

# ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION



AFRICA – Nov/Dec 2011

# REGIONAL REPORT

## PROGRESS IN AFRICA

Safety, Route and Training Initiatives  
Move Forward Air Transport Accomplishments  
in ICAO's Africa-Indian Ocean Region

**Special State Profile Feature: Nigeria**

**In this issue:**

New Leaders for ICAO's AFI Regional Offices

The AFI-Plan: Reviewing Latest Reports from 8<sup>th</sup> Steering Committee Meeting

PBN Advances and ATS Route Development - AFI Aeronautical VSAT networks

AFI MET Developments - Regional Centre for Aviation Medicine for African States



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The Regional Report encourages submissions from interested individuals, organizations and States wishing to share updates, perspectives or analysis related to global and civil aviation. For further information on submission deadlines and planned issue topics for future editions of the Regional Report, please forward your request to anthony@philbin.ca.

Published in Montreal, Canada. ISSN 0018 8778.

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# Ensuring a Strong Commitment to Practical and Collaborative AFI Air Transport Leadership

**ICAO's Africa-Indian Ocean (AFI) Regional Offices saw new leaders appointed during 2011, with Ethiopia's Meshesha Belayneh becoming Regional Director in Nairobi and Gambia's Mam Sait Jallow assuming the leadership responsibilities in ICAO's Dakar Office.**

**Both men bring a wealth of AFI aviation experience to their new leadership roles, in addition to strong commitments to moving forward ATM advances and ensuring more positive aviation safety outcomes in Africa through the collaborative frameworks ICAO has been establishing on the continent in recent years.**

**The ICAO *Regional Report* spoke to the new ICAO AFI leaders during recent high-level meetings on Africa's progress and continuing challenges.**

Significant challenges require strong leaders to confront them. As Africa's efficiency, safety and skilled personnel objectives remain significant areas of air transport concern today, ICAO has ensured that its ongoing programmes and plans for Africa will continue to move forward effectively with the help of the two qualified and committed new leaders it has appointed to the Organization's Dakar and Nairobi Regional Offices.

Meshesha Belayneh, ICAO's new Regional Director in Nairobi for Eastern and Southern Africa, comes to his new position after serving as the Ethiopian Representative to the ICAO Council. He Chaired and served on many important Council committees during this time, responsibilities which were all well-served by the over two decades of high-level air transport and government experience he had attained prior to this posting.

These responsibilities included the economic regulation of air transport, bilateral air services negotiations, providing advice to African States on air transport liberalization, and managing Civil Aviation Authorities (CAAs) and airports by promoting efficient, safe and reliable aviation services.

"Safety is without a doubt our most urgent priority in Africa," began Belayneh. "The ICAO audit process under the USOAP has provided us with a very fertile data-pool that we are now using to tailor safety initiatives addressing deficiencies in especially the most needful AFI States in



Meshesha Belayneh

this regard. At this stage of the process we have presented tailor made action plans to these countries describing the specific objectives, programmes and structures for partnering with local organizations and other development partners that will help realize the various outcomes being sought."

Belayneh highlighted that among the most urgent areas requiring attention in this regard are the process by which AFI States currently issue air operator certificates, license aviation personnel, issue certificates of airworthiness and register aircraft, as well as continuing to ensure that all such certificate and licence holders maintain the conditions of issuance of these documents.

ICAO SARPs prescribe specific steps and procedures which must be followed during and after the issuance of these licences and certificates. Yet the USOAP audits have revealed that many AFI States are still not managing the above certification and licensing processes in conformance with ICAO SARPs and guidance material.

"In the short-term we're looking first and foremost at helping these States become more aware of the necessary processes and procedures, with an end-goal of ensuring that all of these certificate and licence holders are ICAO-compliant," Belayneh remarked. "Additional near-term

priorities include providing improved training in this area for government inspectors so that they are more aware of their actual responsibilities and better equipped to carry them out.”

In ICAO’s Regional Office for Western and Central Africa in Dakar, meanwhile, Mam Sait Jallow was appointed to his position as ICAO Regional Director after serving effectively since 2006 as the Dakar Office’s Deputy Regional Director. Jallow’s career in civil aviation spans 30 years, during which time he served as Director General of Civil Aviation in the Gambia for seven years. Prior to this position he had been seconded to the Secretariat of the Economic Community of West African States (ECOWAS) as Director of a regional project for the implementation of the Yamoussoukro Decision (YD) on air transport liberalization.

Jallow has also participated in numerous events and activities relating to various aviation organizations and bodies in Africa and worldwide. He sees ICAO’s role becoming more and more important to aviation in the AFI region as States and organizations begin to leverage the improved climate of cooperation and awareness that the organization has been working so hard to foster in recent decades.



Mam Sait Jallow

“ICAO’s prestige is still at a very high level in Africa today and, more and more, responsibilities and capabilities are being migrated from Headquarters to its Regional Offices,”

begin Jallow. “Our main challenge from my perspective is levelling the degree of capability we’re seeing today on a State-by-State basis in safety, security and Air Traffic Management (ATM). We’re working through increased training and new programmes to increase awareness and related capabilities but we find some States

move faster than others. In as much as the aggregate AFI aviation system is only as strong as its weakest links, our main challenge now is to motivate and energize deficient States to bring their safety, security and ATM systems to full compliance with international Standards.”

