



**Extraordinary Meeting of the African Flight Procedure Programme Steering Committee
(14 January 2022)**

AGENDA ITEM 2: Review of the implementation status of the Programme

Working paper 2.1: PBN implementation status

(Presented by the Secretariat)

SUMMARY
This paper provides the implementation status of the Programme with regards to the membership, the PBN implementation and the work programme implementation status in Africa at the end of its Phase II. A gap analysis is performed further to this review.
Action by the meeting: The meeting is invited to take note of the information provided in this paper and take the appropriate actions.
REFERENCE(S): <ul style="list-style-type: none">- ICAO assembly resolution A37-11- ASBU elements- APIRG Conclusions and Decisions- AFPP Programmer Document- AFPP quarterly reports
Related ICAO Strategic Objective(s): <ul style="list-style-type: none">- Safety- Air navigation Capacity and Efficiency- Environmental protection

1. Introduction

1.1 The ICAO developed the Performance Based Navigation (PBN) concept in 2007 and took resolution A36-23 urging States to complete a PBN implementation plan by 2009 in order to achieve implementation of RNAV and RNP operations for all phases of flight (including approach with vertical guidance). With resolution A37-11 superseding A36-23, PBN implementation has become a matter of urgency.

1.2 Furthermore, ASBU modules APTA-B0/4 (CDO), APTA-B0/5 (CCO) and APTA-B0/5 (PinS) use PBN as enabler and AFI region and industry are urging States and ANSP to implement the selected modules.

1.3 The paper provides the membership status of the Programme and the PBN implementation status in the continent. PBN implementation should start with the completion of a National PBN implementation plan (NPIP) followed by the development of eponymous arrival, approach, departure of en-route flight procedures. The PBN implementation status will be done in line with the implementation of those elements. A gap analysis is proposed as a result of this review.

2. Discussion

2.1 As of 14 January 2022, 35 out to the 54 African States joined the AFPP as Active members, ie

65% of the African States. A new prospective is at the entry gate as its application to become an active member is in the pipe. This will bring the membership rate to 65%. Details are provided in Appendix A.

2.2 As detailed in Appendix to this paper, the PBN implementation rate can be summarized as follows:

- a) National PBN plan implementation : 80%;
- b) RNP APCH : 59%;
- c) RNP APCH with baro-VNAV : 35%;
- d) SID : 30%;
- e) STARs : 37%

2.3 It should be noted that CCO/CDO implementation status is not known for many reasons for which details are provided in Appendix 2.1 App A.

2.4 With regard to the work programme implementation, the implementation status is as follows:

- a) Assistance to States : Activities provided on request to many States (See appendix);
- b) Training activities : 78% implemented;
- c) Project oriented support : 10% completed.

2.5 A gap analysis is provided as conclusion in the Appendix.

3. Action by the Meeting

3.1 The meeting is invited to:

- a) Take note of the information provide in this paper and,
- b) Take the appropriate actions.



Appendix

1. Introduction

The objective of this appendix is to provide the Steering Committee with a detailed status of the membership, the PBN implementation as well as the assistance projects conducted or being conducted for the benefit of the States and Organizations in order to assist them in developing in-house capability and meeting their commitments under Assembly Resolution A37-11 (Performance Based Navigation).

To this end, the document will provide respectively the membership status, the PBN implementation status and the work programme implementation status.

This will allow us to proceed to a gap analysis for further actions or decisions.

2. AFPP membership

2.1. Membership status

The participating members of the Programme comprises:

Active Members: All African participating members that commit to provide annual financial contributions to AFPP (10 000 USD per year);

Users (US): All African Participating Member that is not an Active Member, but one that intends to use the services of the AFPP;

Observers (OBS): Participating Members that are not Active Members or Users;

Donors (DON): Participating Member that supports the AFPP by secondment of experts, and/or provision of equipment, trainings, finances and any other proposed activities endorsed by the Steering Committee.

