



INTERNATIONAL CIVIL AVIATION ORGANIZATION

Twenty Fifth Meeting of the Africa-Indian Ocean Planning and Implementation Regional Group (APIRG/25)

7-11 November 2022

Agenda Item 3: Implementation of air navigation goals, targets and indicators, including the priorities set in the regional air navigation plan

3.6 Other Air Navigation Initiatives

ASECNA expertise on in-flight calibration of procedures (IFP)

(Note presented by ASECNA)

| summary | |
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| <p>This briefing note focuses on ASECNA's efforts and expertise in the context of in-flight validation of flight procedure (IFP).</p> <p>The follow-up to be taken by the meeting is contained in paragraph 4.</p> | |
| REFERENCE(S) | <ul style="list-style-type: none"> ▪ State regulations, ▪ AAMAC Regulations, ▪ Doc 9906 vol 5 (HEAR) |
| <i>Strategic Objectives</i> | <p>A – Safety, B – Air navigation capacity and efficiency, D – Economic development of air transport, and E – Environmental protection.</p> |

1 INTRODUCTION

- 1.1. ASECNA, in its role as a provider of air navigation services, works for the implementation of flight procedures in accordance with the objectives set in the ASBU blocks.
- 1.2. The design process described in Doc. 9906 Vol 1 presents the various steps, including in-flight validation of procedures (step 8).
- 1.3. This note highlights the expertise, the increase in ASECNA's capacity in the fields of flight validation of flight procedures and calibration of navigational aids and the assistance provided to States in recent years.

2. CONTEXT

- 2.1. As part of the continuous improvement process, ASECNA has strengthened its skills and capabilities in the field of flight validation and calibration of navigational aids.
- 2.2. In terms of capacity building, ASECNA has acquired a second CESSNA SOVEREIGN+ laboratory aircraft, equipped with AERODATA's AEROFIS 1013 calibration bench, fully operational since October 2021 and capable of:

- ✓ Validate in flight conventional procedures and PBN procedures of LNAV, Baro VNAV, SBAS and GBAS types,
 - ✓ Perform flight control of air navigation, surveillance and communication aids (ILS, VOR, DME, NDB, RADAR and VHF COM).
- 2.3. In terms of capacity building:
- ✓ The crews and designers benefited from AFPP's assistance, through ICAO training in the field of flight validation;
 - ✓ The crews have undergone all the training and qualifications to conduct these calibration operations with the new aircraft;
 - ✓ The crews benefited from a period of maturation on aircraft and bench as required with the assistance of EASA and ANACIM authorized manufacturers and instructors.
- 2.4. The instructions and working procedures of the PANS-OPS office and the ASECNA Flight Control Service (CEV) have been fully domesticated with reference to ICAO Doc. 9906 vol5 and the national aeronautical regulations of the States.

3 ANALYSIS & REGULATORY REQUIREMENTS

- 3.1 After the strengthening of capacity and competence, in accordance with the quality assurance approach required in the process of designing instrument flight procedures, ASECNA continues the general and periodic review of flight procedures at all aerodromes of its Member States.
- 3.2 Non-member States of ASECNA in view of current regulatory requirements request the services of the AGENCY in the fields of design and flight validation of flight procedures, knowing that flight validations of instrument flight procedures being new concepts of air navigation to which our states are resolutely committed today.
- 3.3 The latest ICAO audits have imposed rigorous action plans on most of our reports with very precise and documented validation frameworks.

The purpose of this working note is to share in REX the experiences and assistance provided by ASECNA in this context in 6 (Six) airports whose states have committed themselves to the realization of flight procedures.