Jallow also brought to light some of the challenges ICAO is now seeing in transitioning Cooperative Development of Operational Safety and Continuing Airworthiness Programmes (COSCAPs) which ICAO had previously helped States to establish, into the new Regional Safety Oversight Organizations which the Organization has determined, in consensus with AFI States and aviation organizations, are the best way forward in terms of raising the minimum level of capability in all AFI States.

“These transitions are working very well in some cases but they are also stalling in others,” he noted. “Part of the problem here is the multiplicity of programmes in the various RSOOs and States who may be committed to more than one grouping being unable to determine their best course to follow. This is why we’re encouraging States to choose a single RSOO to participate in or, if they have to, avoid duplication of activities or functions they delegate to such bodies, thereby simplifying their options and their path to more effective safety oversight.”

ICAO too is embarking on increasingly collaborative ventures in the safety area, having established a new Cooperative Inspectorate Scheme (AFI-CIS) with the African Civil Aviation Commission (AFCAC) and the African Airlines Association. Jallow pointed out that AFCAC is at the forefront of this project, being supported with technical and other resources by ICAO. A pool of qualified inspectors has been established under the scheme to work with States on the ground to address audit deficiencies. This programme began in early 2011 and has initiated

assistance missions and related training that are presently ongoing.

ICAO’s Dakar Office has also been pursuing a similar venture in cooperation with ACI (Airports Council International) in Africa. This was recently launched in the region under ACI’s APEX programme and involves assisting African airports to improve safety and facilitate certification by their aviation authorities. Because these programmes need both operators and regulators to be working in a coordinated manner toward the common safety goals being sought, the ACI/ICAO cooperation was essential in delivering the sought after outcome.

In closing, both Jallow and Belayneh expressed their enthusiasm for the level of progress and buy-in by AFI States as ICAO’s work in these areas and many others continue to deliver the improvements and results that are bringing the African continent’s performance metrics more in line with the global Standards ICAO consistently seeks to achieve.

“African States are as keenly aware as any other ICAO Member States of the affects that diminishing air transport activity can have on travel, tourism and other economic activities,” concluded Belayneh. “States who saw these types of detrimental economic impacts because of their aviation safety and ATM deficiencies, thanks in large part to ICAO and IATA safety audit processes, now understand the direct links between dependable and efficient air transport activity and improved social and economic prosperity.”

“This new understanding has been very important to helping attain the level of motivation we’re now seeing among AFI States to address safety and ATM issues across the board,” agreed Jallow. This is permitting air transport to once again be a driver of real progress on the African continent.” ■



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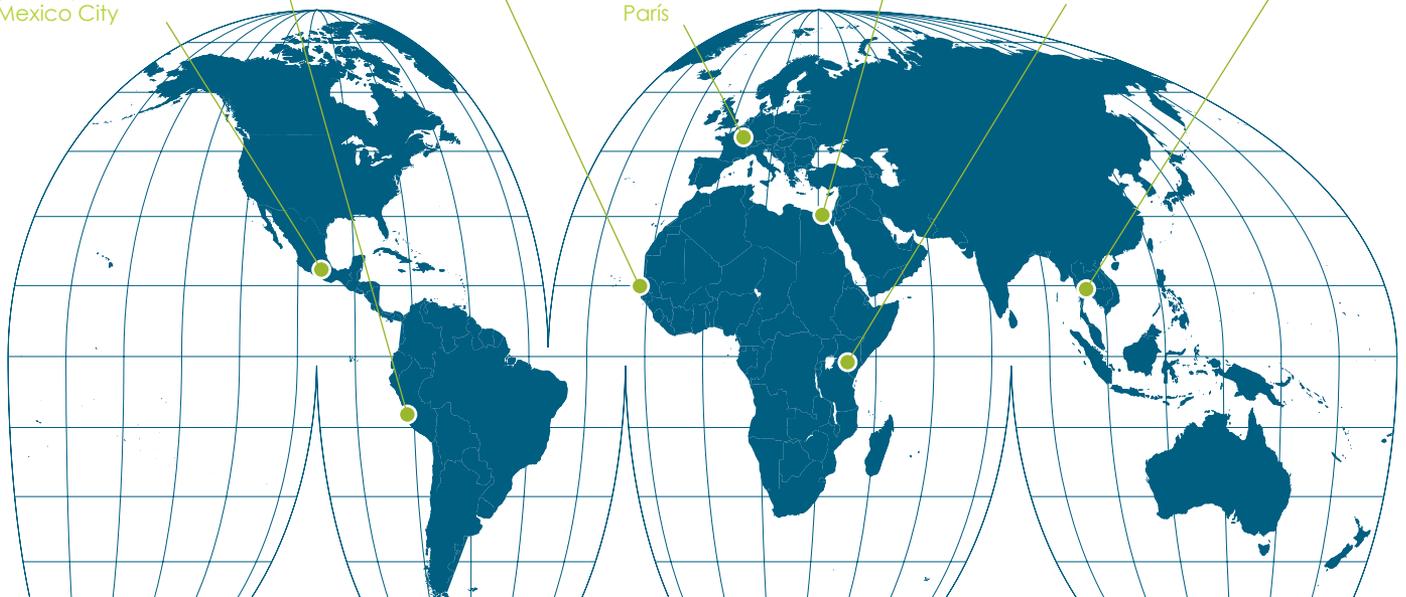
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# Moving Forward on Improved AFI Collaborative Frameworks