The membership status is provided below:

Status	APM	US	OBS	DON	Total*
Number	35	0	1	8	39

2.2. Active members

The 35 following States/Organizations have the status of Active Participating Members (APM):

Angola	DRC	Mozambique
Benin	Equatorial Guinea	Niger
Botswana	Eswatini	Nigeria
Burkina Faso	Gabon	Sao T & Principe
Cabo Verde	Gambia	Senegal
Cameroon	Ghana	Sierra Leone
Central Af. Republic	Guinea Bissau	Somalia
Chad	Guinea Conakry	Tanzania
Comoros	Kenya	Togo
Congo	Madagascar*	Uganda
Côte d'Ivoire	Mali	Zimbabwe
Djibouti	Mauritania	

2.3. Users

Currently there is no user member.

2.4. Observers

The African Civil Aviation Commission (AFCAC) is be considered as a special observer with voting rights.

2.5. Donors

In line with provision 5.2.5 of the Programme document, the following States/Organizations are deemed to be donors:

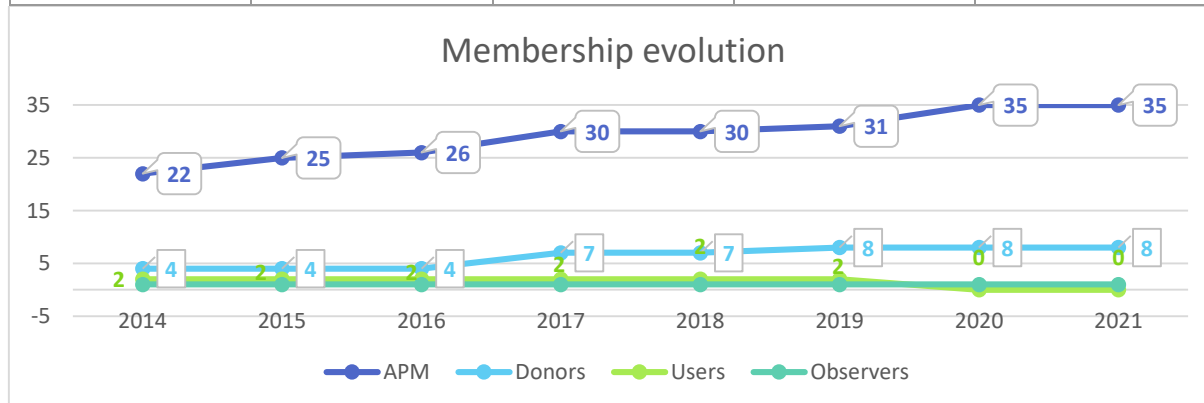
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|----------------------|---|
| ✓ ASECNA; | ✓ TCAA (Tanzania CAA); |
| ✓ DGAC France (CAA); | ✓ ANAC Côte d'Ivoire (Côte d'Ivoire CAA); |
| ✓ KCAA (Kenya CAA); | ✓ GCAA (Ghana CAA); |
| ✓ Airbus; | ✓ CCAA (Cameroon CAA). |

Notes:

- *Some of the donors States are also active members;*
- *Namibia has formally requested to join the Programme as active member.*

2.6. Evolution of the membership

Years	APM	Donors	Users	Observers
2014	22	4	2	1
2015	25	4	2	1
2016	26	4	2	1
2017	30	7	2	1
2018	30	7	2	1
2019	31	8	2	1
2020	35	8	0	1
2021	35	8	0	1