The table below stands out:

1. The problem of in-flight validation of procedures at these airports
2. The needs and overall costs of the campaigns executed,
3. Comments related to the difficulties on WGS84 points

3.4 Table in REX

| AIRPORTS CONCERNED | PROBLEMATIC & FINDINGS NOTIFIED | ACTIONS MENEES ASSISTANCE ASECNA | OBSERVATIONS |
|--------------------|---|--|--|
| LOME | Implementation of flight validation of flight procedures. | Pre-flight study carried out by the DNADP service which delivered the final report after the flight validation of the Flight Procedures carried out by the DGCEV service of ASECNA. | In-flight supply of flight procedures performed |
| COTONOU | Implementation of flight validation of flight procedures. | Pre-flight study carried out by the DNADP service which issued the Final Report after the flight validation of the Flight Procedures carried out by the DGCEV service of ASECNA. | In-flight supply of flight procedures performed |
| GAROUA | Implementation of flight validation of flight procedures. | Pre-flight study carried out by the DNADP service which issued the Final Report after the flight validation of the Flight Procedures carried out by the DGCEV service of ASECNA. | In-flight supply of flight procedures performed |
| NIAMEY | Implementation of flight validation of flight procedures. | Pre-flight study carried out by the DNADP service which issued the Final Report after the flight validation of the Flight Procedures carried out by the DGCEV service of ASECNA. | In-flight supply of flight procedures performed |
| KIGALI | The Director of Rwanda Airport Company (RAC) has seized the Director of Air Navigation of ASECNA to request the assistance of the Agency for the Flight Validation of the new ILS CAT II RWY 28 procedures of Kigali International Airport. | <p>the mission was carried out by three ASECNA entities, namely:</p> <ul style="list-style-type: none"> -The DTI for ground assistance at calibration (including any settings) -The DNADP for the Flight Procedures component with <p>The recovery of the file of the procedure to be validated and its adaptation by providing all the necessary elements for the validation before flight and its Effective participation in the flight validation and finally the Drafting of the final validation report</p> <ul style="list-style-type: none"> -The DGCEV for the flight calibration part of the ILS CAT II RWY 28 and the flight validation of the associated flight procedure. | <ul style="list-style-type: none"> -The suggestion of a vast geodetic survey campaign of the characteristic points (in WGS84 coordinates) of Rwandan airports and airfields likely to calibration and flight validation of flight procedures, (ASECNA having appropriate tools may be requested if necessary for this service). -The upgrade of NAVAIDS technicians in Rwanda would be essential for the coordination of calibration and parameter adjustments if necessary. -The training of Rwanda Air Company personnel to follow flight procedures. |

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| MONROVIA | <p>Following the ICAO Audit in mid-June 2022, two SSCs (Significant Safety Concerns) have been identified at Monrovia's Roberts Airport, which will have to be corrected before mid-September to avoid its closure. From these SSCs the corrective actions focus on:</p> <ul style="list-style-type: none"> -WGS84 points at Monrovia's Roberts Airport -Flight validation of RNAV/GNSS procedures -the calibration of Navaids | <p>ASECNA's DNADA, DNADP and DGCEV services have been requested by LCAA (Liberia Civil Aviation Authority) to assist them in resolving these deficiencies.</p> <ul style="list-style-type: none"> -The DNADA for WGS84 coordinates of Roberts Airport. -The DNADP for the Flight Procedures component where he will take care of the file to be validated before flight and provide the final report of the validation. -The DGCEV for the in-flight calibration of the Navaids and the flight validation of the associated flight procedure. | <ul style="list-style-type: none"> -The suggestion of a vast campaign of geodetic surveys of the characteristic points (in WGS84 coordinates) of Liberian airports and airfields likely to calibration and flight validation of flight procedures, (ASECNA having appropriate tools may be requested if necessary for this service). -The upgrade of Liberia's NAVAIDS technicians would be essential for the coordination of calibration and parameter adjustments if necessary. -Training of LCAA (Liberia Civil Aviation Authority) personnel to follow flight procedures. |
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4 ACTION BY THE MEETING

- 4.1 The meeting is invited to include the information contained and shared in REX in this working note.