process ends when project priority and task response times are known, documented, and communicated to the applicant, and when resources have been allocated to project tasks. The project will then be completed in accordance with 8110.4 or 8110.42 with a goal of not exceeding the maximum response times set forth within this process.

1.2. Background. This SOP contains a process for certification project prioritization and resource management in AIR. This SOP supersedes the legacy SOP for Aircraft Certification Service Project Sequencing posted in the Federal Register (FR) on September 1, 2011 under FR DOC # 2011-22360.

AIR began project sequencing in 2005 in an effort to focus its limited resources on safety enhancements. With project sequencing, AIR managed workload by delaying entire projects until AIR resources were available. Applicants were sometimes subject to long delays and they could not anticipate when a project would be started by AIR personnel. Based on comments received through the FR on the legacy Project Sequencing SOP, AIR has designed this new certification project prioritization and resource management process. This process has the same goal of focusing FAA resources on safety but with an approach that allows work to begin following acceptance of a certification package. All projects are initiated by the FAA when the application is received.

When a certification project is initiated, the office determines the project's priority and related task response times. A new TC project or top priority project will be managed by task office flow times (OFT), while a low priority project will be managed by task response times that are extended out to a maximum of the OFT plus 90 days. If the aircraft certification service is unable to support a project task within its maximum response times, geographic Directorate management will be notified of the resource needs and impacts.

Priority will be determined primarily by the project's safety benefit. The amount of FAA involvement in a project also plays a small role in the prioritization calculation, with safety remaining the primary driver.

2. Definitions:

2.1. Must or Will. This SOP is directive in nature. The use of words such as "must" or "will" herein indicate that the actions are mandatory.

2.2. May or Should. The use of words such as "may" or "should" herein indicate a process step is not mandatory, but is an optional best practice to allow flexibility. You are encouraged to follow the best practices contained in this SOP.

2.3. Risk Based Resource Targeting (RBRT) is the process by which each airworthiness requirement is systematically assigned a risk level and how those risk levels are used to guide decisions on the amount of FAA involvement in a project. Further definition of the RBRT process and its application can be found in FAA Notice N 8110.115 and QMS procedure AIR-002-050-W1.

2.4. Safety Index (SI) is a rating of a certification project to prioritize use of resources based on the project's overall impact on safety. See Appendix A, Step 1 for a detailed description of how SI is calculated.

2.5. Applicant Showing or Designee Finding (ASDF) is a rating based on the anticipated discrete number of FAA direct findings to be made, as compared with the percentage of discrete findings to be made by a designee or where an applicant showing will be accepted without a discrete finding. ASDF can be calculated from an accepted compliance checklist or from the output of a RBRT analysis. See Appendix A, Step 2 for a detailed description of how ASDF is calculated.

2.6. FAA Hours of Certification Involvement (FHCI) is an estimate of the number of hours of FAA involvement to accomplish a certification project. This number does not include involvement by FAA designees. The options for FHCI are project categories of 1(small), 2 (moderate), 3 (large) and 4 (major).

2.7. Project Focal is the person from the applicant's geographic certification office identified as the project manager for the particular project.

2.8. **Project Priority** is the prioritization level assigned to a project. The priorities can be Top, High, Medium or Low. Prioritization details can affect the maximum FAA response time to any applicant submittal.

2.9. **Office Flow Time (OFT)** is the baseline amount of time allocated for an FAA office to complete a task or respond to a specific type of applicant submittal (i.e., test plan, flight test report, etc.). Each office determines its own OFT based on staffing level and workload.

2.10. **Response Time Extension** is the maximum amount of time that a task can be extended based on project priority. These extensions are 0 days for Top Priority, 30 days for High Priority, 60 days for Medium Priority and 90 days for Low Priority. Extensions are measured in calendar days.

2.11. **Maximum Response Time** is the maximum amount of time to respond to a task on a project. This time is the OFT plus the Response Time Extension. This maximum response time is not a target and tasks should be accomplished before the maximum if resources are available.

