U.S. Department
of Transportation
Federal Aviation
Administration

Advisory Circular

Subject: ISSUE PAPER PROCESS | **Date:** 11/06/2014 | **AC No:** 20-166A
Initiated by: AIR-110

1. Purpose.

a. This advisory circular (AC) provides information on the use of issue papers (IP) and gives guidance on their role in the IP process to applicants seeking approval for a type certificate (TC), an amended TC, a supplemental type certificate (STC), an amended STC, type design changes, approval of articles (14 CFR 21.8(d)), Technical Standard Order Authorization (TSOA) approvals, or parts manufacturer approval (PMA). It also provides guidance for use of IPs in type validation programs. This document provides guidance to applicants relative to FAA Order 8110.112A, *Standardized Procedures for Usage of Issue Papers and Development of Equivalent Level of Safety Memorandums*.

b. This AC is not mandatory and is not a regulation. This AC describes an acceptable means, but not the only means, to comply with Title 14 of the Code of Federal Regulations (14 CFR). However, if you choose to use the means described in this AC, follow it in its entirety.

2. Applicability. This AC provides guidance to all applicants seeking approval for a TC, an amended TC, an STC, an amended STC, type design changes, 14 CFR 21.8(d) approvals, TSOA, PMA. It also provides guidance for use of IPs in type validation programs.

3. Cancellation. This AC cancels AC 20-166, *Issue Paper Process*, dated 6/15/2010.

4. Purpose of IPs.

a. The Federal Aviation Administration (FAA) uses IPs to provide a structured means to address certain issues in the type certification and type validation processes. Type certification includes projects for TCs, amended TCs, type design changes, STCs and amended STCs. For FAA approvals such as 14 CFR 21.8(d), TSOA, and PMA projects, IPs can be used, with discretion, to document and resolve compliance issues where directorate or policy office guidance is required.

b. IPs provide a structured means for describing and tracking the resolution of significant technical, regulatory, and administrative issues that occur during a project. The IP process establishes a formal communication for addressing significant issues between the

applicant, the validating authority (VA) or the certificating authority (CA) for type validation programs, and the FAA. They are also very useful in addressing novel or controversial technical issues.

c. For type certification projects, IPs are useful tools for keeping an unbiased uniform certification approach between applicants. They also form a valuable reference for future type certification programs and for development of regulatory changes. By describing significant or precedent-setting technical decisions and the rationales employed, they are ideal source documents. For example, a certification summary report (if required by the accountable directorate) may be generated by extracting the final issue resolution from the IPs (omitting any proprietary information).

d. For type validation programs, if the FAA is the VA, the FAA uses IPs mainly to identify and resolve issues of particular interest to the FAA, including aspects of the design or proposed methods of compliance (MoC) that warrant further involvement (beyond familiarization) by the FAA. IPs may be identified by the FAA that meet any of the categories identified in paragraph 5 below. In certain cases, even when FAA and CA airworthiness standards and interpretations are identical, the FAA still needs to write their own IP. For example, the FAA writes IPs for equivalent level of safety (ELOS) findings per 14 CFR 21.21(b)(1). Also, the FAA must write IPs on the certification basis (G-1), determination of compliance or compliance checklist (G-2), environmental considerations (G-3), and other unique import requirements (see FAA Order 8110.52, *Type Validation and Post Type Validation Procedures*, and the applicable bilateral agreements for more information). The FAA may also develop procedures with our bilateral partners to allow the FAA to accept the CA's IP or equivalent in place of an FAA IP.

5. Items Considered Significant Issues and Addressed by IPs.

a. Certification Basis (G-1). G-1 is an IP that designates the applicable airworthiness and environmental regulations (i.e., noise, fuel venting and exhaust emissions), including ELOS findings and special conditions that must be met for certification as stated in 14 CFR 21.17, 21.21, 21.25, 21.27, 21.29, or 21.101, as applicable. It also designates the applicable Special Federal Aviation Regulations (SFAR) and records any exemptions granted (see 14 CFR 11.15 and 11.81). This IP must provide the definitive justification for selecting the certification basis, including specific amendment levels.

b. Determination of Compliance (G-2). G-2 is an IP that provides a statement of the FAA procedural requirements, including those that define the applicant's responsibilities for showing compliance. This IP is designated to capture the "compliance checklist" which shows the regulatory requirement and the method of compliance proposed by the applicant for each regulation identified in the certification basis (see 14 CFR 21.20). For foreign-manufactured products to be eligible for an import TC, the applicant shows, and the FAA finds, that the type design complies with the U.S. type certification basis established in the G-1 IP. Under certain bilateral agreements, the CA may be authorized to approve data used for showing compliance to the

requirements in the VA's G-1 IP. Therefore, the G-2 IP will also outline the responsibilities of the CA and the VA.

