

# ICAO Workshop on Oversight of Instrument Flight Procedures(IFPs)

25-26 March 2024

IFP Approval Process

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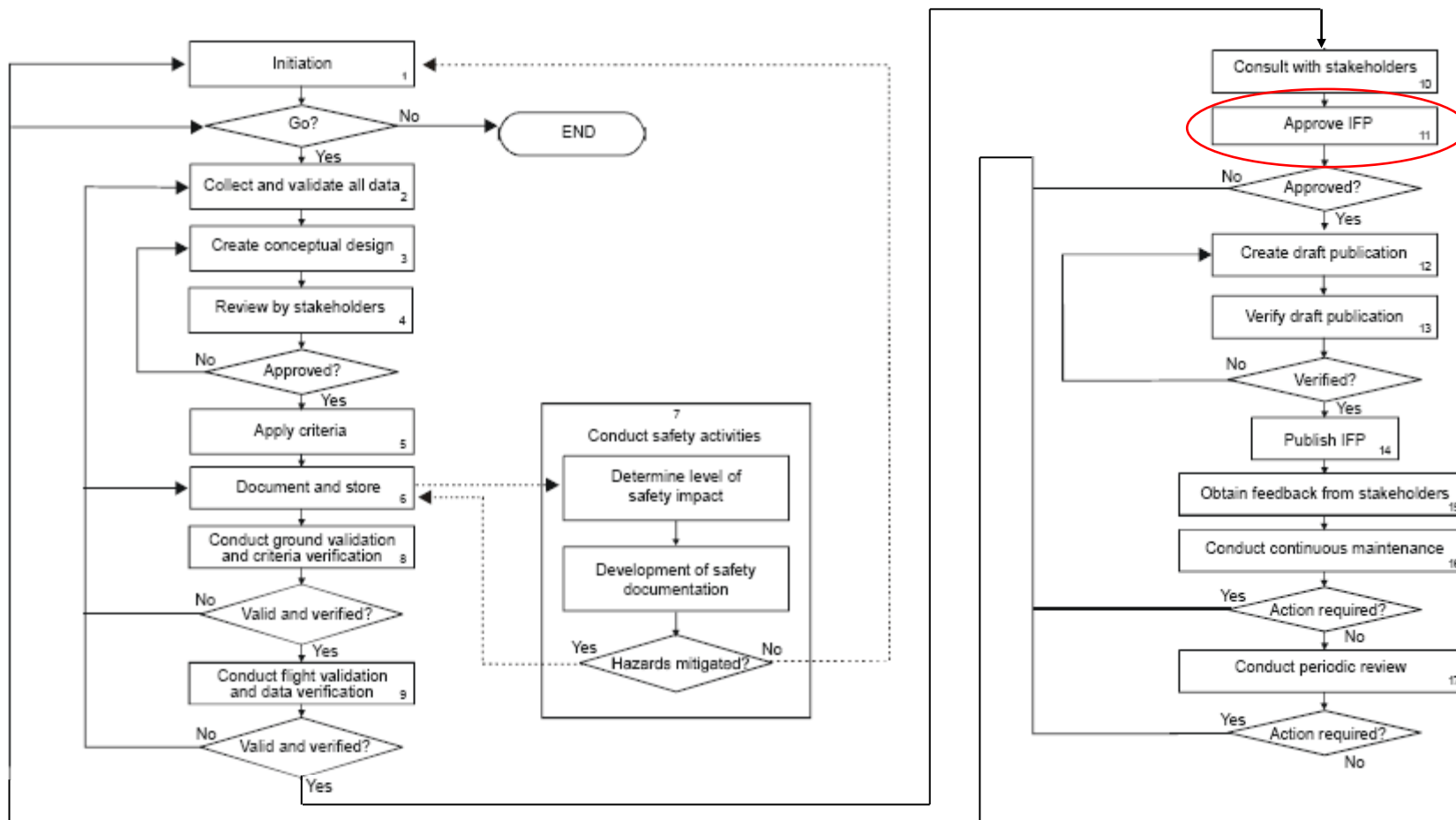
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# Where are we?

