ICAO QA Workshop

✈ Instrument Flight Procedure Workflow in
✈ Civil Aviation Department, Hong Kong, China

October 2020

Content

- Hong Kong instrument flight procedure design (IFPD) process
- Reference documents
- Further elaboration of the reference
- Example
- Q&A

Basis of IFPD in CAD

- CAD refers to the guidance materials from the following materials to formulate the framework of IFPD workflow and Quality Assurance (QA) process
  - Doc 8168
  - Doc 9906

Flow of IFPD in CAD

1. Initiation
2. Collect and validate all data
3. Create conceptual design
4. Review by stakeholders
5. Apply criteria
6. Conduction validation and criteria verification
7. Create draft publication
8. Consult with stakeholders
9. Conduct safety activities
10. Approve IFP
11. Verify draft publication
12. Publish IFP
13. Obtain feedback from stakeholders
14. Conduct continuous maintenance
15. Conduct periodic review

Document and Store

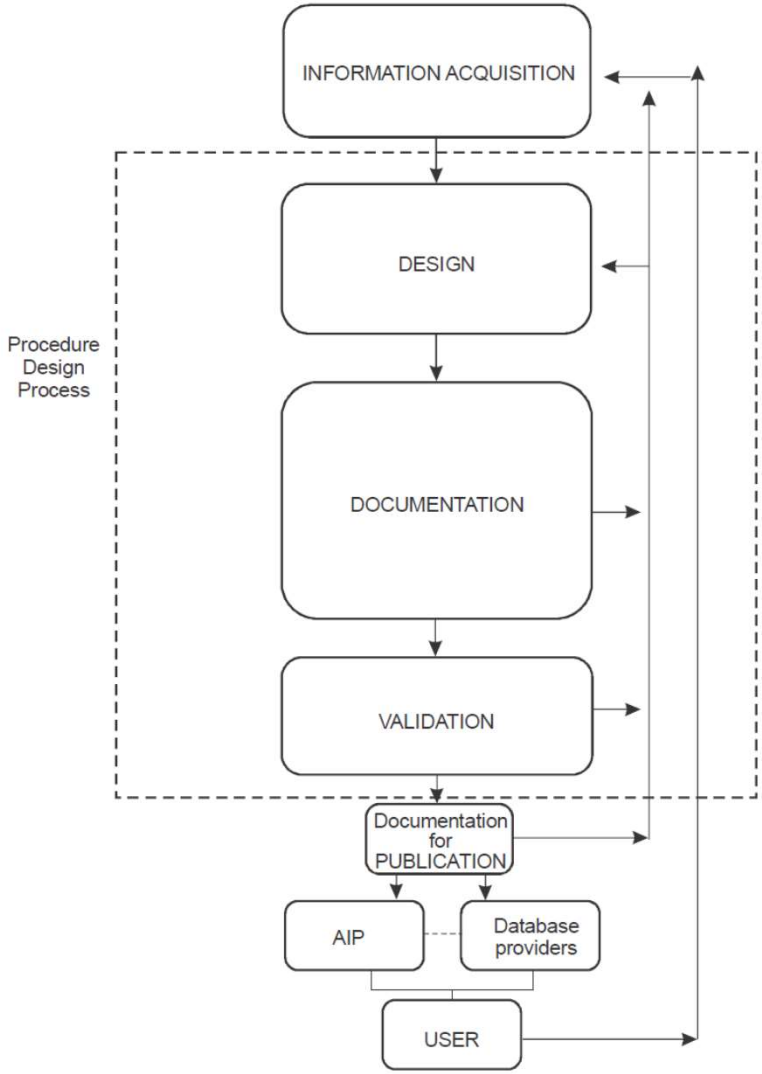


Figure I-2-4-1. Instrument flight procedure process

Flow of IFPD from Doc 8168

- 4.1 GENERAL
- 4.2 THE INSTRUMENT FLIGHT PROCEDURE PROCESS
- 4.3 PROCEDURE DESIGN INFORMATION ACQUISITION
- 4.4 PROCEDURE DESIGN
- 4.5 PROCEDURE DESIGN DOCUMENTATION
- 4.6 GROUND AND FLIGHT VALIDATION
  - 4.6.1 Validation
  - 4.6.2 Ground validation
  - 4.6.3 Flight validation
  - 4.6.4 The procedure designer shall be the originator of all data applicable to conducting a flight validation provided to the flight validation or flight inspection operations activity. The procedure designer should be prepared to provide briefings to the flight validation or flight inspection crews in those cases where flight procedures have unique application or special features.
  - 4.6.5 The procedure designer may participate in the initial validation flight to assist in its evaluation and obtain direct knowledge of issues related to the procedure's design from the flight inspection or validation pilot and/or inspector.
  - 4.6.6 Flight validation pilot qualifications and training
- 4.7 PROCEDURE DESIGNER QUALIFICATIONS AND TRAINING
- 4.8 PROCEDURE DESIGN AUTOMATION
- 4.9 SAFETY RISK ASSESSMENT OF FLIGHT PROCEDURE DESIGNS

Flow of IFPD from Doc9906 vs Doc8168

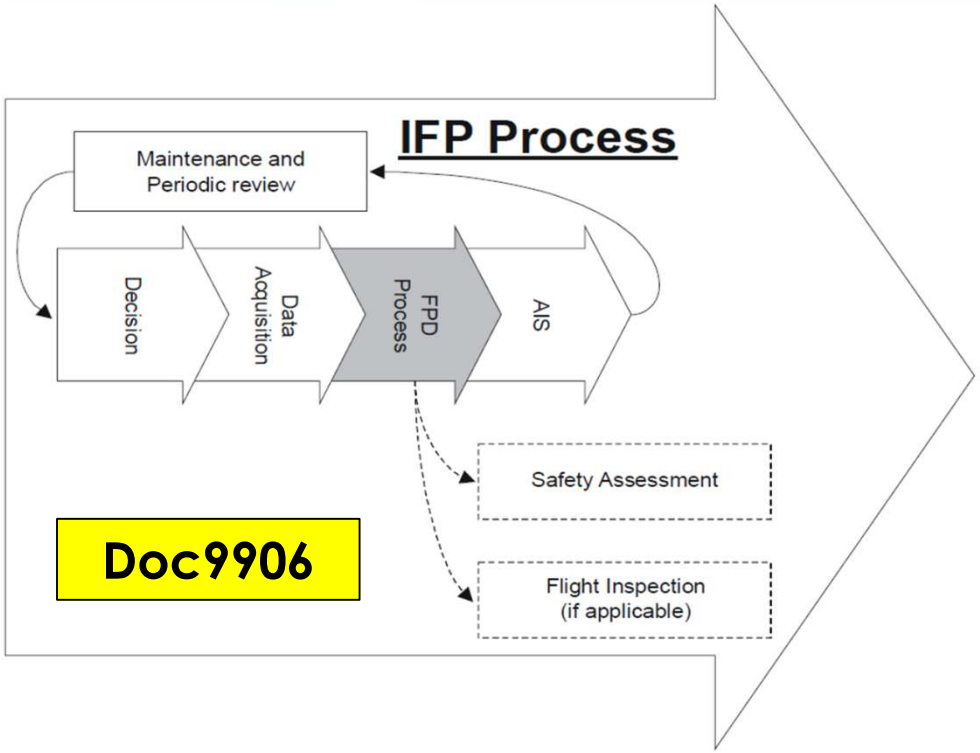


Figure 3. IFP development process.