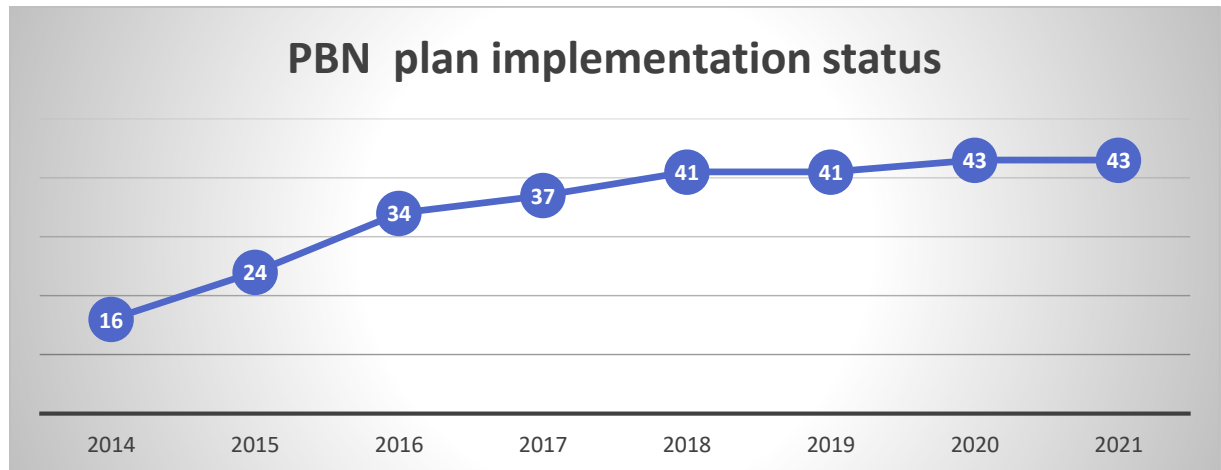


As a summary, the Programme is attractive as 65% (35 on 54 States) have joined it. However, many actives members are not paying their annual financial contribution. Should they still be considered as active member?

3. PBN implementation status

3.1. PBN plan implementation status

National PBN implementation Plan (NPIP) status should be analyzed in light of the implemented NPIP and their robustness. The robustness of an NPIP will consist its relevance and its alignment with both regional PBN roadmap and the latest ICAO PBN plan template. If an NPIP is not robust, it will need to be reviewed.



To summarize, 43 States over the 54 have issued a PBN implementation plan, ie an effective implementation ratio of 80%. However, most of the plan are not consistent and need to be revised. The analysis of the plans is not yet performed.

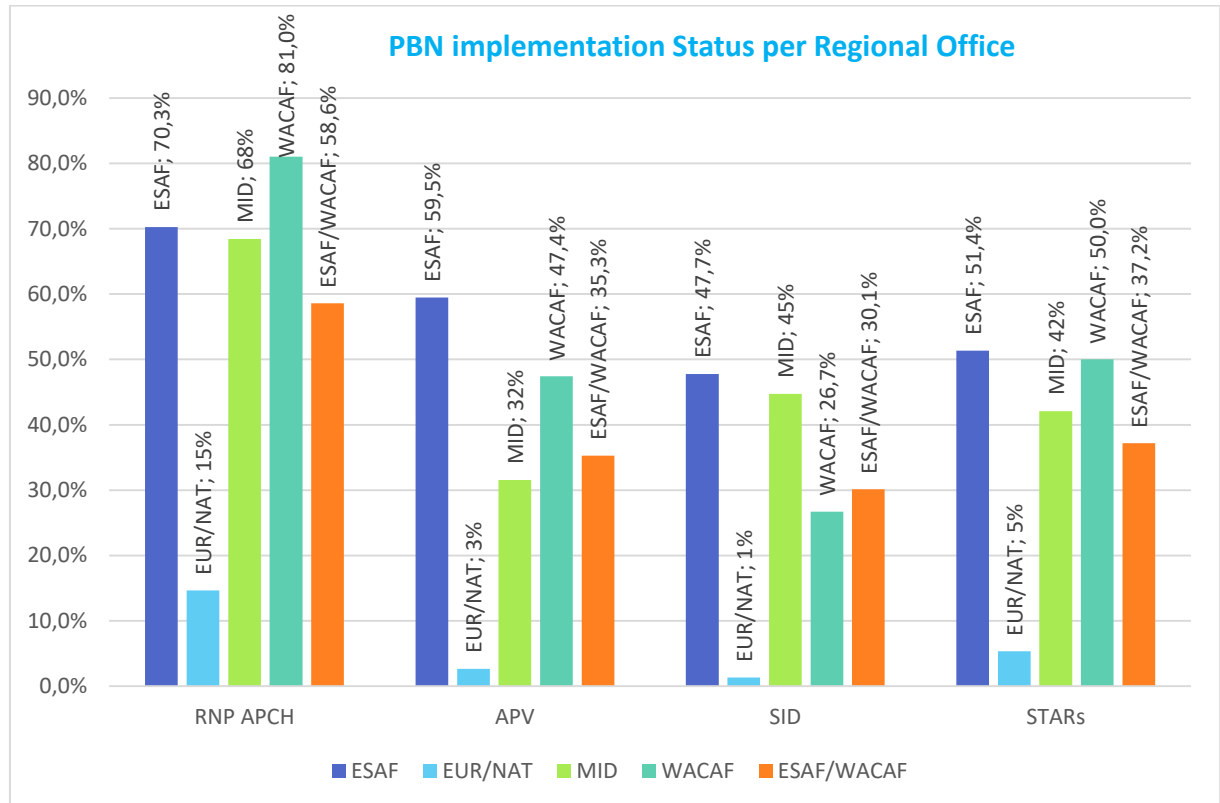
It is unfortunate to note that despite the free support offered by the AFPP in this domain through workshops or direct assistance, eight (08) States have failed to issue a PBN plan and do not report any issues encountered:

