Sixth meeting of the APIRG Information and Infrastructure Management Sub-Group (IIM/SG6)

Implementation of Air/Ground communication (HF/VHF voice data, CPDLC and ASBU elements)

Nokuthula Phakathi

1. Introduction

This working paper presents the progress of the IIM/SG COM3 Implementation of Air/Ground communication (HF/VHF voice data, CPDLC and COM3 ASBU Elements)

2. Project documentation Status

All Project Planning Documentation completed

– Project Organisation / Plan 100%

– Project Description including ASBU COM3 elements 100%

– Project Terms of reference 100%

– Project Linkage 100%;

QUESTIONNAIRE ANALYSIS PROGRESS

Questionnaire Analysis Progress	Status	Comment
Botswana	100%	
Burkina Faso	99%	Received feedback
Ghana	100%	
Ivory Coast	99%	Waiting for feedback from meeting inputs
Kenya	95%	In progress received feedback
Seychelles	100%	
South Africa	100%	
Togo	100%	Finalise upon response for clarification

	Legend
🟩	Ready for Migration
🟧	Not yet Ready, but in progress
⬛	Not Ready for Migration
⬜	Do not have the system/Status Unkown

GANP REQUIREMENTS READINESS

STATE and QUESTIONNAIRE	VHF IP READINESS	HF IP READINESS	HF SELCAL MIGRATION READINESS	SATCOM	SATCOM INMARSAT CODES	CPDLC	VDL	HFDL
Botswana	🟩							
Burkina Faso	⬛	⬛	⬛	🟩	⬛			
Cameroon	🟩	🟩	🟩	🟩	🟩			
Central African Republic	🟩	🟩	🟩	🟩	🟩			
Chad	🟩	🟩	🟩	🟩	🟩	🟩		
Comoros	🟩	🟩	🟩	🟩	🟩			
Congo	🟩	🟩	🟩	🟩	🟩	🟩		
Côte d'Ivoire	⬛	🟧	🟩	🟩	🟩	🟩	⬛	⬛
Ghana	🟩	⬛	⬛	🟩	⬛	🟩	⬛	⬛
Kenya	🟩	🟩	🟩	🟩	⬛	🟩		
Seychelles	🟧	🟧	🟧	🟩	⬛	🟩		
South Africa	🟩	🟧	🟧	🟩	⬛	🟩	🟩	🟩
Togo	⬛	⬛	⬛					

HFDL / VDL REQUIREMENT (MANUAL / GUIDANCE)

HFDL / VDL Requirement (Manual / Guidance)	Status	Comment
Project initiation	100%	The meeting to initiate the project was held on the 17th March 2021
HFDL Manual	99%	The HFDL section is complete and is currently being reviewed by all AFI states.
VDL Manual	85%	Literature review to be used in the development of the document will continue while developing the document.
		The development of the document is in progress, only a few sections remaining.
VDL CONOPS	25%	The section will be populated with the information contained mostly in the EUROCAE documents, i.e., ED-276 (Guidance on Air to Ground VDL Mode 2 Interoperability) and ED-92C (Minimum Operational Performance Standard (MOPS) for an Airborne VDL Mode-2 System Operating in the Frequency Range 118-136.975 MHz).

AFI COMMUNICATION STRATEGY

1.Preparatory Phase – Initiation meeting 100%

2. Assessment and Analysis Phase (Current Environment) 95%

3. SWOT 95%

4. PESTLE 95%

5. Design Phase

5a.Define Vision, Mission and Values 95%

5b.Goals, Objectives, Strategies and Expected Results 95%

6. Implementation Phase 0%

7. Action Plans 0%

STRENGTHS	WEAKNESSES
1. Technical Skills - Planning, implementation of communications systems (Plan/Acquire/Deploy/Support)	1. Lack of funds
2. Organisational presence e.g. APIRG, IIM	2. Cooperation between AFI states
3. Cooperation between local and international organisations like IATA	3. Lack of published strategies
4. Availability and ease of use of online working tools	4. Lack of local ATM Equipment Manufacturers
5. Diversity of expert skills	5. Lack of commitment from committee members
	6. Limited ATM institutions on the African Continent
OPPORTUNITIES	THREATS
1. Local ATM Equipment Manufacturers	1. Declining revenue and traffic movements
2. Development of AFI Communications Strategy	2. Delay to buy or sell raw material to develop ATM equipment.
3. Synergy between Regional Economic Communities (RECs). We already have SADC, ASECNA, EAC, ECOWAS which can collaborate	
4. Establish ATM research Institutions on the African Continent	3. Member States' lack of adherence to the strategy

POLITICAL	ECONOMIC
1. Political environment is fairly stable.	1. The economy of most states is picking up slowly after the effects of COVID 19 pandemic.
2. Member States' lack of adherence to the strategy	2. The exchange rate is volatile. May affect procurement of goods and services for countries using the local currency.
3. Lack of published strategies 4. The political situation in Russia -Ukraine and its impact on the Global economy and the aviation industry.	3. Increase in airfares which can have impact on passenger movement.

