AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG)

INFRASTRUCTURE & INFORMATION (IIM) SUB-GROUP

COMMUNICATION PROJECT 5

Document information	
APIRG Subgroup	Infrastructure & Information Management APIRG Sub Group
Project Title	Assessment of AFI Air Navigation Services Cyber Safety and Resilience
Project Number	IIM SG COM N°5
Project Coordinator	Côte d'Ivoire
Deliverable Name	IIM COM Project N°5 Organization Description
Deliverable ID	D02
Edition	00.02.00
Task contributors	
Benin, Côte d'Ivoire, Gambia, Ghana, Kenya, Nigeria, Somalia, South Africa, ASECNA, IATA, Cameroon, Madagascar	

Abstract

This document describes the organization of the Infrastructure & Information Management (IIM) Subgroup Communication Project N° 5 "Assessment of AFI Air Navigation Services Cyber Resilience".

It covers the project framework, the project planning with milestones, the meeting program, and the project deliverables.

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Document History

Edition	Date	Status	Author	Justification
00.00.01	23/11/2017	Initial draft	Sandrine GNASSOU	Creation of the document
00.00.02	01/03/2018	Revised Draft	Sandrine GNASSOU AYINA AKILOTAN Cumbi Hugues	Update of the project member list, schedule, and the meeting program
00.00.03	21/09/2018	Revised Draft	Sandrine GNASSOU	
00.00.04	04/10/2018	Revised Draft	Sandrine GNASSOU	Update of the project title and the project schedule
00.00.05	16/11/201/8	Revised Draft for final review	Fredrick JUMA Nombulelo Lekota Sandrine GNASSOU	Update of the document following the review by the project team
00.01.00	08/01/2019	Final Edition	Project team	Consolidated edition
00.01.01	08/02/2019	Revised Edition	Sandrine GNASSOU	Add of a description of document sharing process
00.01.02	20/09/2020	Revised Edition	Sandrine GNASSOU	Update of project scope, project cost estimation, deliverables
00.02.00	02/11/2020	Revised Edition	Sandrine GNASSOU	Update of the project deliverable list, project planning
00.02.01	01/03/2021	Revised Edition	Sandrine GNASSOU	Update of the project planning, the project team member list, the tasks, the project team composition

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Executive summary

This document provides the description of the project organization for the Infrastructure & Information Management Subgroup (IIM) Communication Project N° 5 “Assessment of AFI Aeronautical Networks Cyber Security”. It defines the project framework, the project team organization, the project planning with milestones, the meeting program, and the project deliverables.

The first meeting of the APIRG Sub-Group on Infrastructure and Information Management (IIM / SG / 1) held in Nairobi, Kenya (June 2017) approved and included the IIMSG COM Project.5 as a new regional project in the CNS area, namely “AFI Air Navigation Services Air Navigation Services Assessment” Project.

The scope of the project includes:

- the assessment of the cyber threats on Air Navigation Services in Africa[1];
- the development of a cybersecurity framework over the AFI region. This framework will be voluntary guidance, based on existing standards, guidelines, and practices for organizations to manage and reduce cybersecurity risk. It would assess all issues including the definition of common cyber threats, training & awareness, response, recovery performances, security studies, systematic process of cyber risk evaluation on all new systems, audits, and controls.

The project team is composed of experts from Côte d’Ivoire (project coordinator), Benin, Gambia, Ghana, Kenya, Nigeria, South Africa, Somalia, ASECNA and IATA.

The objective of the document is to provide key elements on the project organization, coordination, the project planning, and the results expected (deliverables).

[1] **"Air Navigation Services"** means air traffic services; communication, navigation, and surveillance services; meteorological services for air navigation; and aeronautical information services

1 Introduction

1.1 Purpose of the document

The Project organization document describes the coordination and arrangement set by the IIM SG COM 5 project team to successfully achieve the "Assessment of AFI Air Navigation Services Cyber Resilience".

It defines the project framework, project planning with milestones, the meeting program, and the project deliverables.

1.2 Intended readership

The intended audience for this document is:

- The project team members,
- The chair and the vice chair of the IIM Sub group.
- The Secretariat of IIM Sub group.
- The other IIM Subgroup projects
- The AAO Subgroup projects.

External to the IIM Sub group, other stakeholders are to be found among:

- Air Navigation Service Providers (ANSP) over the AFI Region.
- National Safety Authority (NSA).
- Affected employee unions.
- Airport owners/providers.
- Airspace users.

1.3 Structure of the document

The structure of the document is as follows:

Section 1	introduces the document; (this section)
Section 2	provides an overview of the IIM COM project N° 5
Section 3	outlines the key elements of the project framework.
Section 4	defines the project deliverables
Section 5	provides the project planning with milestones.
Section 6	describes the task allocation
Section 7	sets the project meeting program.
Section 8	provides the project risk analysis.
Section 9	lists the applicable and reference documents used in the production of this document.