c. Environmental Consideration (G-3). G-3 is an IP that designates the applicable environmental regulations (i.e., the regulations establishing standards for aircraft noise and, for turbine-engine powered airplanes, fuel venting and exhaust emissions). The FAA must obtain certain information for compliance with U.S. statutory environmental requirements in addition to the 14 CFR requirements listed in the certification basis for certification projects.

d. Export (Import) Country Requirements (G-4). For products exported from the United States, the G-4 IP cites the extent of FAA findings of compliance with the importing country's airworthiness requirements on the importing civil aviation authority's (CAA) behalf. For products imported to the United States, the G-4 IP serves to establish the exporting CAA's function for airworthiness certification, operating matters, and additional compliance findings relative to those defined in the G-1 IP.

e. Method of Compliance (MoC). The most common type of IP defines a particular MoC that requires directorate or policy office coordination as a result of FAA concerns with the acceptability of the MoC to show that the type design complies with the applicable certification basis or the need to define specific conditions and/or establish the environment under which substantiation must be shown.

f. ELOS. An IP is the vehicle for documenting the evolution and conclusion of the request for an ELOS finding. ELOS findings will be made when literal compliance with an airworthiness standard cannot be shown and compensating factors exist which can be shown to provide an ELOS (see 14 CFR 21.21(b)(1)).

(1) While an IP may be the vehicle for initially generating an ELOS finding, the ELOS memorandum is the way to communicate the rationale for the FAA's ELOS finding to the public.

(2) The ELOS memorandum also serves the important purpose of documenting those critical aspects of the finding that must be maintained for continued airworthiness.

Note: An ELOS finding and an equivalent safety finding (ESF) have the same meaning.

g. Proposed Special Conditions. For a new TC, the basis for issuing and amending special conditions is found in 14 CFR 21.16; for changes to a TC, it is found in 14 CFR 21.101(d). Under § 21.16 or § 21.101(d), a special condition is issued only if the existing applicable airworthiness standards do not contain adequate or appropriate safety standards for an aircraft, aircraft engine, or propeller because of novel or unusual design features of the product to be type certificated. The phrase "novel or unusual" applies to design features of the product to be certificated when compared to the applicable airworthiness standards. The FAA uses IPs to address novel design features for which there are no regulations or the regulations are inadequate.

The FAA uses IPs to develop the basis, need, and wording of special conditions. A special condition contains only such airworthiness standards as are necessary to establish a level of safety equivalent to that established by the intent of the applicable regulations. Special conditions are unique to the specific certification program for which they are issued. The FAA has delegated authority for issuing special conditions to the directorates, or to the Design, Manufacturing, and Airworthiness Division (AIR-100) for areas of responsibility not assigned to a directorate.

> **Note:** Special conditions are not used to upgrade the applicable airworthiness standards when novel or unusual design features with respect to the state of technology foreseen when the applicable regulations were codified are *not* involved.

(1) The project aircraft certification office (PACO) drafts proposed special conditions in conjunction with an application for a TC, an amended TC, or an STC in an IP. The PACO formulates the proposed special conditions in the IPs with full participation by the accountable directorate and with an invitation to any other appropriate FAA offices to participate. The PACO forwards the IPs, with full particulars and justification for each special condition, to the accountable directorate.

(2) The PACO will continue with the special condition proposal even in cases where applicants indicate that they have or will voluntarily comply. The special condition is included in the certification basis and forms an exact record of the airworthiness regulations applicable to the product or modification.

(3) Once the IP is closed, the accountable directorate will then prepare a Notice of Proposed Rulemaking (NPRM) for the proposed special condition. Note that the wording in the IP for a proposed special condition will become the foundation for the wording of the NPRM published in the Federal Register.

h. New Information. It is conceivable that an IP might be required to examine issues that arise from a better understanding of environmental or other hazards that were not well understood in the past or that did not exist previously. Such items could include new scientific information on weather threats such as the quantification of microbursts that occurred in the last 30 years; the substantiation of super-cooled liquid droplets environment; cabin ozone hazards; and other potential hazards where the existing applicable regulations were developed unaware of the threats.

i. Type Validation. When the FAA is the VA, the FAA uses IPs to identify and resolve issues of particular interest to the FAA, including aspects of the design or proposed MoC that warrant further involvement (beyond familiarization) by the FAA. IPs may be identified by the FAA that meet any of the categories identified in this paragraph. In certain cases, even when FAA and CA airworthiness standards and interpretations are identical, the FAA still needs to write our own IP. For example, the FAA writes IPs for ELOS (ESF) per 14 CFR 21.21(b)(1). Also, the FAA must write IPs on the certification basis (G-1), determination of compliance or

compliance checklist (G-2), environmental considerations (G-3), and other unique import requirements (see FAA Order 8110.52, *Type Validation and Post Type Validation Procedures*, and the applicable bilateral agreements for more information). The FAA may also develop procedures with our bilateral partners to allow the FAA to accept the CA's IP or equivalent in place of an FAA IP. The FAA may choose to document an issue by means of a cover IP (CIP) if the bilateral partner authority has produced an equivalent document that is acceptable to the FAA to track resolution of an issue.