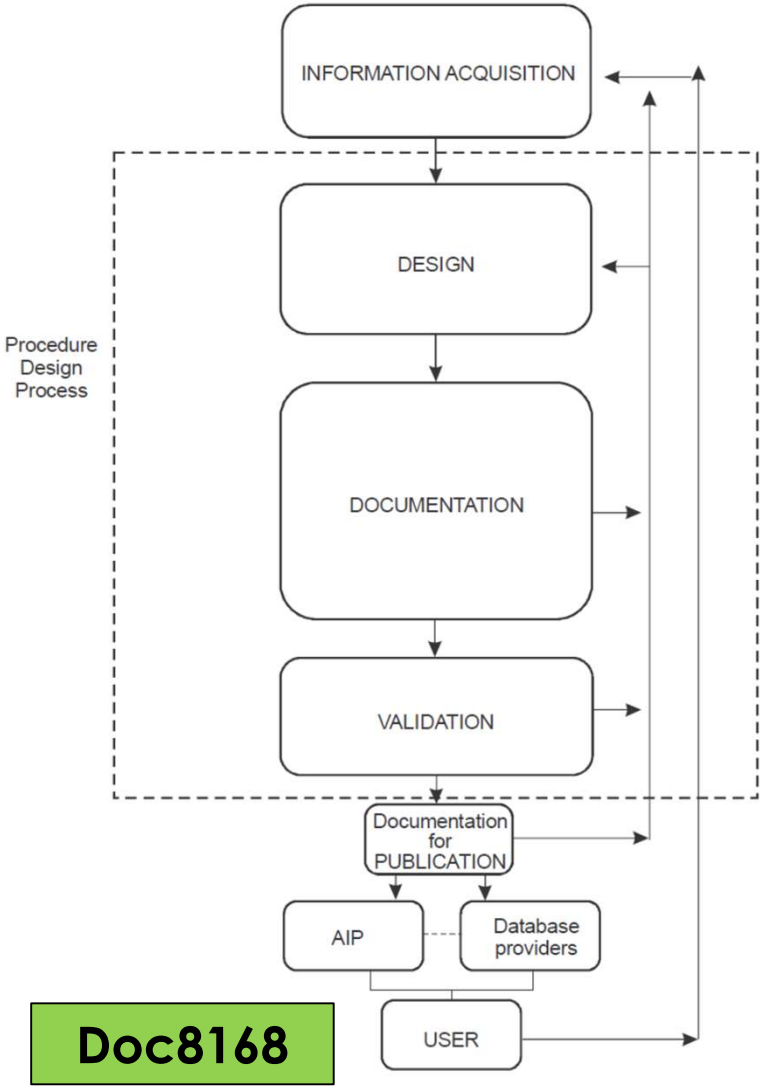
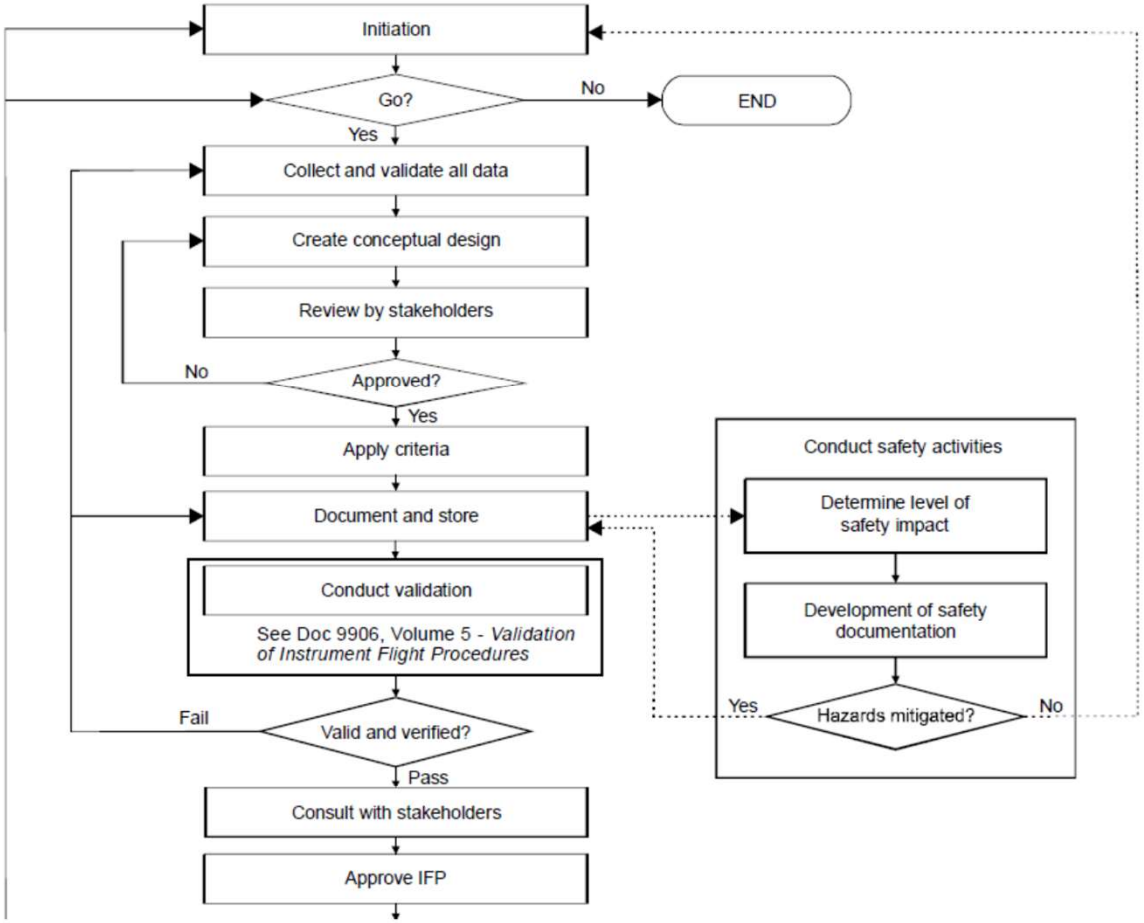
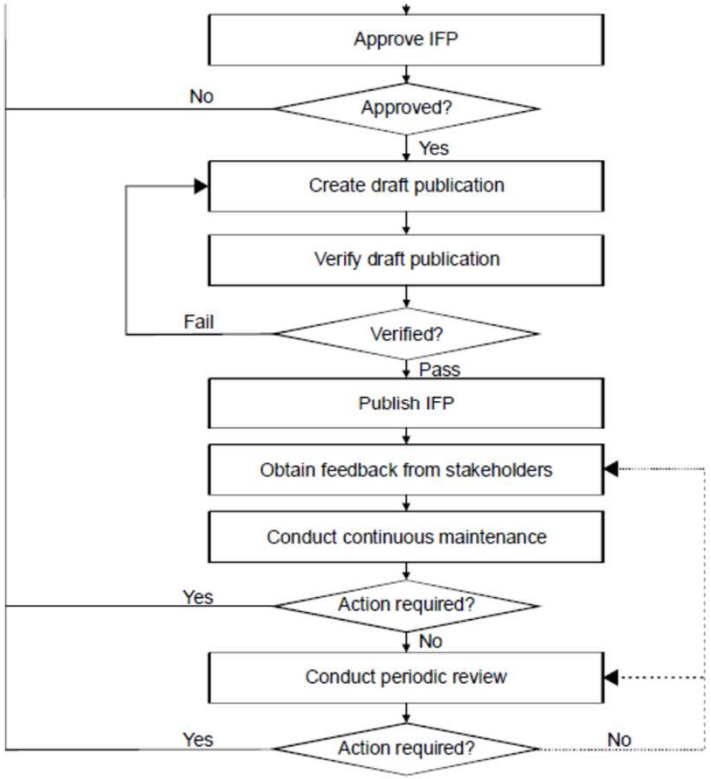