2.12. **Functional Skill Categories.** The functional skill categories needed for resource management are:

Entity	Acronym
Flight Test Pilot	FTP
ASE Flight Test Analyst	FTE
ASE Airframe / Structures	AF/ST
ASE Mechanical / Environmental Systems	MS/ES
ASE Electrical / Avionics / Software	EL/AV/SW
ASE Powerplant / Noise	PI
ASE Propulsion Part 33 / 34 / 35	P33
ASE Cabin Safety	CS

2.13. **AIR Resource Management Process** is the process by which ACOs identify resources needed and allocate resources available between certification offices. This process will include regular meetings by skill (FTP/FTE; AF/ST; PI/P33; MS/ES/CS; and EL/AV/SW) and an evaluation of project tasks that are encroaching on their maximum response times.

2.14. **Project Office**, referred to as PACO in some other documents, is the FAA organization that will issue the design approval. The project is managed by the geographic ACO unless the project is transferred to another office (see Order

8110.4 for further definition of Project Office). This SOP does not apply to projects managed by the MCO.

2.15. AIR Resource Management Facilitator is the person assigned to facilitate the allocation of resources based on availability and need across AIR. This person will also record the allocation of available resources to resource needs.

2.16. AIR Resource Management Meetings are discipline-specific, biweekly meetings (teleconferences) that are held to match resources available with resources needed throughout AIR.

2.17. Certification Project. For purposes of this SOP, a certification project is any TC, ATC, STC, ASTC or Test & Computation PMA. TSOA projects and changes to TSOA approvals are not included as part of this process.

2.18. Project Support Personnel are the support personnel assisting with the execution of the project. These personnel will generally be from the Project Office but can include other support personnel as required. Per Order 8110.4, these personnel normally consist of: a project manager, engineers or technical specialists, flight test pilots and flight test engineers, manufacturing inspectors, AEG operations and airworthiness inspectors, and a project officer with other persons at the discretion of the accountable directorate.

3. Responsibilities

3.1. The AIR-100 manager is responsible for implementing, maintaining, and continually improving this process.

3.2. Aircraft Certification Service employees who are involved with certification project prioritization and resource management are responsible for understanding, providing feedback to, and complying with this SOP.

4. Determining Certification Project Prioritization

4.1. Project Focal. You, with assistance from project support personnel as required, must calculate and document: 1) the safety index (SI), 2) applicant showing or designee finding (ASDF) rating, 3) project priority, and 4) skills required for the project using the established criteria in the Certification Project Prioritization Criteria and Determination steps located in Appendix A.

4.1.1. *Information.* The prioritization process begins with a certification project package that is complete per the requirements in 8110.4 or 8110.42 as evaluated by the project support personnel. A certification plan or PSCP, compliance checklist, and RBRT output (as applicable) are necessary to complete the prioritization process. For an ODA, the certification package will be submitted via a Program Notification Letter (PNL).

4.1.2. *Best Practice.* You should use the certification prioritization checklist located TBD to determine and document the SI, ASDF, FHCI, skills required, and priority as defined above.

4.1.3. *Best Practice*. If you know at the beginning of a project that your office will not have a functional skill set needed to support the project, you should notify your manager immediately so that resources may be requested in the next AIR resource management meeting. Additionally, notification to other branch managers may be appropriate based on the skill need in question.

4.2. Project Focal. You must determine the project's maximum task response time using table 4.1 below.

4.2.1. *Information.* If the project is a TC or major model addition amended TC, the maximum task response time is the OFT only. These types of projects use OFT only and do not go through the normal prioritization process because of their long duration and lack of detailed plans at the start of the project. For all other project types, the maximum task response time is a function of the project priority determined in paragraph 4.1.and Appendix A, steps 1-3.