1.4 Acronyms and Terminology

1.4.1 Acronyms and Terminology

Term	Definition
AAO	Airspace and Aerodrome Operations
AIM	Aeronautical Information Management
ANSP	Air Navigation Service Provider
APCC	APIRG Projects Coordination Committee
APIRG	AFI Planning and Implementation Regional Group
ATC	Air Traffic Control
ATM	Air Traffic Management
CERT	Computer Emergency Response Team
CNS	Communication Navigation Surveillance

Term	Definition
COM	Communication
CSRIT	Computer Security Incident Response Team
ESAF	Eastern and Southern African
FIRST	Global Forum of Incident Response and Security Teams
ICAO	International Civil Aviation Organization
IIM	Infrastructure & Information Management
NIST	National Institute of Standards and Technology
SG	Sub Group
WACAF	Western and Central African (WACAF)

1.4.2 Definition of Terms

CSIRT - An internal group within an organization that provides services and functions to secure the assets of the organization. A CSIRT is responsible for receiving, reviewing, and responding to security incidents.

CERT - A CERT provides security awareness, best practices, and security vulnerability information to their populations. CERTs do not directly respond to security incidents.

2 IIM COM Project.5 Overview

The IIM SG COM project N° 5 deals with the Assessment of AFI Air Navigation Services Cyber safety and Resilience. The project was approved during the first meeting of the APIRG Sub-Group on Infrastructure and Information Management (IIM / SG / 1) held in Nairobi, Kenya from 27 to 30 June 2017.

2.1 Project Objective

Considering that the member organizations potentially have unique risks, threats, vulnerabilities, and risk tolerances, and they may be at different levels in adopting and/or implementing cybersecurity strategies, the objective of this Project is to identify and develop cybersecurity risk frameworks for voluntary use by AFI ANSP organizations and member states. Upon adoption of the framework, the member organizations will customize practices described in the Framework.

With the help of the Project members, the organizations can determine activities that are important to critical service delivery and can prioritize investments to maximize the impact of each dollar spent.

2.2 Scope of project

The scope of the project contemplates the assessment of the cyber threats on Air Navigation Services in Africa[2] .

