



ICAO

COMPREHENSIVE REGIONAL IMPLEMENTATION PLAN FOR AVIATION SAFETY IN AFRICA (AFI PLAN)

TWENTY-SECOND AFI PLAN STEERING COMMITTEE MEETING *Kampala, Uganda, 15 May 2019*

Agenda Item 6: Consideration of the African Aviation Training Roadmap

(Presented by AATO)

EXECUTIVE SUMMARY

This paper presents the African Aviation Training Roadmap.

Aviation is a sector of strategic importance that supports a broad set of economic and social development. The provision of quality aviation training is critical for the development of a sustainable, safe and secure air transport industry in Africa. As a region that faces shortages in critical skills in key areas of civil aviation to plan, coordinate, manage, operate, and oversee all complex operations in various aviation infrastructure, the growth of the industry will be influenced by the pace at which African organizations are able to develop and retain adequate and skilled human resources in compliance with ICAO provisions, plans, programs and required performance specified in ICAO SARPS. ICAO is concerned about the disparities in aviation training quality and standards that lead to inability to achieve the same level of human performance at work hence the need for States to focus on the development of skills and capacities in order to have a common level. The expected and projected changes in the aviation systems, equipment, ICAO SARPs, technology, demographic changes of workforce will additionally impact aviation training.

Action: The Steering Committee is invited to:

- a) Note the information contained in the paper;
- b) To consider the final draft of the African Aviation Training Roadmap presented as Attachment A to this Discussion Paper;
- c) Encourage all stakeholders such as Civil Aviation Authorities, Aviation Training Organizations, Service Providers, Industry partners etc. to continue providing aviation training related information for the continuous improvement of the Roadmap and

related Appendices, development of the aviation professional's database

- d) Provide technical and financial support to the programs and activities of AATO; and
- e) Provide further guidance to the meeting.

REFERENCE(S): ICAO Global Aviation Safety Plan (GASP), Global Air Navigation Capacity and Efficiency Plan (Global Plan), Abuja Safety Targets, Windhoek Declaration, AU SAATM High Level Implementation Plan, AATO Strategic Objectives, Boeing and Airbus Industry Forecasts, UNEP Plans.

Related ICAO Strategic Objective(s): Safety, Air Navigation Capacity and Efficiency, Security and Facilitation, Economic Development of Air Transport, Environmental Protection.

1. INTRODUCTION

1.1 The Steering Committee (SC) of the Comprehensive Regional Implementation Plan for Africa (AFI PLAN) in its 14th meeting held in Montreal, Canada on 24th October 2014 had a discussion on matters related to aviation training in Africa. During this meeting the SC considered the lack of information on an inventory on training needs and courses available as one of the key challenges in the region. Accordingly, it recommended that AATO in collaboration with GAT and Morocco to carry out the training needs analysis and to come up with Draft Training Needs Road Map.

1.2 AATO network of training organizations and partners were considered to be a good source of information that will be used to prepare the Roadmap.

2. ROADMAP DEVELOPMENT MILESTONES

2.1 AATO conducted two training needs surveys in 2014 and 2015. Additionally, results of similar surveys from Singapore Aviation Academy and East African School of Aviation were used to prepare a draft aviation training roadmap.

2.2 The draft roadmap was presented to the 18th AFI Plan SC meeting held in Montreal, Canada on the 30th of November 2016. The SC reviewed the draft training roadmap and advised the AFI Plan Secretariat to assist AATO coordinating a meeting among Partners and stakeholders including GAT to further enhance the content of the roadmap.

2.3 The 11th AATO Council decided that, the draft roadmap be shared with aviation training stakeholders and then collaborate with AFI Plan secretariat to convene a stakeholders meeting back to back with the 4th ICAO Global Aviation Training and TRAINAIR Plus Symposium in Addis Ababa, Ethiopia.

2.4 The AFI Plan Secretariat coordinated the hosting of the stakeholders meeting which was held on 10 April and attended by 24 participants representing key stakeholders including Aviation Training Organizations (ATOs), ICAO Global Aviation Training Office (ICAO-GAT), Eastern and Southern Africa and Western and Central Regional Offices of ICAO (ICAO ESAF and WACAF), Singapore Aviation Academy, US FAA, African Business Aviation Association, African Aviation Services, Ethiopian Civil Aviation Authority, Ethiopian Airlines Academy, and Egnos Joint Program Office etc.

2.5 The meeting came out with recommendations on the roadmap structure which will include the objectives, scope, methodology, audience/customers, performance enablers, risks and actions. Additionally, a detailed training needs survey for each state and all professions must be conducted so as to have an accurate training needs database.

2.6 The meeting also recommended adopting the methodology presented by GAT for the training roadmap development to review the African Aviation Training roadmap and incorporate inputs that were submitted by FAA, JPO, SAA, AfBAA, EASA e.t.c.

2.7 The stakeholders meeting report was presented to the 19th AFI SC meeting in Gaborone and AATO and partners were directed to continue with the roadmap development and finalize it as soon as possible.

2.8 AATO adopted the Addis Ababa aviation training roadmap development model and prepared a first Roadmap based on results of previous surveys, ATOs' training records, and equipment manufactures forecasts.

2.9 The Roadmap was presented to stakeholders in meeting in Doha jointly organized by AFI SC, GAT and AATO and hosted by Qatar Aeronautical College back to back with the 5th Global Aviation Training Symposium on 12th December 2018.

2.10 Stakeholders provided comments on the Roadmap structure and contents, which were incorporated and the resulting document contains the Roadmap and five appendices.

3. Action required: The Steering Committee is invited to

3.1 Note the information contained in the paper;

3.2 To consider the final draft of the African Aviation Training Roadmap presented as attachment A to this Discussion Paper;

3.3 Encourage stakeholders such as Civil Aviation Authorities, Aviation Training Institutions, Industry partners etc. to continue submitting training related information for the continuous improvement of the roadmap;

3.4 Provide technical and financial support to the programs and activities of AATO;
and,

3.5 Provide further guidance as necessary.

-END-



Attachment A

AFRICAN AVIATION TRAINING ROADMAP

**Prepared By: Association of African Aviation Training
Organizations (AATO)**

2019

Table of Contents

GLOSSARY.....	iii
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1. Executive Summary	Error! Bookmark not defined.
2. Main Objective	Error! Bookmark not defined.
2.1 Specific Objectives.....	2
2.1.1 Safe, Secure and Sustainable air transport in Africa	2
2.1.2 Harmonized and standardized training	3
3. Scope.....	Error! Bookmark not defined.
4. Methodology	Error! Bookmark not defined.
The Roadmap development methodology was based on the following model.....	3
4.1 Systems.....	3
4.2 Data	4
4.3 Focal Points	4
4.4.1 Road map report	5
4.4.2 List of accredited ATOs	5
4.4.3 List of available courses	5
4.4.4 List of instructors and their qualifications.....	5
5. Performance Enablers	5
5.1 Standard of Training.....	5
5.1.1 Curriculum design	5
5.2 Accreditation of Qualifications	6
5.3 Collaboration.....	6
5.4 Sharing of Data.....	6
5.5 Global and Regional Plans	6
5.6 Actual training needs	7
6. Audience/Customers.....	8
6.1 Members	8
6.1.1 Current Members	8
6.1.2 Prospective Members	8
6.2 Stakeholders.....	8
7. Risks	11
7.1 Local Relevancy.....	11
7.2 Political, Economic, Social, Technological, Environmental and Legal.....	11

7.2.1 Political	11
7.2.2 Economical	11
7.2.3 Social	11
7.2.4 Technological	12
7.2.5 Environmental	12
8. Actions.....	12
8.1 Short Term: 1 – 5 Years	12
8.2 Medium Term: 5 – 10 Years	14
8.3 Long Term: 10 – 20 Years.....	16
9. High Level Implementation Strategy 2019 - 2039.....	17
10. Monitoring and Evaluation Mechanism	2
 Appendix A	 5
Appendix B	11
Appendix C	13
Appendix D	21
Appendix E	47

APPENDICES

Appendix A: List of Training Organizations in Africa

Appendix B: List of Courses (STPs, ITPs and Others)

Appendix C: Actual Training Needs

Appendix D: Instructors Database

Appendix E: GAT Catalogue

GLOSSARY

AATO – Association of African Aviation Training Organizations

ATO – Aviation Training Organization

ACI – Airport Council International

AFBAA – African Business Aviation Association

AFCAC – African Civil Aviation Commission

AFI SC – Africa and Indian Ocean Steering Committee

AFRAA – African Airline Association

AMO – Aviation Maintenance Organization

ATA – Air Traffic Academy

ATC – Air Traffic Control

ATNS – Air Traffic and Navigation Services

CAA – Civil Aviation Authority

CATC – Civil Aviation Training Centre

CAS – Continental Accreditation System

CANSO – Council of Air Navigation Service Organizations

CASSOA – Civil Aviation Safety and Security Oversight Agency

EAC – East African Community

EASA – East African School of Aviation

EI – Effective Implementation

FAA – Federal Aviation Authority

GAT – Global Aviation Training

GATA – Ghana CAA Training Academy

IATA – International Air Transport Association

ICAO – International Civil Aviation Organization

JPO – Joint Program Office

NAHCO – Nigeria Aviation Handling Company

NCAT – Nigerian College of Aviation Technology

SAATM – Single African Air Transport Market

SARPS – Standards and Recommended Practices

SITA – Société Internationale de Télécommunications Aéronautiques

STP – Standard Training Package

TP – TRAINAIR PLUS

TEWG – Training Experts Work Group

USOAP – Universal Safety Oversight Audit Program

The African Aviation Training Roadmap

1. Executive Summary

1.1 Aviation is a sector of strategic importance that supports a broad set of economic and social development. The provision of quality aviation training is critical for the development of a sustainable, safe and secure air transport industry in Africa. As a region that faces shortages in critical skills in key areas of civil aviation to plan, coordinate, manage, operate, and oversee all complex operations in various aviation infrastructure, the growth of the industry will be influenced by the pace at which African organizations are able to develop and retain adequate and skilled human resources in compliance with ICAO provisions, plans, programs and required performance specified in ICAO SARPS. ICAO is concerned about the disparities in aviation training quality and standards that lead to inability to achieve the same level of human performance at work hence the need for States to focus on the development of skills and capacities in order to have a common level. The expected and projected changes in the aviation systems, equipment, ICAO SARPs, technology, demographic changes of workforce will additionally impact aviation training.

1.2 The African Union Agenda for liberalising intra air transport through the full implementation of the Yamoussoukro Decision, to improve air connectivity and lower fares, ensuring the sustainable development of air transport in Africa and its contribution to economic growth, job creation and integration of the continent strategically depend on the availability of adequate and competent aviation professionals. Agenda 2063 Flagship Project of creating a Single African Air Transport Market amongst other things, African Aviation training is definitely going to take centre stage in fulfilling the AU vision. The Association of African Aviation Training Organizations (AATO) was given the task, in collaboration with Global Aviation Training (GAT), by the International Civil Aviation Organisation (ICAO) to research and design an Aviation Training Roadmap for the African Continent.