4.2.2. *Best Practice:* You should respond to each applicant submittal (i.e. task) in accordance with the OFT and extension for that task.

Note: The response time extensions are not applied to initial review of a certification project package. The project focal and project support personnel should review the initial package in a timely manner.

Project Priority or Project Type	FAA maximum task response time goal
Top Priority (TP) or Type Certificate (TC) Project or Major Model Addition Amended Type Certificate (ATC) Project	Maximum response time: OFT
High Priority (HP)	Maximum response time: OFT plus 30 days
Medium Priority (MP)	Maximum response time: OFT plus 60 days
Low Priority (LP)	Maximum response time: OFT plus 90 days

Table 4.1: Maximum Task Response Time Goals

4.3. Project Focal. You must record the project prioritization results (SI, FHCI, project priority and skill needs) in the project folder.

5. Communication with Applicant regarding Certification Project Prioritization

5.1. Project Focal. You must communicate to the applicant the project prioritization details including priority, rationale, response time extensions, and any known FAA resource issues for the project. Additionally, you must maintain a record of this communication in the project file.

5.1.1. *Best Practice.* You should document and send your communication to the applicant via a standard letter, email, or minutes from a face-to-face meeting.

5.1.2. *Best Practice.* If you are communicating project prioritization details to the applicant via a standard letter or email, you should use the template located in Appendix B.

5.1.3. Best Practice. If a face-to-face meeting is conducted to communicate prioritization details the official meeting minutes should be recorded.

Note: There is no project level delay in this prioritization process. The response time extensions are maximums (not targets) and are to be used only on tasks that have limited resources. For tasks where resources are available, responses should be given within the OFT.

5.2. Project Support Personnel.

5.2.1. *Best Practice*. You should attend the meeting described in section 5.1.3 when requested to do so by the project focal.

6. AIR Resource Management Process

6.1. Branch Managers (or Office Managers in Offices without Branch Managers) or Delegates (from each ACO or Oversight Office). You must:

6.1.1. Attend the applicable AIR Resource Management Meeting(s) for your discipline(s).

6.1.2. At the biweekly AIR Resource Management Meeting(s) identify and report resource needs within your office for the assigned discipline(s).

6.1.3. Identify and report resource availability within your office for the assigned discipline(s) to the members of the AIR resource management team.

6.1.4. Determine whether a task in the AIR resource management process takes priority over active projects in your office and should be taken on by your office.

Note: Upon agreement between the applicant and the geographic certification office managing a project, the applicant may volunteer in writing to use the geographic certification office exclusively for all aspects of a certification project, regardless of the additional delay. In these cases, the maximum task response time may be greater than that determined by this prioritization process and expected response times should be noted in the agreement between applicant and geographic certification office.

6.1.5. Evaluate resource needs that have not been assigned resources to determine if approximately ¾ of maximum task response time has elapsed with no support.

6.1.6. Notify your office manager and geographic Directorate Manager if approximately ¾ of the maximum task response time has elapsed as determined in 6.1.5.

6.1.7. If you offer a resource to fill a task need from another office, the baseline expectation is that the resource will be available to accomplish the task within the maximum response time.

6.2. AIR Resource Management Facilitator (or their Delegate). You must:

6.2.1. Set up biweekly resource management meetings (teleconferences) for each of the five sets of disciplines listed below, and require attendance from representatives from each ACO and oversight office according to discipline.

- FTP & FTE
- AF & ST
- PI & P33
- MS & ES & CS
- EL & AV & SW

6.2.2. Attend the meetings and during the biweekly teleconferences allocate resources to tasks identified as needing support (using project priority as a factor when allocating those resources). If the AIR resource management facilitator is unable to attend a resource management meeting, a delegate must be assigned.

6.2.3. Take meeting minutes and document resource management allocations.

6.2.3.1. *Best Practice*. You should use a standardized report available to all meeting participants to document and focus meeting discussions on resource needs, resource availability, project priority, management resource allocations, and whether approximately ¾ of the maximum task response time has elapsed on any active tasks (yes or no).

