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

*TWENTY-FIRST AFI PLAN STEERING COMMITTEE MEETING*
*Niamey, Niger, 17 July 2018*

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**Agenda Item1.3:**     **Progress Report on the Review of the African Aviation Training Roadmap**

*(Presented by AATO)*

| EXECUTIVE SUMMARY |
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| This paper presents a report of the development of the African Aviation Training Roadmap. <br><br> **Action:** The Steering Committee is invited to: <br><br> a) Note the information contained in the paper; <br><br> b) Encourage stakeholders such as Civil Aviation Authorities, Aviation Training Institutions, Industry partners etc. to continue providing aviation training related information for the continuous improvement of the report and aviation professionals database development  and <br><br> c) Provide further guidance to the meeting. |

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 report.

1.2        AATO network of training organizations and partners was 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. The draft African Aviation Roadmap Presented as **Attachment A** to this paper.

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 report based on results of previous surveys, ATOs' training records, and equipment manufactures forecasts.

2.9        The report is a living document and will be continuously updated; is appended with a list of ATOs in Africa, available courses, previous survey results, actual training needs.

2.10        An instructor database is still being developed to complete a list of appendices to the aviation training roadmap report.

## 3. CONCLUSIONS

3.1        Note the information contained in the paper.

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

3.3        Support  the programs and activities of AATO;  and

3.4        Provide further guidance as necessary.


-END-

**AFRICAN AVIATION TRAINING ROADMAP**

## 1. Main Objective

Provide adequate and quality training to aviation professionals and bring Africa to the minimum safety standards.

### 1.1 Specific Objectives

### 1.1.1 Sustainable air transport in Africa

Sustainable, safe and secure aviation development rely on 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. An aviation training and capacity-building roadmap will assist the International Civil Aviation Organization (ICAO) Members in the development of plans to ensure 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).

### 1.1.2 Harmonized and standardized training

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

## 2. Scope

An aviation training and capacity-building roadmap is a strategic document that outlines the human resource requirements for states to achieve its 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 a gap analysis.

It will also identify national education and training institutions that contribute to meeting training needs by naming existing programmes offered by universities, academies, private and government (civil aviation authorities) training institutions, colleges or other post-secondary institutions that graduate qualified personnel for occupations in air transport.

## 3. Methodology

### 3.1 Systems

The Addis Ababa model for roadmap development and other concepts such as the one developed by FAA were used.

### 3.2 Statistics

Obtaining accurate and timely training needs information is 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 report 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

### 3.3 Focal Points

For each state, there will be duly appointed focal points from the ATO and CAAs to track and submit updates on the roadmap.

## 4. Performance Enablers

### 4.1 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 to different levels of efficiency in service delivery even when the course is the same. Most of the institutions

have not acquired certification for quality management systems and even the Safety Management System. The inadequacies identified and the lack of quality management systems does not reflect the necessary confidence required to attract students looking for quality training. Therefore, there is a need to address the issue of standardization and harmonization in aviation training as stipulated in the AATO mandate.

### 4.1.1 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 and the accreditation of centres of excellence by AATO will address this challenge.

### 4.2 Accreditation of Qualifications

The number of skilled instructors on the continent is increasing due to expansion of trainings 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 facilitates the movement of skilled personnel across the continent as a way of addressing shortages of qualified staff. The development of instructors' database will facilitate sharing of the available intellectual capital.

### 4.3 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 close collaboration of training institutions, service providers, ICAO AFCAC and donors. AFI SC through AATO will be a proper platform for information dissemination.

### 4.4 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.

### 4.5 Measurable Deliverables

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

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

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

### 4.5.4 List of instructors and their qualifications
An instructor database is being developed as appendix C.

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

## 5. Audience/Customers
The roadmap will benefit various aviation training stakeholders.

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

### 5.1.1 Current Members
Currently AATO has 13 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

### 5.1.2 Prospective Members
The continent has more than 200 ATOs that qualify to become AATO members. Of those, AATO has a plan to attract at least 5 new members in 2018 and consequently increase the membership to 50 by 2025 hence, assurance of more credible ATOs.