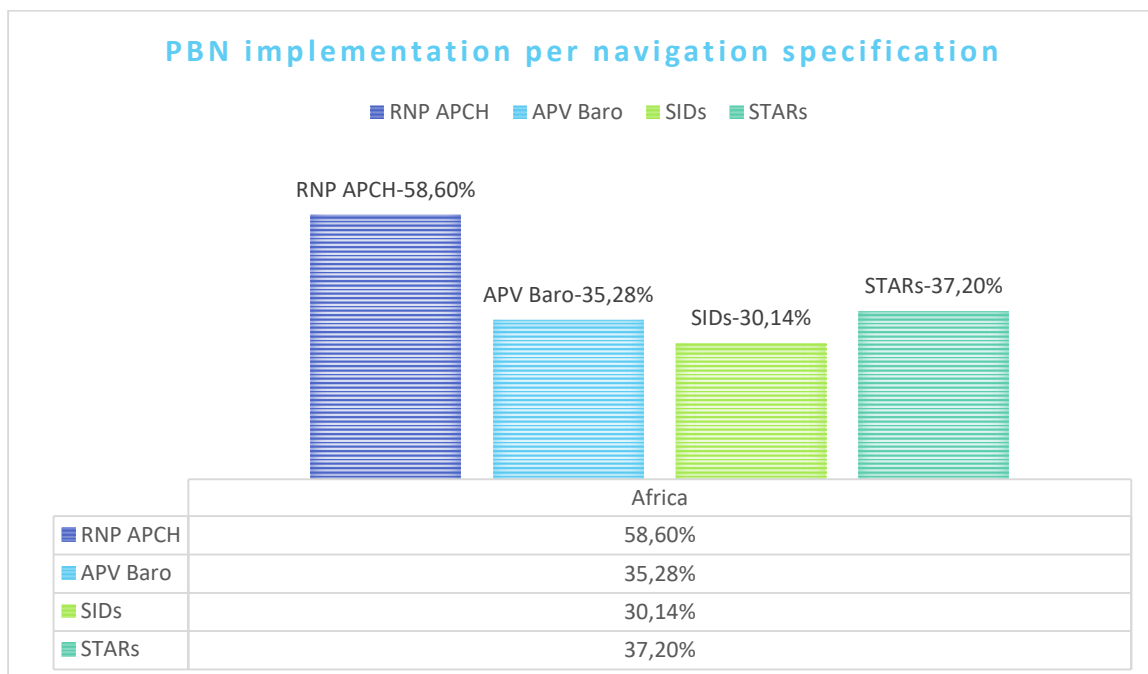
1. Burundi
2. Eswatini;
3. Lesotho ;
4. South Sudan;
5. Zambia;
6. Central African Rep.
7. Egypt;
8. Libya.

3.2. PBN flight procedures implementation

In order to improve the level of PBN implementation in the continent, APIRG took conclusion 23/5 requesting ICAO and AFPP to conduct a survey on PBN flight procedures and CCO/CDO. However, no State responded to the survey; as a consequence, the status provided here may not reflect the current situation as we used an expired Jeppview software license.

Below is the implementation status of RNP APCH, Approach with Vertical Guidance (APV), Arrival and Departure procedures (STARs/SIDs). The airports used in this survey are those listed as international in the AFI eANP.





Despite the benefits of the PBN, some States have not yet implemented any PBN flight procedure. The overall implementation rate is still low at the continent level. A Strategy should be found in order to bring them with the majority, in line with the “No country left behind” initiative.

Even if the survey for the PBN implementation is not successive, as a relatively new concept, the continuous descent and continuous climb (CDO/CCO) implementation rate is very low. Next step for the AFPP will be to bring focus on its implementation.