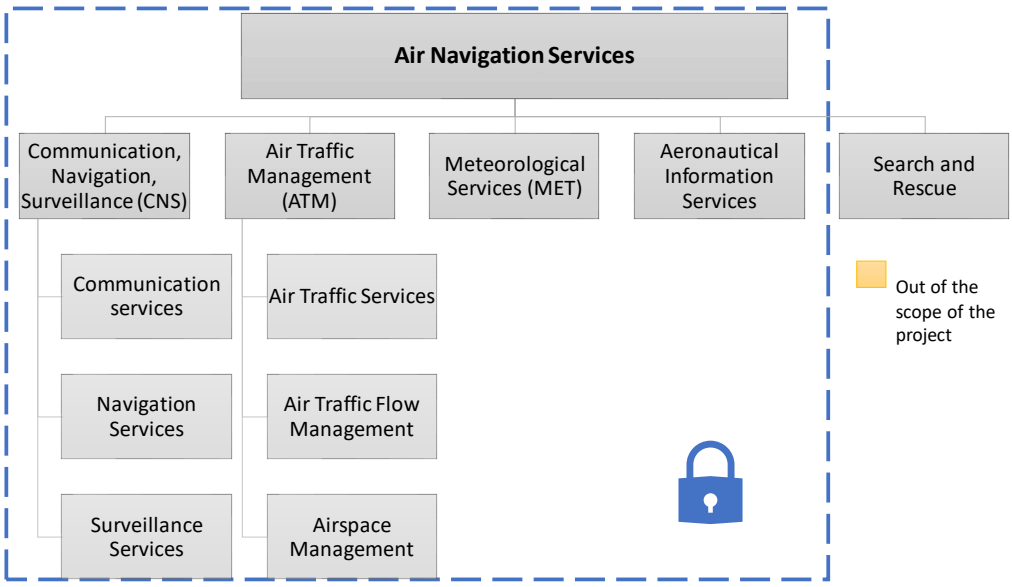


Figure 1 : Scope of the project

[2] Aeronautical Communication Services is included in the scope

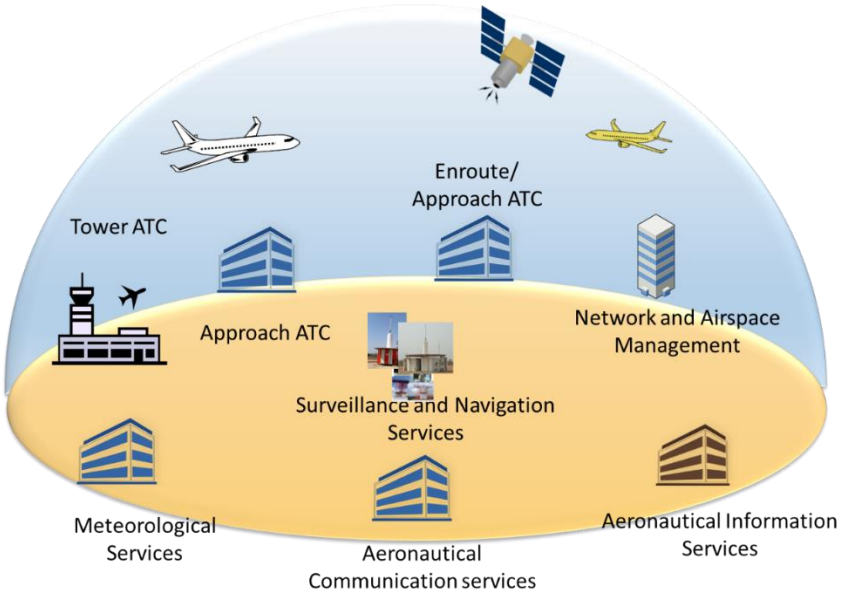


Figure 2 : ANS Sub domains within IIM SG COM project 5 scope

2.3 Project Strategy

The project will rely on five main phases as illustrated in the figure below:

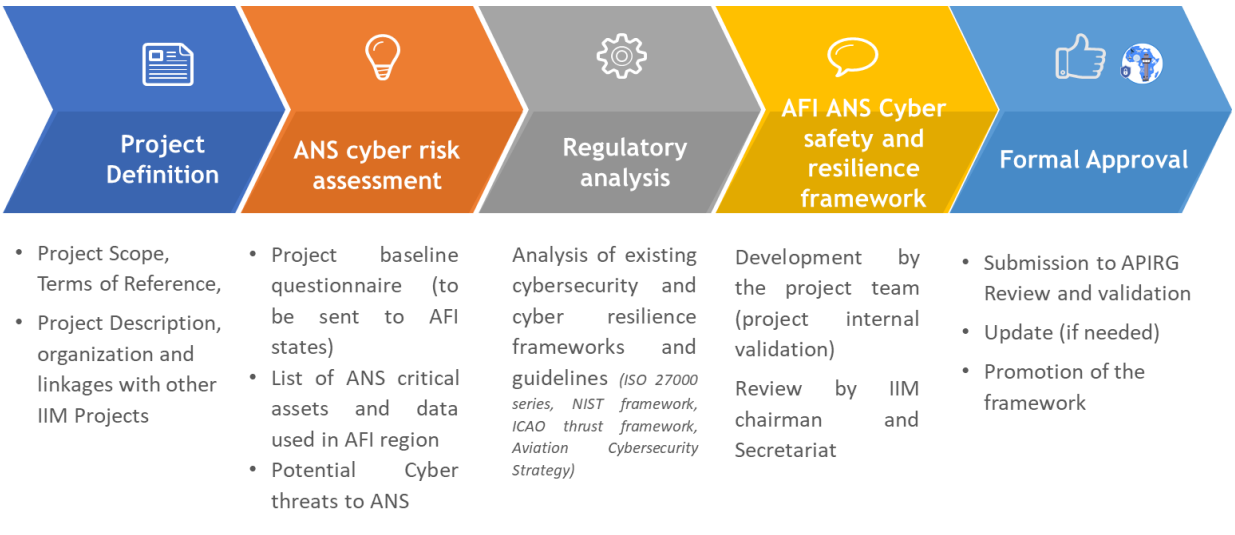


Figure 3 : IIM SG COM project 5 main phases

2.4 Project Tasks

All tasks will be carried out by COM/ IT experts nominated by AFI States or organizations participating in the project, led by the Project-Team Coordinator and under the supervision of the Project Facilitators (ROs/CNS, Dakar, and Nairobi) through the IIM SG working methodology.

Upon completion of the tasks, the results will be sent to the IIM SG Chairman/Vice chairman and Secretariat as a final document for submission to, and if necessary, approval by the APIRG Projects Coordination Committee (APCC).

The Project main tasks are listed in the table below:

	Key activities	Main Tasks
PROJECT DESCRIPTION	Project description and scope	• Define the project Scope • Agree on Project Terms of Reference • Develop and keep up to date the Project Description, organization and linkages with other IIM Projects
CYBER THREATS ASSESSMENT	Assessment of cyber resilience of Air Navigation services in Africa	• List all systems and data used for Air Navigation Services in AFI Region (expert knowledge , APIRG reports,… • Develop Project baseline questionnaire and analyze AFI States and ANSPs feedbacks (through questionnaire) • Identify the main cyber threats (ENISA reports, Symantec, Aviation cyber incidents information)
CYBER FRAMEWORK	Development of an AFI ANS Cyber resilience Framework	• Analyze existing cybersecurity and cyber resilience frameworks (ISO 27000 series, NIST framework, ICAO thrust framework) • Develop an AFI Cyber resilience framework for Air Navigation services

Figure 4 : IIM SG COM 5 Project tasks

A detailed description of the project tasks is provided in appendix B.

