

Agenda Item 6: Other business

CIRCULAR 353 AN/209 IMPLEMENTATION PLAN - BRAZIL

(Presented by Brazil)

SUMMARY

This working paper presents the initiative of the Department of Airspace Control (DECEA), through an ad hoc group of the Air Space Planning Study Group (GEPEA), to develop an Implementation Plan of Circular 353 AN/209 "*Transition planning for change to instrument flight procedure approach chart identification from RNAV to RNP*" for the Brazilian airports.

REFERENCES

- SAM/IG meetings

- SAM/PANS-OPS/3 workshop

- Circular 353 AN/209 "Transition planning for change to instrument flight procedure approach chart identification from RNAV to RNP"

1. Background

1.1 The advent of performance-based navigation (PBN) is having a major impact on all aspects of the aviation industry and associated professionals involved in PBN planning, implementation and execution.

1.2 As part of a continuing effort to streamline inconsistencies resulting from the emergence of PBN, ICAO Circular 353 $AN/209^1$ introduce changes to the identification of instrument flight procedure approach charts, from RNAV(GNSS) to RNP, to align the procedure approach chart identification with the designation of the navigation specification (NAVSPEC).

1.3 In addition to the change in the identification of PBN IAP, it is also sought to harmonize the application of the PBN Box in the approach procedure charts. This information table is used to present the pilot other requirements and important information for the execution of the PBN procedure.

1.4 Circular 353 AN/209 replace Circular 336 AN/195 and provides guidance for the development of transition plans to support the procedure approach chart identification change. The main principles for the change are:

- a) synchronized transition planning at all levels global, regional and State transition plan;
- b) ICAO to guide its regions as to how and when to transition from current to end state;

¹ Circular 353 AN/209 "Transition planning for change to instrument flight procedure approach chart identification from RNAV to RNP"

- c) consultation with stakeholders involved in transition planning to ensure that all stakeholders' needs, issues and concerns are addressed;
- d) State (or other organization) decision-making bodies to publish in their AIP noncompliance with ICAO chart titling plan and to inform their stakeholders should the State not elect to transition to the new chart identification;
- e) regulators to ensure that the "package" of chart identification, radio telephony, pilot and flight crew procedures (enabling shared flight crew/air traffic control (ATC) understanding) is properly formulated and is consistent with international practices;
- f) service providers and airline operators to provide effective briefings and knowledge transfer, and to ensure where appropriate that training is provided for operational personnel; and
- g) development of a timely and effective communication plan as this is key to synchronized transition planning and effective transition execution.

1.5 In September 2018, during the 3rd PANS-OPS Workshop (SAM/PANS-OPS/3), States were invited to present the procedures published in their AIP and the number of the procedures affected by the new identification. The commitment assumed was to develop an implementation plan for Circular 353 AN/209 and present that plan to ICAO South American Regional Office for the development of an implementation plan for the SAM Region.

1.6 This working paper presents the Circular 353 AN/209 "*Transition planning for change to instrument flight procedure approach chart identification from RNAV to RNP*" implementation plan for the Brazilian airports.

2. Brazilian PBN Procedures

2.1 IFR procedures published for Brazilian airports (IAC, SID, STAR) can be consulted on the AISWEB portal:

https://www.aisweb.aer.mil.br/?i=cartas

2.2 Brazil has over 1.524 IFR procedures (IAC, SID, STAR) published for 135 airports with IFR operations:

IAC		SID		STAR	
CONV	PBN	CONV	PBN	CONV	PBN
447	266	294	345	43	129
713		639		172	

Table 1 – IFR Procedures in Brazilian AIP

2.3 Procedures affected by Circular 353 AN/209 (new identification and PBN Box) are the following:

ТҮРЕ	NUMBER
RNAV (GNSS)	219
RNAV (RNP)	25
ILS (RNAV)	50
PINS (RNAV)	11
LOC (RNAV)	05
TVD (RNAV)	04
HEL (RNAV)	02
TOTAL	316 IAC

Table 2 - Approach procedures affected by Circular 353 AN/209

Note: It's considered that ILS procedures with RNAV transition are also affected by Circular 353 AN/209 because of the need to insert PBN Box on the chart.

