ICAO

Twenty-Fourth Meeting of the AFI Planning and Implementation Regional Group (APIRG/24)
(Virtual – 2 to 4 November 2021)

Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation

Status of implementation of AMHS at ASECNA

(Presented by ASECNA)

SUMMARY
This working paper reports on the progress made in the implementation of AMHS at ASECNA. The follow-up to be taken by the meeting is contained in paragraph 3. It Promotes the deployment of AMHS systems by upgrading the necessary telecommunications media under TCP/IP protocol for their effective operation in full AMHS in the AFI region.

Objectives Strategic	A - B

1. INTRODUCTION

1.1 In accordance with the Global Air Navigation Plan (GANP), the Regional Navigation Plan and the Concept of Upgrading the Aviation Block System (ASBU), ASECNA has registered the implementation of AMHS to improve the safety and efficiency of the exchange of aeronautical messages required under the Aeronautical Fixed Service.

1.2 Regional and interregional cooperation is necessary to ensure system compatibility and interoperability of telecommunication media required to support the migration of existing RSFTA circuits to AMHS, in order to reap the full-expected operational benefit.

2. DISCUSSION

2.1 Prerequisites for migrating bilateral links to TCP/IP

2.1.1 AMHS systems are interconnected with each other by TCP/IP protocol links, deployed via existing aeronautical telecommunication networks. To this end, ASECNA migrated its internal RSFTA links under TCP/IP protocol several years ago, which allowed it to easily migrate from the RSFTA to the AMHS.
At the bilateral level, several actions have been launched for the gradual migration of links to TCP/IP. These include:

- Upgrading CAFSAT network nodes through the implementation of Phase I of the re-engineering to support full IP capability;

- Interconnection and/or interoperability of AFISNET with AFI's aeronautical VSAT networks (SADC-III, NAFISAT, CAFSAT, REDDIG);
- Expansion and interconnection of AFISNET to the South America (SAM) region with nodes in Recife, Cayenne and Trinidad and Tobago connecting the AFI and SAM regions; To date, only the link with RECIFE is migrated to TCP/IP.

2.2 State of AMHS implementation in the ASECNA area

2.2.1 Since 2014, ASECNA has begun the installation of AMHS for the smooth implementation of ATS messaging in accordance with the ICAO regional plan. To date, AMHS systems are implemented and operational in ten (10) centers. Since 2017, the SFA circuits between ASECNA centers operate in AMHS. Actions are underway to continue AMHS connections with adjacent ACCs.

2.2.2 On 25 June 2020, after IOT and pre-operational procedures and very comprehensive coordination and cooperation between ASECNA and DECEA (Brazil) during the COVID-19 period, the first connection in AMHS (ATS Message Handling System) technology between South America and Africa was activated and is operational.

2.2.3 With the activation of the AMHS link with Dakar, Senegal, using the satellite connection of the AFISNET network in Recife and Dakar, DECEA and ASECNA have since ensured the fluidity necessary for the processing of flight plans, meteorology and aeronautical information messages between South America and Africa, with an operational gain in terms of circuit and data availability.

2.2.4 Following the example of Dakar – Recife AMHS implementation, increased coordination is needed with our partners to migrate bilateral links under TCP/IP protocol, as this is a necessary prerequisite for centres equipped with AMHS to establish end-to-end AMHS links.

2.2.5 Currently, ASECNA continues to deploy AMHS systems in almost all of its centres. This project is entering its final phase with on-site reception and commissioning operations by the end of the year, with regard to the centers of Abidjan, Douala, Bangui, Bissau, Libreville, Malabo, Moroni, which will soon be interconnected in TCP/IP via the secure links deployed on its network.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) Take note of the information contained in the present document,
b) Invite States and organizations: To implement the AMHS, while migrating to TCP/IP, bilateral links with adjacent equipped centers, in order to ensure the interoperability of AMHS systems in the AFI region.
c) Strengthen cooperation between the States of the AFI region for the coordinated implementation of the prerequisites for the establishment of bilateral links in full AMHS, with a view to improving the performance of the Fixed Aeronautical Service.