Note: The essence of the project is to put in place a solid team and strategy to support the implementation of the cybersecurity framework for Air Navigation Services in AFI region.

3 Project framework

3.1 Communication means

The mediums that will be used to communicate between the project team members and to make the project progress meetings (and working meetings) are the following electronic based means:

- Electronic correspondence (e-mail).
- Teleconference, videoconference.
- WhatsApp's (working group).
- Microsoft Teams or Skype meetings.

The project coordinator will use the same means for the coordination with the chairman/vice chairman and the secretariat of IIM Sub group.

3.2 Project team

The IIM COM Project.5 is composed of CNS & IT experts from the following States and Organizations:

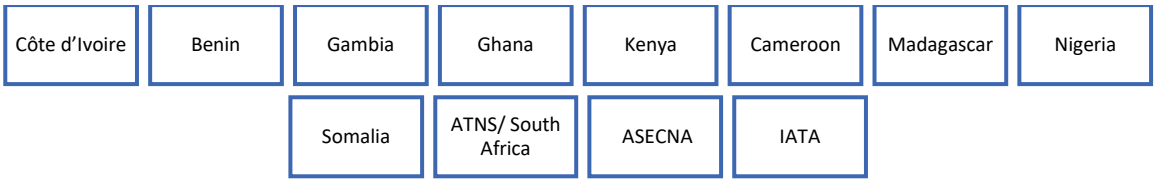


Figure 5 : Composition of the project team

The list of project team members who have been identified to form part of the IIM COM Project 5 team is provided in appendix 1.

3.3 Language of work

The deliverables and the working documents will be in English.

Teleconferences/videoconferences meeting may be conducted in English.

3.4 Project Document sharing

A Drop Box account where we have uploaded all the relevant Project documents had been created.

3.5 Project cost Estimation

As requested by the IIM Chair and Secretariat, a project cost estimation is being developed.

4 Project deliverables

The project deliverables are listed in Table *1*.

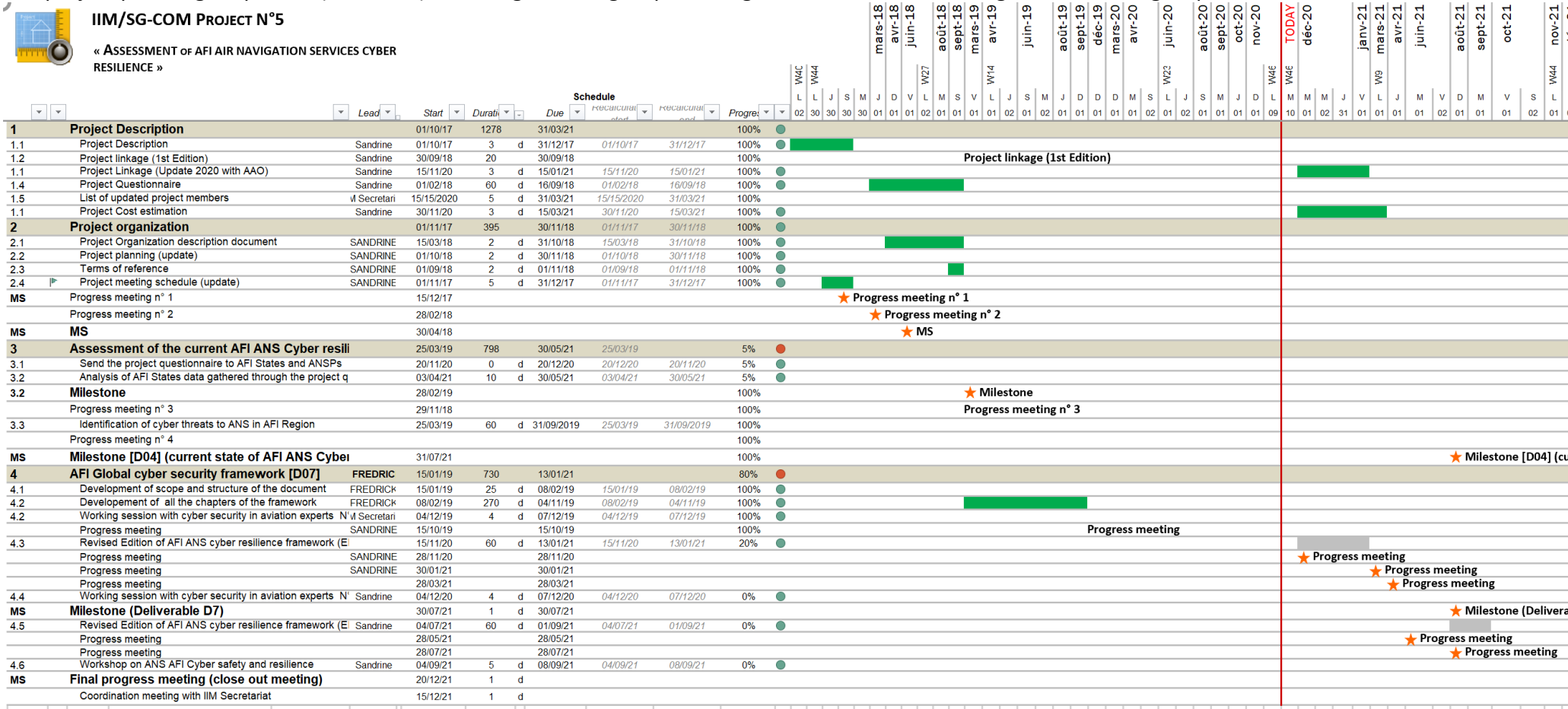
Project Deliverables	Date of Delivery	Objectives
[D01] Project Description	31/12/2017	To provide a description of the project
[D02] Organization of project team	31/12/2017	To set the basis for the project organization and coordination
[D03] Terms of reference	30/09/2018	The terms of reference had been updated in December 2019 (minor updates)
[D04] Project linkage	30/12/2018	To identify the links between the IIM COM 5 project and the other IIM and AAO projects. The initial matric linkage shall be updated in 2021
[D05] Project baseline questionnaire	December 2018	The project questionnaire had been updated in December 2019
[D06] Assessment of the current ANS cyber resilience and diagnostic of the potential threats to the safe provision of the air navigation service in the AFI region	September 2021	To assess the current Air Navigation Services cyber security and diagnostic the potential threats to the safe provision of the air navigation service in the AFI region
[D07] ANS Cyber resilience framework for AFI region	September 2021	The framework will define standards, guidelines, and best practices to manage cybersecurity related risks for the AFI region member organizations
[D08] Teleconferences, Workshops/Seminars, working sessions (French and English) on AFI ANS cyber resilience framework	2021-2022	Working Sessions are an essential tool to: •Promote the AFI Cybersecurity framework •Network people and contribute to build capacity in Cybersecurity in aviation •Deliver valuable information to decision makers about Cybersecurity •Gather best practices from other regional initiatives on Cyberspace issues for Aviation

