"AFI Air Navigation Services Cyber safety and resilience assessment"

IIM SG COM 5 Project Status Report

Third Meeting of the APIRG IIM/SG, 12-14 October 2020

Presented by: Côte d'Ivoire

(Sandrine GNASSOU)

IIM/SG/3- AI 4 – WP/04B.5

AGENDA

1. Introduction

2. Discussion ……
   - 2.1 Scope
   - 2.2 Actions conducted
   - 2.3 Challenges
   - 2.4 The way Forward

3. Action by the Meeting …….
   - 3.1 The meeting is invited to..
   - 3.2 Draft Conclusion/Decision

Attacks on Aviation are happening…

OVER **60 CYBER-ATTACKS** ON AVIATION SINCE JANUARY 2019*

THE AVERAGE COST OF EACH ATTACK IS **€ 1,000,000**

AVIATION WILL NOT EVER BE **100%** CYBER PROOF …

AIRPORT

AIRCRAFT

AIRLINES

AIR TRAFFIC MANAGEMENT/ ANS

POTENTIAL **TARGETS** IN AVIATION

(*) Source : https://www.eurocontrol.int/news/moving-towards-cyber-resilience-aviation

1. INTRODUCTION

IIM SG COM 5 project is addressing AFI ANS cyber safety & resilience

Project Objectives

To identify cyber threats on Air Navigation Services in Africa

To assess current cyber resilience of Air Navigation Services in AFI region

To develop a cyber safety and resilience framework for Air Navigation Services

Project Members

AIS, CNS experts, Cybersecurity and ICT experts from :

- Benin
- Côte d'Ivoire
- Gambia
- Ghana
- Kenya
- Nigeria
- Somalia
- South Africa

2. DISCUSSION

2.1 Scope

2.2 Actions conducted *(project key achievements)*

2.3 Challenges

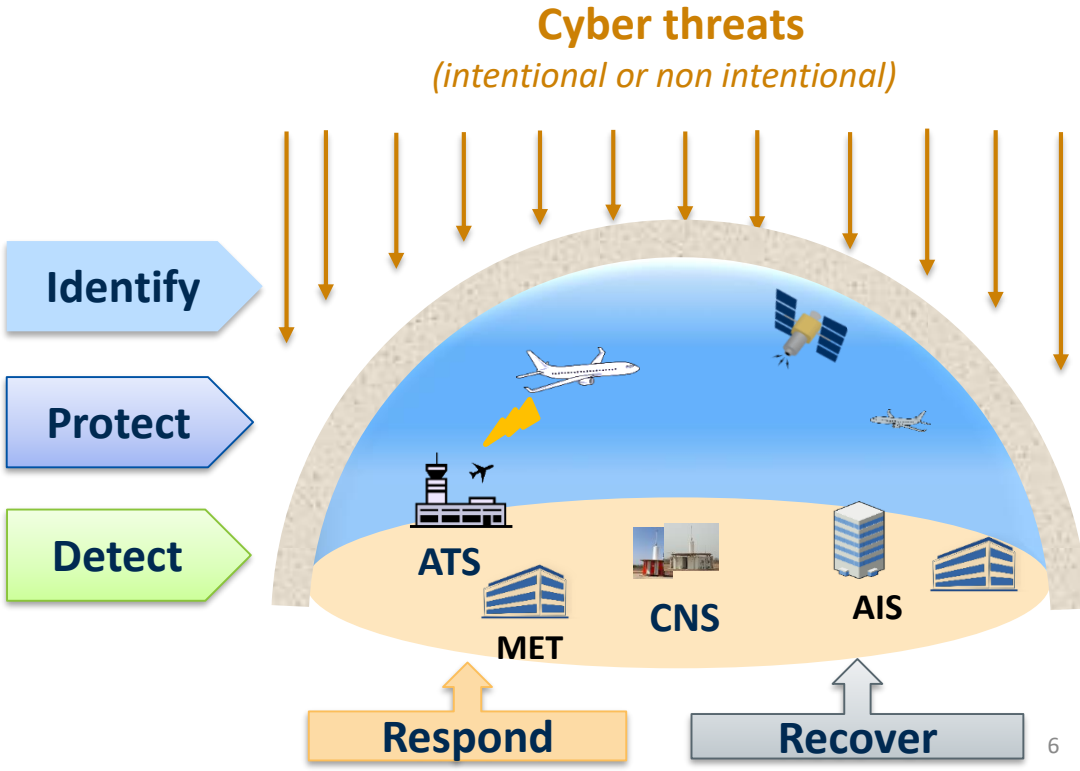
2.4 The way Forward *(Project Upcoming Tasks and Milestones)*

