



U.S. Department
of Transportation
**Federal Aviation
Administration**

Advisory Circular

Subject: Service Provider Authorization
Guidance for Public Performance Based
Instrument Flight Procedures (IFPs)

Date: 09/12/2023

AC No: 90-110C

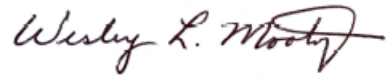
Initiated By: AFS-400

- 1. PURPOSE OF THIS ADVISORY CIRCULAR (AC).** This AC provides guidance for non-FAA Instrument Flight Procedure (IFP) developers, hereinafter referred to as “service providers,” to become authorized by the Federal Aviation Administration (FAA) (Flight Standards’ Flight Technologies and Procedures Division) to develop public performance based IFPs.
- 2. APPLICABILITY.** The primary audience for this AC is service providers who desire FAA authorization to develop public performance based IFPs. The secondary audience for this AC is FAA Flight Standards personnel who are directly associated with the procedure development process and/or charged with the responsibility to authorize and provide oversight of service providers.

This AC provides one method for service providers to obtain FAA authorization to develop public performance based IFPs. This AC describes an acceptable method, but not the only method, to obtain authorization; however, if you use the means described in this AC, you must follow it in its entirety. Service providers may elect to use guidance in this AC or an alternative method acceptable to the FAA.

The contents of this document do not have the force and effect of law and are not meant to bind the public in any way. This document is intended only to provide clarity to the public regarding existing requirements under the law or agency policies.
- 3. WHERE YOU CAN FIND THIS AC.** You can find this AC on the FAA’s website at https://www.faa.gov/regulations_policies/advisory_circulars and the Dynamic Regulatory System (DRS) at <https://drs.faa.gov>.
- 4. WHAT THIS CANCELS.** AC 90-110B, Instrument Flight Procedure Service Provider Authorization Guidance for Space-based Instrument Flight Procedures, dated 03/20/2019, is canceled.
- 5. RELATED 14 CFR PARTS.** This AC applies to the section of 14 CFR parts 71, 73, 77, 91, 93, 95, 97, 121, 135, and 157.
- 6. PRINCIPAL CHANGES.** The title of the AC changed from “Instrument Flight Procedure Service Provider Authorization Guidance for Space-based Instrument Flight Procedures” to “Service Provider Authorization Guidance for Public Performance Based Instrument Flight Procedures (IFPs).” This AC includes reference to AC 120-92, Safety Management Systems for Aviation Service Providers. It updates IFP record retention requirements. It clarifies that service providers may develop approved departures. It also clarifies the process for submitting public IFPs to the FAA.

7. **AC FEEDBACKFORM.** For your convenience, the AC Feedback Form is the last page of this AC. Note any deficiencies found, clarifications needed, or suggested improvements regarding the content of this AC on the Feedback Form.

A handwritten signature in cursive script, reading "Wesley L. Mooty".

Wesley L. Mooty
Acting Deputy Executive Director, Flight Standards Service

TABLE OF CONTENTS

CHAPTER 1. INSTRUMENT FLIGHT PROCEDURE SERVICE PROVIDER REQUIREMENTS	1-1
1.1 General.....	1-1
1.2 Organization.....	1-1
1.3 Required Functional Positions	1-3
1.4 IFP Design and Development Process.....	1-4
1.5 Procedure Maintenance.....	1-4
1.6 Application.....	1-4
1.7 FAA Authorization Process and Program.....	1-5
1.8 Notification	1-5
CHAPTER 2. PROCESS FOR IFP DESIGN AND DEVELOPMENT	2-1
2.1 General.....	2-1
2.2 Preliminary Activities	2-1
2.3 Procedure Design.....	2-2
2.4 Instrument Flight Procedure Validation (IFPV)	2-2
2.5 Pre-Implementation.....	2-2
2.6 Post-Implementation	2-2
APPENDIX A. TRAINING SYLLABUS EXAMPLE.....	A-1
APPENDIX B. ADMINISTRATIVE INFORMATION.....	B-1

CHAPTER 1. INSTRUMENT FLIGHT PROCEDURE SERVICE PROVIDER REQUIREMENTS

1.1 General

This chapter provides a list of requirements and identifies reference materials for service providers applying for FAA authorization to develop public instrument flight procedures (IFPs). This enables service providers to develop and maintain public performance-based instrument flight procedures, approved departures, and other future capabilities.