Table 1 : List of Project deliverables

5 Project planning

The following figure provide the project planning and the milestones (update of March 2021).

The project planning is updated (if needed) following IIM Sub group meetings or coordination meetings with IIM Sub group chair and Secretariat.



		Lead	Start	Durati		Due	Recalculat start	Recalculat end	Progres
1	**Project Description**		01/10/17	1278		31/03/21			100%
1.1	Project Description	Sandrine	01/10/17	3	d	31/12/17	01/10/17	31/12/17	100%
1.2	Project linkage (1st Edition)	Sandrine	30/09/18	20		30/09/18			100%
1.1	Project Linkage (Update 2020 with AAO)	Sandrine	15/11/20	3	d	15/01/21	15/11/20	15/01/21	100%
1.4	Project Questionnaire	Sandrine	01/02/18	60	d	16/09/18	01/02/18	16/09/18	100%
1.5	List of updated project members	M Secretari	15/15/2020	5	d	31/03/21	15/15/2020	31/03/21	100%
1.1	Project Cost estimation	Sandrine	30/11/20	3	d	15/03/21	30/11/20	15/03/21	100%
2	**Project organization**		01/11/17	395		30/11/18	01/11/17	30/11/18	100%
2.1	Project Organization description document	SANDRINE	15/03/18	2	d	31/10/18	15/03/18	31/10/18	100%
2.2	Project planning (update)	SANDRINE	01/10/18	2	d	30/11/18	01/10/18	30/11/18	100%
2.3	Terms of reference	SANDRINE	01/09/18	2	d	01/11/18	01/09/18	01/11/18	100%
2.4	Project meeting schedule (update)	SANDRINE	01/11/17	5	d	31/12/17	01/11/17	31/12/17	100%
MS	Progress meeting n° 1		15/12/17						
	Progress meeting n° 2		28/02/18						
MS	**MS**		30/04/18						
3	**Assessment of the current AFI ANS Cyber resili**		25/03/19	798		30/05/21	25/03/19		5%
3.1	Send the project questionnaire to AFI States and ANSPs		20/11/20	0	d	20/12/20	20/12/20	20/11/20	5%
3.2	Analysis of AFI States data gathered through the project q		03/04/21	10	d	30/05/21	03/04/21	30/05/21	5%
3.2	**Milestone**		28/02/19						100%
	Progress meeting n° 3		29/11/18						100%
3.3	Identification of cyber threats to ANS in AFI Region		25/03/19	60	d	31/09/2019	25/03/19	31/09/2019	100%
	Progress meeting n° 4								100%
MS	**Milestone [D04] (current state of AFI ANS Cyber**		31/07/21						100%
4	**AFI Global cyber security framework [D07]**	FREDRIC	15/01/19	730		13/01/21			80%
4.1	Development of scope and structure of the document	FREDRICK	15/01/19	25	d	08/02/19	15/01/19	08/02/19	100%
4.2	Developement of all the chapters of the framework	FREDRICK	08/02/19	270	d	04/11/19	08/02/19	04/11/19	100%
4.2	Working session with cyber security in aviation experts	M Secretari	04/12/19	4	d	07/12/19	04/12/19	07/12/19	100%
	Progress meeting	SANDRINE	15/10/19			15/10/19			100%
4.3	Revised Edition of AFI ANS cyber resilience framework (E		15/11/20	60	d	13/01/21	15/11/20	13/01/21	20%
	Progress meeting	SANDRINE	28/11/20			28/11/20			
	Progress meeting	SANDRINE	30/01/21			30/01/21			
	Progress meeting		28/03/21			28/03/21			
4.4	Working session with cyber security in aviation experts	M Sandrine	04/12/20	4	d	07/12/20	04/12/20	07/12/20	0%
MS	**Milestone (Deliverable D7)**		30/07/21	1	d	30/07/21			
4.5	Revised Edition of AFI ANS cyber resilience framework (E	Sandrine	04/07/21	60	d	01/09/21	04/07/21	01/09/21	0%
	Progress meeting		28/05/21			28/05/21			
	Progress meeting		28/07/21			28/07/21			
4.6	Workshop on ANS AFI Cyber safety and resilience	Sandrine	04/09/21	5	d	08/09/21	04/09/21	08/09/21	0%
MS	**Final progress meeting (close out meeting)**		20/12/21	1	d				
	Coordination meeting with IIM Secretariat		15/12/21	1	d				