2.1 Scope

Cyber resilience

- an organisation ability to continuously deliver the intended outcome despite adverse cyber events.
- Is a measure of how well an organization can operate its business during a data breach or cyber attack

How can ANS be resilient to cyber threat?



75 % Project tasks completed

2.2 Actions conducted *(Project phases)*

- Project Scope, Terms of Reference,
- Project Description, organization and linkages with other IIM Projects

- Project baseline questionnaire (to be sent to AFI states)
- List of ANS critical assets and data used in AFI region
- Potential Cyber threats to ANS

Analysis of existing cybersecurity and cyber resilience frameworks and guidelines *(ISO 27000 series, NIST framework, ICAO thrust framework, Aviation Cybersecurity Strategy)*

Development by the project team (project internal validation)

Review by IIM chairman and Secretariat

- Submission to APIRG Review and validation
- Update (if needed)
- Promotion of the framework

AFI ANS Cyber resilience Assessment

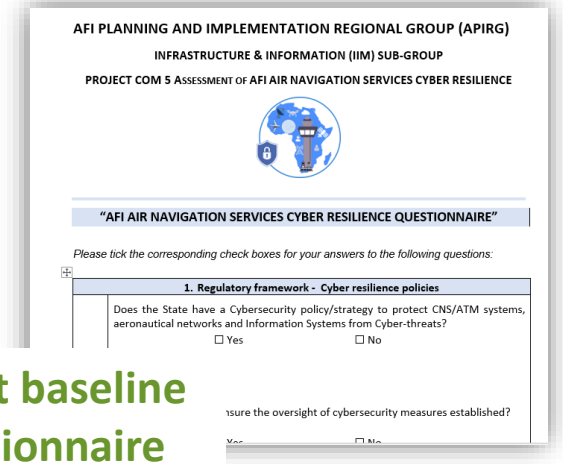
2.2 Actions conducted *(Key achievements)*

List all critical systems and data used for Air Navigation Services in AFI Region

Based on experts ' analysis, APIRG

Identification of cyber threats to ANS

Potential cyber threats, type of cyber attacks,…



AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG)

INFRASTRUCTURE & INFORMATION (IIM) SUB-GROUP

PROJECT COM 5 ASSESSMENT OF AFI AIR NAVIGATION SERVICES CYBER RESILIENCE

"AFI AIR NAVIGATION SERVICES CYBER RESILIENCE QUESTIONNAIRE"

Please tick the corresponding check boxes for your answers to the following questions:

1. Regulatory framework - Cyber resilience policies	
Does the State have a Cybersecurity policy/strategy to protect CNS/ATM systems, aeronautical networks and Information Systems from Cyber-threats?	☐ Yes ☐ No