j. Cover Issue Paper (CIP). For an FAA validation program, a CIP could be used to approve a foreign IP (FIP) from a CA for the *same certification program, provided that the current applicant is the same as the applicant of the previously approved IP or FIP*.

k. Administrative Collector Issue Paper (ACIP). An ACIP is an IP that approves previously approved foreign IPs (FIP) or domestic IPs for *a new certification program, provided that the current applicant is the same as the applicant of the previously approved IP or FIP*.

l. Unsafe Features or Characteristics. A corrective action of potentially unsafe features or characteristics that could preclude certification in accordance with § 21.21(b)(2). This type of issue paper is used to document the necessary corrective action.

m. Areas of New Technology. Areas of new technology or novel design are those that do not require a special condition but might require the development of an acceptable MoC with existing regulations that would set a national precedent.

n. Changes in Interpretation. Changes in interpretation include new interpretation or policy of existing regulations using precedent-setting new technology in an IP at the early stages of the certification project.

o. Other Types of FAA Approvals (Optional). For other types of FAA approval projects (for example, TSOA, PMA and 14 CFR 21.8 (d)), IPs may be used to document and resolve compliance issues where directorate or policy office guidance is required. The format and process of the IP offers a well-used tool to document the specific issues, options, and resolutions of technical issues in these types of projects. Examples of this include setting the MoCs to specific regulations. For PMA projects, IPs can be used to document the agreed upon understanding and approach to approval of a part's design.

p. Administrative IPs. Administrative IPs may be used to define or interpret policy, or to document the resolution of issues when adherence to policy becomes controversial or might otherwise require type certification board (TCB) action to resolve (see item number 12 of appendix C for the description of duties of a TCB). An example of this is a non-standard method of compliance proposed by an applicant.

q. AEG IPs. The AEG may use, at their discretion, the IP process as described in this AC for the maintenance and operations evaluations of applicants in support of certification projects.

6. What Applicants Need to Know During the IP Process.

a. For applicants seeking a TC, STC, PMA, TSOA, or other type design approval, FAA technical personnel will work closely with the applicant to identify any significant issues that may require a special emphasis for resolution. This step will usually require more detailed technical discussions, correspondence, review of design data and hardware.

b. The FAA encourages the applicant to raise questions or issues that may require extra time or special study for resolution so all significant issues are identified as soon as practicable to allow sufficient time for resolution.

c. An IP is not required to document a particular MoC that is consistent with existing directives, ACs, or other written FAA policy, or that does not fall into one of the common types of IPs covered in paragraph 5.

d. Routine items relative to showing compliance and work relationships would not normally be raised as significant issues and would not require IPs unless some special problems are anticipated or develop during the course of the program. Decisions and actions will be documented in correspondence, data submittals, and file records of meetings, conversations, and events. In this regard, it is recognized that what may be routine with an experienced applicant may be treated as a significant issue with an applicant who has limited or no current FAA type certification experience.

e. An Organization Designation Authorization (ODA) holder may not approve IPs. When necessary, the FAA will develop IPs and the ODA administrator must cooperate with the FAA in this process and provide a company position when requested. The ODA procedures manual establishes the procedures necessary for ODAs to coordinate IPs.

7. IP Development. This section covers the development process for IPs related to type certification projects and type validation programs. See figure 1 below for the IP process flow chart and appendix A for a typical IP format. See appendix B for a description of the roles and responsibilities of the FAA personnel in the issue paper process and see appendix C for a list of commonly used terms and definitions.

a. For type certification projects, new IPs can be proposed to the TCB by the standards staff specialists, the project officer (PO), the program/project manager (PM), or by technical specialists for technical issues in their areas, through the PM. This can occur at any time during the process but before final type certification. For ODA projects, the OMT can propose new IPs (this also applies to the Delegation Systems Certification Office (DSCO)). The originator will enter the general information, the "STATEMENT OF ISSUE" and the "BACKGROUND" information in the IP at *Stage 1*. The PM must coordinate the "BACKGROUND" and "STATEMENT OF ISSUE" with the accountable directorate specialists through the PO. When a significant issue pertains to technical policy or avionics (for example, NextGen technologies) overseen by the Systems and Equipment Standards Branch (AIR-130), or a significant issue pertains to operational or maintenance suitability requirements overseen by the AEG offices, the