The project coordinator follows and updates the project planning.

Figure 6 : IIM SG COM Project.5 planning (update 05th November 2020)

6 Project task allocation

The different tasks of the project are allocated among the project team members. The task allocation is decided collaboratively and on a voluntary basis.

For each task, a project task leader and project task contributors are designated.
The project task leader plays a critical role in ensuring that a group of people complete a task or project as expected.

7 Project meeting program

The project meeting program is based on four (4) types of meetings (Figure 7**Erreur ! Source du renvoi introuvable.**):

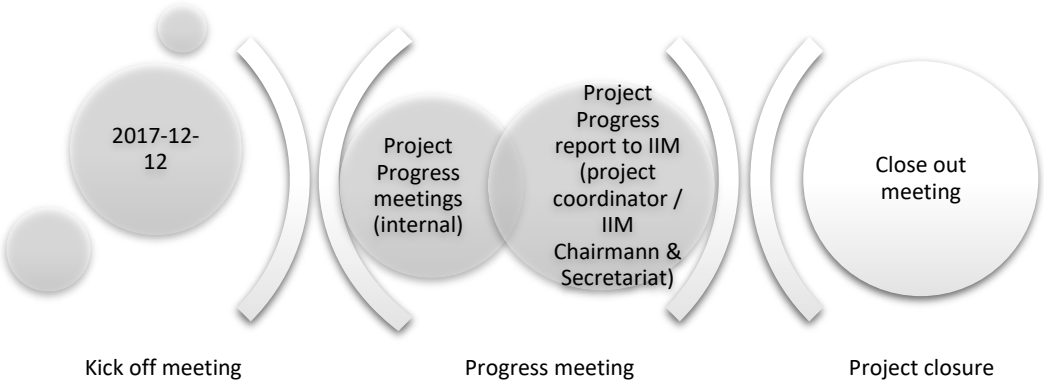


Figure 7 : Project meeting program

7.1 Kick off meeting

Meeting Objectives	• **To agree on the project organization** • **To agree on the project planning**
Periodicity	Once (December 2017 & February 2018)
Means:	Teleconference / Videoconference/ Skype meeting / WebEx meeting (WebEx, skype)
Report	Minutes of meeting (MoM)

Table 2 : Project Kick off meeting

7.2 Internal Progress meetings (with project team members)

Meeting Objectives	• **To capture from time to time all the ongoing critical issues affecting the project**

	• **To identify the top issues,** • **To agree about the actions, the owners, the deadlines and** • **To review any previously closed items if needed**
Periodicity	monthly
Means	Teleconference / Skype meeting / WebEx meeting (WebEx, skype)
Meeting scheduling	Use of "doodle" tool to gather project team members' availabilities (https://doodle.com)
Report	Minutes of meeting (MoM)

Table 3 : Project internal progress meeting

7.3 Progress report to IIM Chairperson and Secretariat (bimonthly)

Objectives	• **To report the progress made by the project and the status of the deliverables** • **To discuss the potential difficulties of the project**
Periodicity	Every two months
Attendees	IIM Chairman and vice chairman IIM Secretariat Project coordinator
Means	Teleconference / Videoconference/ Skype meeting / WebEx meeting (WebEx, skype)
Meeting scheduling	Define by the IIM Secretariat
Report	Minutes of meeting (MOM) Progress report