Note: The evaluation of approximately ¾ of the maximum task response time being elapsed does not necessarily constitute a discrete quantitative threshold. This evaluation can be made qualitatively if your office does not have a task tracking system in place.

7. Monitor the Project per Assigned Resources

7.1. Project Focal. You should remain cognizant of task response times and notify your manager, or their delegate, if you expect a task response may exceed the maximum response time.

7.1.1. *Best Practice*. If a task response is expected to exceed the maximum response time, you should communicate an expected response date to the applicant.

7.1.2. *Best Practice.* The AIR Resource Management Process should be utilized at any time prior to project completion when the resources on a project become limited.

7.1.3. *Best Practice.* When a project is completed (or canceled) the Project Focal should notify the Branch Manager or delegate so that reference to the project (and associated tasks) can be removed from the AIR Resource Management Process.

7.2. Branch Managers or Delegates (from each ACO or Oversight Office). You must utilize the AIR Resource Management Process for a response time that has exceeded, is expected to exceed the maximum response time, or any other time that you do not have appropriate resources available.

Appendix A
Certification Project Prioritization Criteria & Determination

Step 1. Determine the Safety Index. The project Safety Index is composed of three primary elements: 1) Safety Impact, 2) Passenger Impact, and 3) Affected Fleet. The safety index is calculated by multiplying the prioritization value obtained from each of the three areas (Safety Impact, Passenger Impact and Affected Fleet). Use the highest applicable value for each section relevant to the product being evaluated.

(Safety Impact) x (Passenger Impact) x (Affected Fleet) = Safety Index

Safety Impact		
Criteria	**Description**	**Prioritization Value**
Very High / Immediate Safety Benefit	Prevent/mitigate accident/Near-term safety impact (AD or safety related to that aircraft. Prevent an accident on that aircraft)	90
High / Strategic Safety Benefit	Program of defined strategic safety importance / regulatory compliance (NextGen, congressionally-mandated programs, Administration imperatives: Link TBD)	10
Moderate / Long Term Safety Benefit	Product with updated certification basis where the change to the product has some safety enhancement/Longer-term safety impact (compliance with new amendments and regulations)	4
Negligible Safety Benefit	Negligible safety impact (passenger entertainment systems, cabin mods) - Also includes projects where the applicant refuses to submit a certification plan	0

Table A-1: Determining Safety Impact

Passenger Impact		
Criteria	**Description**	**Prioritization Value**
20 or Greater passengers	Aircraft that can carry 20 or more passengers (per the Type Certificate Data Sheet TCDS)	7
11 to 19 passengers	Aircraft that can carry between 11 and 19 passengers (per the Type Certificate Data Sheet TCDS)	6
Defined public safety impact	A project that will have a defined public safety impact (examples: firefighting tankers, law enforcement/border patrol aircraft)	5
0 to 10 passengers	Aircraft that can carry between 0 and 10 passengers (per the Type Certificate Data Sheet TCDS)	4
Public Use	Aircraft that is for public use only (DoD, DHS, Head of State, etc.)	1

Table A-2: Determining Passenger Impact

Affected Fleet		
Criteria	**Description**	**Prioritization Value**
Incorporation into production line	New TC or a modification that will be incorporated into the entire production line for the aircraft	5
Greater than 5 aircraft	Modification can affect more than 5 aircraft (but not expected to be used throughout the entire fleet of active aircraft)	3
5 or fewer aircraft	Modification will affect 5 or fewer aircraft	1

Table A-3: Determining Affected Fleet

Example: Calculation of Safety Index for project with the following criteria:

- Safety Impact: High/Strategic Safety Impact = 10
- Passenger Impact: 20 or Greater Passengers = 7
- Affected Fleet: Incorporation Into Production Line = 5

Safety Index = (10) x (7) x (5) = 350

Step 2: Determine Applicant Showing or Designee Finding (ASDF) Rating. The ASDF rating for a project is composed of two primary elements: 1) Percentage of airworthiness regulations with *Applicant Showing Only or Designee Finding of compliance*, 2) *Number of Findings Retained by FAA personnel*. The intent is that these numbers will be established by counting individual regulations and not by sections, paragraphs or sub-paragraphs.