1.2 Organization

The service provider must meet the following requirements:

1.2.1 Operations Manual

The organization must have an FAA-accepted operations manual that contains:

1. Current regulatory guidance material associated with each authorized function,
2. A process to comply with environmental policy,
3. A list of functions, limitations, and product(s) authorized by the FAA (Flight Technologies and Procedures Division),
4. A Notices to Air Missions (NOTAM) plan,
5. A description of the service provider's organizational structure and roles and responsibilities relevant to IFP design and maintenance,
6. Processes (for each of the following items),
 - Communications and coordination with appropriate FAA offices
 - Electronic aeronautical data transmission to include forms and documents
 - IFP development and supporting software
 - IFP maintenance
 - Manual update
 - Periodic internal audits
 - Records management
 - Performing any other functions the FAA authorizes
7. Training programs (initial and recurrent), and
8. A process for exchanging aeronautical data with FAA-approved data source(s).

1.2.2 Safety Management Process

Service providers should define the safety policies, processes, and practices for all aspects of IFP design, validation, and maintenance. Service providers should have processes and methods in place to control safety risks before and after an IFP is approved. If service providers want to adopt an FAA-accepted Safety Management System (SMS), they should use AC 120-92, Safety Management Systems for Aviation Service Providers, as guidance.

1.2.3 Access to FAA IFP Publications and Correspondence

Service providers must establish a process for maintaining access to FAA and service provider publications and correspondence pertinent to IFP development. Access includes links to current source documents on FAA websites. All procedure designers must have access.

1.2.4 Training

The service provider must establish a training program with specified minimum qualification standards for personnel involved in IFP development. The training program must be documented in an FAA-accepted service provider manual. The manual must include:

1. Initial and recurrent training requirements and
2. A training syllabus as outlined in appendix A

1.2.5 Record Keeping

Service providers must maintain the following records in an electronic records format accessible to the FAA:

1. A file containing all documents required by FAA Order 8260.19, Flight Procedures and Airspace; FAA Order 8260.46, Departure Procedure (DP) Program; and FAA 8260-series forms; waivers; and approval letters, and the service provider's operations manual. The files must be retained for two years after an IFP is canceled and five years after a procedure is involved in an incident or accident.
2. Personnel training records
3. Any additional recordkeeping items listed in the service provider's operations manual

1.3 Required Functional Positions

1.3.1 Chief Designer

1. The organization must appoint a Chief Designer, who is responsible for the service provider's IFP development operations. The Chief Designer must certify in writing that each IFP meets FAA requirements.
2. The Chief Designer must have the following qualifications:
 - a. The qualification and experience requirements of a Qualified Designer (see paragraph 1.3.2),
 - b. Experience in the development of IFPs,
 - c. Knowledge of applicable design requirements in 8260-series FAA orders, and
 - d. Knowledge of the principles of Quality Assurance (QA).
3. The Chief Designer's qualifications must be evaluated by the FAA. The FAA's acceptance of the Chief Designer takes place during the operations manual review process (see paragraph 1.2.1).

1.3.2 Qualified Designer

Qualified Designer qualifications and experience are:

1. Satisfactory completion of a formal course of training accepted by the FAA (Flight Technologies and Procedures Division's representative),
2. Satisfactory completion of on-the-job training, consistent with the requirements outlined in the service provider's operations manual (see paragraph 1.2.1),
3. Knowledge of applicable design regulations, and
4. Written approval by the Chief Designer.

1.3.3 Quality Assurance (QA) Specialist

The service provider must appoint a QA Specialist responsible for performing QA activities. Qualifications and experience of a QA Specialist are:

1. Meet or have met the qualification for a Qualified Designer (see paragraph 1.3.2) and
2. Knowledge and experience in QA as outlined in the service provider's operations manual (see paragraph 1.2.1).