2.4 In order to facilitate the development of the implementation plan, a control table has been prepared for the procedures:

Localidade 🖵	Tipo 💌	NavSpec 🖓	PNA 💌	RWY	Regional 💌	Atualizada 💌	FPDAM 💌
SBAC	<u>RNAV</u>	RNAV	RNAV (GNSS) RWY 09	09			
SBAC	RNAV	RNAV	RNAV (GNSS) RWY 27	<u>27</u>			
SBAE	RNAV	<u>RNAV</u>	RNAV (GNSS) RWY 17	<u>17</u>			
SBAE	RNAV	<u>RNAV</u>	RNAV (GNSS) RWY 35	<u>35</u>			
<u>SBAN</u>	RNAV	<u>RNAV</u>	RNAV (GNSS) Z RWY 06L	<u>06L</u>			
<u>SBAN</u>	RNAV	<u>RNAV</u>	RNAV (GNSS) Y RWY 24R	<u>24R</u>			
<u>SBAN</u>	ILS	<u>RNAV</u>	ILS Z RWY 24R	<u>24R</u>			
<u>SBAQ</u>	RNAV	<u>RNAV</u>	RNAV GNSS RWY 17	<u>17</u>			
<u>SBAQ</u>	RNAV	RNAV	RNAV GNSS RWY 35	35			
<u>SBAR</u>	<u>RNAV</u>	<u>RNAV</u>	RNAV (GNSS) RWY 11	<u>11</u>			
<u>SBAR</u>	RNAV	RNAV	RNAV (GNSS) RWY 29	<u>29</u>			
CDALL	DNIAN	DNIAN	DNAV (CNCC) DVAV 22	22			

Table 3 – Control table of the IAP affected by Circular 353 AN/209

3. Proposed Implementation Plan of Circular 353 AN/209

3.1 The strategy for the development of the implementation plan of Circular 353 AN/209 considered the following aspects:

- a) Stablish blocks of procedures divided in group of AD and TMA;
- b) Start the change for the simplest TMAs;
- c) Change all procedures of the TMA.

FIR BRASIL	NUMBER	
FIR BRASÍLIA	49	
FIR CURITIBA	110	
FIR RECIFE	49	
FIR AMAZÔNICA	49	
SRPV-SP	59	
TOTAL	316 IAC	

Table 4 – IAP PBN blocks by FIR

3.2 The proposed Implementation Plan of Circular 353 AN/209 (number of procedures, work blocks, time necessary for the change) is presented in Table 5.

3.3 Estimate that it will take 2.9 years to make the changes in the PBN procedure charts (and ILS with RNAV transition). The proposal is to start the work in JAN 2020.

Note: The time needed to make the change in the identification of the procedure (and introduction of the PBN Box) depends on the updating of the chart. More "old" charts take more time for correction.

FIR	IAC	BLOCK	MONTHS	PERIOD
FIR AMAZÔNICA	49	01	6.0	JAN/JUN 2020
FIR RECIFE	49	02	6.2	JUL 2020 JAN 2021
FIR BRASÍLIA	49	03	5.4	FEB/JUL 2021
SRPV-SP	59	04	5.6	AUG 2021 JAN 2022
FIR CURITIBA (1)	63	05	5.9	FEB/JUL 2022
FIR CURITIBA (2)	47	06	3.9	AUG/NOV 2022
TOTAL	316		33	2.9 YEARS

Table 5 – Proposed Implementation Plan of Circular 353 AN/209 - BRAZIL

3.4 In addition to the proposed change in the identification of PBN procedures, other actions will be adopted for the implementation of Circular 353 AN / 209:

- a) Adjust internal regulations (MACAR, CIRCEA, etc);
- b) Adapt design procedure tools (FPDAM, etc);
- c) Train pilots and ATCO;
- d) Coordinate the change with database providers;
- e) AIC to disclose the information;
- f) Coordinate the implementation with other organizations and authorities;
- g) Attend the Regional Plan that will be developed by the ICAO South American Regional Office.

4. Suggested Actions

- 4.1 The Meeting is invited to:
 - a) take note and review the information provided in this working paper;
 - b) approve the creation of a working group of the Study and Airspace Implementation Group of the SAM (GESEA) to study and propose the development of a Implementation Plan of Circular 353 AN/209 for SAM Region (GESEA/SG2/GT Circular 353);
 - c) To appoint advisors and the rapporteur of the GESEA/SG2/GT Circular 353, under GESEA/SG2; and
 - d) Discuss and approve a schedule of meetings to develop the implementation plan.