Agenda Item 2: SAT SOG ToRs implementation

f) States/ANSP Safety Management Updates

STATUS OF ATM OPERATIONS IN DAKAR OCEANIC FIR

(Presented by ASECNA)

SUMMARY

This working paper provides an overview of current ATM operations in Dakar Oceanic FIR. The objective is to help the meeting identify the priority projects to be implemented and to provide inputs for the definition of the SAT Region CONOPS.
As a result, this paper:

- Shares information on CNS/ATM concepts already implemented in Dakar oceanic airspace.
- presents the survey on CNS Capacity of Aircraft flying in Dakar Oceanic Airspace and data on traffic flow

Action required: See paragraph 3

REFERENCES

- SAT/24 meeting report
- ACM/S meeting report

1. Background

1.1 Dakar oceanic FIR is a wide and remote oceanic airspace in The South Atlantic that connects Europe to South America and North American to Africa. This airspace has the particularity of being halfway between Europe and South America for EUR/SAM Corridor flights. Therefore, there are many requests for flight levels change.

1.2 This paper presents an overview of operations in Dakar Oceanic airspace, and ongoing activities to facilitate improvements of Air Traffic Service provision in the SAT area.

2. Analysis

CNS/ATM concepts implemented in Dakar oceanic FIR

2.1 The status of implementation of CNS/ATM concepts already implemented in Dakar oceanic airspace is reported in the following table:

Means		Date of implementation	Comments	Next Step
Communication	CPDLC	24/09/2009	The CPDLC is the primary means of communication for equipped aircraft operating in Dakar Oceanic FIR/UIR. HF serves as a backup.	**Implementation of PBCS (RCP140):** PBCS monitoring tests carried out in the Dakar FIR from 1st to 31st March, 2020 showed : -The 95% criteria were met for the aggregate Dakar Oceanic FIR for trial 2 -The 99.9% criteria were met for the aggregate Dakar Oceanic FIR for trail 2 Monitoring is ongoing
	AIDC	**10/11/2021** (Abidjan ACC)	Dakar ACC successfully implemented AIDC with Abidjan ACC in November 2021.	**AIDC Implementation with**: **-Atlántico (on-going)** Trials with Atlántico ACC (Brazil) since January 17, 2022, and implementation is on the process -**SAL, CAYENNE:** ATM system are now upgraded, AIDC implementation activities is planned to start in early 2023. **- Canarias, Piarco:** Dakar ACC is ready to begin trials
Navigation	RNP 10	2001	RNAV10 results in 50 NM lateral separation and 10 minutes or 80 NM longitudinal separation between RNAV-equipped aircraft that have been RNP10 certified.	**Implementation of RN4 in coordination with SAT Region**
Surveillance	ADS-C	24/09/2009	ADS-C has been the primary means of surveillance for the in corridor since its implementation.	**Implementation of PBCS (RSP140)** PBCS monitoring tests carried out in the Dakar FIR from March 1st to 31st, 2020 showed: -The 95% criteria were met for the aggregate Dakar Oceanic FIR for **trial 2**

Means		Date of implementation	Comments	Next Step
				-The 99.9% criteria were met at the **currently accepted level of 99.0%** for the aggregate Dakar Oceanic FIR for **trail 2.**
	Space-based ADS-B	19/05/2022	The space ADS-B is operationally implemented in Dakar Oceanic FIR since 19 May 2022 after the overall satisfactory experimental phase launched in 2020.	**Implementation of ASEPS** Implementation of Advanced Surveillance-Enhanced Procedural Separation (ASEPS) using Space-based ADS-B.

Airspace Organization and Management

2.2 Dakar Oceanic FIR is a mixed airspace composed of:

- Unidirectional RNAV routes UN741 and UN866 and bidirectional route UN873 and UN857 in the EUR/SAM Corridor airspace to manage the flow of traffic along the corridor.
- Atlantic Ocean Random Routing Area (AORRA)

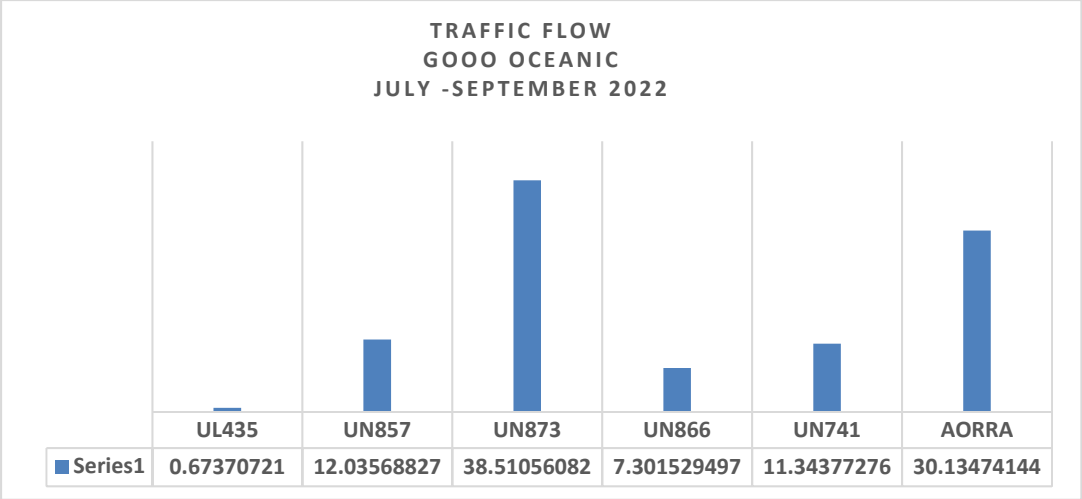
Ten (10) Minutes Longitudinal Separation is applied in the EUR/SAM Corridor with Mach Number Technique

Fleet Capability Assessment

2.3 Traffic statistics is key for the study, the monitoring and assessment of air navigation operations over the EUR/SAM Corridor. It enables an orderly, continued, safe and efficient development of air navigation services in the airspace. Therefore, in line with the new SAT structure, SAT IMG Group needs to know the current level of equipage and capabilities related Communications, Navigation and Surveillance, as basis for deployment planning and monitoring.

2.4 The objective of this assessment is to determine via the FPL information the current level of equipage and capabilities related Communications, Navigation and Surveillance, as basis for deployment planning and monitoring.

2.5 Data from 5492 flight related to traffic flow of aircraft that operated in the EUR/SAM corridor from July to September 2022 was analyzed:



2.6 Data from 5492 flight related to ADS-B, RNP4, CPDLC, RSP180 and RCP240 capability of aircraft that operated in the EUR/SAM corridor from July to September 2022 was analyzed.

The results of the study are presented in the table below:

Period	**July -September 2022**
Total Aircraft	**586**
Total flight	**5492**
	% Flight
ADS-B	93,46
CPDLC (J5,J6,J7)	98,29
CPDLC (J5)	96,67
CPDLC (J6)	0,76
CPDLC (J7)	2,55
RCP240	70,92
RSP180	70,05

3. Action by the Meeting

3.1 The meeting is invited to:

a) Note the description of these elements in the definition of SAT CONOPS in the SAT area and provide direction as deemed necessary; and

b) Discuss any relevant matters as appropriate.

—END —