1.3 AATO has developed the African Aviation Training Roadmap with a view to provide guidance on the development of training aviation personnel in Africa to meet future demands for the industry and in congruent with the ICAO strategic objectives, global and regional plans. The Road Map will help stakeholders to develop and implement plans to ensure that they improve their human resource requirements in order to meet the ICAO standards and recommended practices. The AATO objective of providing harmonized and standardized quality training in Africa will empower ATOs and assist States in achieving the minimum safety and security standards.

This training and capacity building Roadmap is a strategic document aimed at outlining the human resource requirements for states to achieve its national objectives and to address performance issues identified through gap analysis

1.4 The Road Map was developed using the Addis Ababa model which was adopted by aviation training stakeholders. Comprehensive data collected from Aviation Training Organizations in Africa and reports prepared in early studies on aviation training were used to design the roadmap. The reports were discussed in various meetings with AATO members and aviation training stakeholders during which clarity on the requirements in the short, medium and long terms were identified. The analyses showed that challenges remain in the areas of standards in training, curricula design, instructor's qualification, accreditation of qualifications, collaboration and sharing of data among the training institutions. Tackling

these challenges will go a long way in solving Africa's human resources shortages. The performance enablers that the roadmap addresses are: Standard of Training, Curriculum design, Accreditation of qualifications, Collaboration and Sharing of data. The measurable outcomes addresses: The Roadmap, List of accredited ATOs, List of available courses, List of Instructors and their Qualifications, the Actual Training Needs, Facilities and Infrastructure. The roadmap details the intended audience as well as the stakeholders who will be the consumers of this information while risks in implementing the roadmap are highlighted according to the PESTLE model and local relevancy.

1.5 Finally an action plan with short, medium and long term goals is included in the roadmap. In the short term the Roadmap focuses on improving capacity and assisting states at the lowest compliance levels to achieve effective implementation of 60% and improving to 90% for States currently with above 60%. In the medium term, the focus will be to ensure adequate qualified personnel to replace the ageing staff, develop capacities for new technologies, harmonise and standardise training and designating centres of excellence in aviation training. In addition, a training needs survey will be undertaken to inform future training requirements and ensure continuous data improvement and sharing across the continent. In the long term the road map envisages the achievement of adequate skills and competences that supports a sustainable air transport industry. At this stage industry surveys will be conducted to establish emerging training requirements and to continuously improve the data available on aviation training.

1.6 The implementation of this aviation training Roadmap will help bridge the gap in human resource requirements and enable states to improve capacity and achieve their national objectives in air transportation. AATO members will take the lead in implementing the Roadmap and encouraging other states to embrace and implement the Road map in the ICAO theme of "Working together to ensure that no country is left behind". There will be a continuous monitoring, evaluation and review of the roadmap as it is a living document that relies on the changing needs of the aviation industry to be effective.

The African aviation training roadmap's main objective is to provide adequate, standardized and harmonized quality training to aviation professionals and bring Africa up to the minimum safety and security standards.

2. Specific Objectives

2.1.1 Safe, Secure and Sustainable air transport in Africa

Safe, secure and sustainable aviation development rely on the availability of qualified and competent employees, supervisors and managers to plan, coordinate, manage, operate, maintain and oversee all complex operations in various airports, airspaces, airplanes, etc. This aviation training and capacity- building Roadmap will assist the International Civil Aviation Organization (ICAO) members in the development of plans to ensure that they have the required human resources, skills, technology and operational environment to carry out all aviation activities in compliance with ICAO provisions, plans, programmes and required performance specified in ICAO Standards and Recommended Practices (SARPs) as well as regional aviation initiatives.

2.1.2 Harmonized and standardized training

The ICAO Universal Safety Oversight Audit Program (USOAP) and Universal Security Audit (USAP) results and findings include lack of effective implementations directly related to personnel qualifications and training hence affecting compliance on effective implementation of ICAO CE4. Lack of effective implementation of the safety and security targets in Africa is a serious concern and ICAO is taking every action to help states reach the minimum safety and security targets. The role of personnel qualification and training is recognized to be crucial to reach the safety and security targets and thus endow states with necessary tools to build solid Human Resource capacity to sustain the industry growth.

3. Scope

This aviation training and capacity- building Roadmap for Africa is a strategic document that outlines the human resource requirements for states to achieve their national objectives in air transportation. The outcomes of the roadmap are related to the resolution of performance problems identified in state's audit reports or expected performance problems identified through gap analysis. It will also identify national education and training institutions that contribute to meeting training needs by naming existing programs offered by Approved Training Organizations (ATO) and eventually other institutions that offer aviation training.

4. Methodology

The Roadmap development methodology was based on the following model.

4.1 Systems

The AFI Plan steering committee at their meeting held in Montreal in 2015, tasked AATO, to work with ICAO GAT, East African School of Aviation (EASA) to develop an African Aviation Training Roadmap.

4.1.2 AATO conducted two training needs surveys in 2014 and 2015. Additionally, results of similar surveys from Singapore Aviation Academy and East African School of Aviation were used to prepare the aviation training roadmap. In developing the Roadmap, the first meeting was held at EASA. This meeting identified an itinerary of aviation courses including basic, specialisation and advanced. The meeting also identified the immediate, medium and long term areas of aviation training interventions in line with the TNA.

4.1.3 The draft roadmap was presented to the 18th AFI SC in Montreal and AATO, GAT and stakeholders were tasked to continue with refining the Roadmap and submit it during the 19th AFI SC meeting. The 11th AATO Council decided that, the draft roadmap be shared with aviation training stakeholders. AATO collaborated with ICAO ESAF Office to convene a stakeholders meeting back to back with the 4th ICAO Global Aviation Training Symposium in Addis Ababa on 10th April 2017.

4.1.4 The meeting adopted a model for Roadmap development and other concepts such as the one proposed by FAA.

4.2 Data

4.2.1 Obtaining accurate and timely training needs information was crucial to the Roadmap development. Hence, past survey results and future training forecasts were supplemented by secondary data from ATOs, CAAs, and industry partners (ICAO, AFCAC, ACI, AFRAA, GAT, SITA, IATA, Boeing, Airbus, AfBAA, and e.t.c).

This Roadmap has also incorporated results from the following previous surveys and reports:

- Training Experts Work Group and Société Internationale de Télécommunications Aéronautiques (SITA) Survey conducted in 2009,
- AATO Surveys conducted in 2015 and 2016,
- ATOs Training Records
 - ✓ ATNS Training Academy (ATA), Johannesburg
 - ✓ COMAIR, Johannesburg
 - ✓ EAMAC, Niamey
 - ✓ Egyptian Aviation Academy, Cairo
 - ✓ Ethiopian Airlines Aviation Academy, Addis Ababa
 - ✓ Ethiopian CAA Training Centre, Addis Ababa
 - ✓ East African School of Aviation (EASA), Nairobi
 - ✓ Ghana CAA Training Academy, (GATA)
 - ✓ Nigerian College of Aviation Technology (NCAT), Zaria
 - ✓ Nigeria Aviation Handling Company (NAHCO), Lagos
 - ✓ Tanzania CAA Training Centre, Dar es Salaam
 - ✓ United ATS, Cairo
- CAAs Training Records
 - ✓ CAA Uganda
- East African School of Aviation African training needs survey
- Singapore Aviation Academy training needs report
- FAA
- JPO

4.3 Focal Points

4.3.1 For each State, there will be duly appointed focal points from the ATO and CAAs to track and submit updates on training needs and the Roadmap implementation.

4.4 Measurable Deliverables

4.4.1 Road map report

The report was developed based on the Addis Ababa meeting recommendations submitted by various aviation training stakeholders.

4.4.2 List of accredited ATOs

A list of accredited African ATOs is attached to the report as appendix A.

4.4.3 List of available courses

A list of available courses is attached to the report as appendix B.

4.4.4 List of instructors and their qualifications.

A list of instructors and their qualifications will be created in the African aviation training data base.

5. Performance Enablers

The following have been identified as key performance enablers for successful implementation of this roadmap:

5.1 Standard of Training

The establishment and application of quality systems in aviation training institutions is not uniform across the various training institutions and this has resulted in different levels of efficiency in service delivery even where the course is the same. Most of the institutions have not acquired certification for quality and safety management systems. The inadequacies identified and the absences of quality and safety management systems are challenges in attracting students looking for quality training. Therefore, there is need to address the issue of standardization and harmonization in aviation training as stipulated in the AATO mandate. However, where standardization and harmonization is not attainable, conventional courses will be offered.

5.1.1 Curriculum design

The current institutions provide training services based on policies and regulations established by each individual state. As a result, the curricula developed are different from one country to another. The entry requirements and the instructor requirements are also different in each country. This has led to a situation where trainees performing similar tasks undergo different training in each individual state. This makes it difficult for the trainees to be absorbed in other countries as the standard of training may not be acceptable in other countries. The consistent development of STPs supervised by GAT, harmonization of

conventional courses and the accreditation of centres of excellence by AATO will address this challenge. An AATO framework for entry requirement and instructor qualification will address the disparities across different ATOs.

5.2 Accreditation of Qualifications

The number of skilled instructors on the continent is increasing due to expansion of training programmes in most aviation training organisations. A realisation that more instructors will be required in future has also resulted to increased budgets for training of instructors. These instructors will be useful in training the next generation of skilled human resource personnel for aviation. However, the instructors' qualifications must be standardized so as to have uniform awards. Thus, there is a need to have a system (such as Continental Accreditation System (CAS)) to facilitate the movement of skilled personnel across the continent as a way of addressing shortages of qualified staff. The development of an instructors' database will facilitate sharing of available intellectual capital.

5.3 Collaboration

Maintenance of high levels of aviation safety in Africa depends on the quality of training offered by the aviation training organisations which can only be achieved through implementation of a strategy of working with others. This will entail forging international and local co-operation as well as close collaboration of all key players such as training institutions, service providers, ICAO, AFCAC and donors. AFI SC through AATO will be a proper platform for information dissemination.

5.4 Sharing of Data

There is inadequate information on the capacity of the training institutions in Africa. Information on the courses offered, training facilities and instructor capabilities is not shared among states to assist in sharing of scarce resources in Africa. The problem is compounded by lack of recognition criteria for qualification of students and instructors from other states. Other challenges include insufficient number of instructors/facilitators especially in new emerging concepts and technology, lack of personnel database, limited learning facilities, logistics difficulties related to access to training centres and accommodation for foreign students. The accreditation of centres of excellence by AATO planned to begin in 2019 will facilitate cross border recognition of credentials and instructors sharing. To get states to accept and recognise qualifications across the border, this Roadmap will be aligned with AU vision 2063 goal on education.