1.3.4 Flight Validation

The service provider is responsible for ensuring all IFPs are flight validated in accordance with AC 90-113, Instrument Flight Procedure Validation (IFPV) of Performance-Based Navigation (PBN) Instrument Flight Procedures (IFP); FAA Order 8900.1, Flight

Standards Information Management System (FSIMS), and FAA Order 8200.1, United States Standard Flight Inspection Manual (USSFIM). Regarding flight validation:

1. A service provider may appoint a person within the service provider's organization to fulfill this function upon completion of a Flight Validation briefing approved by the FAA (Flight Technologies and Procedures Division), or
2. The service provider may enter into an agreement with an FAA-authorized flight validation provider, or
3. The service provider may enter into an agreement with the FAA for flight validation services.

1.4 IFP Design and Development Process

1.4.1 Guidance for IFP development and administration are found in:

- Aeronautical Radio Incorporated (ARINC) specification 424
- FAA Order JO 7400.2, Procedures for Handling Airspace Matters
- FAA Order 7930.2, Notices to Air Missions
- FAA Order 8260.3, United States Standard for Terminal Instrument Procedures
- FAA Order 8260.19, Flight Procedures and Airspace
- FAA Order 8260.26, Establishing Submission Cutoff Dates for Civil Instrument Flight Procedures
- FAA Order 8260.46, Departure Procedure Program
- FAA Order 8260.58, United States Standard for Performance Based Navigation Instrument Procedure Design

1.4.2 Additional elements of the development process are found in:

- FAA Order 1050.1, Environmental Impacts: Policies and Procedures
- FAA Order 8260.43, Flight Procedures Management Program

1.5 Procedure Maintenance

IFPs must be maintained in accordance with all applicable FAA orders (see paragraph B.3.2) and the service provider's operations manual (see paragraph 1.2.1).

1.6 Application

To apply, the service provider must submit a letter of application to the FAA (Flight Technologies and Procedures Division), including a detailed proposal of compliance with this AC to the address listed below. The FAA will review the letter of application and guide how to proceed with the authorization process. Please email this letter of application to 9-awa-avs-afs420@faa.gov.

1.7 FAA Authorization Process and Program

The FAA (Flight Technologies and Procedures Division) will:

1.7.1 Applicant's compliance

Verify the applicant's compliance with this AC, which includes, but is not limited to:

1. Audit(s) of the applicant's facilities (including any subcontractor facilities),
2. Interview(s) of applicant's staff,
3. Examination of relevant documentation,
4. Evaluation of the development process, and
5. Evaluation of compliance with applicable orders.

1.7.2 IFP Quality Review

Perform an IFP Quality Review. See table 1-1 for a sample quality review checklist used for airports with approaches for fixed-wing aircraft (if applicable).

1.7.3 Oversight Process

Perform oversight and compliance as outlined in FAA Order 8000.368, Flight Standards Service Oversight; and FAA Order FS 8260.57, Oversight of Non-FAA Instrument Flight Procedure Service Providers.

1.7.4 Letter of Authorization (LOA)

Upon determination of compliance with this AC, issue an LOA to develop public performance based IFPs.

1.8 Notification

The service provider will provide the Flight Technologies and Procedures Division a 14-day advance notice (in writing) for any proposed change, which may affect compliance with this AC.

**Table 1-1. IFP Quality Review Sample Checklist
(airports with approaches for fixed-wing aircraft (if applicable))**

Airport:				
Designer:				
Reviewer:				
Date:				
IFP Name:				
Requirement Phase and Data Collection:		Yes	No	NA
Existing IFPs and obstacles reviewed				
Airport name				
Airport's geographic location				
Runway characteristics (TDZE, THLD, profile)				
Runway Threshold Latitude/Longitude				
Departure End Threshold Latitude/Longitude				
Touchdown Zone Elevations - All runways				
Landing Threshold Elevations - All runways				
Navigational aids				
Airport lighting				
Weather reporting and forecasting capabilities				
Airspace limitations and restrictions				
ATC contacted – Approach				
ATC contacted – Center				
Categorical Exclusion Letter included				
Mountainous terrain				
Assumed tree/vegetation heights per the ground obstacle assessment				
Obstacle data				
Five-year average LOW temperature analysis				
Design Phase		Yes	No	NA
Bearings, headings, courses, and radials are magnetic and documented to the closest hundredth of a degree				
Elevations and altitudes are in feet				
Distances are in nautical mile (NM)				
Waypoints are named and have completed FAA Form 8260-2				
Minimum Altitudes are at or rounded up to the nearest 100-foot increment (i.e., 1,701 feet and 1,751 feet both round up to 1,800 feet)				