PM must coordinate with them when formulating the "FAA POSITION" and "CONCLUSION." For significant issues pertaining to policy overseen by the Certification Procedures Branch (AIR-110), the Operational Oversight Policy Branch (AIR-140), or the System Performance and Development Branch (AIR-150), the PM must coordinate with those offices when formulating the "FAA POSITION" and "CONCLUSION."

b. Draft IPs are developed by the project team members for each significant issue as early in the program as practicable. Ideally, IPs are proposed at the preliminary type certificate board meeting (TCBM) and the "STATEMENT OF ISSUE" section of the IP is developed. However, the major purpose of each IP is to raise the issue to the FAA and the applicant's attention as early as practicable, providing a concise "STATEMENT OF ISSUE" that is understood by all parties.

c. Overall, the first priority is to identify, rather than resolve, significant issues. It is not expected that all significant issues will be identified or resolved before the TCBM. Quite often, identification of IPs does not occur until the significant features of the type design are identified later in the certification process. These IPs are generally issued at *Stage 2*, which includes the "FAA POSITION" statement. IPs must be developed, revised, and concluded as a concerted effort between the FAA, a foreign CA (if applicable), and the applicant.

d. If the applicants are notified by the FAA of the need for an IP, it is expected that the IP first introduced to the applicant will contain the "FAA POSITION" statement that is initially released at *Stage 2*. However, if controversial aspects and/or the nature of the issue require immediate and formal notification of the issue, the IP would be released to the applicant at *Stage 1*.

e. There will be certain cases where a *Stage 2* IP will include an "APPLICANT POSITION" statement prior to the "FAA POSITION" statement. These cases would include an applicant's request for an ELOS, where the FAA does not have a position until the applicant has made their request. This may also occur when an applicant proposes a new MoC that is outside of written FAA policy.

f. After the applicant reviews the IP, he should provide the FAA with the applicant's position in a separate document or letter. The FAA will incorporate the applicant's statements in the "APPLICANT POSITION" block, usually verbatim, when submitted in writing (and/or "the Validating/Certificating Authority POSITION," if applicable) at *Stage 3*. If the applicant does not elect to provide a statement for inclusion in the issue paper, the FAA will state that the applicant declined to make a statement in the "APPLICANT POSITION" block.

g. Progress on significant issues will be indicated by the FAA updating existing IPs or, if new significant issues are raised, developing new IPs. This is an iterative process involving the applicant and the appropriate FAA offices.

h. PMs are expected to keep the accountable directorate, the Design, Manufacturing, and Airworthiness Division (AIR-100), the MIDO, the AEG, and the Chief Scientist and Technical

Advisors (CSTA), fully informed of the technical issues encountered throughout the evaluation process.

i. The PM typically obtains accountable directorate assistance in formulating the “FAA POSITION” and “CONCLUSION” before the IP is submitted to the project team members for coordination. Directorate team coordination and standards staff manager sign-off on the IP is required at any stage of the IP that will be released to the applicant.

j. All new or revised IPs are coordinated with the applicant, the project team members and the accountable directorate. If coordination with the applicant and project team members happens without impasse, the PACO will *close* the IP by revising it and will then coordinate it with the accountable directorate without holding a formal TCBM. If the applicant is not satisfied with the conclusion reached through the IP process, further discussions, correspondence, or appeals must focus on new information or proposals. See subparagraph 7.m. for more information.

k. If an impasse occurs between TCB members, the PACO manager and/or directorate management must resolve it after considering the views of all affected parties. The resulting decision becomes the basis for the FAA position in the IP, which is signed by the designated representative of the accountable directorate.

l. Before completing the "CONCLUSION” of the IP at *Stage 4*, the FAA will make every effort to get an agreement with the applicant on the final requirements. These final requirements will be stated in the "CONCLUSION" at *Stage 4*. If further discussions require a revision to the applicant’s position, the applicant should submit his statements on a separate document or letter and the FAA will revise the IP accordingly and respond with a new position. For each revision, the PACO coordinates it with the appropriate project team members, the accountable directorate, and policy offices, if appropriate.