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## ❖ IFP Process Flow Diagram



# Reference Documents

## ❖ Annex 6. Aircraft Operations, Part 1

### 4.4.8 Instrument Flight Procedures

4.4.8.1 One or more instrument approach procedures designed to support instrument approach operations **shall be approved and promulgated by the State** in which the aerodrome is located to serve each instrument runway or aerodrome utilized for instrument flight operations.

4.4.8.2 All aeroplanes operated in accordance with instrument flight rules **shall comply with the instrument flight procedures approved by the State** in which the aerodrome is located.

# Reference Documents

## ❖ Annex 11. Air Traffic Services

*Instrument flight procedure design service.* A service established for the design, documentation, validation, maintenance and periodic review of instrument flight procedures necessary for the safety, regularity and efficiency of air navigation.

### 2.33 Instrument flight procedure design service

States shall ensure that *an instrument flight procedure design service is in place* in accordance with Appendix 8.

#### ➤ Appendix 8. State Responsibilities concerning an IFP Design Service

##### 1. A State shall:

- a) provide an instrument flight procedure design service; and/or
- b) agree with one or more Contracting State(s) to provide a joint service; and/or
- c) delegate the provision of the service to external agency(ies).

# Reference Documents

- Appendix 8. State Responsibilities concerning an IFP Design Service
  - 2. In all cases in paragraph 1 above, the State concerned shall approve and remain responsible for all instrument flight procedures for aerodromes and airspace under the authority of the State.
  - 3. Instrument flight procedures shall be designed in accordance with State-approved design criteria.
  - 4. Each State shall ensure that an instrument flight procedure design service provider intending to design an instrument flight procedure for aerodromes or airspace under the authority of that State meets the requirements established by that State's regulatory framework.

*Note.*— Guidance material for regulatory framework for the oversight of instrument flight procedure design service is contained in the Manual on the Development of a Regulatory Framework for Instrument Flight Procedure Design Service (Doc 10068).

# Reference Documents

## ➤ Appendix 8. State Responsibilities concerning an IFP Design Service

5. A State shall ensure that an instrument flight procedure design service provider **utilizes a quality management system** at each stage of the instrument flight procedure design process.

*Note.— This requirement can be met by means of a quality assurance methodology, such as that described in PANS-OPS (Doc 8168), Volume II. Guidance for implementing such a methodology is contained in the Quality Assurance Manual for Flight Procedure Design (Doc 9906).*

6. A State shall ensure that **maintenance and periodic review of instrument flight procedures** for aerodromes and airspace under the authority of the State **are conducted**. Each State shall establish an interval for periodic review of instrument flight procedures **not exceeding five years**.

*Note.— Guidance on maintenance and periodic review is contained in the Quality Assurance Manual for Flight Procedure Design (Doc 9906).*

# Reference Documents

## ❖ Doc 9906 QA Manual for Flight Procedure Design, Vol. 1

### 6.2 Output of the quality process

- **conceptual design**, including planned implementation dates, and resources needed to achieve the task;
- **the FPD**, including the procedure layout, the relevant calculation outputs, coordinates and a textual description of the intended procedure;
- **validation and verification reports for the IFP**;
- **approval of the procedure by the regulatory authority**;
- **documentation throughout the various stages** from the input through the publication process; and
- **the released AIP publication** (charts, texts, coordinates, path terminators and any other pertinent information relevant to the procedure).

*At the end of the life cycle, **a decision to withdraw the procedure will be issued (and documented)**. All changes permitting the withdrawal will be included in the quality documentation but will also be part of the replacement procedures' (if any) documentation.*

# Reference Documents

## ❖ Doc 9906 QA Manual for Flight Procedure Design, Vol. 1

### 7.11 Approve IFP (Step 11)

The IFP must be approved by the State or by an authority designated by the State, prior to publication. This approval process must ensure that all the appropriate steps within the IFP process have been completed, documented and signed off by the competent authority.

