Workshop on quality assurance for the implementation of an instrument flight procedure

29 March -2 April 2021

Flight Procedure Design Regulatory Approval
(Doc. 9906, vol. 1)

African Flight Procedure Programme (AFPP)

1. Regulatory framework

2. State responsibilities

3. Flight procedure implementation diagram

4. Flight procedure regulatory approval (requirements & approval)
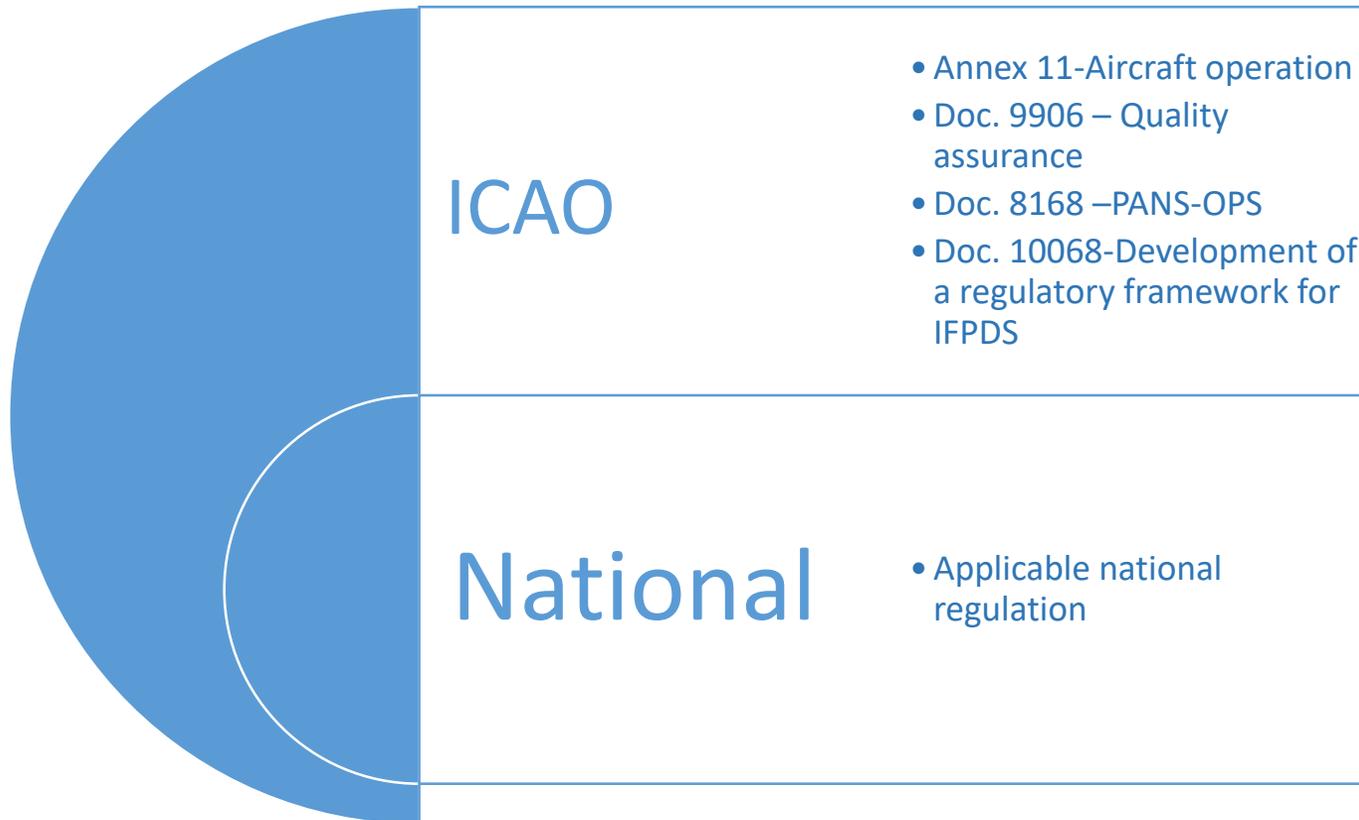
5. Best practices

- There is no dedicated ICAO Document on IFP regulatory approval
- Provisions provided in various documents

ICAO

- Annex 11-Aircraft operation
- Doc. 9906 – Quality assurance
- Doc. 8168 –PANS-OPS
- Doc. 10068-Development of a regulatory framework for IFPDS

National

- Applicable national regulation

African Flight Procedure Programme (AFPP)

❑ The implementation of flight procedures is the responsibility of States!!!

