



IFP PROVISION AND SAFETY OVERSIGHT WORKSHOP

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Service Provider Function

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ANNEX 11

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Manual on the Development of a Regulatory Framework for Instrument Flight Procedure Design Service

Service Provider Function Chapter 3

Chapter Overview

Purpose of Chapter 3

- Provides guidelines for service providers involved in Instrument Flight Procedure Design Service (IFPDS) to develop their processes, procedures, and organizational structure.
- Aligns with ICAO SARPs, PANS, and State regulations.

Partnership Concept

Role of service providers in IFPDS

- IFPDS providers and State safety oversight authorities are partners working together to ensure safety and quality.
- Providers must understand the roles and expectations of oversight authorities.
- Service providers should prepare processes and documentation to demonstrate compliance with established requirements.
- Compliance must be shown both initially and on an ongoing basis.

Understanding State Expectations

Service Provider Responsibilities

- Must establish its own processes and procedures based on the State's regulatory framework.
- If no State-specific framework exists, follow ICAO SARPs and PANS.
- Doc 9906, Volume 1 offers detailed guidelines for setting up a Flight Procedure Design (FPD) process.

Operations Manual Purpose

- The organization providing the service must create its own **operations manual** aligned with the **State regulatory framework**.
- If no specific framework exists, it should follow ICAO guidance (SARPs, PANS).
- The manual should be **customized** to reflect the unique characteristics of the organization.
- A sample content structure is usually provided as a reference in chapter 3, but adaptation is essential. Table 3-1.

Table 3-1. Sample contents of an operations manual for a service provider

PART / Chapter	Contents	Reference
PART I. Administrative		
Chapter 1. Responsibility for revision of the operations manual	<ul style="list-style-type: none"> • Describe <ul style="list-style-type: none"> ➤ Under whom the operations manual is established ➤ Who is responsible for the technical contents • Version control 	
PART II. General and Organization		
Chapter 1. General	<ul style="list-style-type: none"> • Purpose of the operations manual • Precedence of the operations manual • Scope of the operations manual • Functions to be performed by the service provider 	

PART / Chapter	Contents	Reference
Chapter 2. Roles and responsibilities	<ul style="list-style-type: none"> • Describe the roles and responsibilities of the department, section and/or position (Descriptions for each department, section and/or position follow.) 	
Chapter 3. Staffing requirement	<ul style="list-style-type: none"> • Describe the staffing requirements such as: <ul style="list-style-type: none"> ➢ number of personnel per procedure, or ➢ number of procedures which can be designed by a designer (The statement does not have to be quantitative; a statement such as “a sufficient number of qualified staff is required...” may be acceptable.) • Define the hierarchy – e.g. supervisor, chief designer, senior designer, designer, trainee designer (depending on each organization) 	
Chapter 4. Training and qualification	<ul style="list-style-type: none"> • Provisions concerning training and qualification of personnel • Appointment of special position (e.g. chief or supervisor) • Describe types of training and their contents, duration, interval (frequency) 	
Chapter 5. Facility and resources	<ul style="list-style-type: none"> • Define the facilities and resources to be utilized to perform the task such as: <ul style="list-style-type: none"> ➢ building, office, table, and other equipment ➢ software and design tool ➢ aircraft and on-board equipment 	
Chapter 6. Agreements with other organizations	<ul style="list-style-type: none"> • Define the procedures and/or rules to establish agreements with other organizations, including procurement of service and/or goods (Reference to another document is acceptable) 	
Chapter 7. Compliance	<ul style="list-style-type: none"> • Define the processes to comply with regulations and verification (Reference to another document is acceptable) • Describe how to demonstrate the compliance 	
Chapter 8. Operational instructions	<ul style="list-style-type: none"> • Define the methodology to provide operational instructions to staff members such as: <ul style="list-style-type: none"> ➢ circular ➢ information bulletin ➢ amendment to existing document (including notification of changes in design criteria) 	

PART / Chapter	Contents	Reference
Chapter 9. Services to be provided	<ul style="list-style-type: none"> • Define the services (and/or product) to be provided by the organization such as: <ul style="list-style-type: none"> ➤ (Initial) design ➤ continuous maintenance ➤ periodic review ➤ documentation process ➤ validation process • Define the types of flight validation to be provided by the organization such as: <ul style="list-style-type: none"> ➤ validation of newly designed flight procedures ➤ periodic validation (with its interval for each type of flight procedure) <ul style="list-style-type: none"> ➤ validation upon amendment of flight procedures ➤ other validation conducted for special needs • Describe the criteria needed to determine the necessity of these types of service • Describe the criteria needed to determine the necessity of simulator evaluation 	
PART III. Flight procedure design process		
Chapter 1. Design process	<ul style="list-style-type: none"> • Define the process to be followed 	Doc 9906, Vol. 1
Chapter 2. Acquisition of data/ information	<ul style="list-style-type: none"> • Define <ul style="list-style-type: none"> ➤ types of data/information required for the design of instrument flight procedures ➤ how to acquire such data/information ➤ from whom/where to acquire such data/information 	
Chapter 3. Consultation with stakeholders	<ul style="list-style-type: none"> • Identify stakeholders • Describe <ul style="list-style-type: none"> ➤ on which matters consultation with stakeholders is needed ➤ with whom ➤ when ➤ how 	PBN manual Doc 9906, Vol. 1 Doc 9906, Vol. 5
Chapter 4. Environmental consideration	<ul style="list-style-type: none"> • Describe what should be considered in the design or flight procedures 	
Chapter 5. Documentation	<ul style="list-style-type: none"> • Describe <ul style="list-style-type: none"> ➤ how to record the activities ➤ how to maintain documents • Define the period of maintenance of records 	
Chapter 6. Format	<ul style="list-style-type: none"> • Provide the format (template) for design documents to record: <ul style="list-style-type: none"> ➤ rationale for the design ➤ controlling obstacle ➤ summary of calculation process • Provide the format (template) for flight validation report 	