Both the percentage and number of findings play a role in the ASDF rating. This is done to ensure that both large and small projects are evaluated equitably when determining the level of FAA involvement in a project. A small project may have only a few applicable regulations, so each regulation retained by the FAA counts for a relatively large percentage of the total applicable regulations. Conversely, in a large project there may be several retained regulations, but those retained findings may constitute only a small portion of the total number of applicable regulations.

Note: If RBRT tool output is available, the values in the next two tables can be derived easily from the regulation risk levels and management options. If RBRT tool output is not available, this evaluation can be done quantitatively based on the compliance checklist. In order to obtain an integer value, round each percent value to the nearest whole number.

% Applicant Showing Only or Designee Findings	
Criteria	**Description**
100 %	Use this selection if no findings of compliance will be retained by the FAA for the applicable regulations to this project.
90 to 99%	Use this selection if responsibility for findings of compliance will be retained by the FAA on between 1% and 10% of the airworthiness regulations for this project.
75 to 89%	Use this selection if responsibility for findings of compliance will be retained by the FAA on between 11% and 25% of the airworthiness regulations for this project.
50% to 74%	Use this selection if responsibility for findings of compliance will be retained by the FAA on between 26% and 50% of the airworthiness regulations for this project.
< 50%	Use this selection if responsibility for findings of compliance will be retained by the FAA on greater than 50% of the airworthiness regulations for this project.

Table A-4: Determining % ASDF

Number of Findings Retained by the FAA	
Criteria	**Description**
0	Use this selection if no findings of compliance will be retained by the FAA for the applicable regulations to this project.
1 to 5	Use this selection if responsibility for findings of compliance will be retained by the FAA on 1 to 5 of the airworthiness regulations for this project.
6 to 15	Use this selection if responsibility for findings of compliance will be retained by the FAA on 6 to 15 of the airworthiness regulations for this project.
> 16	Use this selection if responsibility for findings of compliance will be retained by the FAA on greater than 16 of the airworthiness regulations for this project.

Table A-5: Determining # of Findings Retained by the FAA

Use the composite of percentage (%) of regulations and number (#) of regulations to determine the ASDF that goes into the prioritization calculation.

Applicant Showing or Designee Finding (ASDF)				
% Applicant Showing or Designee Finding of Compliance	90% to 99%	High	High	Med
	75% to 89%	High	Med	Med
	50% to 74%	Med	Med	Low
	< 50%	Med	Low	Low
		1 to 5	6 to 15	16 +
*Round the % Findings Retained to Nearest Integer		# of Applicable Regulations Retained by the FAA		

Table A-6: Determining the ASDF Rating

Note: If all applicable regulations will be met through our acceptance of the applicant's showing or all specific findings have been delegated to a DER or ODA or any combination thereof, then setting a response time is not necessary. For the purpose of identifying a project's priority, these projects are considered to have an ASDF rating equivalent to 'High'.

Example: Calculating the FAA Certification Involvement for project with the following criteria:

- Percentage (%) of Findings Applicant Showing Only or Designee Finding: 80%
- Number (#) of Findings Retained by FAA: 10

ASDF = (75% to 89%) and (6 to 15) = Medium

Step 3: Determine project priority from SI and ASDF. Project priority is determined by a composite of SI and ASDF. The grid below illustrates the general concept behind priority determination. SI makes up the majority of the priority calculation, with ASDF fine tuning the calculation slightly after SI has been determined.