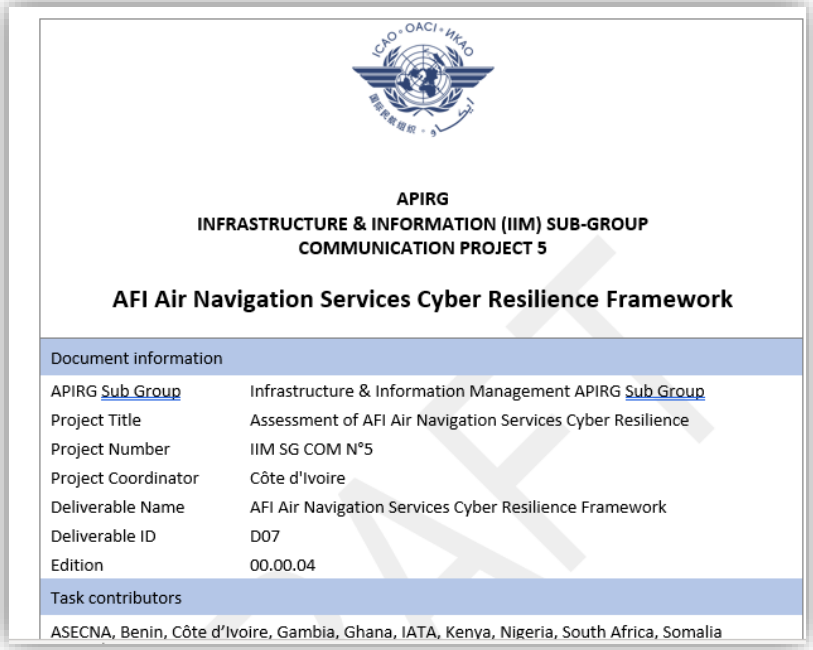
…nsure the oversight of cybersecurity measures established?

Project baseline questionnaire

To assess current cyber resilience strategies put in place

2.2 Key achievements

AFI ANS Cyber safety resilience Framework



APIRG
INFRASTRUCTURE & INFORMATION (IIM) SUB-GROUP
COMMUNICATION PROJECT 5

AFI Air Navigation Services Cyber Resilience Framework

Document information	
APIRG Sub Group	Infrastructure & Information Management APIRG Sub Group
Project Title	Assessment of AFI Air Navigation Services Cyber Resilience
Project Number	IIM SG COM N°5
Project Coordinator	Côte d'Ivoire
Deliverable Name	AFI Air Navigation Services Cyber Resilience Framework
Deliverable ID	D07
Edition	00.00.04
Task contributors	
ASECNA, Benin, Côte d'Ivoire, Gambia, Ghana, IATA, Kenya, Nigeria, South Africa, Somalia	

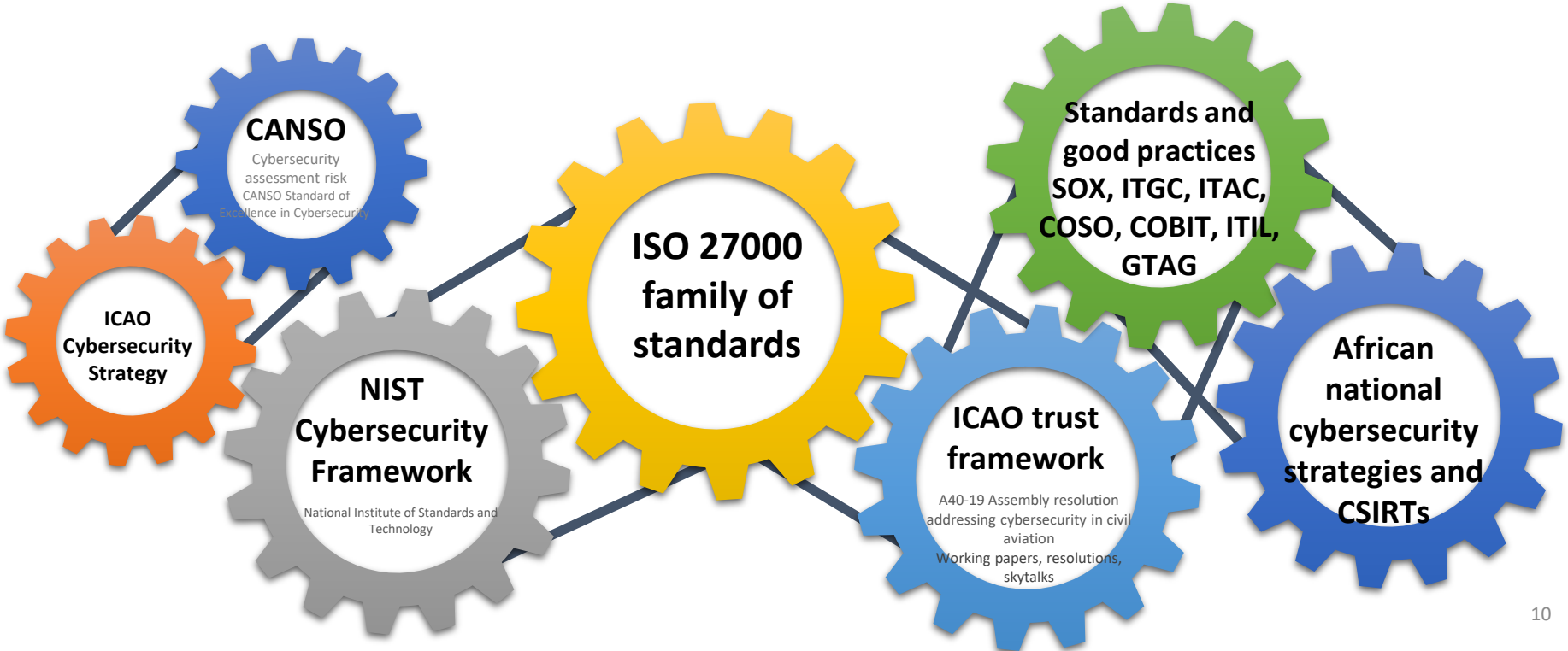
Provides **guidelines** that **AFI states and organizations can adopt to assess the cybersecurity risks, threats and vulnerability to the ANS systems and operations, methods of risk mitigating** , on a voluntary basis.