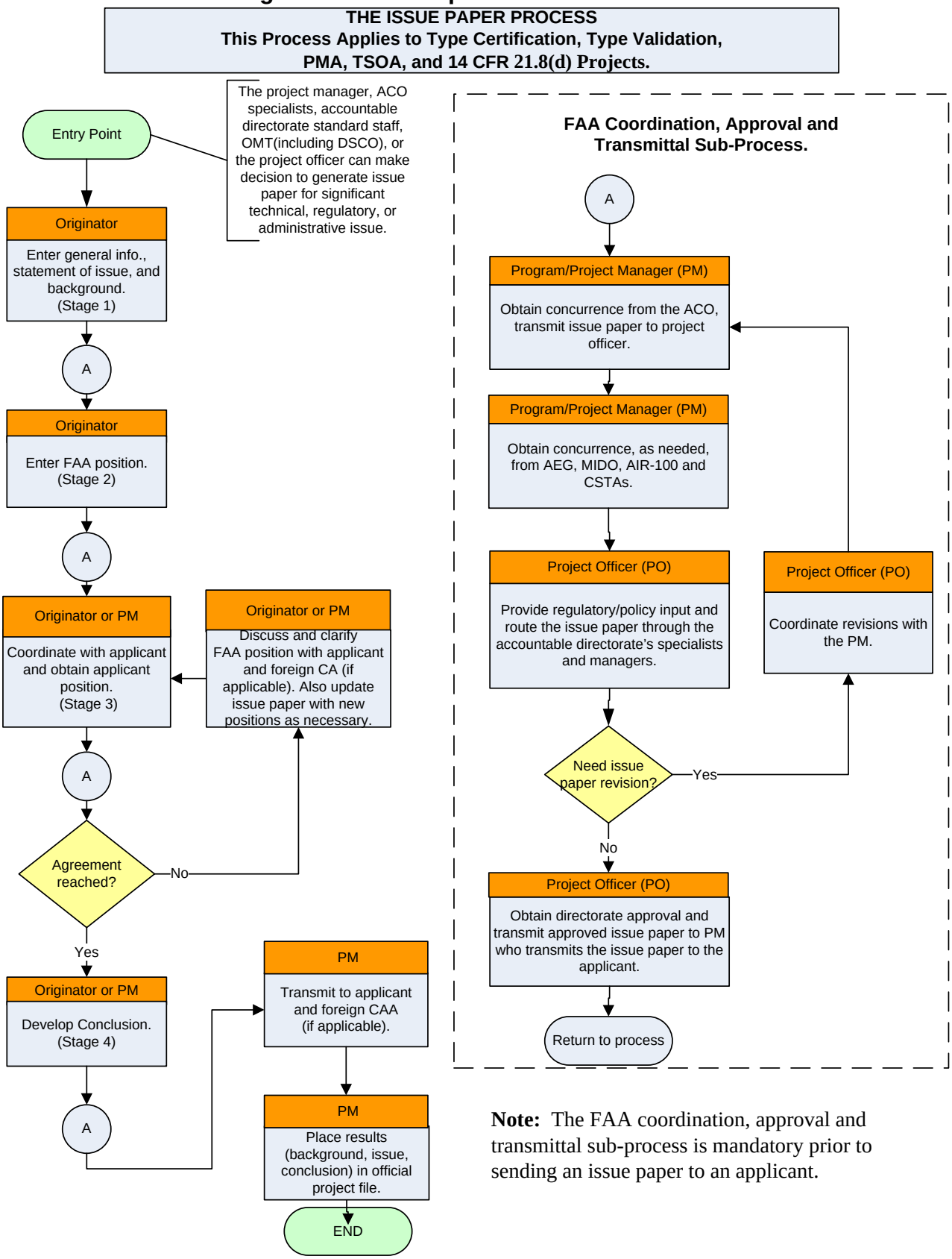
m. Approval by the accountable directorate of the “CONCLUSION” statement constitutes definition of the FAA requirement. The IP may be sent to the applicant directly or through the CA, for foreign projects. If coordination with the applicant and project team members happens without impasse, the PACO will *close* the IP. If the applicant is not satisfied with the conclusion reached through the IP process, further discussions, correspondence, or appeals must focus on new information or proposals. FAA’s responses to such efforts must refer to the current stage and date of the IP as well as indicate whether the new effort provides new information warranting a reconsideration of, and revision to, the IP; otherwise the IP “CONCLUSION” stands as written.

n. Generally, the FAA does not provide *draft copies* of IPs to applicants. However, the FAA may need the applicant’s help in developing the IP. For example, the FAA may request the applicant’s help to confirm the technical correctness of the “BACKGROUND.” Also, it may be necessary for the applicant to review his position as written in the IP to determine its accuracy.

o. If the applicant does not comply with the criteria of an IP, the project will not be closed and the approval will not be issued.

p. An IP may be reopened if a new issue is identified, or at the applicant's request with the concurrence of the PACO and the accountable directorate.

Figure 1. Issue Paper Process Flow Chart



Note: The FAA coordination, approval and transmittal sub-process is mandatory prior to sending an issue paper to an applicant.

Figure 1. The Issue Paper Process Flow Chart (Continued)

Note 1: This process can apply to other types of FAA approvals by omitting the usage of TCB because PMA or TSOA projects do not require the creation of a TCB.