5.5 Global and Regional Plans

Aviation training will be influenced by Global and Regional plans which provides for various activities to be implemented by States. The main initiatives relate to the Abuja safety targets, the Regional ANS Plans, Single African Air Transport Market, Regional Aviation Security and Facilitation Plans.

5.5.1 Abuja Safety Targets

The targets focus on reduction of accident rates and incidents, establishment of autonomous CAA's, resolving of Significant Safety Concerns, implementation of ICAO and state plans, increase in effective implementation, establishment of State Safety Policies and Safety Management Systems and certification of international airports and airlines. The implementation of the activities that are geared towards achieving the specific targets will require trainings to be undertaken to improve the skills of the technical staff and their capacity to achieve the targets.

5.5.2 Regional ANS Plans

The ANS operational and institutional targets as set out by ICAO will require implementation of activities in reduction of accidents and incidents related to Air Traffic Management, implementation of ASBU and PBN, measures to reduce carbon emissions, management of risks, integration of ANS and harmonization of ANS operations with regulations. Further these plans requires states to establish Search and Rescue Organizations, implement transition from AIS to AIM, reduce aircraft proximity occurrences, establish seamless ANS and ensure all ASBU Block zero modules are implemented by 2020.

5.5.3 Single African Air Transport Market (SAATM)

The Single African Air Transport Market (SAATM) which has been approved for implementation by the African Union (AU) will require increased investment in infrastructure and development of the single African market sky infrastructure to cater for the expected increase in traffic. The growth of the air transport in Africa will result to increased demand for professionals and this will and open up more opportunities for training by AATO members.

5.5.4 Regional Aviation Security and Facilitation Plans

The facilitation and security of passengers through passenger terminals remains a critical area of service performance by Government, airports and airlines. As cross border traffic increases in Africa, the need for efficient systems for aviation security and facilitation at the airports will rise. The Ministerial Conference on Aviation Security and Facilitation in Africa held in Windhoek on 4th -7th April 2016 set targets for Africa that will require to be achieved over the next decade. These targets focus on improving effective implementation levels, resolving the Significant Security Concerns (SSCs), establishment and implementation of effective oversight systems and services, increasing resources for oversight, human resource capacity, travel documents and information and security risk assessments. Also in focus is a requirement for States to develop sustainable aviation security and facilitation training capacities by the end of 2023. It is recognized that training will play a critical role in achieving the targets set out for aviation security and facilitation and therefore opportunities for training will be available to ATOs.

5.6 Actual training needs

Based on past survey results and information from the industry, the actual training needs are attached as appendix D.

6. Audience/Customers

The Roadmap will benefit various aviation training stakeholders.

6.1 Members

Provision of training as identified by the training needs analysis and actual aviation professionals' requirements.

6.1.1 Current Members

Currently AATO has 14 full members.

- ✓ ATNS Training Academy (ATA), Johannesburg
- ✓ CAA Uganda
- ✓ COMAIR, Johannesburg
- ✓ EAMAC, Niamey
- ✓ Egyptian Aviation Academy, Cairo
- ✓ Ethiopian Airlines Aviation Academy, Addis Ababa
- ✓ Ethiopian CAA Training Centre, Addis Ababa
- ✓ East African School of Aviation (EASA), Nairobi
- ✓ Ghana CAA Training Academy, (GATA)
- ✓ Nigerian College of Aviation Technology (NCAT), Zaria
- ✓ Nigeria Aviation Handling Company (NAHCO), Lagos
- ✓ Tanzania CAA Training Centre, Dar es Salaam
- ✓ United ATS, Cairo
- ✓ East African Civil Aviation Academy, Soroti Uganda

6.1.2 Prospective Members

The continent has more than 200 ATOs that are eligible for AATO membership. Of those, AATO has a plan to attract at least 5 new members in 2019 and consequently increase the membership to 50 by 2025. This will enhance the membership of more credible ATOs.

6.2 Stakeholders

Availability of accurate and reliable information is crucial to a successful and sustainable business. It is envisaged that the stakeholders will continue working together with AATO to support the establishment and continuous improvement of the roadmap.

Category/Stakeholder	Interest and Expectations	Role
Members	Train aviation professionals in identified needs.	Submit training reports and forecasts.
	Availability of guidelines for curricula development and instructor qualifications.	Participate in identified programs/projects.
	Sharing of resources across Africa.	Establish a resource sharing mechanism in the region.
	Collaboration not competition	Join AATO
ICAO	An aviation training roadmap	Submit aviation training needs as identified by USOAP audits and other reports.
	Standardised and harmonized training and same human performance at work in compliance with SARPS.	Support in the Roadmap development and oversee its implementation.
	Continuous improvement of the Roadmap.	Continuous support to AATO.
	Safer Skies in Africa.	Ensure adequate and quality human resource for the industry.
Category/Stakeholder	Interest and Expectations	Role
GAT	Sharing report on identified training needs	Submit data on ATOs. Submit TP Members training records.
	Sharing the instructors database	Encourage TP to submit instructors' data
	Continue developing STPs/ITPs	
African Union	Aviation plays a major role in connecting Africa to help support its social, economic and political integration and boost Intra-Africa trade and tourism.	Plan and facilitate future growth by investing in aviation training infrastructure and human resource development.
	Sustainable air transport in Africa.	Encourage states and stakeholders to work together in the recognition of aviation's strategic importance and support for the broad economic and social

	Successful implementation of the Single African Air Transport Market (SAATM).	development objectives across Africa by participating in AATO programs/projects. Technical and financial support to AATO
AFCAC	Enhanced Safety and Security – Ensuring that all countries attain the minimum standard (at least 60% EI)	Ensure all states meet Abuja safety targets. Implement Windhoek security and facilitation targets. Improve safety oversight.
	Increased air transport growth Financing the aviation industry Successful identification of accurate training needs.	Plan for future growth in infrastructure and human resource development by engaging financing partners. Facilitate access to sustainable funding. Encourage States to submit accurate training needs data. Encourage States to develop civil aviation master plans. Develop a continental civil aviation master plan.
Civil Aviation Authorities	Improved safety	Submit accurate training needs
	Increased number of approved training organizations.	Providing guidance to ATOs to achieve the harmonised standards in Africa.
Aviation Service Providers - ANSP's, Airports, Airlines, AMO's	Adequate and qualified human resources to deliver quality services to the industry.	Submit training needs.

IATA/AFRAA/ ACI/CANSO	Adequate and quality human resource to work in the industry.	Increased training opportunities and quality standardised training.
Staff Associations/Trade Unions	Increasing and qualified membership	Diverse, adequate and qualified human resource. Less strikes.

7. Risks

There are several risks related to the roadmap development and implementation.

7.1 Local Relevancy

States and service providers have been operating within their own established standards and procedures. The introduction of aviation training roadmap may not be easily acceptable. ICAO, AFCAC, CANSO, ACI, AFRAA and other continental bodies will be instrumental in advocating the relevancy of the roadmap.

7.2 Political, Economic, Social, Technological, Environmental and Legal

7.2.1 Political

The political stability in the countries within the continent from which AATO draws its membership is critical for success. Opportunities for growth of aviation and training will only be available in countries that are politically stable with Governments implementing activities aimed at the promotion of civil aviation. Continued political stability is conducive to the growth of the aviation industry. However, political instability may lead to reduced travel due to travel advisories. A framework on ATOs Cross Border collaboration will guide on student transfer where political instability affects training in the host state.

7.2.2 Economical

The improvement in general economic performance resulting in growth in economies and increase in disposable incomes will boost the aviation industry through increased demand for air services. This will automatically trigger demand for more human resources hence the need to train more personnel. Scholarship and Fellowship program will address participants' financial challenges during harsh economic times.

7.2.3 Social

The social dynamics in Africa are constantly changing. The customers have become more knowledgeable and better informed and thus higher demand for better quality services. The Association shall therefore make sure that the aviation training organisations offer quality training that produce human resources that are able to effectively serve a highly demanding population. Africa has the highest population of youth (15-25 years) at 51% of the total African population. This generation of people require jobs and more importantly how does the Aviation industry attract, train and retain this workforce, needs to be considered. Economic growth in the States has a direct correlation to employment opportunities within the Aviation sector, as Aviation is directly linked to a country's economic growth

7.2.4 Technological

The advancement in the level of technology in the aviation industry requires support from skilled, dynamic and flexible workforce that is able to learn and adopt new technologies for use in the work place. The aviation training organisations will therefore need to position themselves to offer training on emerging technologies that can be applied on the next generation equipment. The Association will work with Development Partners towards acquisition and utilisation of current technology in training. Technology can also be harnessed as a methodology to provide training initiatives. This is in the form of online and e-learning programmes, communities of learning, blogs etc. Therefore, a solid technological infrastructure with affordable and accessible data is necessary in Countries adopting this approach to learning

7.2.5 Environmental

The aviation industry is growing rapidly and is also contributing to the pollution of the atmosphere. A major concern for the industry is the greenhouse emissions from aviation and their implication on climate change. The operation of aviation activities also leads to the need to dispose off obsolete equipment and facilities which end up harming the environment. These emissions have been growing over the last millennium and ICAO has brought together Partner States to work towards achieving a neutral growth by aviation in carbon emissions. This is an area with emerging opportunities for creation of awareness and training by aviation training organisations.

7.2.6 Legal

Different Partner States have different legal and regulatory requirements. However, States are guided by Chicago Convention and ICAO SARPS when developing Aviation Primary Laws and Regulations. ATO training is guided by requirements of ICAO Annex 1 and Doc 9841 reducing significantly the challenge that would arise from different legal regimes.

8. Actions

The Roadmap implementation will have different time spans.