Identifies the main cyber threats and lists AFI ANS Critical systems.

Provides a **high-level guidelines and practices on cyber resilience rather than detailed technical specifications**

2.2 Key achievements

… based on proven cybersecurity standards, frameworks and existing guidelines



2.2 Key achievements

AFI ANS Cyber safety resilience Framework

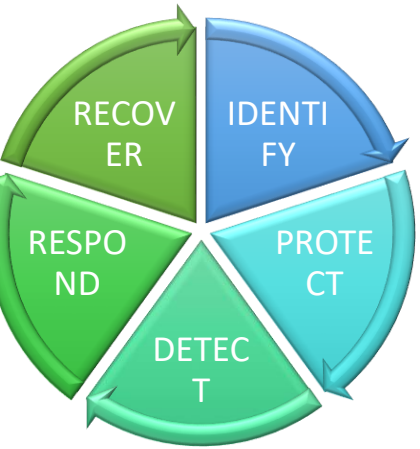
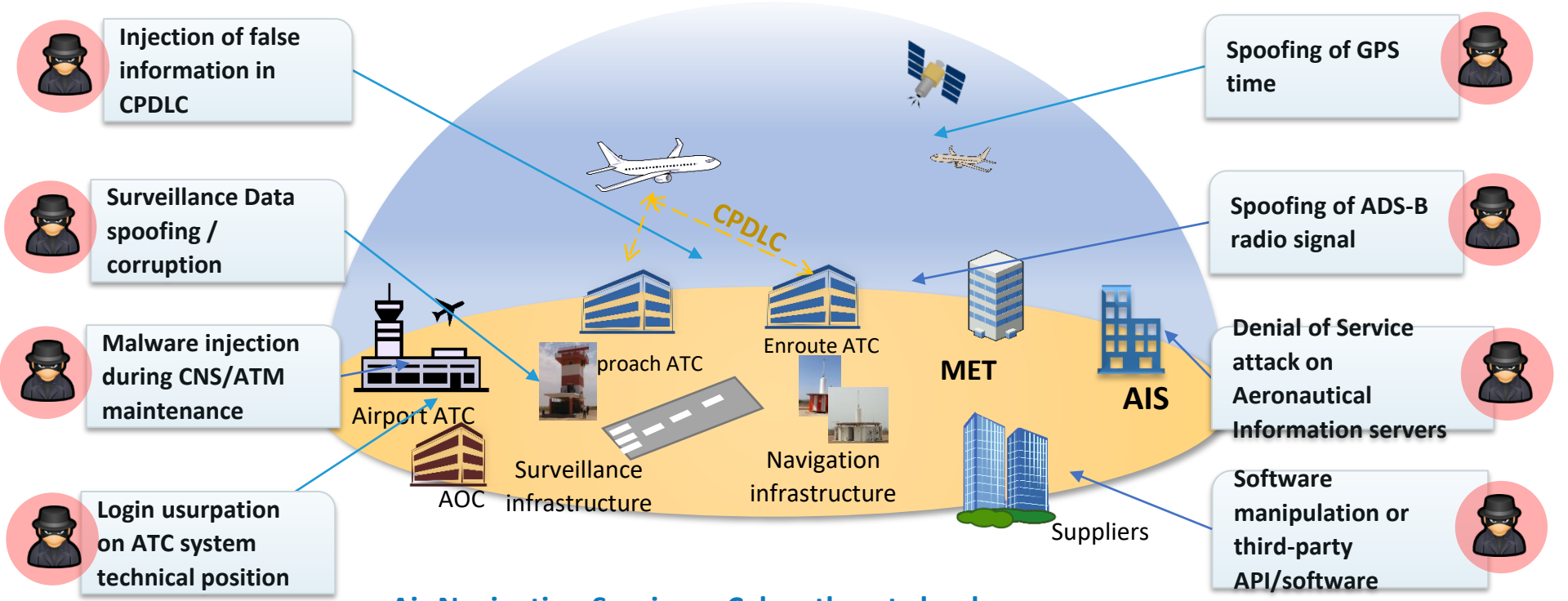