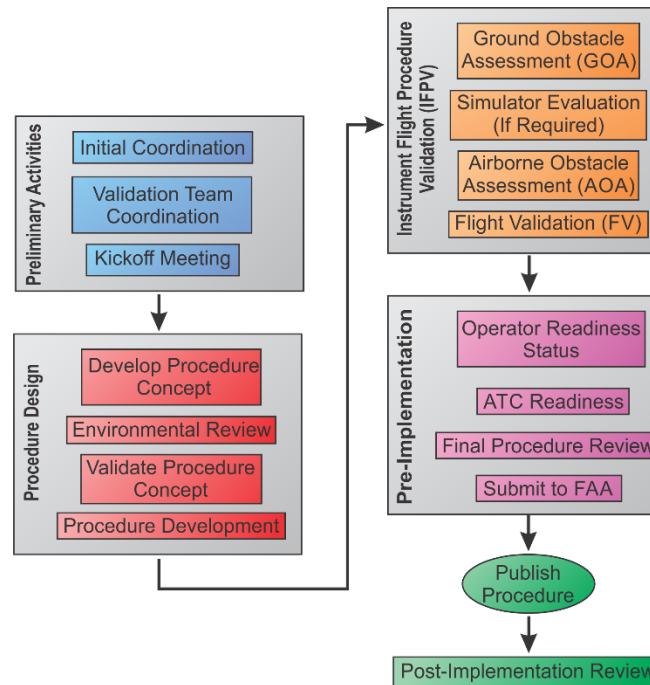
Airport:				
Designer:				
Reviewer:				
Date:				
IFP Name:				
Requirement Phase and Data Collection:		Yes	No	NA
The missed approach design must match the missed approach instructions				
Feeder, Initial, and Intermediate Segments documented				
Holding Patterns evaluated and documented				
All bank angles evaluated				
Form 8260-3 per FAA Order 8260.19				
Form 8260-9 per the FAA Order 8260.19				
Form 8260-2 for all waypoints and NAVAIDs per FAA Order 8260.19 to include turn centers				
ARINC 424 coding				

CHAPTER 2. PROCESS FOR IFP DESIGN AND DEVELOPMENT

2.1 General

This chapter provides guidance on the coordination process to design/develop public performance based IFPs.

Figure 2.1. Process Flow Chart



2.2 Preliminary Activities

Before design of a public performance based IFP, several tasks must be completed which include, but are not limited to:

2.2.1 Initial Coordination

The first step is for service providers to obtain concurrence from the airport sponsor/owner and the applicable air traffic facilities. Procedure development at National Plan of Integrated Airport Systems (NPIAS) airports should be coordinated early with the Office of Airports, in the event the Airport Layout Plan needs to be updated.

Note: Procedure development requires the airport to comply with applicable notification requirements (see 14 CFR part [157](#)).

2.2.2 Validation Team Coordination

Procedure initiation coordination requirements are found in FAA Orders 8260.19 and 8260.43.

2.2.3 Kickoff Meeting

For all public projects, the service provider should host a kickoff meeting. A kickoff meeting provides a forum to reach a consensus on the initial procedure design and establish a timeline. Recommended participants: representatives from air traffic, environmental, airspace, flight procedures team, and the Flight Procedures and Airspace Group (aviation safety inspector, procedure design specialist, and a representative from the oversight unit).

2.3 **Procedure Design**

After the initial coordination, the service provider will design and document the IFP. As a part of this process, the service provider must ensure the procedure has the appropriate environmental documentation.

2.4 **Instrument Flight Procedure Validation (IFPV)**

The service provider must conduct IFPV in accordance with AC 90-113; FAA Order 8900.1, Volume 11 Chapter 12; and FAA Order 8200.1.

2.5 **Pre-Implementation**

The service provider must submit the completed IFP to the FAA for review and processing via the Specials and Waivers Inventory Management System (SWIMS), in accordance with FAA Order 8260.43.