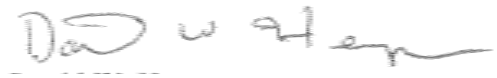
Note 2: For 14 CFR part 21 issues, consider AIR-100 as the accountable directorate.

Note 3: The PACO PM conducts MIDO or AEG coordination as well as CSTA coordination, as appropriate.

Note 4: There are certain cases where a Stage 2 IP will include an "APPLICANT POSITION" statement prior to the "FAA POSITION" statement. These cases would include an applicant's request for an ELOS where the FAA does not have a position until the applicant has made their request. This may also apply when an applicant proposes a new MoC that is outside of written FAA policy.

Note 5: PO is the FAA project officer and OMT is the Organization Management Team for an ODA (this includes the Delegation Systems Certification Office (DSCO)).

If you have any suggestions for improvements or changes, you may use the template at the end of this AC.



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Appendix A. Issue Paper Format

ISSUE PAPER

PROJECT: [Company ABC]
Model [XYZ]
Project # [CCXXXXLL-T]

ITEM:
STAGE:
DATE:

REG. REF.:

NATIONAL POLICY REF.:

ISSUE STATUS: Open

SUBJECT:

BRANCH ACTION:

COMPLIANCE TARGET:

[Issue Paper Type]

STATEMENT OF ISSUE:

BACKGROUND:

FAA POSITION: (Stage _, Date)

VALIDATING/CERTIFICATING AUTHORITY POSITION: (Stage _, Date)

APPLICANT'S POSITION: (Stage _, Date)

CONCLUSION:

Accountable Directorate
Aircraft Certification Service

Date

CONTACTS:

TITLE	NAME	PHONE
Originator		
Project Manager		
Project Officer		

FILE NAME:

Appendix B. Roles of FAA Personnel

1. Accountable Directorate. The Accountable Directorate is the aircraft certification directorate with final authority, accountability, and responsibility for type certification programs, the development of airworthiness standards, and development and standardization of technical policy for an assigned product and a specific part of Title 14 of the Code of Federal Regulations (14 CFR). In general, the primary purpose of the accountable directorate review is to do the following:

- Serve as the lead for, and ensure standardization of, the IP by comparing it with similar IPs from other projects, and
- Provide current policy related to the significant issue. When the FAA invokes an identical IP for numerous projects, this is indicative of mature policy suitable for written guidance such as methods, procedures, and practices acceptable to the FAA (e.g., an AC).
- Serve as the validating authority (VA) on validating projects.

2. Aircraft Certification Office (ACO). The ACO is the aircraft certification directorate's engineering operational element. This office administers and secures compliance with agency regulations, programs, standards, and procedures governing the type design of aircraft, aircraft engines, or propellers. The term "ACO" also refers to the Engine Certification Office (ECO), the organization management team (OMT) leadership offices that oversee Organization Designation Authorization (ODA) holders (this includes the Delegation Systems Certification Office (DSCO)), and the Military Certification Office (MCO).

3. Aircraft Evaluation Group (AEG). AEGs are Flight Standards Service personnel that are assigned to each aircraft certification directorate to address Flight Standards considerations during type certification, evaluate operational and maintenance aspects of certification, and evaluate continuing airworthiness requirements of newly certificated or modified products and parts. When a significant issue pertains to operational and maintenance aspects, the AEG must be coordinated with when formulating the "FAA POSITION" and the "CONCLUSION" stages.

4. Certificate Management ACO (CMACO). The CMACO is the ACO managing the product's TC. The CMACO also manages the continued airworthiness for all products it approves for as long as the products are in service. Since this is the ACO managing a product's TC and the continued airworthiness, the project ACO must coordinate the issue paper with the CMACO.

5. Certificating and Validating Authorities. For type validation programs, when the FAA is the validating authority (VA), the FAA provides the certificating authority (CA) an opportunity to comment on the IPs produced for that validation program. To the extent possible, the program manager/project manager (PM) or project officer (PO) must incorporate the CA position, verbatim, in the IP. A CA position is not required in a CIP, since in that case the FAA is adopting

the CA IP (or equivalent) directly, and is attaching that document to the FAA's CIP. The FAA also reserves the right to write IPs on other unique import requirements.

6. Chief Scientific and Technical Advisors (CSTA). CSTAs are technical consultants in specific, specialized topics who use their technical expertise to help AIR apply regulatory policies and practices to certify state-of-the-art technology, influence the research agendas of U.S. and foreign aviation industries, military, academia, and other research institutions, and interact with and assist other U.S. Government agencies and foreign CAAs in technology-related issues. The PM must include the appropriate CSTAs in the IP coordination process when significant technical issues arise involving practices to certify state-of-the-art technology.