TABLE OF CONTENT

	Status
CHAPTER 1 : INTRODUCTION	✓
CHAPTER 2: UNDERSTANDING CYBER THREATS IN CIVIL AVIATION	✓
CHAPTER 3: ASSET MANAGEMENT	✓
CHAPTER 4: RISK ASSESSMENT AND MANAGEMENT	✓
CHAPTER 5: TRAINING AND AWARENESS MEASURES	✓
CHAPTER 6: DETECTION	✓
CHAPTER 7: RESPONSE	✓
CHAPTER 8: RECOVERY	✓
CHAPTER 9 : CONCLUSION AND RECOMMENDATIONS	✓

2.2 Key achievements



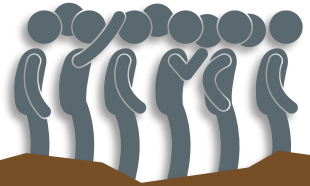
Air Navigation Services - Cyber-threats landscape

(Examples §section 2.5 of ANS Cyber resilience Framework)

2.3 Challenges

Risks

1) Project baseline questionnaire and States response
2) Experts's availability and validity
3) Keeping the framework up-to-date with developments in this area until final approval by APIRG



Project Current status

1. The project baseline questionnaire on ANS Cyber resilience had been finalized since mid 2018 but not yet sent to AFI States
2. Low level of participation of experts
3. A consolidated version of the framework finalized in January 2020

Project Goals

1. Current state of ANS cyber safety resilience in AFI region
2. Experts involved in the project (cooperation with other regional initiatives)
3. A final edition of the cyber framework up-to-date and in line with ICAO latest developments