SOCIAL	TECHNOLOGY
1. Travel restrictions due to COVID 19 pandemic resulted in significant reduction in travels within and across states. However, there are signs of gradual improvement passenger arrivals and departures.	1. The aviation industry is still up to date with the ASBU roadmap, and new technologies are being implemented to help reduce flights operation cost, as well as reducing their carbon footprint.
2. Tourism across the African continent is improving.	2. Rise in cybercrime risk to data protection and operational stability.
3	3. Lack of local ATM Equipment Manufacturers 4. With the introduction of new standards and technologies, the industry is becoming more harmonize whereby airlines can expect a seamless flight experience from its point of departure to its destination. 5. The use of virtual platforms for meeting and conferences in the aviation industry.

LEGAL	ENVIRONNEMENTAL
1. Legal factors include changes to legislation impacting employment , Access to Materials, quotas, ressources, imports/exports, and taxation.	1. Global warming issues which may impact air travel and the aviation industry.
	2. The rise in ethical and environmental issues

VISION	To provide safe and seamless skies within the ICAO AFI Region
MISSION	To improve cooperation and enhance the effectiveness of the AFI Region Member states' communication capabilities through the sharing of knowledge, experience, and best practices in the field of communication for civil aviation.
VALUES	➢ Safety ➢ Leadership ➢ Accountability ➢ Sustainability ➢ Unity

Strategies

1. AFI Priorities – aligned with GANP and AFI plans

2. Reengineering infrastructure – IP technologies; while ensuring the security of the infrastructure.

3. Ensure full connectivity and interoperability

4. Funding strategy

Goals

1. AFI states should have a plan to reengineer communication infrastructure using latest technologies.

2. To support user needs and traffic increase and provide the performance needed for today and future ATM.

3. To provide safe, secure and efficient aeronautical mobile & fixed service in compliance with national, regional and global requirements.

4. ANSPs shall have funding strategies in place for the provision of navigation services infrastructure.

Objectives

1. AFI states should deploy IP based communication infrastructure by 2028.

2. AFI States to develop their national communication plans based on the AFI CONOPS, and ATM Master Strategy, and ensure that they are aligned with GANP by 2026.

3. Increase communication reliability to ensure that communication infrastructures and networks are robust, redundant, and able to handle the ATM demand without interruption and downtime.

4. States should have Service Level Agreement (SLA) and contracts in place with the 3rd parties to ensure service availability of 99.7%.

5. The states should monitor the performance of the communication infrastructure to ensure availability of 99.7%.

6. AFI states should fully implement AMHS by 2026.

OBJECTIVES

1. Provide a safe, secure and efficient aeronautical mobile service in compliance with nationals, regional and global plan initiative.

2. Strategy: Implementation of HF, VHF, VDL, HDL, AMHS, CPDLC, AIDC, etc

3. Operational Objectives (how to implement point 2):

- Define Operational requirements;

- Adaptation training for controllers and ATSEPs prior to commissioning

4. OLDI Implementation (interface state with the Mid-region states).

Proper planning and allocation of necessary resources (funding, human resources, land & property)

OBJECTIVES

1. 55% AMHS currently

2. AFI H/VDL manual developed – low implementation

3. 5% AIDC Implementation – low implementation

4. Cybersecurity ATM/CNS resilience and safety

8. OLDI Implementation (interface state with the Mid-region states)

Expected results

1. AFI Priorities – aligned with GANP and AFI plans

2. Reengineering infrastructure – IP technologies

3. Ensure full connectivity and interoperability

4. 53% AMHS currently

5. AFI H/VDL manual developed – low implementation

6. 5% AIDC Implementation – low implementation

7. Cybersecurity ATM/CNS resilience and safety

8. OLDI Implementation

3. Summary of the achievements

3.1 Questionnaire distributed, responses received from Seychelles, Ghana, South Africa, Kenya, Botswana, Burkina Faso, and Ivory Coast, Togo and analysed Led by South Africa;

3.2 HFDL / VDL Requirement (Manual / Guidance) - *HFDL Section of the Manual completed and VDL Section of the Manual is currently underway* Led by South Africa and Ghana

3.3 AFI Communication Strategy Led by Ghana

3.4 Project progress meeting – as per plan

4. Conclusion

The meeting is invited to:

a) Take note of the progress made so far regarding the IIMSG Communication Project 3 deliverables and challenges;

b) b) Encourage State participation in the AFI region projects

Thank you COM3 Active Project Members and Sponsor – Mr Harvey!!!