Figure I-2-4-1. Instrument flight procedure process

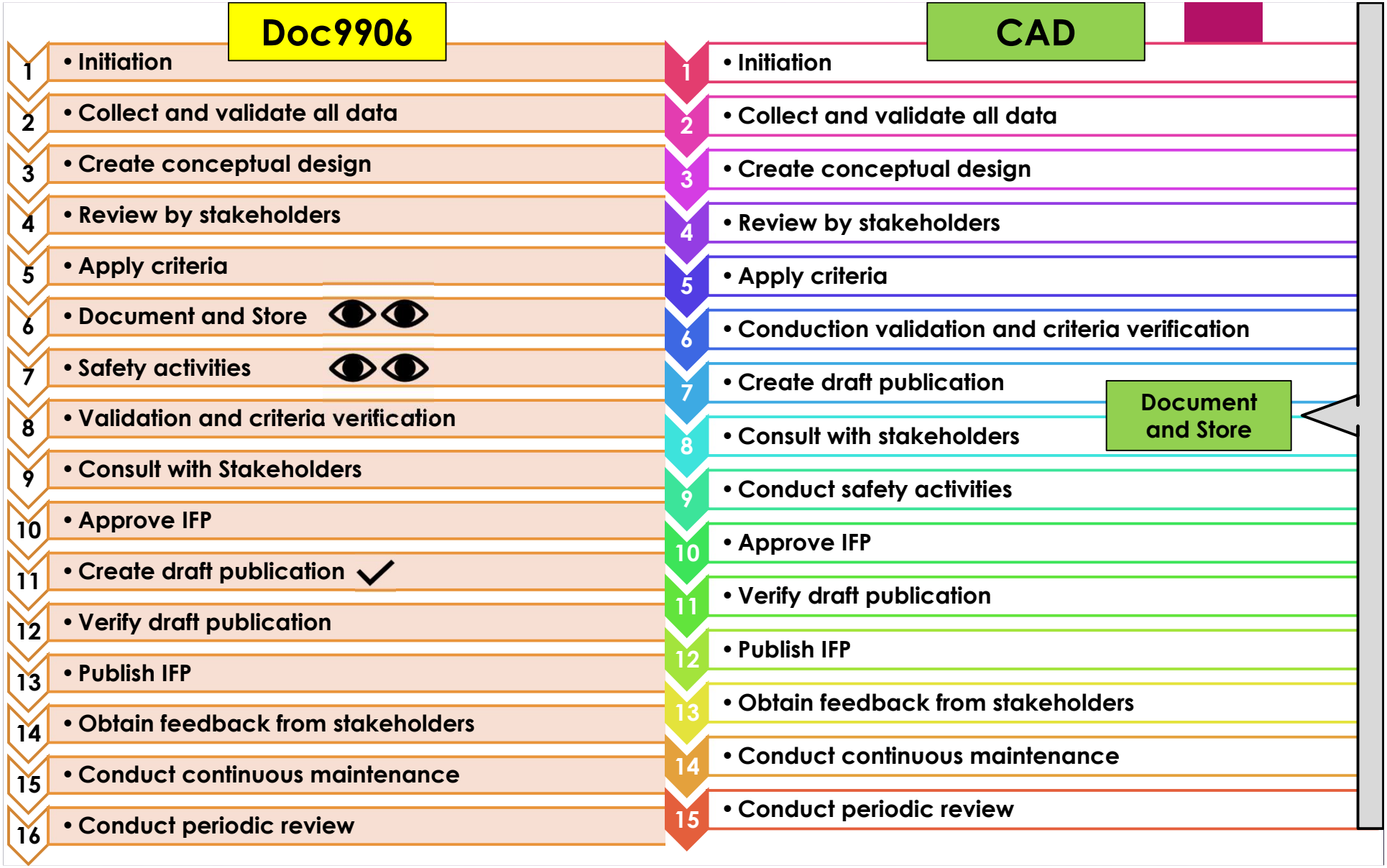
Doc9906 Workflow





Doc9906 Workflow details

1. Initiation
2. Collect and validate all data
3. Create conceptual design
4. Review by stakeholders
5. Apply criteria
6. Document and Store
7. Safety activities
8. Validation and criteria verification
9. Consult with Stakeholders
10. Approve IFP
11. Create draft publication
12. Verify draft publication
13. Publish IFP
14. Obtain feedback from stakeholders
15. Conduct continuous maintenance
16. Conduct periodic review