*5.2 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 the Africa. | Establish a resource sharing mechanism in the region. |
| | Collaboration not competition | Join AATO |
| ICAO | A roadmap report. | Submit aviation training needs as identified by USOAP audits and other reports. |
| | Achievement of standardised Training. | 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. |
| 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 | |
| African Union | Sustainable air transport in Africa. | Encourage states to participate in identified programs/projects. |
| | Successful implementation of the SAATM. | Technical and financial support to AATO |
| AFCAC | Successful identification of accurate training needs. | 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 organisations. | 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. |

## 6. Risks

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

### 6.1 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.

### 6.2 Political, Economical, Social, Technological, and Environmental

### 6.2.1 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.

### 6.2.2 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.

### 6.2.3 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 trainings that produce human resources that are able to effectively serve a highly demanding population.

### 6.2.4 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 trainings on emerging technologies that can be applied on the next generation equipment.

### 6.2.5 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 implications on climate change. 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. Actions

The roadmap implementation will have different spans.

### 7.1 Short Term

This will begin immediately after the roadmap implementation approval and will span for two years.

### 7.1.1 Level of implementation:

Increase the level of effective implementation to above 60% for states with less than 60% EI.

- Angola
- Djibouti
- Eritrea
- Malawi

### 7.1.2 Assistance to States

Assist states with effective implementation of less than 60% to gradually come out of the status by providing training on the identified gaps.

### 7.1.3 Increase the level of effective implementation to 90%.

Based on the information shared from the audit reports, efforts will be directed in addressing the identified gaps for continuous improvement of the effective level of implementation.

### 7.1.4  Database Development

An effective aviation training database is being developed and will continuously be updated.

### 7.2 Medium Term

This will begin immediately after the roadmap implementation approval and will be continuous as per the identified training needs.

### 7.2.1  Succession plan

Set planning strategies for the replacement of ageing/retiring personnel. One of these strategies will be the training of new managers and technical staff in the regions.

### 7.2.2  Introduce new technologies

The aviation industry is highly dynamic as new systems and technologies are being introduced. The ATOs will be required to be proactive and introduce new courses as needs arise. The industry and ATOs need to work closely to avoid technology gaps.

### 7.2.3  Harmonize & Standardize Training

AATO will begin the harmonization and standardization of curricula in 2018. The first program has started in collaboration with EAC CASSOA to harmonize the ATC curricula for EAC states. Once the exercise is completed, it will serve as model for other regions and other curricula.

### 7.2.4  Designate Centres of Excellence

In order to continuously improve safety, AATO will work in collaboration with GAT to ensure that quality aviation training is offered by designated centres of excellence. A framework for the designation of centres of excellence in Africa and other related documents were prepared and adopted by the AATO constitutive assembly in 2013. Currently, a review is in progress so as to begin the exercise in 2019.

### 7.2.5  Conduct training needs survey

Availability of accurate and timely data is crucial to the sustainability of the roadmap. Hence, AATO in collaboration with partners will continuously improve the roadmap by

conducting training need surveys every two years. The industry is requested to participate fully by submitting the relevant information.

### 7.2.6   *Continuous database improvement*

The roadmap report contains database on available ATOs, courses, instructors and qualifications, as well as the actual training needs. This crucial information will be continuously updated to meet the industry needs.

### 7.3 Long Term

Sustainable air transport will require sustainable efforts to maintain standards and meet the required safety levels determined by ICAO. In this regard, long term strategies have been set.

### 7.3.1   *Conduct surveys*

Data collection and conducting surveys will continue being a reliable source of the industry training requirements.

### 7.3.2 Continuous database improvement

Stakeholders will benefit from the results of the surveys by accessing the database. Continuous improvement of the database requires the commitment of all stakeholders in terms of timely information sharing.