☞ Establish operating rules for IFPD;

☞ Carry out FPD process or delegation to third parties.

❑ Establish a quality system for the entire IFP process:

☞ Ensure their quality and safety through:

▪ Review, verification, coordination, validation of certain points, etc.

❑ Approve the instrument flight procedures prior to validation.

State responsibilities

Initiation step (1)	• Each State should describe the initiation and submission process valid within their State; • Establish interval for periodic review (5 years maximum).
Apply criteria (5)	• Establish applicable design criteria
Document and store (6)	• Define minimum period of time during which the withdrawn IFP documentation should be kept.
Validation	• Establish measures for the validation of IFPs
Approve the IFP (10)	• Approve IFP prior to publication.
Publication	• Publication of the IFP • Delegation possible
Periodic review (16)	• Establish interval for periodic review (5 years maximum).

State responsibilities

IFP designers

- Each State should standards for the required competency level for the IFP designers;
- Ensure that designers have acquired and maintain this competency.

Training

- Approve training courses/programme conducted by Procedure Design Service Providers (PDSP);
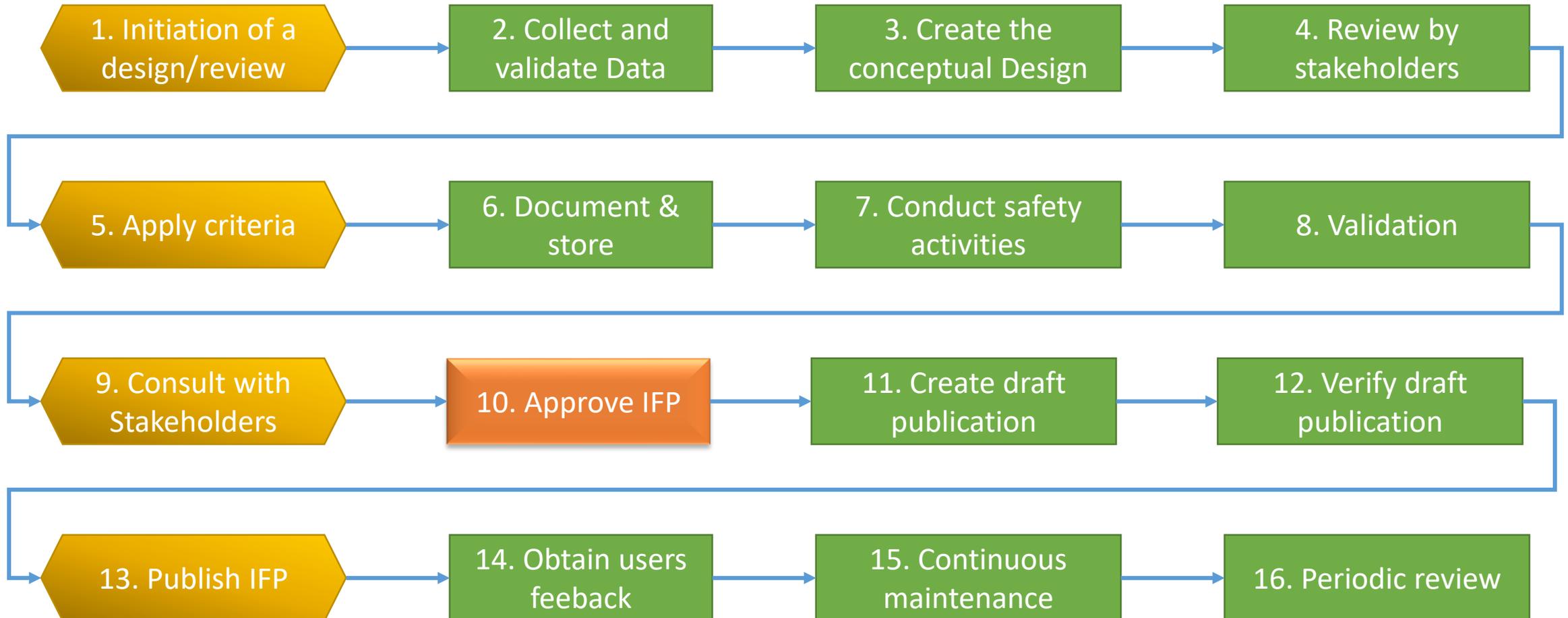- Establish minimum qualifications and training for Flight Validation Pilots

Flight Validation Pilots

- Each State should standards for the required competency level for the FVPs;
- Ensure that FVPs have acquired and maintain this competency.

