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ASSEMBLY — 39TH SESSION

TECHNICAL COMMISSION

Agenda Item 36: Aviation safety and air navigation implementation support

RESTRUCTURING OF SUDAN'S AIRSPACE (KHARTOUM FIR)

(Presented by the Republic of Sudan)

EXECUTIVE SUMMARY	
This Information Paper describes efforts being made by the Sudan Civil Aviation Authority to restructure the airspace in the Khartoum FIR to effectively and efficiently comply with the requirements of the global air navigation plan (GANP) and to adopt requirements aimed at the reduction of gases emission and environmental protection.	
Strategic Objectives:	This information paper relates to the Safety and Air Navigation Capacity and Efficiency Strategic Objectives.
Financial implications:	Not applicable
References:	Global Air Navigation Plan (GANP)

1. INTRODUCTION

1.1 Launched through kick-off meeting in February 2016, the SCAA project concerning a new airspace design in Sudan consist of a major changes in the ATM field in the airspace encompassing the entire aeronautical network from ground to unlimited altitude. It also addresses working methods, working means and airspace organization within the borders of Sudan and in consultation and cooperation with South Sudan over the entire Khartoum FIR that also currently includes the airspace over South Sudan. The design and restructuring shall also address the method of coordination and transfer of air traffic with neighbouring flight information regions on network connections and new cross-border routes.

1.2 In addition the redesigning effort would also, in the foreseeable future, entertain a new concept in traffic management which may allow free route airspace.

2. FLEXIBLE USE OF THE AIRSPACE

2.1 The main objective of the effort to redesign and restructure the airspace is to comply with the global and regional air navigation plan and also to be conforming with the concept of procedures based navigation (PBN) road map and Sudan's own national air navigation plan. Generally speaking,

processes and procedures utilized and specifically the objective of the exercise are in full compliance with the appropriate ICAO documents.

2.2 Through redesigning the airspace, Sudan is also attempting to respond to requests and feedback from the users of the airspace mainly requests for direct-routing flights within the airspace frequently asked for by the air transport companies using the airspace.

2.3 Accordingly, the airspace redesign and restructuring would be liaised with the international air transport association (IATA) and directly communicated to the airspace users to ensure that the demand for the best utilization of the Sudan airspace is met and efficient provision of air navigation services to support airliners to achieve their safe and feasible flight operation and then reflected in the new scenario of the airspace structure is achieved.

2.4 As part of the redesign and restructuring plan, the Sudan Civil Aviation Authority would also consider the city pairing strategy for airline operations and would propose the strategy to neighbouring flight information regions for the purpose of extending the newly proposed RNAV routes regionally, to enable the automatic integration of the regional and global air navigation safety.

2.5 With implementation of this prospective airspace scenario, it is estimated that there would be a global saving in miles flown in the region of Five Hundred and Five Thousand (504940 NM) nautical miles per year as a result of implementing 50 new RNAV routes, including 30 direct and unidirectional routes within the airspace.

2.6 Sudan is convinced that redesigning and restructuring of its airspace would enable it to become one of the first ICAO contracting States in the region to implement the concept of free route airspace.

2.7 In addition to the benefits expected for the airlines estimated at about One Hundred Million United States Dollars (US $100, 000,000) a year, it would also benefit the environment, a primary consideration of Sudan, through the reduction of CO2 emission resulting from the redesigning and restructuring of the airspace, estimated at a saving of not less than 500.000 ton of fuel per year

2.8 Finally, as Sudan’s airspace is in a geostrategic location in the region which can be considered as an advantage, it requires close cooperation and collaboration with neighbouring flight information regions that belong to different ICAO regions which may have variance in their respective regional air navigation plan requirements and different challenges. Nevertheless, Sudan is ready and willing to work with all its neighbouring FIRs to manage and harmonize the regional air navigation system to ensure the safety and efficiency of the global air navigation plan.

3. PERFORMANCE SUMMARY

3.1 The Table in the next page indicates the performance summary that would result from redesigning and restructuring the airspace.

Proposal Route	Current Route(NM)	Proposed Route(NM)	Gain per aircraft(NM)	Number of flights/year	Global saved miles (NM/year)	Comments
ORNAT - WPTDD - DEKUM	1019	958	61		0	
ORNAT - WPTGG - JUB	1018	981	37		0	
ORNAT - WPTJJ - EPLAS	1104	1097	7		0	West side of P10B
ORNAT - ALPOX - KUVTI	1063	1038	25		0	Arrivals and departures HSSS
ATMUL - ASKOL	720	469	251	1053	264303	
ATMUL - ILBIB	1057	681	376		0	
ATMUL - KISAL	1072	771	301		0	
ATMUL - KAFIA	1072	771	301		0	
ATMUL - NE002 - DEKUM	1147	1043	104		0	East side of P10B
ATMUL - NE002 - JUB	1083	1038	45	3	135	
ATMUL - WPT00 - AVONO					0	Creation
ATMUL - KUVTI - TIKAT	700	687	13	68	884	Overflying traffic
ATMUL - ERBUK	700	671	29		0	Only traffic to and from HAAB
NUBAR - ASKOL	664	570	94	495	46530	
NUBAR - NW009 - KISAL	1022	844	178		0	
NUBAR - SE004 - ASKON	1158	986	172		0	
NUBAR - DEKUM	1099	1048	51	82	4182	
NUBAR - MLK - JUB	1031	1022	9		0	
NUBAR - MRW - IMDUR - EPLAS	1117	857	260		0	
NUBAR - KUVTI - AVONO	772	768	4	5862	23448	HSSS to and from EGYPT
NUBAR - TIKAT	650	620	30	1956	58680	Overflying traffic
NUBAR - ALRAP	503	503	0		0	Only traffic to and from HAAB
KAROX - GNA	970	922	48	459	22032	Unidirectional and delimits North side of P10B
KAROX - DELAM - FSR - ILBIB	1081	1053	28	243	6804	KAROX DELAM is unidirectional and delimits South side of P10B
KAROX - DELAM - KISAL	1100	1069	31	559	17329	KAROX DELAM is unidirectional
KAROX - MAHDI - KAFIA	1139	1126	13	444	5772	Unidirectional route
KAROX - MAHDI - PASIL	464	457	7	539	3773	Unidirectional route to HSSS
KAROX - MAHDI - WPTEE - ASKON	1220	1068	152		0	Unidirectional route
KAROX - MAHDI - PSD - WPTNN - IMDUR -JUB	1108	1040	68	751	51068	PSD IMDUR is unidirectional
TOKAR - MIPOL					0	Unidirectional route
AXOTI - WPTLL - KURAM					0	Separation with AVONO MONAN
AVONO - MONAN					0	Separation with AXOTI KURAM
JUB - IMDUR - WPTPP - MIPOL	1089	1017	72		0	IMDUR JUB is unidirectional
SAGBU - JUB					0	
ASKON - BOGUM - MIPOL	1220	1068	152		0	Unidirectional route
KISAL - KTM - PSD - BOGUM - MIPOL	1080	1067	13		0	KTM PSD BOGUM MIPOL is unidirectional
KTM - PSD - BOGUM - MIPOL	446	445	1		0	KTM PSD BOGUM MIPOL is now unidirectional
KTM - DELAM - GNA	600	596	4		0	
KTM - NLY					0	
NLY GNA		166			0	
NLY FSR		94			0	
NLY OBD		314			0	
NLY MLK		422			0	

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