	Key Outputs	Key Actions	Timeline s	Resources	Actors
8.1	Short Term: 1 – 5 Years				
	Improved safety and security	Increase the level of effective implementation to above 60% for States with less than 60% EI.	Dec 2019	Infrastructure/ equipment and Staff	CAAs/ ATOs/ ICAO/ Service Providers
		Assist States with effective implementation of less than 60% to	Dec 2019	Infrastructure/ equipment and Staff	CAAs/ ATOs/ ICAO/

	Key Outputs	Key Actions	Timeline s	Resources	Actors
		gradually come out of the status by providing training on the identified gaps.			Service Providers
		Strengthen CAAs through training of inspectors	2022	Infrastructure/ equipment and Staff	CAAs/ ATOs Service Providers
		States to resolve personnel related SSPs	2018	Infrastructure/ equipment and Staff	CAAs/ ATOs Service Providers
		Implement ICAO ASBU Block Zero	2020	Infrastructure/ equipment and Staff	CAAs/ ATOs Service Providers
		Reduce CO2 Emissions	2022	Infrastructure/ equipment and Staff	CAAs/ ATOs Service Providers
		Establish effective SAR Organizations	2019		CAAs/ ATOs Service Providers
		Implement transition from AIS to AIM	2020		CAAs/ ATOs Service Providers
		Continuously reduce aircraft proximity occurrences in the States airspace	2020		CAAs/ ATOs Service Providers
		Increase the level of effective implementation for states with 60% to 70% EI level to 80%.		Infrastructure/ equipment and Staff	CAAs/ ATOs/ ICAO/ Service Providers
		Improve training of personnel to address CE4	Dec 2019	Infrastructure/ equipment and Staff	CAAs/ ATOs/ ICAO/ Service Providers
		Database Development	Dec 2019	Equipment and Staff	CAAs/ ATOs/ ICAO/ Service

	Key Outputs	Key Actions	Timeline s	Resources	Actors
					Providers
		Sign high level MoCs with partners & donors	June 2019		AATO/ Donor/ Partners
		Increase AATO membership to 20	2019	Advocacy	AATO Council CAAs/ Partners
	Adequate trained personnel	Develop programs to address ab-initio training	June 2019	Funds/Staff	CAAs/ ATOs/ ICAO/ Service Providers
		Seek funds for ab-initio training	June 2019	Funds	CAAs/ ATOs/ ICAO/ Service Providers/ Donors
	Harmonized & Standardized Training	Finalize ATO Inspectors course	Jan 2019	Funds/Staff	AATO/ EASA/ GAT
		Train ATO Inspectors	July 2019	Funds/SMEs	AATO/ CAAs/ ATOs/SPs
		Finalize facilitation course	2020	Funds/ SMEs	AATO/ CAAs/ ATOs/SPs
		Finalize Environment awareness course	2021	Funds/ SMEs	AATO/ CAAs/ ATOs/SPs UNEP
8.2	Medium Term: 5 – 10 Years				
	Improved safety and Security	Establish sustainable SSPs with appropriate maturity level	2025	Funds/ SMEs	CAAs/ ATOs/ ICAO/ Service Providers
		Establish seamless ANS services	2024	Funds/ SMEs	CAAs/ ATOs/ ICAO/ Service Providers
		Implement PBN Procedures for Instrument runways	2025	Funds/ SMEs	CAAs/ ATOs/ ICAO/

	Key Outputs	Key Actions	Timeline s	Resources	Actors
					Service Providers
	Adequate trained personnel	Develop sustainable aviation security and facilitation training capacities	2023	Funds/SMEs	CAAs/ATOs/ICAO/Service Providers
		Train 10,000 personnel	2020	Funds/SMEs	CAAs/ATOs/ICAO/Service Providers
		Develop 10 curricula for new technology and emerging concepts	2020	Funds/SMEs	CAAs/ATOs/ICAO/Service Providers
		Train new managers and technical staff	2018	Infrastructure/equipment and Staff	CAAs/ATOs/ICAO/Service Providers
		Introduce courses in new technology and systems	2018	Infrastructure/equipment and Staff	CAAs/ATOs/ICAO/Service Providers
	Harmonized & Standardized Training	Revise, refine and update the harmonization and standardization procedures outlined by TEWG.	June 2019	Funds/Staff	ATOs/GAT
		Develop cooperation among states, ATOs and aviation organizations	Jan 2019	Funds	CAA/ATOs/Service Providers
		Develop an African Aviation training Policy in light of ICAO training policy and SAATM.	Jan 2019	Funds/Staff	AATO/AFCAC/ICAO
		Finalize course on SAR course	2023	Funds/SMEs	AATO/CAA
		Finalize course on SSP	2023	Funds/SMEs	AATO/CAA
		Develop, approve and	Jan 2019	Funds/Staff	AATO

	Key Outputs	Key Actions	Timeline s	Resources	Actors
		publish the criteria and measures required for instructors, inspectors, and SMEs.			
		Seek technical and financial support	Jan 2019	Goodwill/ Advocacy	CAAs / AFI / AFCAC / GAT.
		Harmonize the ATC curricula for EAC states	June 2019	Funds/Staff	AATO/ EAC CASSOA/ CAA
		Designate Centers of Excellence	Jan 2020	Funds/Staff	AATO/ ATOs/ GAT
		Conduct training needs survey	2020	Funds/Staff	CAAs/ ATOs/ ICAO/ Service Providers
		Improve database Evaluate, Review and Update Roadmap	2023	Funds/Staff	AATO/ GAT/ CAAs/ SPs
		Increase AATO membership to 50	2023	Advocacy	AATO Council
8.3	Long Term: 10 – 20 Years				
	Improve safety and security	Increase the level of effective implementation for states with over 70% EI level to 95%.	2028	Funds	States/ ATOs/ Service Providers
	Sustainable air transport	Increase AATO membership to 100	2028	Advocacy	AATO Council/ Partners
		Maintain standards and meet the required safety levels determined by ICAO			All Key Players
		Conduct surveys		Funds	AATO/ States/ ATOs

9. High Level Implementation Strategy 2019 - 2039

Outcome	Description	Yr 1- 5	Yr 5- 10	Yr 10- 20
Adequate and competent personnel	Infrastructure/equipment and Staff			
Harmonized and Standardized Training	All training curricula across all aviation disciplines meet the same standard			
Designation of COE's	At least one accredited CoE in each sub- region in AFI			
Maintenance of database on training Supply & Demand	Current data available reflect training supply and demand in AFI			
Cooperation , Advocacy, and Funding	Stakeholder management and consultation			
Sustainable air transport	Sustainable and functional AATO			

10. Monitoring and Evaluation Mechanism

10.1

The Roadmap implementation will be continuously monitored and each year an evaluation will be carried out against the predetermined targets.

S/N	Activity	Timeline	Progress Achieved	Factors Affected Performance	Comments
1	Increase the level of effective implementation to above 60% for states with less than 60% EI.	Dec 2019			
2	Assist states with effective implementation of less than 60% to gradually come out of the status by providing training on the identified gaps.	Dec 2019			
3	Increase the level of effective implementation to 90%.	Dec 2024			
4	Improve training of personnel to address CE4	Dec 2019			

5	Database Development	Dec 2019			
6	Sign high level MoCs with partners & Donors	June 2019			
7	Increase AATO membership to 20	2019			
8	Train 10,000 personnel	2020			
9	Develop 10 curricula for new technology and emerging concepts	2020			
10	Develop programs to address ab-initio training	June 2019			
11	Seek funds for ab-initio training	June 2019			
12	Train new managers and technical staff	2018			
13	Introduce courses in new technology and systems	2018			
14	Revise, refine and update the harmonization and standardization procedures outlined by TEWG.	June 2019			
15	Finalize ATO Inspectors course	Jan 2019			
16	Train ATO Inspectors	July 2019			

17	Develop cooperation among states, ATOs and aviation organizations	Jan 2019			
18	Develop an African Aviation training Policy in light of ICAO training policy and SAATM.	Jan 2019			
19	Develop, approve and publish the criteria and measures required for instructors, inspectors, and SMEs.	Jan 2019			
20	Seek technical and financial support	Jan 2019			
21	Harmonize the ATC curricula for EAC states	June 2019			
22	Designate Centres of Excellence	Jan 2020			
23	Conduct training needs survey	2020			
24	Improve database Evaluate, Review and Update Roadmap	2023			
25	Increase AATO membership to 50	2023			

26	Increase AATO membership to 100	2028			
27	Maintain standards and meet the required safety levels determined by ICAO				
28	Conduct surveys				

Appendix A

List of Training Organizations in Africa

Table 1. List of Training Organizations in Africa

STATE	TRAINING CENTER	LOCATION	CONTACT
Algeria	Établissement National de la Navigation Aérienne (CQRENA)	Alger	http://www.enna.dz cqrena@enna-dz.com cqrena@enna.dz
Angola	Enana-EP/ Centro Aeronáutico de Instrução	Luanda	https://www.enana.co.ao/
BOTSWANA	IAS Aviation Academy	Gaborone	www.flyias.net
Cameroon	L'Ecole Régionale de Sécurité Incendie (ERSI)	Douala	contact.ersi@asecna.org
Egypt	Global Aviation Consultancy Service	Cairo	www.globalaviation-cs.com
	Egyptair Training Academy	Cairo	http://training.egyptair.com training.academy@egyptair.com
	Egyptian Aviation Academy (EAA)	Giza	www.eaaegypt.com/
	United for Aviation Technology Services (United ATS)	Obour City	www.unitedats.com/
Ethiopia	Ethiopian Aviation Academy(EAA)	Addis Ababa	www.ethiopianairlines.com/
	Ethiopian Civil Aviation Training Centre (ECATC)	Addis Ababa	www.flyethiopian.com

Table 2. List of Training Organizations in Africa

STATE	TRAINING CENTER	LOCATION	CONTACT
GHANA	GCAA Training Academy	Kotoka International Airport Accra	http://www.gcaa.com/gata
	Mish Aviation	Tema	info@mishaviation.com femi@mishaviation.com
	Institute of Aviation and Professional Studies	Takoradi	http://iapscollege.com/
	Prominence Aviation College	Takoradi	http://prominencecollege.com/
	Crystal Galaxy College	Accra	https://crystalgalaxycollege.com/
KENYA	Aerolink Training Centre	Magharibi Place Opposite Tmall, Moimahiu Roa	
	Aerosafe African Consultants	Wilson Airport	www.aerosafrica.com/
	Capital Connect Aviation Supplies	Wilson Airport	www.capitalconnectaviation.com
	Eldoret Aviation Training Institute	Eldoret	www.eldoretaviatraintraining.com www.eati.ac.ke/
	East African School of Aviation	Airport North Road, Embakasi	www.easa.ac.ke
	Flight Training Centre	Wilson Airport	http://www.flighttrainingcentre.co.ke/
	Kenya School of Flying	Wilson Airport	+254 (0)20 6007892, 6008282 https://www.kenyaschoolofflying.com/
	KQ Pride Centre	KQ Headquarters Embakasi	www.kqpridecentre.com/
	Moi University School of Aerospace	Rivatex Building Eldoret	https://aerospace.mu.ac.ke/
	Nairobi Flight Training	Wilson Airport	www.nairobiflighttraining.com/
	Ninety Nines Flying School	Wilson Airport	www.99flying.com/
	Pegasus Flyers (EA) Limited	Wilson Airport	https://www.pegasusflyersea.com/
	Proactive Training Services	Wilson Airport	www.proactiveairservices.com/
	Standards Aviation	Wilson Airport	+254 706 091811
	Sicham Aviation Limited	Wilson Airport	Tel: +254-206003337