4. Work Programme implementation status

During its 6th meeting, the Steering Committee reviewed and approved the 2020-2021 work programme. This section provides the implementation status of this work programme.

Assistance was provided to States on request.

4.1. Assistance to States

Direct assistance was provided to the following domains to States and organizations:

National PBN plan implementation or updating:

Senegal and Eswatini.

Clearance of a ICAO USOAP CMA audit Safety significant concern (SSC):

Côte d’Ivoire

5LNC validations :

Supported WACAF RO ATM and AIM experts for many States.

Airspace design :

Roberts FIR TMA restructuring.

Parallel routes implementation :

Uganda

Conventional flight procedures issues :

Cabo Verde (Sao Vicente airport).

4.2. Training activities

Title	Venue	Participants	Status	Comments
Flight validation pilot training	Dakar	Beneficiary : ASECNA # Participants : 14 # States : 11	Held	On request of ASECNA
National PBN implementation plan workshop	Virtual	Beneficiary : Africa # Participants : 105 # States : 23	Held	
Conventional flight procedure design course			Postponed	Heavy workload of the IT assistant
PBN flight procedure design course			Postponed	Not efficient in virtual
PANS-OPS flight procedure design course for CAA	Virtual	Beneficiary : Africa # Participants : 46 # States : 15	Held	
PBN operational approval workshop			Postponed	Event organized by TCB in coordination with AFPP
PBN airspace design workshop	Virtual	Beneficiary : Africa # Participants : 102 # States : 25	Held	
Quality assurance workshop	Virtual	Beneficiary : Africa # Participants : 97 # States : 22	Held	
Instrument flight procedure design OJT	Mbabane	Beneficiary : Africa # Participants : 8 # States : 2	Held	On request of Eswatini
	Dakar	Beneficiary : Cameroon # Participants : 1 # States : 1	Held	On request of Cameroon Started in physical and still ongoing in virtual
	Virtual	Beneficiary : Cabo Verde # Participants : 1 # States : 1	Held	On request of ASA Cabo Verde

Despite the Covid-19 pandemic restrictions and workload increase, almost all planned trainings and workshop were completed. Only 3 were postponed for various reasons. The virtual trainings were predominant and this mode has increased very significantly the number of participants. However, it may not be adequate for the flight procedure design trainings for which a solution should be found.

4.3. Project oriented support

#	Project	Site(s)	Status
01	Conventional & PBN flight procedure design	Conakry, Guinea	Completed
02	Local charts design	Conakry, Guinea	Ongoing
03	PBN flight procedure design	Sal and Praia, Cabo Verde	Ongoing
04	PBN flight procedure design	Robertsfield, Liberia	Ongoing
05	Conventional flight procedure design with full OJT	Matsapha	Ongoing
		Sikhupe (KM III)	
06	Visual flight procedures' design	Namissiguima, Burkina	Ongoing
07	PBN flight procedure design	Dompta, Belabo, Cameroon	Ongoing
08	Conventional & PBN flight procedure updating	Banjul, Gambia	Ongoing
09	Conventional & PBN flight procedure design	Arlit, Niger	Ongoing
10	PBN flight procedure design	Sao Tome	Ongoing

As presented above as of 14 January 2022, out of ten (10) flight procedures projects handled by the Programme during Phase 2, only one (01) is completed; the implementation rate is 10%. The reasons for the delays are to be found in the year 2020 lockdowns and the travel restrictions.

5. Conclusion

Despite the Covid-19 pandemic impact, the Programme is still very attractive as the majority of the African States (65%) has joined it as active members.

Despite all the efforts, with free assistance and training provided, some States have not yet make the first step which is to issue the national PBN implementation plan. The PBN flight procedures implementation rates are still low at the continent level. More efforts and strategies should be made toward the States in order to bring the maximum of them at the same level. Focus should also be on the PBN airspace design in general and more specifically on the free routes airspace, the parallel routes and the continuous descent and continuous climb operations (CCO/CDO), which implementation level are still very low.

The implementation rate of the trainings is 78% (7 over 9); it has been difficult to organize the flight procedure design training virtually due to the workload of the IT assistant, the duration and efficiency of the training.

Assistance was provided to States and organizations on request. Flight procedure design projects are being conducted. However, many of these projects are not yet completed due to the Covid-19 restrictions.

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