Doc9906
1 • Initiation
2 • Collect and validate all data
3 • Create conceptual design
4 • Review by stakeholders
5 • Apply criteria
6 • Document and Store
7 • Safety activities
8 • Validation and criteria verification
9 • Consult with Stakeholders
10 • Approve IFP
11 • Create draft publication
12 • Verify draft publication
13 • Publish IFP
14 • Obtain feedback from stakeholders
15 • Conduct continuous maintenance
16 • Conduct periodic review
CAD
1 • Initiation
2 • Collect and validate all data
3 • Create conceptual design
4 • Review by stakeholders
5 • Apply criteria
6 • Conduction validation and criteria verification
7 • Create draft publication
8 • Consult with stakeholders
Document and Store
9 • Conduct safety activities
10 • Approve IFP
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12 • Publish IFP
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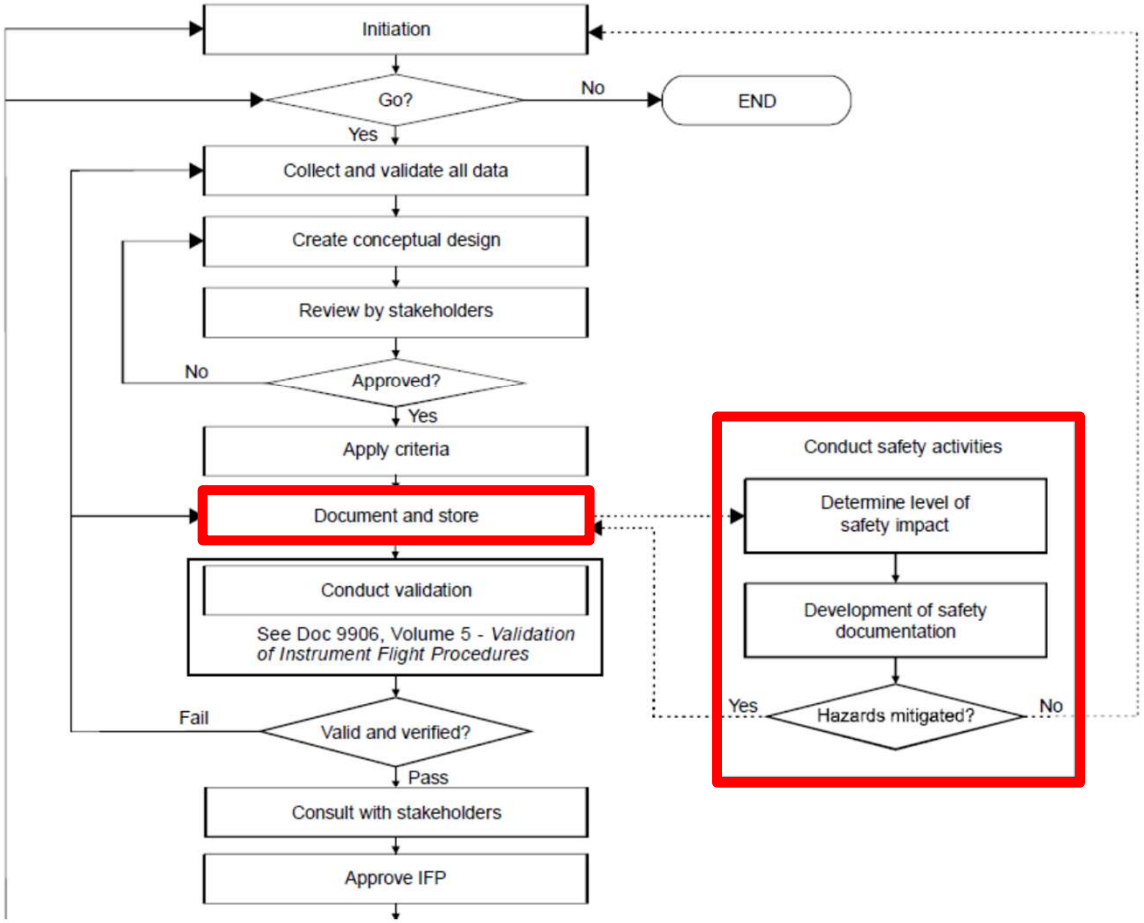
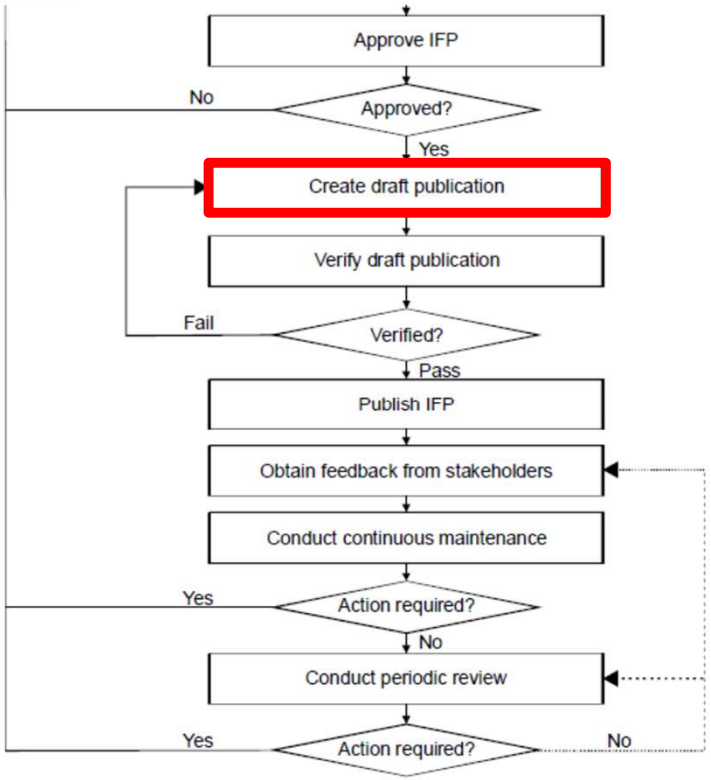
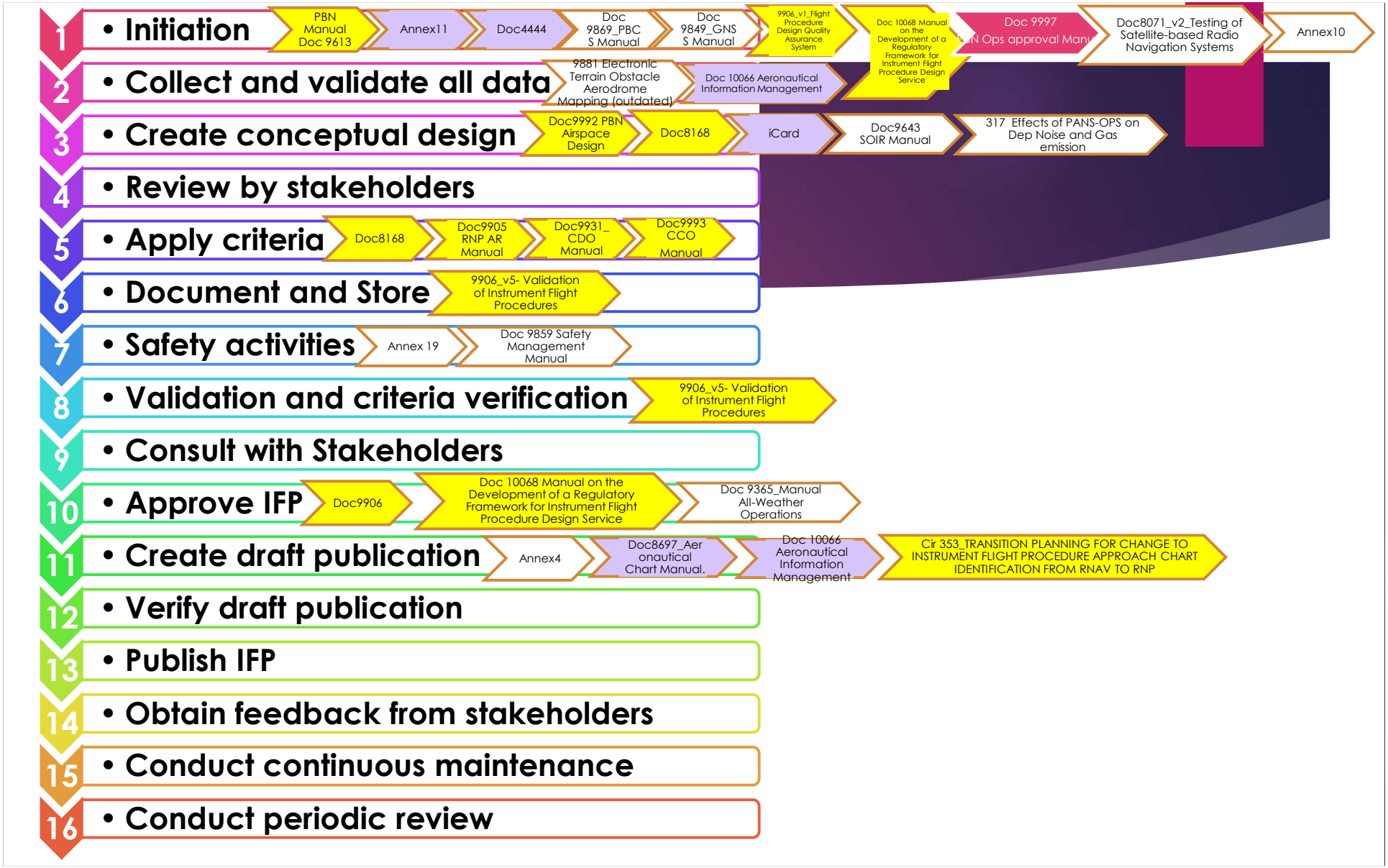
15 • Conduct periodic review