Table 3. List of Training Organizations in Africa

STATE	TRAINING CENTER	LOCATION	CONTACT
KENYA	Skylink Flight Services	Wilson Airport	http://skylinkflights.com/
	Skypath Aviation College	Wilson Airport	+254 20 2301958 Skypath@amrefke.org
	Think Aviation Training	Wilson Airport	www.think.co.ke
	Valentine Air Services	Wilson Airport	
	Westri Aviation Limited	Wilson Airport	
LIBYA	Alberta Libya for Technical Services & Consultancy		www.istcentre.com
MAURITIUS	Airports of Mauritius Co Ltd. Aviation Training Centre	Plaine Magnien	www.airportsofmauritius.aerotraining@aero
MOROCCO	Academie Internationale Mohamed VI de l'Aviation Civile (AIAC)	Casablanca	www.aiac.ma
	Groupe CFPNC/IATC Academy	Rabat	www.groupecfpnc.com secretariat@iatc.ma cfpnc@menara.ma
	Loumed Cabin Crew Training Center (LCCTC)	Agadir	www.lcctc.ma loumedpncenter@gmail.com
MOZAMBIQUE	Academia de Aviacao de Mocambique		+258823132330
NIGER	Ecole Africaine de la Météorologie et de l'Aviation Civile (EAMAC):	Niamey	www.eamac.ne

Table 4. List of Training Organizations in Africa

STATE	TRAINING CENTER	LOCATION	CONTACT
NIGERIA	Aeroconsult	Lagos	www.aeroconsultonline.com/training
	Aero Training School	Lagos	
	Aerokeys Training School	Abuja	https://www.aerokeys.com.ng/
	AFIT AMEL School	Kaduna	https://www.afit.edu.ng
	Afrowings Academy	Enugu	www.afrowingsaviation.com
	Caverton Training Organization	Asaba	https://caverton-offshore.com
	Delfrilision Aviation School	Abuja	
	Dornier Aviation Training School	Kaduna	www.dananig.aero
	Falcon Aviation	Lagos	falconaviationtraining.com
	International Aviation College	Ilorin	www.iac-ng.com
	International Helicopter School of Flying	Lagos	
	Javi Aviation	Lagos	javiaviation.com
	Landover Business School	Lagos	https://landover.aero/
	Nigerian College of Aviation Technology	Zaria	https://ncat.gov.ng/
	Private Flyers International	Lagos	Personal Website
	Universal School of Aviation	Lagos	www.universalschoolofaviation.com.ng

Table 5. List of Training Organizations in Africa

STATE	TRAINING CENTER	LOCATION	CONTACT
SENEGAL	Ecole Régionale de la Navigation Aérienne et Management (ERNAM)	Dakar	https://ernam.org/
SUDAN	Sudan Academy for Aviation Sciences and Technology (SUDAFAST)	Khartoum	http://sudafast.edu.sd/
SOUTH AFRICA	Air Traffic and Navigation Services (ATNS) - Aviation Training Academy	Gauteng	www.atns.co.za
	Aviation Academy For Southern Africa (AAFSa)	Kempton Park Johannesburg	www.aafsa.co.za iasa@mweb.co.za training.aafsa@aafsa.co.za
	Comair Ltd	Bonaero Park	Dy.moonsammy@comair.co.za
	DGM South Africa	Kempton Park Johannesburg	www.dgmsa.com
	Avscan Training	Gauteng	www.avscan.org
	ETS Emergency Training Solutions	Gauteng	www.etsafrica.co.za woboys@etsafrica.co.za
	International House Johannesburg - Language Lab	Johannesburg	www.ihjohannesburg.co.za
TANZANIA	Civil Aviation Training Centre (CATC)	Dar es Salaam	www.catc.ac.tz/
	Regional Aviation College	Dar es Salaam,	+255 222842186, 0754754632 regionaltz@habari.co.tz
	Tanzania Aviation University College	Dar es Salaam	Tauc2009@yahoo.co.uk
	Mosswood Transport (T) Limited	Dar es salaam	airport@flymwaa.com pilot@flymwaa.com

Table 6. List of Training Organizations in Africa

STATE	TRAINING CENTER	LOCATION	CONTACT
TUNISIA	Académie Tuniso-Française de Formation en Sécurité et Sûreté de l'Aviation Civile (AFSAC)	Tunis	www.afsactunisie.com training@afsactunisie.com
	Safe Flight Academy	TUNIS GAMMARTH	www.sfa.tn contact.pilot@sfa.tn
	Airline Flight Academy	Tunis	www.afa.com.tn afa@unat.ens.tn airlineflightacademy@yahoo.fr
	Aviation Training Center of Tunisia	Gammarth	tarek.benaissi@atct.com.tn www.atct.com.tn
	CFOR	SOUSSE	www.cfor.com.tn
	University College of Aviation & Technology (ESAT)	Tunis Carthage	www.esat.ens.tn
UGANDA	East African Civil Aviation Academy	Madera	www.flysoroti.ac.ug
ZAMBIA	Zambia Air Services Training Institute (ZASTI)	Lusaka	www.zasti.ac.zm/

Appendix B

List of Standardized Training Packages (STPs), ITPs and Other Standardized Courses

Table 1. List of Standardized Training Packages (STPs)

STATE	TRAINING CENTER	LANGUAGE	TITLE
ETHIOPIA	Ethiopian Aviation Academy (EAA)	English	Aviation English for Aircraft Maintenance Technicians & Engineers
	Ethiopian Civil Aviation Training Centre (ECATC)	English	Elementary Fire Fighting
	Ethiopian Aviation Academy (EAA)	English	Aircraft Emergency Landing and Evacuation Procedures Training for Cabin Crew
EGYPT	Egyptian Aviation Academy (EAA)	English	Aviation Medical Examiner (Basic Course)
KENYA	East African School for Aviation (EASA)	English	Air Navigation Services CNS Inspector
	East African School for Aviation (EASA)	English	Air Navigation Services ATM Inspector
	East African School for Aviation (EASA)	English	Air Navigation Services AIS Inspector
MOROCCO	Académie Internationale Mohamed VI de l'Aviation Civile (AIAC), Morocco	English/ French	Human Factors Frontline ATM Operators
NIGER	L'École Africaine de la Météorologie et de l'Aviation Civile (EAMAC)	French	Spécialiste en installation et maintenance du balisage lumineux d'aérodrome MCR 5000 - v2
	L'École Africaine de la Météorologie et de l'Aviation Civile (EAMAC)	French	Spécialiste en Maintenance des Stations VSAT Aéronautiques
	L'École Africaine de la Météorologie et de l'Aviation Civile (EAMAC)	French	Gestion d'un Espace Aérien RVSM

Table 2. List of Standardized Training Packages (STPs)

STATE	TRAINING CENTER	LANGUAGE	TITLE
NIGERIA	Nigerian College of Aviation Technology (NCAT)	English	Airport Emergency Procedures
	Nigerian College of Aviation Technology (NCAT)	English	ATSEP Communication Equipment Maintenance
	Nigerian College of Aviation Technology (NCAT)	English	ATSEP Surveillance Maintenance
	Nigerian College of Aviation Technology (NCAT)	English	ATSEP Airport Power Systems and Facilities Maintenance
	Nigerian College of Aviation Technology (NCAT)	English	ATSEP Navigation Aids Equipment Maintenance
	Nigerian College of Aviation Technology (NCAT)	English	ATSEP On-The-Job Training
SUDAN	Sudan Academy For Aviation Sciences and Technology (SUDAFast)	English	Aircraft Marshalling
SOUTH AFRICA	Air Traffic & Navigation Services (ATNS)	English	Performance-based Navigation (PBN) for Air Traffic Services Officers (ATSOs)
TUNISIA	Académie Tuniso-Française de Formation en Sûreté de l'Aviation Civile (AFSAC), Tunisia	French	Gestion Efficace du Processus Lettres aci aux états

Table 3. STP Standardized Training Packages Under Development

STATE	TRAINING CENTER	LANGUAGE	TITLE
CAMEROON	L'Ecole Régionale de Sécurité Incendie (ERSI)	French	Lutte Contre les Feux Mineurs d'Avion
ETHIOPIA	Ethiopian Aviation Academy (EAA)	English	Aviation English for Aircraft Maintenance Technicians & Engineers
KENYA	East African School for Aviation (EASA)	English	Air Navigation Services MET Inspector
	East African School for Aviation (EASA)	English	Air Navigation Services AIS Inspector
NIGER	L'École Africaine de la Météorologie et de l'Aviation Civile (EAMAC)	French	Spécialiste en installation et maintenance du balisage lumineux d'aérodrome MCR 5000 - v2
	L'École Africaine de la Météorologie et de l'Aviation Civile (EAMAC)	French	Gestion d'un Espace Aérien RVSM
	L'École Africaine de la Météorologie et de l'Aviation Civile (EAMAC)	French	Mesure des Paramètres Météorologiques en Altitude
SOUTH AFRICA	Air Traffic and Navigation Services Limited (ATNS) - Aviation Training Academy	English	Internal Auditors Course
	Air Traffic & Navigation Services (ATNS)	English	Performance-based Navigation (PBN) for Air Traffic Services Officers (ATSOs)

Appendix C

Actual Training Needs

ATO		AIR TRAFFIC MANAGEMENT (ATM)											
		Abnitio			Basic			Advanced			Internship/Apprenticeship		
		2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
1	EAMAC				71	103	31						
2	EASA				141	267	362						
3	NIGERIAN CAT							16	35	52			
AERONAUTICAL INFORMATION MANAGEMENT (AIM)													
1	NIGERIAN CAT				61	52	109						
AVIATION SECURITY													
1	EAMAC	See Appendix C page17 for details											
2	EASA	377	93	84									
AIRCRAFT MAINTENANCE ENGINEERING (AME)													
1	EAMAC	See Appendix C page 19for details											
2	NIGERIAN CAT	0	0	0	35	108	52	9	8	10	17	0	12
COMMUNICATION, NAVIGATION, SURVERLANCE (CNS)/ENGINEERING/ATSEP													
1	EAMAC				247	202	191						
2	EASA				210	244	280						
3	NIGERIAN CAT				61	78	60	6					

ATO		NEW EMERGING CONCEPTS											
		2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
1	EAMAC	See Appendix C page 17 for details											
2	NIGERIAN CAT	1											
RESEARCH AND AVIATION DEVELOPMENT													
1	EAMAC	See Appendix C page 17 for details											
INSTRUCTOR (INSTRUCTIONAL SYSTEM DESIGN UNIT (ISDU)													
		TIC			Advanced			CDW					
1	EAMAC	See Appendix C page 17 for details											
2	EASA							39	79	84			
3	NIGERIAN CAT	69	150	87									