Annexe 1 : State of implementation of AMHS in ASECNA centers

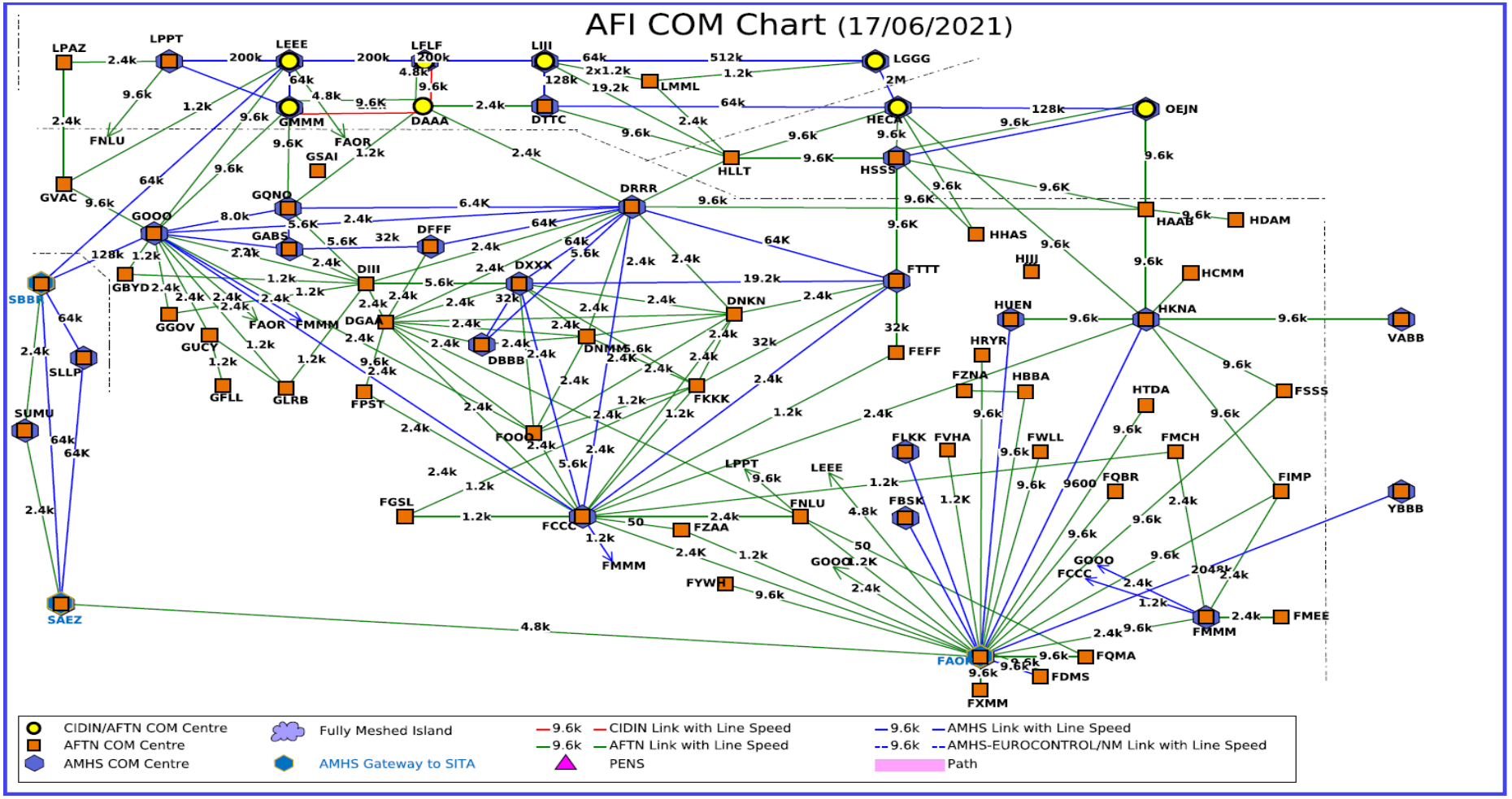
PAYS	Site	Nb Circuit	Corresponding	Circuit	Planned implementation of the AMHS circuit	COMMENTS
	COTONOU	4	ACCRA	AFTN	End 2022	Required: AFISNET IP link
			NIAMEY	AMHS		
			LOME	AMHS		
			LAGOS	AFTN	End 2022	Required: AFISNET IP link
BURKINA	OUAGA	3	NIAMEY	AMHS		
			BAMAKO	AMHS		
			ACCRA	AFTN	End 2022	Required: AFISNET IP link
CONGO	BRAZZA	16	BANGUI	AFTN	2022	AMHS system being deployed
			DAKAR	AMHS		
			DOUALA	AFTN	2022	AMHS system being deployed
			KINSHASA	AFTN	End 2022	
			JOHANNESBOURG	AFTN	End 2022	Required: AFISNET / NAFISAT IP link
			LIBREVILLE	AFTN	2022	AMHS system being deployed
			LUANDA	AFTN	End 2022	
			NAIROBI	AFTN	End 2022	Required: NAFISAT IP link
			N'DJAMENA	AMHS		