Table 4 : Project progress report to IIM Chairman/secretariat meeting

7.4 Close out meeting

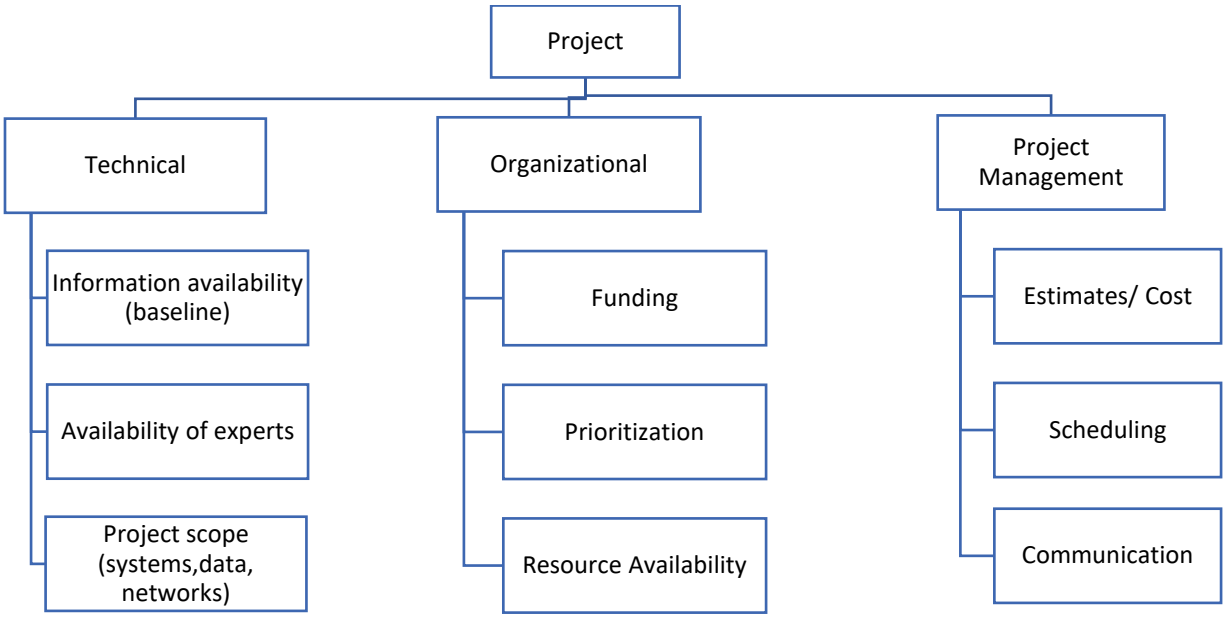
Meeting Objectives	• **To assess, review the project and identify the lessons learned** • **To get official acceptance of the final deliverable** • **To officially close the project** • **To make sure that any potential outstanding activities and tasks are assigned to the right people**
Periodicity	Once End 2019
Attendees	All project team members

	Project coordinator
Means	Teleconference / Videoconference/ Skype meeting / WebEx meeting (WebEx, skype)
Meeting scheduling	Use of "doodle" to gather project team members' availabilities
Report	Minutes of meeting (MOM) Final project report, or close-out report, at the end of the meeting

Table 5 : Close out meeting

8 Project Risk Assessment

A risk is "An uncertain event or condition that has a positive or negative effect on a project's objectives." Basically, risk is any unexpected event that can affect the project.
The categories and subcategories where risks may arise are listed in the figure below:



The risks are listed in the **Table *7***. The project risk matrix is provided in **Table 6**

		Impact				
		Very Low	Low	Medium	High	Very High
Likelihood	Almost certain					
	Likely				**3**	
	Possible			**4, 5**	**1, 2,6, 7, 8**	
	Unlikely					
	Rare					

Table 6: Project risk matrix

ID	Description of Risk	Impact	Risk Response	Likelihood	Consequences	Risk owner
1	Inadequate project planning	Delay in deliverable delivery	Confirm delivery dates Update and revise the project planning	Possible	**High**	Project coordinator
2	Poor definition of scope	Project objectives not met Loss of time	Holding meetings with IIM SG Chairman and Secretariat to clarify the scope	Possible	**High**	
3	Lack of availability of the experts nominated by States and Organization	Delay of deliverables inability to coordinate project tasks Inability to develop the deliverables	Check the updated list of project team with IIM SG chairperson/secretariat and the project team Allocate the tasks according to experts' availability Organize monthly progress meeting taking to account the experts' availability	Likely	**High**	Project team
4	Poor cost estimates	Inability to do some tasks (e.g., workshops on cyber safety and resilience)	Revise cost estimates	Possible	**Medium**	Project coordinator
5	Poor coordination between IIM SG chairperson/secretariat and the project team	Lack of follow up of IIM guidelines for the IIM projects	Organize meetings with the IIM SG chairperson/secretariat and the project team on the regular basis	Possible	**Medium**	IIM Sub Group Project coordinator
6	Lack of information for the project baseline	Incorrect assessment of cybersecurity of air navigation services in Africa	Send the project questionnaire to all African states and ANSPs with sufficient time to respond	Possible	**High**	
7	Communication difficulties within the project team (electronic communication means, online meetings)	Inability to coordinate the tasks Deliverables not delivered	Find the best communication mean for the project	Possible	**High**	Project coordinator