Step	Description	Input	Output	Parties involved	Quality records	References
10	<b>CONSULT WITH STAKEHOLDERS</b> <ul style="list-style-type: none"> <li>Submit all pertinent information to all relevant stakeholders for consultation.</li> </ul>	<ul style="list-style-type: none"> <li>Validated IFP.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder endorsement.</li> </ul>	<ul style="list-style-type: none"> <li>Designer.</li> <li>Relevant stakeholders.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder endorsement.</li> </ul>	<ul style="list-style-type: none"> <li>National regulations as appropriate.</li> </ul>
11	<b>APPROVE IFP</b> <ul style="list-style-type: none"> <li>Provide IFP documentation to the designated authority for approval.</li> </ul>	<ul style="list-style-type: none"> <li>Validated IFP.</li> <li>Stakeholder endorsement.</li> </ul>	<ul style="list-style-type: none"> <li>Approved IFP.</li> </ul>	<ul style="list-style-type: none"> <li>Designer.</li> <li>Designated authority.</li> </ul>	<ul style="list-style-type: none"> <li>Formal approval of the FPD for new procedures (or for relevant changes on existing procedures).</li> </ul>	<ul style="list-style-type: none"> <li>National regulations as appropriate.</li> </ul>



# Who will approve IFPs?

- ❖ Instrument Flight Procedure Design Service (IFPDS) Provider
  - State where IFPs exist
  - One or more other Contracting State(s) with agreement with the State where IFPs exist on a joint service provision
  - Non-governmental agency(s) delegated the provision of the service or a part of the service by the State where IFPs exist
  - In case IFPDS is provided by other than State itself, this should be considered the delegation of function, not the delegation of responsibility

# Who will approve IFPs?

## ❖ IFP Approval

- **State** responsible for all IFPs for aerodromes and airspace under the authority of the State
- **Authority** designated by the State above. The State just delegates function, not responsibility.
- Approval process must ensure that **all the appropriate steps** within the IFP process **have been completed, documented and signed off** by the competent authority
- Approval process of a State **will be documented in that State's regulatory framework**
- Even though IFPs are only available to operators with special authorization for use, **the State concerned remains responsible for such IFPs**