7. Design, Manufacturing, and Airworthiness Division (AIR-100). When a significant issue pertains to technical policy or procedural policy overseen by any of the AIR-100 branches, the AIR-100 division must be coordinated with when formulating the "FAA POSITION" and "CONCLUSION." When the FAA invokes an identical IP for numerous projects, this is indicative of mature policy suitable for written guidance such as methods, procedures, and practices acceptable to the FAA (e.g., an AC).

8. Manufacturing Inspection Office (MIO). A MIO oversees MIDOs and manufacturing inspection satellite offices (MISO) in its geographic area and provides organizational leadership and technical guidance to these offices. The MIO manages all geographically located production facilities and designees. They administer the airworthiness certification policies, office staffing, and internal budget allocation.

9. MIDO. A MIDO is a subordinate office to the MIO in its geographical area. This office oversees production certification, airworthiness certification, approval holders (manufacturing facilities), and designees, in its geographical area. MIDOs support ACOs during type certification programs, and they investigate and submit enforcement reports on noncompliance with 14 CFR parts. MIDOs investigate and ensure that corrective measures for service difficulties are implemented as identified in the quality system. When a significant issue pertains to manufacturing processes, production certification, or airworthiness certification, the program/project manager must include the MIDO in the issue paper coordination.

10. PM (Originator). The PM initiates or originates the IP. The PM:

- Obtains concurrence from the ACO,
- Transmits the IP to the accountable directorate through the PO,
- Coordinates with the applicant and obtains the applicant's position (when necessary, discusses and clarifies the FAA's position with the applicant),
- Obtains concurrence from the AEG, MIDO, AIR-100, and CSTAs as needed,

- Obtains accountable directorate concurrence and approval of the IP,
- Develops the conclusion and transmits it to the applicant, and
- Places results in the official project file.

11. Project ACO (PACO). The PACO is the ACO working a certification project. The PACO may need to coordinate with the CMACO if the project is a follow-up certification activity such as an STC or PMA.

12. Project Team. The project team normally for an aircraft certification project usually consists of the following:

- A PM,
- Engineers or technical specialists,
- Flight test pilots and flight test engineers,
- Manufacturing inspectors,
- AEG operations and airworthiness inspectors, and
- A project officer and other persons at the discretion of the accountable directorate.

> **Note 1:** The certification project team is comprised of the individuals needed to conduct a certification project. A TCB is an FAA management team (see appendix C).
>
> **Note 2:** For engine or propeller certification projects, the project team composition could be slightly different.

13. Project Officer. The project officer (PO) provides regulatory or policy input to the project team or TCB through the PM and routes the IP through the accountable directorate's specialists and manager, in order to keep them apprised of the issue and to obtain their concurrence. Quite often the PO acts as the PM for validation projects.

14. Technical Specialist. For type certification projects, new IPs can be proposed to the TCB by technical specialists for technical issues in their areas, through the PM, at any time during the process before final type certification.

15. TCB or Project Team. The TCB is the FAA management team responsible for acquainting the applicant with the certification process, resolving significant problems, processing and coordinating issue papers, and establishing a schedule for the overall accomplishment of the type certification project. A TCB is established only for projects of a certain magnitude. When a TCB

is not necessary, the certification team manages the project and performs any functions of the TCB to the degree necessary.

Appendix C. Terms and Definitions

1. Amended TC	An approval for a change to a TC, made by the TC holder. Only the holder of the TC may apply for an amended TC.
2. Certificating Authority (CA)	The aviation authority responsible for the original type certificate or supplemental type certificate. Certificating authority means the FAA for applicants/certificate holders located in the United States, and the European Aviation Safety Agency (EASA) for applicants/certificate holders located in the European Community and with Joint Aviation Authorities (JAA) member states, for products under JAA procedures. The certificating authority may also be referred to as the exporting civil aviation authority (CAA).
3. Certification Plan	The applicant's intended means for showing that a product complies with the applicable regulations.
4. Methods of Compliance (MoC)	Analyses, tests, or inspections used by the applicant to demonstrate compliance with the certification and validation airworthiness standards. MoC include descriptions of methodologies employed, assumptions used in applying the methodologies, and discussions of the procedures used to verify the methodologies.
5. Organization Designation Authorization (ODA)	An authorization by the FAA for an organization comprised of an ODA unit(s) using approved procedures to make approvals on behalf of the FAA.
6. Parts Manufacturer Approval (PMA)	An FAA design and production approval to manufacture replacement and modification parts that comply with the regulations. See Order 8110.42, *Parts Manufacturer Approval Procedures.*
7. Product	For type certification, an aircraft, an aircraft engine, or a propeller. The word product has other meanings in different contexts such as export airworthiness approvals (see 14 CFR 21.1(b)).