ID	Description of Risk	Impact	Risk Response	Likelihood	Consequences	Risk owner
8	Failure by member organizations to adopt and implement the guidelines & best practices recommended in the Cybersecurity framework	Project objectives not met. Loss of Time	Ensure buy in and acceptance by all member organizations stakeholders including the Management Teams, Technical Teams, Legal Teams, Finance Teams and Human Resources Teams.	Possible	High	Project Coordinator

Table 7 : Project risks identification

9 References

This section identifies the documents (name, reference, source project) the document must comply to or to be used as additional inputs for the document.

9.1 Applicable Documents

This project organization description document complies with the requirements set out in the following documents:

[1] APIRG Procedural Handbook 5th Edition – 2017

9.2 Reference Documents

[1] IIM COM Project.5 Description, Edition 00.00.10
[2] ISO/IEC 27000 Family of Information Security Standards
[3] https://www.nist.gov/cyberframework/framework

-END OF DOCUMENT-

APPENDICE A: List of Project team members (update November 2020)

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APPENDICE B: IIM SG COM Project 5 Project tasks (update – 5th November 2020)

N°	Project Tasks	Rationale	Sub task	Task leader	Task Contributors	deadline	status
1	Develop project initiation document	1. Define, describe the project	1.1 Develop the project Description	Côte d'Ivoire	All project members	15/12/2018	
			1.2 Develop the project organization document	Côte d'Ivoire	All project members	15/12/2018	
			1.3 Develop the project Terms of reference	Côte d'Ivoire	All project members	15/12/2018	
			1.4 Develop the project linkage	Côte d'Ivoire	All project members	15/12/2018	To be updated
			1.5 Develop the project cost estimation	Côte d'Ivoire	All project members	31/03/2021	
2	Assess current Cyber safety and resilience of Air Navigation Services in AFI Region	2. Identify the critical infrastructures/systems/data that could be affected by a cyber attack 3. Serve as a basis for the project and will be used in the development of the overall framework. 4. Uncover the current state of Air Navigation Services cyber security in AFI organizations 5. conduct a survey	2.1 Develop a baseline questionnaire to be sent to AFI States and ANSPs	Côte d'Ivoire	ATNS ASECNA Somalia ICAO FISS	15/12/2018	
			2.2 Send the project questionnaire to AFI States and ANSP	IIM SG Secretariat		31/01/2021	
			2.3 Analyse the Project questionnaire responses from states	Côte d'Ivoire	ATNS ASECNA Somalia ICAO FISS	30/05/2021	
			2.4 List ANS critical infrastructures/systems/data	ASECNA	ATNS Somalia ICAO FISS Côte d'Ivoire	15/12/2019 (completed)	

N°	Project Tasks	Rationale	Sub task	Task leader	Task Contributors	deadline	status
					Gambia	To be updated in 2021	
			2.5 List potential cyber threats to ANS	ASECNA	ATNS ASECNA Somalia ICAO FISS	15/12/2019 (completed) To be updated in 2021	
3.	Develop and establish the Cyber safety and resilience framework	Provide a comprehensive set of guidelines, and best practices to manage cybersecurity related risks for the AFI region member organizations. A framework to be adopted and adapted by AFI Region	3.1 Analyze the most relevant standards, guidelines, and best practices related to cybersecurity/ cyber resilience	Somalia ICAO FISS	ATNS ASECNA Côte d'Ivoire	20/06/2019	completed
			3.2 Develop the scope and the organization of the framework	Somalia ICAO FISS	ATNS ASECNA Côte d'Ivoire	20/02/2019	completed
			3.3 Develop all the sections of the framework	Somalia ICAO FISS	ATNS ASECNA Côte d'Ivoire	30/11/2019	
			3.4 Ensure that the framework is up to date until formal approval by APIRG	Côte d'Ivoire	ATNS ASECNA Côte d'Ivoire Somalia ICAO FISS Kenya	3011/2021	

N°	Project Tasks	Rationale	Sub task	Task leader	Task Contributors	deadline	status
4	Promote the AFI ANS Cyber safety and resilience	Workshop, webinars to raise awareness	4.1 Organize two workshops/ webinars on cyber safety and resilience in AFI region	IIM COM Project 5 Members	IIM Secretariat	30/11/2021	
		Communication tool kit	4.2 Develop a communication plan to raise awareness	IATA	PTC South Africa	30/11/2021	

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