2.4 The Way Forward

Project Upcoming Tasks and Milestones

Organize a webinar to raise cyber safety and resilience awareness for ANS

Resp. IIM COM 5, IIM Chair

Keep up-to-date the AFI ANS Cyber safety and resilience

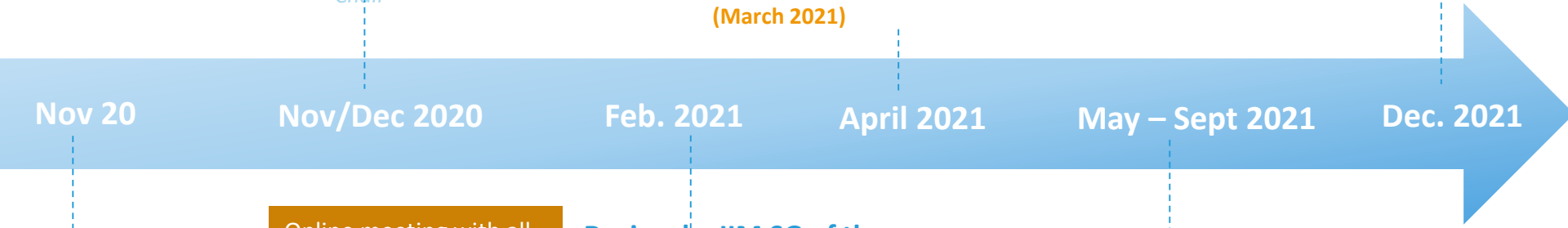
With :

- latest input/information from ICAO Working Group on Air Navigation Systems (WG-ANS) of the ICAO SSGC,
- Survey conducted through the project questionnaire **(March 2021)**

Close out of the project

(Phase 1)

To be validated with IIM SG chair/ Secretariat



Project baseline questionnaire survey to be sent by IIM Secretariat

Online meeting with all IIM projects
Involvement of other regional initiatives (EU,)

Review by IIM SG of the proposed AFI ANS Cyber safety framework

Resp. IIM Chair and Secretariat

Webinars/workshop/information sessions to raise awareness on the framework

Resp. IIIM COM 5, IM Chair and Secretariat

3. Action by the Meeting

3.1 The meeting is invited to:

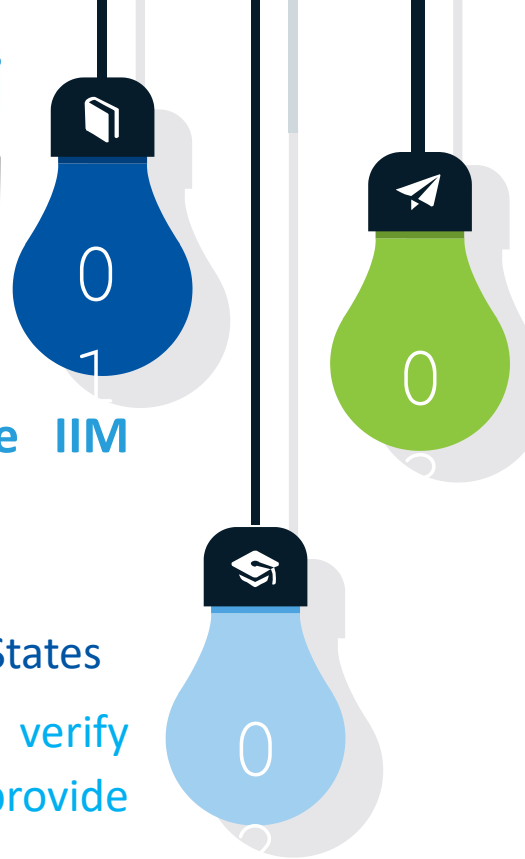
a) Take note of the progress of the project.

b) Note the difficulties encountered by the project and identify any possible solutions with other IIM projects.

c) Encourage cooperation with other regional initiatives on ANS Cyber safety and resilience *(e.g. SAT working group on ANS cybersecurity, EATM CERT, …)*

d) Urge States to participate actively in the project and in future Cyber Security and Resilience awareness workshops/webinars.

3. Action by the Meeting



3.2 Draft Conclusion/Decision : Effective support to the IIM Projects activities

That;

1) Secretariat to send the project baseline questionnaire to AFI States
2) States to confirm the list of project members and verify availability/validity of their designated experts and to provide feedbacks on the project questionnaire
3) APIRG to support activities to raise awareness of ANS Cyber safety and resilience (*through webinars/workshops/seminars on Cyber safety and resilience for AFI Region*).

ICAO

THANK YOU