8. Significant Change As defined in Advisory Circular 21.101-1A, *Establishing the Certification Basis of Changed Aeronautical Products*, a change to the TC is significant to the extent it changes one or more of the following: general configuration, principles of construction, or the assumptions used for certification. The change is not extensive enough to be considered a substantial change (refer to 14 CFR 21.19). See Advisory Circular 21.101-1A for more information.

9. Supplemental Type Certificate (STC) A TC that the FAA issues to an applicant who alters a product by introducing a major change in type design (as defined by 14 CFR 21.93(a)). The STC process is essentially the same as the TC with a few differences.

10. Technical Specialist For this document, "technical specialist" means any specialist involved in certification activities. The term is not restricted to an engineer with that job title.

11. Type Certificate (TC) A design approval issued by the FAA when the applicant demonstrates that a product complies with the applicable regulations. As defined by 14 CFR 21.41, the TC includes the type design, the operating limitations, the type design data sheet (TCDS), the applicable regulations, and other conditions or limitations prescribed by the Administrator. The TC is the foundation for other FAA approvals, including production and airworthiness approvals.

12. Type Certification Board (TCB) An FAA management team responsible for acquainting the applicant with the certification process, resolving significant problems, and establishing a schedule for the overall accomplishment of the type certification project. A TCB is established only for projects of a certain magnitude. When a TCB is not necessary, the project team manages the project and performs any functions of the TCB to the degree necessary. The members of a TCB include:

a. The PACO manager (or representative),

b. Accountable directorate project officer (for projects requiring directorate's involvement),

c. Program/project manager, and

d. Other members including the managers, supervisors, or senior personnel from the appropriate engineering disciplines and flight test, manufacturing inspection, and assigned AEG personnel.

The TCB may request other participants, such as those listed below, to join the certification team or participate on an advisory basis in the TCB meetings. Additional TCB Participants include:

a. ACO engineers, flight test pilots, and manufacturing inspectors,

b. Washington Headquarters specialists,

c. CSTAs,

d. Additional AEG and Flight Standards District Office's personnel,

e. The project officer from the accountable directorate (if not serving as a board member),

f. Representatives of the CMACO, other ACOs, and directorates, and

g. The applicant and its representatives.

13. Type Certification Board Meeting (TCBM)

Any formal meeting between the TCB and the applicant to coordinate the move to the next project phase or resolve issues preventing progress to the next phase. Examples include preliminary, interim, pre-flight, and final TCBMs.

14. Type Design

The engineering definition of a particular product. The type design consists of the following (see 14 CFR 21.31):

a. Drawings and specifications,

b. Dimensions, materials, and processes,

c. Airworthiness limitations,

d. (for primary category aircraft, if desired) A special inspection and preventive maintenance program designed to be accomplished by an appropriately rated and trained pilot-owner, and

e. Any other data necessary to allow, by comparison, the determination of the airworthiness, noise characteristics, fuel venting, and exhaust emissions (where applicable), of later products of the same type.

15. Type Validation Type certification of an imported product to the importing country's applicable requirements or airworthiness standards. Process leads to issuance of new and amended type certificates when the FAA is the VA. When EASA is the VA, type validation leads to issuance of an EASA type certificate valid in all EASA member states. When a national aviation authority (NAA) of a non-EU JAA member state is the VA, type validation leads to a letter of recommendation for a TC from the JAA to the NAAs. The term also describes the general principles adopted by the FAA and EASA/JAA for determining appropriate VA involvement in validations, whether they are new or amended type certifications, or major level 1 design changes.

16. Validating Authority (VA) The aviation authority responsible for validating the CA type certificate or STC. Validating authority means EASA for applicants/approval holders located in the United States and FAA for applicants/approval holders in the European Community and JAA member states. Validating authority may also be called the importing authority.

17. Validation Authority Certification Basis Is comprised of the applicable airworthiness standards identified by the VA plus any exemptions, special conditions, and equivalent level of safety findings declared by the VA to establish design acceptance of an imported product or to certify the design change.

Appendix D. Advisory Circular Feedback Information

If you have comments or recommendations for improving this advisory circular (AC), or suggestions for new items or subjects to be added, or if you find an error, you may let us know about it by using this page as a template and 1) emailing it to 9-AWA-AVS-AIR500-Coord@faa.gov or 2) faxing it to the attention of the AIR Directives Management Officer at 202-267-3983.

Subject: (insert AC number and title) Date: (insert date)

Comment/Recommendation/Error: (Please fill out all that apply)

An error has been noted:

Paragraph _____

Page _____

Type of error (check all that apply): Editorial: ----- Procedural-----

Conceptual _____

Description/Comments: _____

_____

_____

Recommend paragraph _____ on page _____ be changed as follows:
(attach separate sheets if necessary)

_____

In a future change to this advisory circular, please include coverage on the following subject:
(briefly describe what you want added attaching separate sheets if necessary)

_____

Name: _____