Doc9906 Workflow






1
• Initiation
PBN Manual Doc 9613
Annex11
Doc4444
Doc 9869_PBC S Manual
Doc 9849_GNS S Manual
9906_v1_Flight Procedure Design Quality Assurance System
Doc 10068 Manual on the Development of a Regulatory Framework for Instrument Flight Procedure Design Service
Doc 9997
Doc8071_v2_Testing of Satellite-based Radio Navigation Systems
Annex10
2
• Collect and validate all data
9881 Electronic Terrain Obstacle Aerodrome Mapping (outdated)
Doc 10066 Aeronautical Information Management
3
• Create conceptual design
Doc9992 PBN Airspace Design
Doc8168
iCard
Doc9643 SOIR Manual
317 Effects of PANS-OPS on Dep Noise and Gas emission
4
• Review by stakeholders
5
• Apply criteria
Doc8168
Doc9905 RNP AR Manual
Doc9931_ CDO Manual
Doc9993 CCO Manual
6
• Document and Store
9906_v5- Validation of Instrument Flight Procedures
7
• Safety activities
Annex 19
Doc 9859 Safety Management Manual
8
• Validation and criteria verification
9906_v5- Validation of Instrument Flight Procedures
9
• Consult with Stakeholders
10
• Approve IFP
Doc9906
Doc 10068 Manual on the Development of a Regulatory Framework for Instrument Flight Procedure Design Service
Doc 9365_Manual All-Weather Operations
11
• Create draft publication
Annex4
Doc8697_Aeronautical Chart Manual.
Doc 10066 Aeronautical Information Management
Cir 353_TRANSITION PLANNING FOR CHANGE TO INSTRUMENT FLIGHT PROCEDURE APPROACH CHART IDENTIFICATION FROM RNAV TO RNP
12
• Verify draft publication
13
• Publish IFP
14
• Obtain feedback from stakeholders
15
• Conduct continuous maintenance
16
• Conduct periodic review

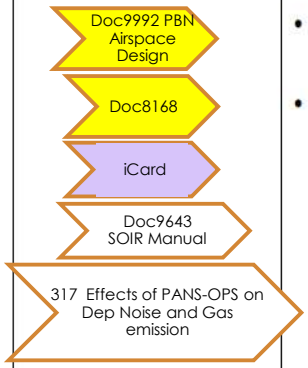
Doc9906 steps in detail - 1

Step	Description	Input	Output	Parties involved	Quality records	References
1	**INITIATION** At the starting point a "pre-design" request is made for a new FPD or a "modification" request to an existing FPD resulting from feedback, continuous maintenance or periodic review (see Steps 11 to 13). Justification for the FPD must be clearly stated and must be in accordance with the airspace concept and the State navigation strategy. It is a managerial responsibility to make a decision at this point to "go" or "no go".	• Request from a stakeholder for a new or a modified procedure. • Review of an existing procedure. • Navigation strategy considerations. • Resource planning. • Feedback on existing procedure.	• Managerial decision to set up the procedure design process or to discontinue the activity.	• Stakeholders	PBN Manual Doc 9613 Annex11 Doc4444 Doc 9869_PBCS Manual Doc 9849_GNSS Manual 9906_v1_Flight Procedure Design Quality Assurance System Doc 10068 Manual on the Development of a Regulatory Framework for Instrument Flight Procedure Design Service Doc 9997 …N Ops approval Manu Doc8071_v2_Testing of Satellite-based Radio Navigation Systems Annex10	• ISO 9001:2000: section 7.2.1 "Determination of requirements related to the product"; section 7.2.2 "Review of requirements related to the product"; section 7.3.1 "Design and development planning"; and section 7.3.2 "Design and development inputs".