			NIAMEY	AMHS		
			SAOTOME	AFTN	End 2022	
			MALABO	AFTN	2022	AMHS system being deployed
			KANO	AFTN	End 2022	Required: AFISNET IP link
			ACCRA	AFTN	End 2022	Required: AFISNET IP link
			TANA	AMHS		
			LOME	AMHS		
MADAGASCAR	TANA	7	JOHANNESBOURG	AFTN	End 2022	Required: AFISNET IP link
			MORONI	AFTN	2022	AMHS system being deployed
			DZAOUDZI	AFTN	2022	
			MAURICE	AFTN	End 2022	Required: AFISNET IP link
			ST DENIS	AFTN	2022	
			BRAZZA	AMHS		
			DAKAR	AMHS		
MALI	BAMAKO	4	DAKAR	AMHS		
			OUAGA	AMHS		
			ABIDJAN	AFTN	2022	AMHS system being deployed
			NOUAKCHOTT	AMHS		
MAURITANIE	NOUAKCHOTT	5	DAKAR	AMHS		
			BAMAKO	AMHS		
			CASABLANCA	AFTN	End 2022	Required: CAFSAT IP link
			ABIDJAN	AFTN	2022	AMHS system being deployed
			NIAMEY	AMHS		
NIGER	NIAMEY	13	ALGER	AFTN	2022	
			ADDIS	AFTN	End 2022	Required: AFISNET IP link
			N'DJAMENA	AMHS		
			KANO	AFTN	End 2022	Required: AFISNET IP link

			BRAZZA	AMHS		
			ACCRA	AFTN	End 2022	Required: AFISNET IP link
			OUAGA	AMHS		
			DAKAR	AMHS		
			COTONOU	AMHS		
			LOME	AMHS		
			ABIDJAN	AFTN	2022	AMHS system being deployed
			NOUAKCHOTT	AMHS		
			BAMAKO	AMHS		
SENEGAL	DAKAR	15	CASA	AFTN	End 2022	Required: CAFSAT IP link
			NOUAKCHOTT	AMHS		
			SAL	AFTN	2022	Required: AFISNET IP link
			BANJUL	AFTN	2022	Required: AFISNET IP link
			BISSAU	AFTN	2022	AMHS system being deployed
			ROBERTS	AFTN	End 2022	
			BRAZZA	AMHS		
			ABIDJAN	AFTN	2022	AMHS system being deployed
			BAMAKO	AMHS		
			NIAMEY	AMHS		
			BRASILIA	AMHS		
			JOHANNESBOURG	AFTN	End 2022	Required: AFISNET/NAFISAT IP link
			MADRID	AFTN	End 2022	Required: CAFSAT IP link
			TANA	AMHS		
			LIBREVILLE	AFTN	2022	AMHS system being deployed
TCHAD	N'DJAMENA	9	NIAMEY	AMHS		
			BRAZZA	AMHS		

			MAIDUGURI	AFTN		
			KANO	AFTN	End 2022	Required: AFISNET IP link
			BANGUI	AFTN	2022	AMHS system being deployed
			DOUALA	AFTN	2022	AMHS system being deployed
			KHARTOUM	AFTN	End 2022	Required: NAFISAT IP link
			TRIPOLI	AFTN		
			LOME	AMHS		
TOGO	LOME	10	ACCRA	AFTN	End 2022	Required: AFISNET IP link
			COTONOU	AMHS		
			NIAMEY	AMHS		
			ABIDJAN	AFTN	2022	AMHS system being deployed
			LIBREVILLE	AFTN	2022	AMHS system being deployed
			LAGOS	AFTN	End 2022	Required: AFISNET IP link
			KANO	AFTN	End 2022	Required: AFISNET IP link
			DOUALA	AFTN	2022	AMHS system being deployed
			BRAZZAVILLE	AMHS		
			NDJAMENA	AMHS		
CAMEROUN	DOUALA				End 2021	AMHS replacement project in progress in progress
CENTRAFRIQUE	BANGUI					
COMORES	MORONI					
COTE D'IVOIRE	ABIDJAN					
GABON	LIBREVILLE					
GUINEE EQUAT	MALABO					
GUINEE BISSAU	BISSAU					

Annexe 2- Plan AFI COM :



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