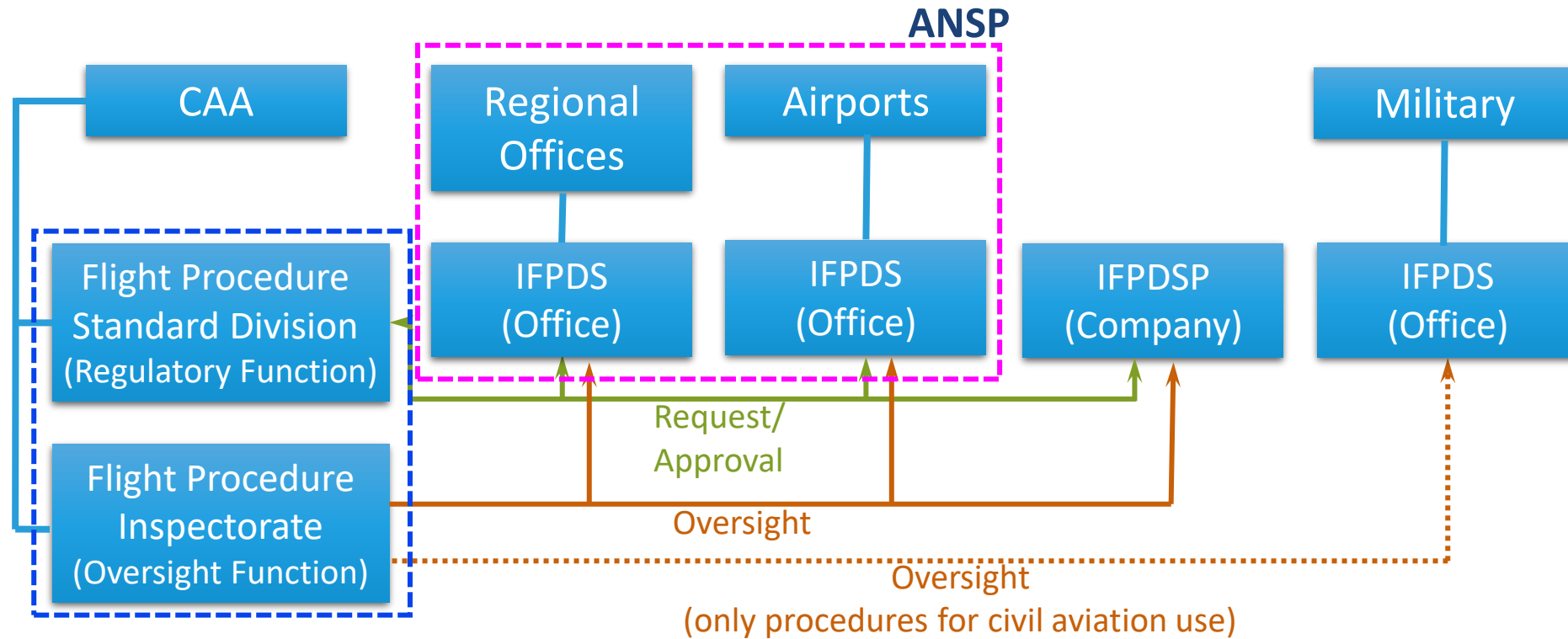
# Who will approve IFPs?

## ❖ Functional Separation of IFP approval (Doc 10068)

- IFPs shall be **approved by the regulatory authority** of a State
- Where a State conducts IFPDS itself, **a separate regulatory/safety oversight function should be established** to oversee State's service provision function
- A State should establish the requirements of IFP approval in the State's regulatory framework
- Regulator/Safety inspector should look into that all IFP processes have been completed, documented and signed off by the competent authority
- The reason for separation is **to ensure safety and integrity** of the developed flight procedures.