ATO		IATA											
		Abnitio			Basic			Advanced			Internship/Apprenticeship		
		2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
1	EAMAC	See Appendix C page 17 for details											
2	NIGERIAN CAT				64	0	0						
PILOT													
1	EAMAC	See Appendix C page 17 for details											
2	NIGERIAN CAT				0	8	0	14	11	14			
FLIGHT OPERATIONS													
1	ATNS	74	15	33									
2	EAMAC	See Appendix C page 17 for details											
3	NIGERIAN CAT							48	17	24			
CABIN CREW													
1	EAMAC	See Appendix C page 17 for details											
2	NIGERIAN CAT				15	33	38						
MANAGEMNT													
		Abnitio			Basic			Advanced			MBA DIPLOMA		
1	EAMAC	See Appendix C page17for details											
2	NIGERIAN CAT	0	0	0	270	195	391	19	77	231	0	6	0

ATO		TRAINING RECORDS 2018 – 2020 (PROJECTION)											
		Abnitio			Basic			Advanced			DIPLOMA		
		2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
EAMAC		See Appendix C page17 for details											
NCAT 、	ATM*				192	94	94	50	52	52			
	AVS*				0	0	0	0	0	0			
	AIM*				11	50	50	8	10	10			
	ENG1.				75	95	84	14	14	20			
	ENG2.				72	60	60	9	20	20			
	PILOT				0	0	0	31	20	20			
	CCB*				42	60	60	0	0	0			
	FO*				0	0	0	16	40	40			
	IATA				0	85	100	0	0	0			
	MGT*				138	200	300	51	90	150	13	30	30
	TIC*				62	64	78	0	0	0			

+ATM – Air Traffic Management

*AVS –Aviation Security

*AIM –Aeronautical Information Management

*FO – Flight Operations

*CCB –Cabin Crew Basic

*MGT- Management

* TIC –Training Instructors Course

EAMAC Training Needs (2015 – 2018)			
AB-INITIO TRAININGS			
Air Navigation Engineers	Meteorology Engineers	Electronic and Maintenance Engineers	Air Traffic Controllers
Meteorology Senior Technicians	Air Navigations Senior Technicians	Electronic & Maintenance Senior Technicians	Meteorology Junior Technicians
Air Navigation Junior Technicians			
CONTINUOUS TRAININGS			
See EAMAC Brochure			
NUMBER OF STUDENTS & TRAINEES			
300 enrolled students in average per year			400 Trainees from all over ASECNA member states in average per year
4189 GRADUATES SINCE 1963			
612 Engineers	795 ATCOs	2003 Senior Technicians	779 Junior Technicians
TRAINAIR PLUS ACTIVITIES			
1 STP on RVSM	1 STP on Aeronautical VSAT	1 STP on Aerodrome Lighting	1 STP on AIM (under design)
54 experts trained during VSAT STP	41 Course Developers	11 Course instructors	20 Safety officers from the West Africa trained on the ITP (Airport borders control and validation of travel documents Level 1 – ICAO trip Program)
LANGUAGE PROFICIENCY TESTS			
EAMAC LPR testing team of 20 members (SME & LME) across the ASECNA region, tests about 300 ATCOs every year for licensing purposes.			
TRAINERS’ TRAINING ON THE RISE FOR EAMAC 56 PERMANENT INSTRUCTORS			
55 Trainings for Air	24 trainings for	42 trainings for Electronics and	

Navigation and Transport Instructors (recurrent and development training on new approaches and technologies this year and will need more the coming years)	Meteorology Instructors (recurrent and development training on new approaches and technologies this year and will need more the coming years)	maintenance Instructors (recurrent and development training on new approaches and technologies this year and will need more the coming years)	
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NCAT Training Needs (2015 – 2018)		
NCAT	FLIGHT OPERATIONS	<ul style="list-style-type: none"> • 737 (NG) Initial and Recurrency Training • Multi Crew Coordination Course (MCC) • Jet Orientation Course (JOC) • Pilot Evaluation Training • High Altitude Training • EFIS Training • Current Training Carried out on the Simulators <ul style="list-style-type: none"> ○ Instrument Initial and Recurrency Training ○ Multi- Engine Training ○ Night Rating • ATPL FROZEN • ATPL ABRIDGED
	CNS FIELD	• COURSES/DURATION
	A. COMMUNICATIONS	<ul style="list-style-type: none"> • AMHS/ 1 Week • Advanced Data Communications/Networking/4 Weeks • Satellite Communications
	B. NAVIGATION	<ul style="list-style-type: none"> • THALES CVOR/DME Equipment Maintenance/4 Weeks • Thales ILS Equipment Maintenance/5 weeks • Thales DVOR/DME Equipment Maintenance /4 Weeks • Flight Calibration/Inspection for ATSEP-NAV Engineers/2 Weeks • 5. GNSS/GBAS Fundamentals/2 Weeks

C. SURVEILLANCE	<ul style="list-style-type: none"> • THALES SURVEILLANCE (PSR & MSSR) EQUIPMENT MAINTENANCE COURSE / 4 Weeks • 2. MICROWAVE TRAINING SYST. LAB VOLT / 2 Weeks
D. POWER SYSTEM MAINTENANCE	<ul style="list-style-type: none"> • Operation and Maintenance of Refrigeration & Air Conditioning System/2 Weeks • Installation and Maintenance of Solar Power System/2 Weeks • 3. Visual Landing System Maintenance Course/3 Weeks
E. CNS/ATM	<ul style="list-style-type: none"> • CNS/ATM for Engineers/2 Weeks

Appendix D

Instructors Database

S/N	INSTRUCTORS NAME	ATO	ACADEMIC QUALIFICATION	INSTRUCTIONAL QUALIFICATION	CONTACT
Fire Fighting					
1	SUMSA Komla Amewokpo	CAMEROON ERSI	<ul style="list-style-type: none"> • Eng, Civil Aviation Training engineering • Eng, Civil engineering 	<ul style="list-style-type: none"> • Airport safety and security • Airport Infrastructure • Air navigation rules and procedures • Aircrafts structure and identification, • Air crash investigations • Airports Wild hazards • Training of Trainers 	sumele@hotmail.com sumsakomlaame@asecna.org
2	KABORE Christophe Désiré	CAMEROON ERSI	<ul style="list-style-type: none"> • Air Traffic Controller (aerodrome, Approach and Regional) • Senior technician in aviation rescue and firefighting • Master degree in planning 	<ul style="list-style-type: none"> • Aircraft fire, Fire simulator training • Breathing Apparatus wearing training • Airport emergency planning and response • Fire Prevention • Airports Wild hazards • Aircrafts Structure and identification 	christkabore@yahoo.fr kaborechr@asecna.org

3	AMAVI Antoine Iréné	CAMEROON ERSI	Senior technician in aviation rescue and firefighting	<ul style="list-style-type: none"> • Aircraft fire, Fire simulator training • Breathing Apparatus wearing tests • ARFF-trucks maintenance • ARFF-trucks hydraulic and pneumatic • Aircraft fire, Fire simulator training 	amantoi@yahoo.fr +237 691 93 30 97
4	KOUMBA NDEMBI Guy Roger	CAMEROON ERSI	Senior Technician in aviation rescue and firefighting	<ul style="list-style-type: none"> • Airport Fire base organization and procedures • Breathing Apparatus wearing tests • Breathing Apparatus wearing tests • Airport emergency planning and response 	koumbaguyroger@yahoo.fr
5	ASSOUMA ISSA Imourana	CAMEROON ERSI	Senior Technician in aviation rescue and firefighting	<ul style="list-style-type: none"> • Aircraft fire, Fire simulator training • First Aid training • Training of first aid trainers • Breathing Apparatus wearing tests 	imourana@yahoo.fr 00 237 699 96 09 83 00 237 691 93 31 05
6	AMPIKI ESSONOMBEN G Alain D.	CAMEROON ERSI	Senior Technician in aviation rescue and firefighting	<ul style="list-style-type: none"> • Aircrafts fire, Fire simulator training • First aid training • Technology of fire 	ampikiessonobengala@ase cna.orgampesso@yahoo.fr
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				<ul style="list-style-type: none"> • Airport Fire base organization and procedures • Breathing Apparatus wearing tests 	
8	SANDA Laoualy	CAMEROON N ERSI	Senior Technician in aviation rescue and firefighting	<ul style="list-style-type: none"> • Aircraft fire, Fire simulator training • ARFF hydraulics • Breathing Apparatus wearing tests 	sandalaoualy_02@yahoo.fr +237 691 93 52 63
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11	DJIBO Halarou	CAMEROON N ERSI	Eng, Civil Aviation	<ul style="list-style-type: none"> • Airport Infrastructure • Air navigation rules and procedures • Airport safety and security 	DJIBOHal@asecna.org +237 691 93 41 85

S/N	INSTRUCTORS NAME	ATO	ACADEMIC QUALIFICATION	INSTRUCTIONAL QUALIFICATION	CONTACT
Flight Operations					
1	Vimal Singh	Comair Ltd	<ul style="list-style-type: none"> • ND Tourism Mgt • ETDP – Assessor • AQS – IOSA Lead Auditor 	ICAO AVSEC Mgt level 3, IATA DG Cat 6, SMS, ERP, CRM, IOSA Lead Auditor, QA Internal Auditor, IOSA Audit Prep – GRH / CGO / IGOM	vimal.singh@comair.co.za +27 782386374 +27 324366539
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3	Capt. Maikano, w. t.	NCAT	B.ENG.(MECH)	CPL, IR, MER, CFI, CFII, MEI, AGI, IGI, ATPL, DPE, TIC, QUALITY AUDITOR	wtmaikano@yahoo.com 08037017974
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5	Capt. Zego Ibrahim	NCAT	SECONDARY SCHOOL CERT	ATPL, CPL, IR, MER, CFI, CFII, MEI, AGI, TIC	ibrahimzego@gmail.com
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22	C. Chatta	NCAT	BSc (Physics), MSc	TIC, Dispatch, ICAO Trainair PLUS CD	+23407084335886 priestdaprince@gmail.com

S/N	INSTRUCTORS NAME	ATO	ACADEMIC QUALIFICATION	INSTRUCTIONAL QUALIFICATION	CONTACT
1	GYAMERAH Franklin	GATA	<ul style="list-style-type: none"> • BSc Economics • AVSEC Basic Course (STP 123) • Crisis Management • Air Cargo and Mail Security • Aviation Security National Inspectors • Aviation Security National Instructors • Risk Management • National Civil Aviation Security Quality Control Programme 	<ul style="list-style-type: none"> • Airport safety and security • Aviation Security • Air navigation rules and procedures 	wazofog@yahoo.com
2	AKATUE Emmanuel	GATA	BSc. Mechanical Engineering MBA	<ul style="list-style-type: none"> • OJT GSI Airworthiness • OJT Personnel Licensing 	eakatue@gmail.com
3	ARYEETAY Armah John	GATA	<ul style="list-style-type: none"> • FAA aircraft dispatcher course at Sheffield School of Aeronautics and Florida Atlantic University • Several training sessions with FAA, ICAO, EASA and Approved Type Rating Training Organizations 	<ul style="list-style-type: none"> • ICAO-Endorsed GSI Personnel Licensing • OJT in Personnel Licensing 	joharnie@gmail.com
4	ASARE Koranteng Emmanuel	GATA	<ul style="list-style-type: none"> • BSc. Business Administration (Marketing) • Aviation accident investigation seminar U S navy - Airforce base, Accra station 	<ul style="list-style-type: none"> • Airline dispatch course in GATA • All dangerous goods courses in GATA 	asaredispatch@yahoo.com