2	**COLLECT AND VALIDATE ALL DATA** • Specific ATS stakeholders' requirements: local traffic patterns (altitude, direction, airspeed), feeder/transitions, arrival/departures, preferred routes, ATS routes, communication facilities, time, restrictions and any ATS needs, restrictions or problems. • The designer is to collect from recognized sources, validate for resolution, integrity, reference geodetic datum and effective dates, and incorporate the following data into a design file: – Terrain data: electronic raster and/or vector data or paper cartographic maps. – Obstacle data: man-made and natural (tower/tree/vegetation height). – Aerodrome/heliport data: ARP/HRP, runway, lighting, magnetic variation and rate of change, weather statistics, altimetry source.	• All stakeholder requirements. • Previous designs. • Data from State-recognized sources. • All other data.	• Preliminary work file containing summary of stakeholder requirements, summary of all data.	• Designer • ATM, AIS • Stakeholders • Data sources (e.g. surveyors, charting agencies, MET offices, etc.)	9881 Electronic Terrain Obstacle Aerodrome Mapping (outdated) Doc 10066 Aeronautical Information Management	• *Safety Management Manual (SMM)* (Doc 9859). • *Quality Assurance Manual for Flight Procedure Design* (Doc 9906). • ISO 9001:2000. • Annexes 11, 14, 15. • *World Geodetic System-1984 (WGS-84) Manual* (Doc 9674). • ED 76/RTCA DO 200. • ED 77/RTCA DO 201. • ED 98/RTCA DO 276. • Eurocontrol Doc P357/DO 002-2. • ISO 9001:2000. • *Guidelines for electronic terrain, obstacle and aerodrome mapping information* (Doc 9881).
	– Aeronautical data: airspace structure, classifications (controlled, uncontrolled, Class A, B, C, D, E, F, G, name of controlling agency), airways/air routes, altimeter transition altitudes/flight levels, other instrument procedure assessed airspace, area of magnetic unreliability. – Navaid data: coordinates, elevation, service volume, frequency, identifier, magnetic variation. • Existent waypoints significant to the planned navigation.					

Doc9906 steps in detail - 2

Doc9906 steps in detail - 3

3	**CREATE CONCEPTUAL DESIGN** A conceptual design is drafted with the key elements considering the overall strategy.	• Preliminary work file.	• Conceptual design.	• Designer.		• Doc 8168 (or applicable criteria). • *Required Navigation Performance Authorization Required (RNP AR) Procedure Design Manual* (Doc 9905) (or applicable criteria). • ISO 9001:2000: section 7.3.1 "Design and development planning".

Doc9906 steps in detail - 4

4	**REVIEW BY STAKEHOLDERS** Formal agreement and approval of the conceptual design is sought at this stage. If agreement and approval are not possible then either the designer must redesign the conceptual design or the stakeholders must reconsider their requirements.	• Work programme to serve as basis for decision, including the scope of the activity to be performed. • Conceptual design.	• Formally approved conceptual design or formal decision to discontinue, updated with any consequential changes, if applicable. • Planned implementation AIRAC date, based on available resources and any other technical/ operational/ training constraints.	• All concerned stakeholders. • Designer and management.	• Formally approved conceptual design or formal decision to discontinue, updated with any consequential changes, if applicable.	• ISO 9001:2000: section 7.3.1 "Design and development planning"; and section 7.3.4 "Design and development review".

Doc9906 steps in detail - 5

Step	*Description*	*Input*	*Output*	*Parties involved*	*Quality records*	*References*
5	**APPLY CRITERIA** Using the stakeholder-approved conceptual design, apply criteria.	• Preliminary work file. • Formally approved conceptual design. • Planned implementation AIRAC date. • Resource allocation for the design and planning for publication.	• FPD. • Draft procedure layout. • Report. • Calculation outputs • Coordinates. • Textual description of the procedure.	• Designer.	Doc8168 Doc9905 RNP AR Manual Doc9931_ CDO Manual Doc9993 CCO Manual	• Doc 8168 (or applicable criteria). • Doc 9905 (or applicable criteria). • ISO 9001:2000: section 7.3 “Design and development”.

Doc9906 steps in detail - 6

6	**DOCUMENT AND STORE** • For traceability, complete necessary submission / calculation forms in paper and / or electronic formats. • Create a draft instrument procedure graphical depiction. • Provide a summary of the logic and decisions used in the step-by-step design of the procedure. • Gather all information used and created in the design of the procedure and assemble into a submission package. • Obtain traceability of consensus from stakeholders via signatures. • Store submission package in a secure format and area, easily accessible for future considerations.	• FPD. • Draft procedure layout. • Report. • Calculation outputs. • Coordinates. • Textual description of the procedure.	• Data store FPD containing: all calculations; all forms and reports, including consensus from stakeholders; all charts/maps AIRAC textual description; path terminators (if applicable); and procedure plate (draft graphical depiction).	• Designer.	9906_v5- Validation of Instrument Flight Procedures	• Doc 8168 (or applicable criteria). • Doc 9905 (or applicable criteria). • Annexes 4 and 15. • Doc 9906. • State depiction standards. • State forms.

Doc9906 steps in detail - 7

7	**CONDUCT SAFETY ACTIVITIES** **Determine Level Of Safety Impact** Perform an assessment of the magnitude of change to determine the amplitude needed for the safety case. **Develop Safety Documentation** Safety documentation to be provided for the implementation of a new procedure should be agreed at this stage. Normally the Safety Management System to be used is defined for the ANSP affected by the change or by the regulator responsible for the area where the procedure will be implemented.	• FPD containing draft procedure layout, report, calculation outputs, coordinates, textual description of the procedure.	• Formal statement on the significance of change, allowing to determine the amplitude of the safety case that needs to be performed.	• Quality and safety officer, affected stakeholders, supported by designers.	Annex 19 Doc 9859 Safety Management Manual	• EUROCONTROL Safety Regulatory Requirement (ESARR 4, Section 5). • Doc 9859. • ISO 9001:2000. • European Air Traffic Control Harmonisation and Integration Programme (EATCHIP) Safety Assessment Method. • State Safety Management System documentation (e.g. UK CAA Doc 675).