Flight procedure implementation diagram

1. Initiation of a design/review	2. Collect and validate Data	3. Create the conceptual Design	4. Review by stakeholders

5. Apply criteria	6. Document & store	7. Conduct safety activities	8. Validation

9. Consult with Stakeholders	10. Approve IFP	11. Create draft publication	12. Verify draft publication

13. Publish IFP	14. Obtain users feeback	15. Continuous maintenance	16. Periodic review

Flight procedure regulatory approval

❑ There is no specific guidance for the IFP regulatory approval:
  ☞ Each State to develop its own.

❑ However, approval process may consider many aspects:
  ☞ The actors qualifications;

  ☞ The software tools used;

  ☞ The completeness of the flight procedure approval request bundle;

  ☞ The compliance with the respective quality assurance steps;

  ☞ The compliance with the data requirements, the design criteria and the annex 4 charting criteria.

APPROVAL

The actors qualifications: the Designers

❑ Many questions:

☞ Is there any required license for the designers?

☞ Is the designer adequately trained and is he maintaining his competency?

☞ What is his experience vs the complexity of the IFPs to be designed?

Flight Procedure **DESIGNERS** were created because *Flight Validation* **PILOTS** need heroes too

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The actors qualifications: the FVPs

❑Ensure:

☞The license of the FVP;

☞His level of qualification and experience.

The software used

☐Ensure:

☞That the software tools used are validated:

- Flight Procedure Design tools
- Charting tools;
- Ground validation tool;
- Simulator evaluation and/or flight evaluation tools;
- Etc.

Completeness of the approval request package

❑ The approval request package: blend of two types of documents:

☞ The quality record documents:
- Approved conceptual design (step 4);
- Results of the validation (step 8);
- Stakeholders endorsement (step 9).

☞ Some of the most important outputs (from the steps).

Flight procedure regulatory approval

Example of regulatory approval package

#	Document	Provenance	Step
1	Managerial decision to set up the design	Output	Step 1
2	Data collection report. Content: • Stakeholders requirements • Summary of data collected		Step 2
3	Stakeholders review report: • Formally approved Conceptual Design (CD) or • Decision to discontinue; • Planned AIRAC implementation date (resources, training constraints, etc.)	Quality record	Step 4

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Example of regulatory approval package

#	Document	Provenance	Step
4	Technical report containing: • All strategies, calculations, forms, etc.; • Draft charts and draft coding tables (if applicable) • List of waypoints • Etc.	Output	Step 6
5	Safety assessment report. Content: • Amplitude of the study case; • Identified dangers; • Mitigation measures, etc.	Output	Step 7

Flight procedure regulatory approval

Example of regulatory approval package

#	Document	Requirement	Step
6	Validation report: • Ground validation report; • Simulator evaluation report (if applicable) • Flight evaluation report (if applicable)	Output Quality record	Step 8
7	Stakeholder consultation report. Content: • Stakeholders endorsement.	Output Quality record	Step 9

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❑ Best practices can consist on (example):

☞Establishing clear PANS-OPS regulation:

▪ Data requirements, Design criteria, QMS, Charting, Validation, etc.

☞ Establishing a PANS-OPS implementation team on the CAA side for each design project:

▪ The PANS-OPS team follow the project from initiation;

▪ The team :

• Checks the actors qualifications and competencies (Designers, FVPs);

• Ensure the validity of the software used (Design, charting, etc.);

• Reviews the approval request bundle to ensure:

✓ Completeness of the request bundles;

✓ Adherence to the quality assurance process;

✓ Compliance with the applicable regulation.

Best practices can consist on (example):

❑The inspectors may:
☞Develop approval procedures and processes;
☞Job aids.

❑Example of job aid.

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Central American
and Caribbean
(NACC) Office
MexicoCity

South American
(SAM) Office
Lima

ICAO
Headquarters
Montreal

Western and
Central African
(WACAF) Office
Dakar

European and
North Atlantic
(EUR/NAT) Office
Paris

Middle East
(MID) Office
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(ESAF) Office
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