			<ul style="list-style-type: none"> • Aviation safety inspector (ASI) for aircraft dispatcher functions. Mike Moroney aeronautical center federal aviation (FAA), Oklahoma USA • Designated aircraft dispatch examiner course (DADE) mike Moroney aeronautical center federal aviation (FAA), Oklahoma USA • Safety management course Cranfield aviation (PTY) limited Johannesburg - south Africa • Quality assurance management course Cranfield aviation (PTY) limited Johannesburg - south Africa • (LOSA) induction to international air transport association operational and safety audit QAS aviation academy (PTY) limited (south Africa) • Train the trainer QAS aviation academy (PTY) limited • Education and training development for practitioners (E.T.D.P) qas aviation academy (PTY) limited • Aircrew CRM instructor training (Manchester, U.K.) • Aircraft type ratings (aircraft dispatchers) 		
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			<ul style="list-style-type: none"> Competency to instruct in DGR all categories QAS aviation academy (PTY) limited (South Africa) Dangerous goods all categories (category 6) Gas Aviation academy (PTY) limited 		
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S/N	INSTRUCTORS NAME	ATO	ACADEMIC QUALIFICATION	INSTRUCTIONAL QUALIFICATION	CONTACT
AERONAUTICAL TELECOMMUNICATION ENGINEERING					
1	John Ali	NCAT	M.Sc. Electrical Eng.	ATSEP, TIC SMS, HF, Airfield Ground Lighting, Nav-aids	08051547139
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4	Engr. W. B. Disu	NCAT	ATE DIPLOMA Master in Transportation	Communication, ATSEP, TIC, SMS, HF	08037051323
5	Engr. Edward Yor	NCAT	PGD Electrical Eng.	Communication, ATSEP, TIC, SMS, HF	07027837501
6	Engr. Isah Danjuma	NCAT	M.Sc. Computer Eng.	Airfield Ground Lighting, Nav-aids, ATSEP, TIC, SMS, HF	08053560040

7	Engr. Shittu Ahmed A.	NCAT	B.ENG Electrical Eng.	Nav-aids, ATSEP, TIC, SMS, HF	08036780679
8	Engr. D. J. omotowa	NCAT	B.ENG Electrical Eng.	Radar, ATSEP, TIC, SMS, HF	08050352825
9	Dr. K. A. Bakare	NCAT	PhD. Computer Science	ATSEP, TIC, SMS, HF. Nav-aids	08053527494
10	Mrs. Ngozi Oniah	NCAT	PDG Computer Science	ATSEP, TIC, SMS, HF	08039459995
11	Engr. A. R. Kolawole	NCAT	B.ENG Mechanical Eng.	Airfield Ground Lighting, Nav-aids, ATSEP, TIC, SMS, HF	08055901094
12	Engr. H. A. Muazu	NCAT	M.Sc. Electrical Eng.	Communication, ATSEP, TIC, SMS, HF	08037044740
13	Engr. W. Calabar	NCAT	B.ENG Electrical Eng.	Communication, ATSEP, TIC, SMS, HF	NCAT ATE School
14	Engr. Otori Abdulaziz uye	NCAT	M.Sc. Electrical Eng.	Nav- aids, ATSEP, TIC, SMS, HF	NCAT ATE School
15	Engr. Wasiu Akorede	NCAT	B.ENG Electrical Eng.	Radar/ Surveillance, ATSEP, TIC, SMS, HF	NCAT ATE School
16	Engr. Chiwetalu Tijani O.	NCAT	B.ENG Electrical Eng.	Radar/ Surveillance, ATSEP, TIC, SMS, HF	NCAT ATE School
17	Mr. Mujtaba Mahmud	NCAT	B.Tech. Math/Computer	Nav-aids, ATSEP, TIC, SMS, HF	NCAT ATE School
18	Engr. Falasinnu Adeyeye Tolu	NCAT	B.ENG Electrical Eng.	Airfield Ground Lighting, ATSEP, TIC, SMS, HF	NCAT ATE School
19	Engr. Ekundayo O. Adetiba	NCAT	M.Sc. Electrical Eng.	Communication, ATSEP, TIC SMS HF	NCAT ATE School

S/N	INSTRUCTORS NAME	ATO	ACADEMIC QUALIFICATION	INSTRUCTIONAL QUALIFICATION	CONTACT
AIR TRAFFIC SERVICE/COMMUNICATION (ATS/COM)					
1	Mr Joseph. S. Jmalighwe	NCAT	Secondary School cert	TIC, Standard ATC licenses ratings for aerodrome approach area (enroute) and radar cert AVSEC ISDU in AEP TICTDC	jimalighwe@yahoo.com
2	Alh. S.T. Yahaya	NCAT	MSc Transport Management	TIC, Standard ATC licenses ratings for aerodrome approach, area (enroute), radar and AVEL rating AVSEC	saheedyahaya@yahoo.com
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4	Mr. Olatunde Plasoji	NCAT	Secondary School cert	TIC, ASOL license and AVEL rating	Sojipaul2012@gmail.com
5	Mrs. Adekola O. O.	NCAT	Bachelor of law	TIC, AIS, AAIM, GAO	aoadekay@yahoo.com
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7	Mr. Buari A. Bamidele	NCAT	BSc statistics	TIC, Standard ATC licenses ratings for aerodrome approach, area (enroute), radar and AVEL rating	akinbuari@yahoo.com
8	Mr. Aliyu A. Suleiman	NCAT	BSc geography	TIC, Standard ATC licenses ratings for aerodrome and radar and cert for area (enroute)	Sahaawib1234@gmail.com

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13	MrJohn D. Ukponkpong	NCAT	BSc geography	TIC, BAIMO, AAIM, GAO, control and authenticity of travel doc. at airport borders	con73@yahoo.com
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S/N	INSTRUCTORS NAME	ATO	ACADEMIC QUALIFICATION	INSTRUCTIONAL QUALIFICATION	CONTACT
AIRFRAME					
1.	Amupitan Martins Ayodele	NCAT	<ul style="list-style-type: none"> • B. Eng. (mech) • PGDE (education) 	<ul style="list-style-type: none"> • Instructional Technique Course • Training Instructors' course (TIC) • Aircraft Structures • Airframe/Helicopter systems • Cat 'A' License on TB-9 airplane • Cat 'C' License on O-320-2DALycoming engine • Turbine Helicopter license • Bell 206 license 	delemart74@gmail.com Tel. 08037195195
2.	Mbadugha Rosemary C.	NCAT	<ul style="list-style-type: none"> • B Eng. (chemical engr.) • Diploma in aircraft 	<ul style="list-style-type: none"> • Technical Instructor course (TIC) • Airframe Systems 	rosamarynk@gmail.com Tel. 08033787580

			maintenance engineering	<ul style="list-style-type: none"> • General courses (physics, mathematics, aerodynamics) • ICAOLicence in Aircraft MaintenanceEngineering 	
3.	Bikam M. Kakok	NCAT	<ul style="list-style-type: none"> • B. Eng. (Mech) 	<ul style="list-style-type: none"> • Instructional technique course (TIC) • Training instructors' course (TIC) • Aircraft systems • Wheels & brakes modular course • Cat 'a' license on TB-9 airplane • Cat 'c' license on O-320-2DA Lycoming engine 	bikamkakok@gmail.com Tel: 07038512373

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				(TIC) • CAA airworthiness course (UK)	
5	Marouf Adewale Yusuf	NCAT	<ul style="list-style-type: none"> • Cert. in aircraft maintenance mgt. • Post graduate diploma in mgt • B. Eng. (Mech) • National Diploma in Mech. Eng. • Aircraft Maintenance Engineering Special course cert. • Aircraft Structural Repair 	<ul style="list-style-type: none"> • Instructionaltechnique course (TIC) • Training instructors' course (TIC) • Aircraft systems • Wheels & brakes modular course 	bikamkakok@gmail.com Tel: 07038512373
6	Mudashiru Lukman	NCAT	<ul style="list-style-type: none"> • B. Eng. (mech) • NCAT diploma 	<ul style="list-style-type: none"> • Traininginstructors' course (TIC) • AMEL licence 	mudashirulukman@gmail.com Tel: 08062241827

S/N	INSTRUCTORS NAME	ATO	ACADEMIC QUALIFICATION	INSTRUCTIONAL QUALIFICATION	CONTACT
AMARS					
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			<p>Technology)</p> <ul style="list-style-type: none"> • Master Degree in Transport & Logistics (MTL) 	<ul style="list-style-type: none"> • Breathing Apparatus Wearer Course • First Aid Course • Aviation Planning, Operations and Management Course • IR Part 66 Cat TB1.1 Module 6 – Material & Hardware (Full Module) • IR Part 66 Cat TB1.1 Module 7 – Maintenance Practices • Computer Appreciation and Applications • Train the Trainers Course • Strategic Human Resources Management Course • TRAINAIR Course Developers Workshop • Training Methods and Presentation Course • Advanced Train-the-Trainers C • IATA Flight Operations Management Training • Maintenance Human Factors • Training course Design and Management • Aviation Security Training • Introduction to the Management of Training • Advanced Train the Trainer II 	
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				<ul style="list-style-type: none"> • Advanced Composite Structures: Fabrication and Damage Repair – Phase 1 (Heatcon Abaris) • Internationally Qualified Course Developer (ICAO TRAINAIR PLUS) • Training Developers Course –TDC (ICAO TRAINAIR PLUS) • Post Incident/Accident Trauma Training • Instructional Technique Training • CAA Airworthiness Course • Training Instructors Course - (ICAO TRAINAIR PLUS) • Aircraft Accident Investigation 	
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S/N	INSTRUCTORS NAME	ATO	ACADEMIC QUALIFICATION	INSTRUCTIONAL QUALIFICATION	CONTACT
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2.	Muhammad Nasiru Gungura	NCAT	<ul style="list-style-type: none"> • ICAO Diploma, Aircraft Maintenance Engineering (A&P) • Bachelor of Engineering B.Eng (Mechanical) • Masters in International Affairs 	<ul style="list-style-type: none"> • Aircraft Maintenance Engineer's • Licence • Aerospace Non-Destructive Testing & Inspection • Fire fighter Initial Course • Breathing Apparatus Wearer • First Aid 	Telephone: +2348037012913 +2348098131831 gunguranasiru@gmail.com