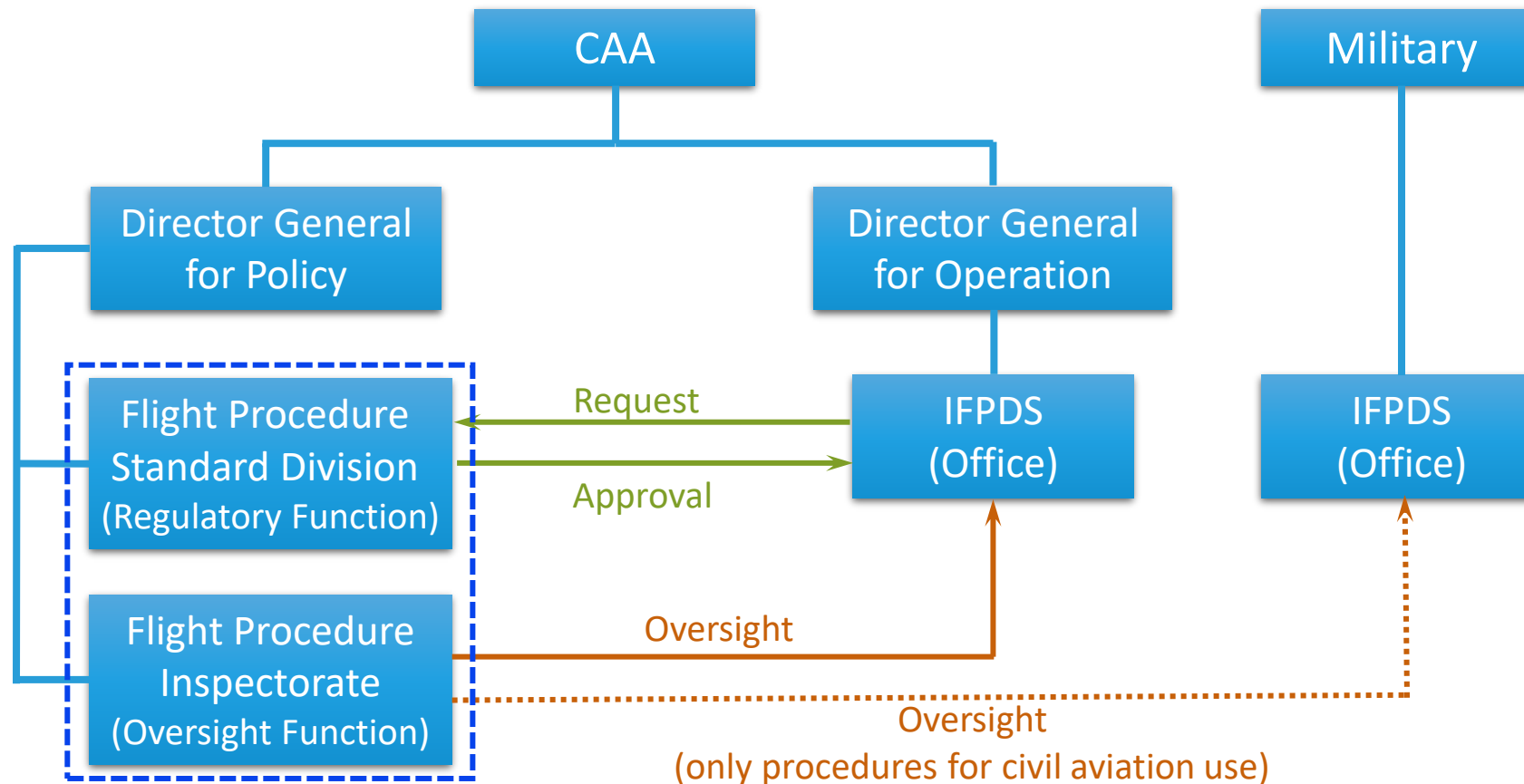
# Who will approve IFPs?

## ❖ Functional Separation of IFP approval - Separation Example



# Who will approve IFPs?

## ❖ Functional Separation of IFP approval – Separation Example



# Documents Required

- ❖ **Regulator should consider all documents** related to IFP development process (refer Doc 8168 Vol.2 Part.1, Sec. 2, Ch. 4 QA)
  - **Procedure design data**
    - Require proper surveys
    - Conform to ICAO Annex 11, 14 and 15
    - Coordinates for ARP, Nav-aids & terrain, elevation data, etc.
  - **Procedure design document**
    - Controlling obstacle for each segment
    - Effect of environmental considerations
    - Infrastructure assessment, i.e. runway classification, lighting, communications, runway markings, availability of local altimeter setting, etc.
    - Airspace constraints
    - Results of the periodic review

# Documents Required

- ❖ **Regulator should consider all documents related to IFP development process**  
(refer Doc 8168 Vol.2 Part.1, Sec. 2, Ch. 4 QA)
  - **Procedure design document (Cont')**
    - For modifications and amendment to existing procedures, the reason for any changes
    - Any deviation from existing standards, the reasons for such a deviation, and details of the mitigation applied to
    - Results of the final verification for accuracy and completeness (quality validation checks)
    - Results of safety assessment and details of the mitigation applied to
  - **Results of ground validation and flight validation** or flight inspection
  - **Qualification/competency of procedure designers**
  - **Other documents related to IFP design, i.e. aeronautical study results, procedure design calculation sheets, Flight Inspection report of Nav-aid, etc.**



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Thank You!