Doc9906 steps in detail – 8-10

Step	*Description*	*Input*	*Output*	*Parties involved*	*Quality records*	*References*
8	**CONDUCT VALIDATION AND CRITERIA VERIFICATION** See Doc 9906, Volume 5, "Validation of Instrument Flight Procedures" for detailed guidance.	• FPD package. • Safety case.	• Validation report.	• Validation personnel as per Doc 8168 (PANS-OPS), Volume 2, Part 1, Section 2, Chapter 4, 4.6.	• Results of validation. 9906_v5- Validation of Instrument Flight Procedures Doc 10068 Manual on the Development of a Regulatory Framework for Instrument Flight Procedure Design Service Doc 9365_Manual All-Weather Operations	• Doc 8168 (or applicable criteria). • Doc 9905 (or applicable criteria). • Annexes 4 and 15. • Doc 9905, Volume 5. • Doc 9613.
9	**CONSULT WITH STAKEHOLDERS** • Submit all pertinent information to all relevant stakeholders for consultation.	• Validated IFP.	• Stakeholder endorsement.	• Designer. • Relevant stakeholders.	• Stakeholder endorsement.	• National regulations as appropriate.
10	**APPROVE IFP** • Provide IFP documentation to the designated authority for approval.	• Validated IFP. • Stakeholder endorsement.	• Approved IFP.	• Designer. • Designated authority.	• Formal approval of the FPD for new procedures (or for relevant changes on existing procedures).	• National regulations as appropriate.

Doc9906 steps in detail – 11-13

Annex4

Doc8697_Aeronautical Chart Manual.

Doc 10066 Aeronautical Information Management

Cir 353_TRANSITION PLANNING FOR CHANGE TO INSTRUMENT FLIGHT PROCEDURE APPROACH CHART IDENTIFICATION FROM RNAV TO RNP

11	**CREATE DRAFT PUBLICATION** • Provide FPD package, including a graphical depiction, to the AIS to create a draft publication.	• Approved IFP.	• Draft publication.	• Designer. • AIS.		• Annexes 4 and 15. ISO 9001:2000 section 4.2 "Documentation requirements" section 7.3.5 "Design and development verification".
12	**VERIFY DRAFT PUBLICATION** • Verify the draft publication for completeness and consistency.	• Draft publication. • Validated FPD.	• Cross-checked draft publication. • Decision for publication release.	• Designer. • AIS / aviation authority.		• Regional/national regulation. • Doc 8168, Volumes I and II (or applicable criteria) • All applicable Annexes and Documents. • ISO 9001:2000 section 7.3.5 "Design and development verification"; and section 7.3.6 "Design and development validation".
13	**PUBLISH IFP** • AIS initiates the AIRAC process.	• Cross-checked draft publication. • Decision for publication release.	• AIP chart, documentation.	• AIS.		• Annexes 4 and 15.

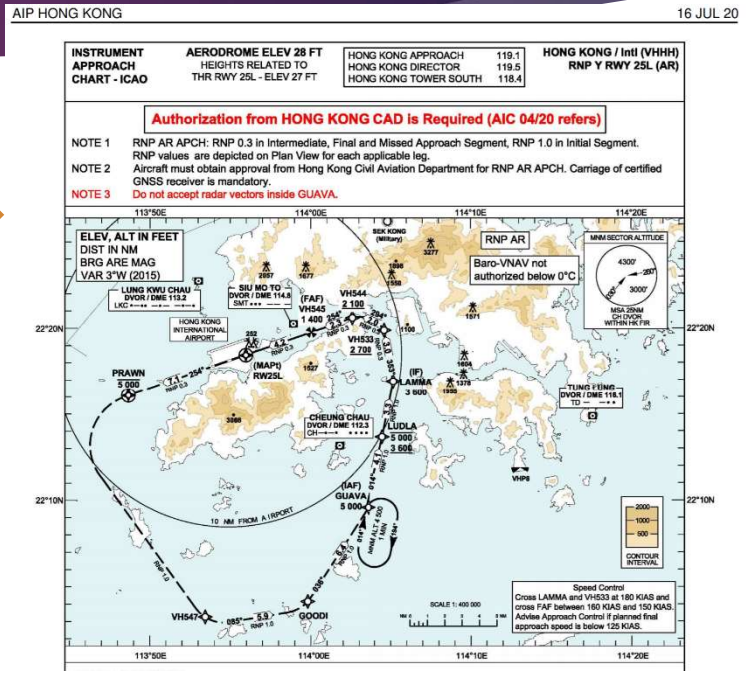
Doc9906 steps in detail –14

14	**OBTAIN FEEDBACK FROM STAKEHOLDERS** • Request and analyse feedback from stakeholders on the accept-ability of the work performed. • Cross-check the AIP chart, documentation.	• AIP chart, documentation. • Reports from stakeholders.	• Decision for ongoing activities.	• Manager of the design office. • Stakeholders.		• Standards for processing aeronautical data (EUROCAE ED-76 / RTCA DO-200).

Doc9906 steps in detail – 15-16

15	**CONDUCT CONTINUOUS MAINTENANCE** • On a continuous basis ensure that: – significant changes to obstacles, aerodrome, aeronautical and navaid data are assessed. – significant changes to criteria and design specification that affect procedure design are assessed to determine if action is required prior to the periodic review. • If action is required, return to Step 1 to reinitiate process.	• Significant changes in the FPD environment or design criteria changes that are safety related.	• Revision as required.	• Designer. • Regulator. • Procedure owner. • Pilots (when applicable and possible).	• If modifications or amendments, the reason(s) for the change(s).	• Doc 8168 (or applicable criteria). • Doc 9905 (or applicable criteria). • Annexes 4 and 15. • Doc 9859. • Doc 9906.
16	**CONDUCT PERIODIC REVIEW** • On a periodic basis (periodicity determined by State, but no greater than five years) ensure: – that all changes to obstacles, aerodrome, aeronautical and navaid data are assessed; and – that all changes to criteria, user requirements and depiction standards are assessed. • If action is required, return to Step 1 to reinitiate process.	• All changes in the FPD environment, design criteria or depiction standards.	• Revisions as required.	• Designer. • AIS/Aviation Authority.	• Results of the periodic review. • If modifications or amendments, the reason(s) for the change(s).	• Doc 8168 (or applicable criteria). • Doc 9905 (or applicable criteria). • Annexes 4 and 15. • Doc 9859. • Doc 9906.