			and (MIAD) Diplomacy	<ul style="list-style-type: none"> • Aviation Planning, Operations and Management Course • Air Transport Economics Course • Transport Law and Practice • Computer Appreciation and Applications • Train the Trainers • Strategic Human Resources • Management Course • Safety Management System • Training Methods and Presentation Course • Advanced Train-the-Trainers • Integrated Management System • Maintenance Human Factors • Quality Management System • Human Performance and • Limitations Course • Introduction to the Management of Training • Advanced Train the Trainer II • Facility Maintenance Management Course • Leadership Skills Training • Classroom Instructor Training • Job Site Safety Training • Instructional Technology Training 	
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				<ul style="list-style-type: none"> • Federal Aviation Regulations Parts 65, 91 and 147 • Training Instructors Course (TIC) • Aircraft Investigation Course 	
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S/N	INSTRUCTORS NAME	ATO	ACADEMIC QUALIFICATION	INSTRUCTIONAL QUALIFICATION	CONTACT
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			Maintenance Management	<ul style="list-style-type: none"> • EASA Module 11 • Aviation Safety Management Course • Aircraft Structural Repair for Engineers-Part I • Aircraft Structural Repair for Engineers-Part II • Quality Management System in Aviation • Airline Operations Document Systems and Quality (IATA) • Air Transport Fundamentals (IATA) • Leadership Skills Training • Classroom Instructor Training • Job Site Safety Training • Overview of Federal Aviation Regulations Parts 65, 91 and 147 • Instructional Technology Training • Air Transport Fundamentals • Training Instructors Course (TIC) 	
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S/N	INSTRUCTORS NAME	ATO	ACADEMIC QUALIFICATION	INSTRUCTIONAL QUALIFICATION	CONTACT
AMARS					
4	Balogun Sherif Olarewaju	NCAT	<ul style="list-style-type: none"> • ICAO Diploma, Aircraft Maintenance Engineering (A&P - Helicopter) • Bachelor of Engineering 	<ul style="list-style-type: none"> • License Aircraft Maintenance Engineer (A & P) • Advance Composite Repair and Fabrication • EASA Modules 6, 7 and 8 • Training Instructors Course 	Telephone: +2348037036427 balogunsherifola@gmail.com

			(Metallurgical Engineering) <ul style="list-style-type: none"> • Aircraft Maintenance Engineering Special Course 	<ul style="list-style-type: none"> • Airline Operations System Document and Quality • TB-9 Line Inspection Course • Human Factor in Aviation Course • Quality Management System(IATA) • Aviation Quality Auditors Training • Bell 206 Series Field Maintenance 	
5	Uhegho Osayi Oloye	NCAT	<ul style="list-style-type: none"> • Bachelor of Engineering (Metallurgical Engineering) • M.Sc. Energy and Petroleum Economics 	<ul style="list-style-type: none"> • ICAO Diploma, Aircraft Maintenance Engineering (A&P - Helicopter) • License Aircraft Maintenance Engineer (A & P) • EASA Modules 6, 7 and 8 • Training Instructors Course • TB-9 Line Inspection Course • Bell 206 Series Field Maintenance 	osayioloye@yahoo.com
6	Joseph Kumai Didam	NCAT	<ul style="list-style-type: none"> • ICAO Diploma, Aircraft Maintenance Engineering (A&P - Helicopter) • Bachelor of Engineering (Metallurgical Engineering) • Aircraft Maintenance Engineering Special Course 	<ul style="list-style-type: none"> • License Aircraft Maintenance Engineer (A & P) • EASA Modules 6, 7 and 8 • Training Instructors Course • Airline Operations System Document and Quality • TB-9 Line Inspection Course • Bell 206 Series Field Maintenance Course 	Telephone: +2348062217601 Jdk_alone@yahoo.com
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			Engineering (Mechanical Engineering)		
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S/N	INSTRUCTORS NAME	ATO	ACADEMIC QUALIFICATIO N	INSTRUCTIONAL QUALIFICATION	CONTACT
AVIONICS					
1	Engr. Henry O. Toluhi	NCAT	<ul style="list-style-type: none"> • ICAO diploma • Aircraft maintenance engineering (electrical & 	<ul style="list-style-type: none"> • Aircraft maint. engineer's licence • Traininginstructors' course (TIC) • Beech Boron 58 technical familiarization course • TB20 aircraft manufacturing course 	toluhiojo@yahoo.com Tel. 08033176343

			instrument)	<ul style="list-style-type: none"> JAR 66 Module 13 Avionics type qualification on dolphin Part 66 Module 9 Human Factors Part 66 module 10 aviation legislation Aviation Security Training Airworthiness course 	
2	Aandrew Akamagwuna A.	NCAT	<ul style="list-style-type: none"> HND, PGD in electrical engineering 	<ul style="list-style-type: none"> AES, UK EAAMod 13, EC225 helicopter avionics, 'X' 8.1 aircraft instruments, 'X' 9.1 DC electrics power, TIC 	andrewakamagwuna@yahoo.com Tel. 08037051364
3	Kazaure H. J.	NCAT	<ul style="list-style-type: none"> HND ATE diploma AME diploma 	<ul style="list-style-type: none"> Training instructors' course (TIC) license in: X – 8.1 instruments X – 9.1 electrics X – 15.1 direct compass X – 15.2 remote compass module 13 B1 Human Factor Safety 	khamisu@yahoo.com Tel: 08033116481
4	Olumakin A. B.	NCAT	<ul style="list-style-type: none"> B. Eng. (electrical) 	<ul style="list-style-type: none"> Training instructors' course (TIC) NCAT AES NCAA license EASA part 66 modules 	bolanleolumakin@gmail.com Tel: 08068916633
5	Galadima Abednego A.	NCAT	<ul style="list-style-type: none"> MSc electrical B. Eng. (electrical/electronic) 	<ul style="list-style-type: none"> Training instructors' course (TIC) Train the trainer, IATA Basic Instructional course Instructor training course 	Abednego-72@yahoo.com Tel: 08096703502
6	Agbo Chijioke	NCAT	<ul style="list-style-type: none"> HND 	<ul style="list-style-type: none"> Training instructors' course (TIC) 	agbochijioke16@gmail.c

			(elect/electronics) • AME diploma	• TDC • AME license	om Tel: 08060426821
7	Musa Nehemiah	NCAT	• B. Eng. • NCAT diploma (avionics)	• Training Instructors' course (TIC) • aircraft maintenance licenses • S. M. S. • Q.M. S	botsongr@yahoo.co.uk Tel: 07061681114
8	Emmanuel Joseph	NCAT	• HND (elect/electronics)	• Training Instructors' course (TIC 1 & 2) • NCAT diploma (avionics) • X – 8.1 instruments • X – 9.1 DC electrics • X – 9.2AC electrics • X – 12 Autopilot • 'R' - radio	jezee4real@yahoo.com Tel: 08057971347
9	Hamisu Yari Garga	NCAT	• ICAO Diploma Aircraft Maintenance engineering (electrical & instrument)	• AMEL licence, avionics • NCAT diploma (avionics) • X – 8.1 instruments • X – 9.1 DC electrics • X – 9.2AC electrics • X – 12 Autopilot • 'R' - radio • 'X' – 9.4	Tel: 08020985008

S/N	INSTRUCTORS	ATO	ACADEMIC	INSTRUCTIONAL	CONTACT
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	NAME		QUALIFICATION	QUALIFICATION	
AVIONICS					
10	Gana Frank Ndache	NCAT	B. Eng. (Aerospace Maintenance Engineering)	<ul style="list-style-type: none"> • ICAO tic parts 1 & 2 • certificate of continuing education instructional technology • examination techniques course certificate • T2 Avionics type licence on Eurocopter EC225 Helicopter • Certificate JAR 66 Module 13- Aircraft systems course • Professional licences in aircraft maintenance engineering Cat 'x' aircraft electrics (9.1) & aircraft instruments (8.1) • Certificate of completion of Beechcraft Baron B58 maintenance training (initial) • Certificate of aviation safety management • Certificate of completion of instructor training course • Certificate of familiarization & operational training course on model AT-01 avionics trainer 	Tel: 07038512373 frang6@yahoo.com
S/N	INSTRUCTORS NAME	ATO	ACADEMIC QUALIFICATION	INSTRUCTIONAL QUALIFICATION	CONTACT

POWERPLANT					
1	Babalola Eniola Johnson	NCAT	<ul style="list-style-type: none"> • Masters, Disaster Risk Management & Development Studies • ICAO Diploma in Aircraft Maintenance Engineering (Airframe & Powerplant) • BTech Chemical Engineering 	<ul style="list-style-type: none"> • Aircraft Maintenance Engineer's Licence • Safety Management System • Pressurized Metal Airframe • Advanced Train the trainer • Non-Destructive Testing Level I&II • Training Instructor Course • Aviation Auditors and Lead Auditors Training • Quality Management System 	+234 (0) 8055554615 enny_babs@yahoo.com
2	Engr. Kole Uhuegho O.	NCAT	<ul style="list-style-type: none"> • PhD Aviation Science • MSc Air Safety Management • Master of Business Administration • ICAO Diploma, Aircraft Maintenance Engineering (A&P) • BEng Mechanical Engineering 	<ul style="list-style-type: none"> • Aircraft Maintenance Engineer's Licence • Training Instructor Course • B737 Airframe & Powerplant System Course • Beech Baron 58 Technical Course • TB-20 Manufacturer Maintenance Course • Emergency Preparedness in Aviation Industry • Air Transport Economic Course • Helicopter Maintenance Course • Safety Management System • Ramp and Maintenance Safety • Operational Risk Management • Basic Accident Investigation Course 	+234 (0) 8036700930 Kole_k45@yahoo.com
3	SolomonO. Adediji	NCAT	<ul style="list-style-type: none"> • PGD Mechanical 	<ul style="list-style-type: none"> • Aircraft Maintenance 	+234 (0) 8160780887

			<p>Engineering</p> <ul style="list-style-type: none"> • ICAO Diploma, Aircraft Maintenance Engineering (Airframe & Powerplant) • HND Mechanical Engineering • ND Mechanical Engineering 	<p>Engineering Licence</p> <ul style="list-style-type: none"> • Training Instructor Course 	seunadediji@yahoo.com
4	Dagal Sabta	NCAT	<ul style="list-style-type: none"> • Aircraft Maintenance Engineering Special • BEng. Mechanical Engineering 	<ul style="list-style-type: none"> • Aircraft Maintenance Engineer's Licence • Training Instructor Course • Part-66 Module 15 – Gas Turbine Engine • Part-66 Module 17 – Propellers • Familiarization and Operational Training Course on Model AE-10 (Operational CF-700-2D2 Fan Engine) • Train the Trainers Course • Advanced Train the trainers Course. 	+234 (0) 7037879953 dagalsabta@yahoo.com

S/NO.	INSTRUCTORS NAME	ATO	ACADEMIC QUALIFICATION	INSTRUCTIONAL QUALIFICATION	CONTACT
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Appendix E
GAT Catalogue