		Priority		
Safety Index (SI)	> 350	Top	Top	Top
	120 to 350	Med	High	High
	50 to 119	Low	Low	Med
	0 to 49	Low	Low	Low
		Low	**Med**	**High**
		Applicant Showing or Designee Finding (ASDF)		

Table A-7: Determining Project Priority

Note: As a best practice, when an office is looking to prioritize multiple projects with the same project priority, the project with the higher SI should take precedence. If both the project priority and SI are the same, priority may be set based on the highest ASDF. If all of these are identical, the submittal which was sent to the office first should take precedence.

Example: Prioritization and response time extension using the data from the examples in steps 1 and 2 above:

- SI = 350 (from step 1)
- ASDF = Medium (from step 2)
- OFT = 30 days (assumption)

Calculate Project Priority = High (from step 3)
Calculate Response Time Extension for High = 30 days (from table 4.1)
Calculate Maximum Response Time = OFT + 30 days = 60 days

Step 4: Determine FAA Hours of Certification Involvement (FHCI). FHCI may be determined by a qualitative estimate from the project focal, or through the use of the certification prioritization checklist. FHCI is an estimate of the size of a project based on FAA resources needed to complete a certification project, and does not include time spent on a project by designees or delegated organizations. FHCI is the project focal's estimate of the project being Category 1, 2, 3 or 4, as was done prior to the introduction of this document. Category 1 refers to a project requiring less than an estimated 40 hours of FAA resource time. Category 2 refers to projects estimated to take at least 40 but less than 120 hours of FAA resource time. Category 3 refers to projects estimated to take at least 120 hours but less than 600 hours of FAA resource time. Category 4 refers to projects estimated to take 600 or more hours of FAA resource time. Record the FHCI along with the other numbers determined in this appendix.

FHCI is a management tool meant to be used to determine project focal assignments and evaluate workload and staffing levels. FHCI is not used in the determination of project priority or project skill needs. It will not affect the certification process or timeliness of responses.

APPENDIX B

Certification Project Prioritization Letter Template

U.S. Department of Transportation
Federal Aviation Administration

(Regional Name) Directorate
Aircraft Certification Service

Directorate Address

[date signed]

In Reply
Refer To: [*letter number*]

[*Mr./Mrs. + name*]
[*Title*]

[*Company*]

[*Address*]

[*City, State Zip*]

Subject: [*subject line is optional*]

Reference: [*reference line is optional*]

Dear [*Mr./Mrs. + name*]:

We have initiated and prioritized your certification project for your [*insert brief description of certification project*]. We have determined that your project's priority is [*insert top, high, medium, or low*] by evaluating its safety impact and determining its applicant showing or designee finding rating. Based on the determined priority, we will make every attempt to respond to project submittals within maximum response times equal to [*insert one of the following: office flow times (OFT), office flow times (OFT) plus 30, office flow times (OFT) plus 60, or office flow times (OFT) plus 90*] days.

This office's flow times are: [*Insert OFTs*].

Our rationale for your project's priority rating is determined following the Aircraft Certification Service Project Prioritization and Resource Management Process. Your project had an ASDF of [*insert low medium, or high*] and a safety index [*insert safety index*].

Note that an extension beyond office flow times is not a project level delay. The extended response times are maximum goals, not targets, and are to be used only on tasks that have limited resources. [*Insert the following sentence if there are known resource issues: We do not currently have resources available to work your project in [Insert functional skill categorie(s) from section 2.1.3 as applicable] function skill area(s)]*

We look forward to working with you and completing your project as expeditiously as possible.

Sincerely,

[*Office Manager*]Manager,
[*Office Name*]

[*routing symbol*]:[*engineer*]:[*phone extension*]:[*oa*]:[*phone extension*]:[*date*]
[*network shared drive*]\[*year*]\[*letter number*].doc
File Code: [*file code*]
Project No.: [*project number, if applicable*]
CPP Letter Template