2.6 **Post-Implementation**

The service provider must ensure lifecycle procedure maintenance per current reference materials (see paragraph B.3.2).

APPENDIX A. TRAINING SYLLABUS EXAMPLE

A.1 General

This appendix provides a training syllabus example. Each service provider is responsible for establishing a training program that includes minimum qualification standards for personnel actively involved in IFP development. The training program must include both initial and recurrent training, and must include skill and knowledge requirements for all aspects of IFP design (see paragraph A.2.1). The FAA must approve the service provider's training program.

A.2 Training Syllabus

The training syllabus will include, but is not limited to, the following general and specific knowledge areas to ensure the continuity of IFP development expertise:

A.2.1 General Areas

A.2.1.1 Title 14, Code of Federal Regulations (14 CFR)

- Part [71](#), Designation of Class A, B, C, D, and E Airspace Areas; Air Traffic Service Routes; Reporting Points
- Part [73](#), Special Use Airspace
- Part [77](#), Objects Affecting Navigable Airspace
- Part [91](#), Air Traffic and General Operating Rules
- Part [93](#), Specific Air Traffic Rules
- Part [95](#), IFR (Instrument Flight Rules) Altitudes
- Part [97](#), Standard Instrument Procedures
- Part [121](#), Operating Requirements: Domestic, Flag, and Supplemental Operations
- Part [135](#), Operating Requirements: Commuter and On-Demand Operations and Rules Governing Persons On Board Such Aircraft
- Part [157](#), Notice of Construction, Alteration, Activation and Deactivation

A.2.1.2 Flight Procedures Management Program (see FAA Order 8260.43)

A.2.1.3 8260-series FAA orders applicable to instrument procedure development

A.2.1.4 Service Provider Operating Procedures

A.2.1.5 FAA Safety Management System

A.2.1.6 Navigation systems and aircraft performance

A.2.1.7 Air Traffic Control Procedures

A.2.1.8 Airspace design

A.2.1.9 Environmental regulations

A.2.2 Specific Areas

A.2.2.1 Security as it pertains to protecting FAA-provided data, software, and/or equipment

A.2.2.2 Maintenance of FAA-provided references and resources

A.2.2.3 Data submission and accuracy requirements

A.2.2.4 Processing environmental assessments and impact statements

A.2.2.5 Preparing IFP packages for submission to the FAA

A.2.2.6 The IFP approval process

APPENDIX B. ADMINISTRATIVE INFORMATION

B.1 General

This appendix provides an alphabetical listing of frequently used acronyms and abbreviations (see table B.1-1) and definitions.

Table B.1-1. Acronyms and Abbreviations

AC	Advisory Circular	NAS	National Airspace System
FS	Flight Standards	NASR	National Airspace System Resources
AIRNAV	Airports and Navigation Aids Database System	NOTAM	Notices to Air Missions
ARINC	Aeronautical Radio Incorporated	NPIAS	National Plan of Integrated Airport Systems
ATC	Air Traffic Control	ODP	Obstacle Departure Procedures
AVS	Aviation Safety	OE/AAA	Obstruction Evaluation/Airport Airspace Analysis
DP	departure procedure	PBN	Performance-Based Navigation
FAA	Federal Aviation Administration	QA	quality assurance
FSIMS	Flight Standards Information Management System	RNAV	area navigation
FV	flight validation	RNP	required navigation performance
GOA	ground obstacle assessment	RNP AR	required navigation performance authorization required
GUI	Graphic User Interface	SMS	Safety Management System
IAP	instrument approach procedure	STAR	Standard Terminal Arrival Routes
IFP	instrument flight procedure	TERPS	Terminal Instrument Procedures
IFPV	Instrument Flight Procedure Validation	USSFIM	United States Standard Flight Inspection Manual
IFR	instrument flight rule		
LOA	letter of authorization		
LOB	line of business		

B.2 **Definitions**

B.2.1 Airports and Navigation Aids Database System (AIRNAV)

AIRNAV is the working database that stores FAA airport and facility survey data pertinent to flight inspection-reference data.