<i>PART / Chapter</i>	<i>Contents</i>	<i>Reference</i>
Chapter 7. Validation	<ul style="list-style-type: none"> • Describe: <ul style="list-style-type: none"> ➢ who validates the procedures ➢ how the procedures are validated • Define the process to be followed • Define the items (charts, aeronautical data, obstacle, flyability, Navaid/lighting) to be validated for each type of validation • Define tolerance • Define the type of result (pass, pass on condition, fail) <ul style="list-style-type: none"> ➢ what are the actions to be taken for failed procedure 	Doc 9906, Vol. 5
Chapter 8. Preparation of publication	<ul style="list-style-type: none"> • Define the types of material to be submitted to AIS (depending on the protocol with AIS) • Define the timing of submission 	
PART IV. Safety and Quality		
Chapter 1. SMS and QA system	<ul style="list-style-type: none"> • Define how to be involved in the SMS (e.g. the SMS of an entire ANSP) • Provide a reference to the organization's quality manual • Provide a statement on the resolution of safety/quality-related issues 	Annex 19 — <i>Safety Management</i> Doc 9859 Doc 9906, Vol. 1
Chapter 2. Oversight by regulator	<ul style="list-style-type: none"> • Describe how to manage the oversight 	

3.2.3 Quality manual

Quality Manual (QM): Ensures consistency and compliance across all processes.

Integration with IFPDS: Procedure design steps must adhere to both ICAO standards and the organization's QMS.

Doc 9906 Volume 1: Acts as the foundation for creating a **Quality Assurance System** for flight procedure design.

3.2.3.2 The QM may be a part of the IFPDS's operations manual.

3.3.1 Design and publication of new procedures

3.3.1.1 IFPs must be designed in accordance with State-approved design criteria, including PANS-OPS, Volume II (Doc 8168). Any deviation requires prior consultation and approval from the regulator, with deviations published in the State AIP.

3.3.1.2 The service provider shall establish its work process and document it in an operations manual (see Table 3-1), ensuring compliance with State regulations and ICAO guidance (Doc 9906, Volume 1).

3.3.1.3 In accordance with Annex 11, any significant safety-related change to the ATS system, such as reduced separation minima or new procedures, must undergo a safety assessment... Safety assessments should follow Annex 19 and Safety Intelligence Manual (Doc 10159) ~~Doc 9859~~ principles. Responsibility for the assessment lies with either the IFPDS provider or the requesting organization, with results submitted to the State Safety Oversight Authority for approval.

3.3.2 Periodic review (ref: Doc 9906, Volume 1)

3.3.2.1 All published IFPs must be subject to a periodic review. Upon periodic review, the following tasks are to be conducted:

- **Assessment of the impact of all changes to obstacle data.**
- **Assessment of the impact of all changes to aerodrome, aeronautical and navaid data.**
- **Assessment of the impact of all criteria amendments and changes to depiction standards.**

d) **Assessment of the impact of all changes to user requirements.** Such changes to user requirements include, but are not limited to:

- fleet type (performance)
- scheduled service route
- ATM procedures
- airspace.

Even if the user requirements are not a safety-related issue, IFP amendments and/or new IFPs may be needed to satisfy current user requirements.



3.3.2.2 In order to conduct a periodic review efficiently, it is essential to obtain and store design data.



3.3.2.3 If it is determined that any action is required, such as amendment to the existing IFP, due to new obstacle and/or changes in design criteria which have a safety impact, return to the “initiation” step (Step no. 1 in the FPD process, see Doc 9906, Volume 1)



3.3.2.4 Periodic review must be conducted in accordance with the interval established by the State (maximum five years (see Annex 11 and PANS-OPS, Volume II)).



3.3.2.5 A level of procedure design competency equivalent to that necessary for the design of a new procedure is required to conduct a periodic review.

3.4 QUALITY ASSURANCE

A service provider must establish and comply with an appropriate quality assurance methodology. Doc 9906, Volume 1 provides guidelines to establish a quality assurance methodology for IFPDS.

3.5 TRAINING AND QUALIFICATIONS

A service provider must establish and comply with its own scheme for training and qualification of its procedure designers in accordance with the State regulatory framework. Doc 9906, Volumes 2 and 6 provide guidelines for establishing a training scheme for both flight procedure designers and flight validation pilots.

3.6 SAFETY MANAGEMENT SYSTEM (SMS)

The ATS provider's interfaces with IFPDS can make a significant contribution to the safety of its products or services. Therefore, the SMS aspects of IFPDS products would be normally included as part of an ATS provider's SMS.

Note.—Guidance on interface management as it relates to SMS is provided in the Safety Intelligence Manual (Doc 10159).





Thank You!