1. **Initiation** — PBN Manual Doc 9613; Annex11; Doc4444; Doc 9869_PBCS Manual; Doc 9849_GNSS Manual; 9906_v1_Flight Procedure Design Quality Assurance System; Doc 10068 Manual on the Development of a Regulatory Framework for Instrument Flight Procedure Design Service; Doc 9997 PBN Ops approval Manu; Doc8071_v2_Testing of Satellite-based Radio Navigation Systems; Annex10
2. **Collect and validate all data** — 9881 Electronic Terrain Obstacle Aerodrome Mapping (outdated); Doc 10066 Aeronautical Information Management
3. **Create conceptual design** — Doc9992 PBN Airspace Design; Doc8168; iCard; Doc9643 SOIR Manual; 317 Effects of PANS-OPS on Dep Noise and Gas emission
4. **Review by stakeholders**
5. **Apply criteria** — Doc8168; Doc9905 RNP AR Manual; Doc9931_CDO Manual; Doc9993 CCO Manual
6. **Document and Store** — 9906_v5- Validation of Instrument Flight Procedures
7. **Safety activities** — Annex 19; Doc 9859 Safety Management Manual
8. **Validation and criteria verification** — 9906_v5- Validation of Instrument Flight Procedures
9. **Consult with Stakeholders**
10. **Approve IFP** — Doc9906; Doc 10068 Manual on the Development of a Regulatory Framework for Instrument Flight Procedure Design Service; Doc 9365_Manual All-Weather Operations
11. **Create draft publication** — Annex4; Doc8697_Aeronautical Chart Manual.
12. **Verify draft publication** — Doc 10066 Aeronautical Information Management
13. **Publish IFP** — Cir 353_TRANSITION PLANNING FOR CHANGE TO INSTRUMENT FLIGHT PROCEDURE APPROACH CHART IDENTIFICATION FROM RNAV TO RNP
14. **Obtain feedback from stakeholders**
15. **Conduct continuous maintenance**
16. **Conduct periodic review**




Any
Questions

Doc9906 template samples

C.1 Preflight validation checklist — fixed wing

PREFLIGHT VALIDATION CHECKLIST — FIXED WING			
REPORT HEADER			
Date:	Validation type (new/amended procedure):		
Organization:			
Procedure title:			
Location:			
Airport:	Runway:		
Evaluator's name/telephone no.:			
PBN navigation specification:			
PREFLIGHT VALIDATION			
		SATISFACTORY	
		YES	**NO**
IFP package forms, charts and maps			
Data verification (e.g. aerodrome/heliport, aeronautical, obstacle, ARINC coding)			
Location of the controlling obstacles			
Correctness and complexity of the graphical depiction (chart)			
Intended use and special requirements			
Overall design (i.e. practical, complete, clear and safe)			
Impact on the procedure of waivers to standard design criteria			
Segment lengths and descent gradients allow for deceleration/configuration			
Comparison of FMS navigation database with the IFP design, coding and relevant charting information			
Charting of notification of cold/warm temperature limits			
Flight inspection reports available			
REMARKS			
Simulator evaluation needed		**YES**	**NO**
Flight evaluation needed		**YES**	**NO**
PROCEDURE	**PASS**	**FAIL**	
EVALUATOR'S SIGNATURE:			
Date:			

C.2 Simulator evaluation checklist — fixed wing

SIMULATOR EVALUATION CHECKLIST — FIXED WING			
REPORT HEADER			
Date:	Validation type (new/amended procedure):		
Organization:			
Procedure title:			
Location:			
Airport:	Runway:		
Evaluator's name/telephone no.:			
PBN navigation specification:			
		SATISFACTORY	
		YES	**NO**
Comparison of FMS navigation database and source documents, including proper ARINC 424 coding			
Provide simulator documentation, including FMS software			
Assessed faster and/or slower than charted			
Assessed at allowed temperature limits			
Assessed with adverse wind components			
Flight track matches procedure design			
Flyability			
Human Factors assessment			
ADDITIONAL REQUIREMENTS FOR SIMULATOR ACTIVITIES			
		COMPLETED	
Document the following information as satisfactory or not for each procedure segment as appropriate: heading/track, distance, TAWS alerts, flight path angle (for final segment only) and note the wind component and temperature conditions			
Note the maximum bank angle achieved during any RF segments			
Record simulation data (if applicable)			
REMARKS			
PROCEDURE	**PASS**	**FAIL**	
EVALUATOR'S SIGNATURE:			
Date:			

C.3 Flight evaluation checklist — fixed wing

FLIGHT EVALUATION CHECKLIST — FIXED WING			
REPORT HEADER			
Date:	Validation type (new/amended procedure):		
Organization:			
Procedure title:			
Location:			
Airport:	Runway:		
Evaluator's name/telephone no.:			
PBN navigation specification:			
PLANNING			
		COMPLETED	
Check that all the necessary items from the IFP package are available, including: graphics, text, maps, submission form			
Check that the necessary flight validation forms are available			
Check that the aircraft and avionics are appropriate for the IFP being evaluated			
Does the procedure require use of autopilot or flight director?			
PREFLIGHT			
		COMPLETED	
Review preflight validation assessment			
Review simulator evaluation assessment (if applicable)			
Obstacle assessment planning: areas of concern; ability to identify and fly lateral limits of obstacle assessment area (if required)			
Verify source of IFP data for aircraft FMS (electronic or manual creation)			
Evaluate navigation system status at time of flight (NOTAM, RAIM, outages)			
Weather requirements			
Night evaluation requirement (if applicable)			
Required navigation (NAVAID) support (if applicable)			
Combination of multiple IFP evaluations			
Estimated flight time			
Coordination (as required) with ATS, procedure designer, airport authority			
Necessary equipment and media for electronic record of validation flight			
GENERAL			
		SATISFACTORY	
		YES	**NO**
IFP graphic (chart) is complete and correct			
Check for interference: document all details related to detected RFI			
Satisfactory radio communication			
Required radar coverage is satisfactory			
Verify proper runway markings, lighting and VASIS			
Altimeter sources			
Extra consideration given to non-surveyed areas			
For approach procedures with circling minima, verify controlling obstacle for each circling category			

FLYABILITY		
	SATISFACTORY	
	YES	**NO**
Comparison of FMS navigation database and source documents, including proper ARINC 424 coding. *Note.— If manual entry is used, this field is marked "N/A", and a note must be inserted in the remarks section to alert the approving authority of the procedure that a table top review of the coded procedure, or an operational assessment by a company pilot, should be completed prior to operational approval being granted.*		
Human Factors and general workload are satisfactory		
Was there any loss of RAIM?		
Was there any loss of required RNP (where applicable)?		
Missed approach procedure		
Descent/climb gradients		
Procedure flown auto-coupled		
Segment length, turns and bank angles, speed restrictions and deceleration allowance		
TAWS		
INSTRUMENT APPROACH PROCEDURE		
	SATISFACTORY	
	YES	**NO**
Segment lengths, headings/tracks and waypoint locations match procedure design		
Final segment vertical glide path angle (if applicable)		
Threshold crossing height (LTP or FTP), if applicable.		
Course alignment		
Along-track alignment		
FAS data block		
REMARKS		
PROCEDURE	**PASS**	**FAIL**
EVALUATOR'S SIGNATURE:		
Date:		