B.2.2 Instrument Flight Procedure (IFP)

IFP is a charted flight path defined by a series of navigation fixes, altitudes, and courses provided with lateral and vertical protection from obstacles from the beginning of the path to a termination point. IFPs can be approach procedures, departure procedures, Airways, and STARs.

B.2.3 IFP Service Provider

An IFP Service Provider is an entity that provides IFP development services to the public.

B.2.4 National Airspace System (NAS) Resources (NASR)

NASR is the FAA's aeronautical database of record and is a client-server system employing a GUI for Aeronautical Information Services' specialists accessing NAS data. This system provides the FAA with the means for storing and maintaining a reference database with descriptive details of the NAS infrastructure and the operational status of all components.

B.2.5 Obstacle Evaluation/Airport Airspace Analysis (OE/AAA)

OE/AAA is the FAA system in administering 14 CFR parts 77 and 157, as prescribed by FAA Order JO 7400.2, Procedures for Handling Airspace Matters. The FAA conducts aeronautical studies based on information provided by proponents on FAA Forms 7460-1 or 7480-1. New users can register online at <https://oeaaa.faa.gov>.

B.2.6 Public Instrument Flight Procedure (IFP)

A public IFP is charted and available to the public.

B.2.7 Working Group

Working Group refers to a cadre of personnel representing affected lines of business. This group includes a facilitator as spokesperson for the group.

B.3 **Related Publications**

B.3.1 Regulations

Title 14, Code of Federal Regulations (14 CFR)

B.3.2 Reference Material (current editions)

These publications address IFPs development and implementation:

- FAA AC 90-101, Approval Guidance for RNP Procedures with AR
- FAA AC 90-113, Instrument Flight Procedure Validation of Performance-Based Navigation Instrument Flight Procedures
- FAA Order 1050.1, Environmental Impacts: Policies and Procedures
- FAA Order JO 7100.9, Standard Terminal Arrival Program and Procedures
- FAA Order JO 7400.2, Procedures for Handling Airspace Matters
- FAA Order 7930.2, Notices to Air Missions
- FAA Order 8000.368, Flight Standards Service Oversight
- FAA Order 8000.369, AVS Safety Management System Requirements
- FAA Order 8200.1, United States Standard Flight Inspection Manual
- FAA Order 8260.3, United States Standard for Terminal Instrument Procedures
- FAA Order 8260.19, Flight Procedures and Airspace
- FAA Order 8260.26, Establishing and Scheduling Civil Public-Use Standard Instrument Procedure Effective Dates
- FAA Order 8260.43, Flight Procedures Management Program
- FAA Order 8260.46, Department Procedure Program
- FAA Order FS 8260.57, Oversight of Non-FAA Instrument Flight Procedure Service Providers
- FAA Order 8260.58, United States Standard for Performance-Based Navigation Instrument Procedure Design
- FAA Order 8260.60; Special Procedures
- FAA Order 8900.1, Flight Standards Information Management System
- RTCA DO-236, Minimum Aviation System Performance Standards: Required Navigation Performance for Area Navigation

B.4 **Forms**

The forms referenced here are available electronically:

- FAA Form 7460-1, Notice of Proposed Construction or Alteration
- FAA Form 7480-1, Notice for Construction, Alteration and Deactivation of Airports
- FAA Form 8260-2, Radio Fix and Holding Data Record
- FAA Form 8260-3, Standard Instrument Approach Procedure
- FAA Form 8260-9, Standard Instrument Approach Procedure Data Record

- FAA Form 8260-30.1, Simulator Validation Checklist
- FAA Form 8260-30.2, Obstacle Assessment Checklist
- FAA Form 8260-30.3, Flight Validation Checklist
- FAA Form 8260-30.4, IFPV Evaluator Check Record

Advisory Circular Feedback

If you find an error in this AC, have recommendations for improving it, or have suggestions for new items/subjects to be added, you may let us know by emailing this form to [9-AWA-AFS400-COORD@faa.gov].

Subject: [insert AC title/number here]

Date:

Please check all appropriate line items:

- An error (procedural or typographical) has been noted in paragraph .
- Recommend paragraph be changed as follows:
- In a future change to this AC, please cover the following subject:
(Briefly describe what you want added.)
- Other comments:
- I would like to discuss the above. Please contact me.

Submitted by: _____

Date: _____