**The Comprehensive Implementation Plan for Aviation Safety in Africa Steering Committee's Eighth Meeting took place at ICAO HQ in October 2011. High-level participants reviewed the progress that has been made to date on the AFI Plan objectives and made recommendations for future adjustments as ICAO, regional organizations and AFI States continue to collaboratively address the continent's safety, inspection and skilled personnel challenges.**

**The following report presents the outcomes of these deliberations, stressing ongoing achievements in the advancement of related action plans and many areas of safety- and training-related cooperation.**

ICAO's Comprehensive Regional Implementation Plan for Aviation Safety in Africa (AFI Plan) seeks to improve safety oversight capabilities and safety outcomes on a continent-wide basis while increasing the Organization's leadership and accountability in programme coordination and management across the Africa-Indian Ocean (AFI) Region.

The AFI Plan reflects the strategic directions and goals reflected in ICAO's Global Aviation Safety Roadmap (GASP), while seeking to effectively rectify deficiencies identified by the ICAO Universal Safety Audit Programme (USOAP) and IATA's Operational Safety Audit (IOSA). Infrastructure deficiencies as identified by the AFI Planning and Regional Implementation Group (APIRG) also inform the AFI Plan's continuing activities and objectives.

In addition to these primarily safety-improvement related goals, the AFI Plan is also seeking to increase the number of qualified aviation personnel available to African States and aviation organizations. This last measure is in accordance with ICAO's ongoing Next Generation of Aviation Professionals (NGAP) initiative and with related efforts to increase the quantity and quality of training programmes in the region.

## **Acknowledgements and Outcomes: Safety-related**

With regard to the establishment of improved regional safety oversight, the AFI Plan Steering Committee's Eighth Meeting noted the progress that has been made in the development of State Safety Programmes (SSPs) for the East African Community (EAC) States (Burundi, Kenya, Rwanda, Tanzania and Uganda). It recommended that similar support programmes be extended to all the other Regional Safety Oversight Organizations (RSOO).

The Committee was also updated on the progress of its support activities related to the establishment of a new EAC regional accident investigation agency and invited the EAC States to expedite the process of finalizing the framework for its creation. Development of a common personnel licensing examination data bank had not yet been completed and it was agreed that a detailed report on its status would be submitted at the next Steering Committee gathering.

Progress was also presented in the establishment of the RSOOs and Regional Accident Investigation Agencies (RAIAs) for the CEMAC Member States (Cameroon; Central African

**AFI PLAN: BACKGROUND**

The Comprehensive Regional Implementation Plan for Aviation Safety in Africa (AFI Plan) was developed to address the concerns expressed by the ICAO Council on the safety status of aircraft operations in the AFI Region. The Council recognized that the problem facing the States in the AFI Region and many other States are similar in nature.

The AFI Plan was adopted by the 36<sup>th</sup> ICAO Assembly (Assembly Resolution A36-1). To implement the AFI Plan, the ICAO Secretary General established on 1 January 2008 the AFI Comprehensive Implementation Programme (ACIP).

ACIP developed its work programme around three focus areas to give effect to the objectives of the AFI Plan:

1. Enabling States to establish and maintain a sustainable safety oversight system (infra-structure and capacity building).
2. Assisting States to resolve identified deficiencies within a reasonable time.
3. Enhancing aviation safety culture of African aviation service providers.

Activities undertaken in each focus area by ACIP between 2008 and 2010:

**Focus Area 1:**

*Enable States to establish and maintain a sustainable safety oversight system (infra-structure and capacity building).*

1. ACIP conducted seven Global Aviation Safety Roadmap (GASR) Workshops.
2. ACIP worked closely with Regional bodies (BAG, EAC Partner States, CEMAC, UEMOA, SADC and States in the MID and ESAF Regions) to help establish Regional Safety Oversight Organizations (RSOOs) and Regional Accident Investigation Agencies (RAIAs).

**Focus Area 2:**

*Assisting States to resolve identified deficiencies within a reasonable time.*

1. ACIP conducted a number of safety-related seminars and workshops. These covered topics such as

Personnel Licensing and Aircraft Operations, Aircraft Airworthiness and Maintenance, Organization and Management of a State's Safety Oversight System, Air Traffic Control Operations and Safety, Aerodrome Safety management, Aviation Medicine, Transport of Dangerous Goods by Air, and lastly three ECCAIRS training courses.

2. ACIP conducted two Government Safety Inspectors (GSI) courses in Airworthiness and one GSI course in Operations based on training course material provided by FAA and endorsed by ICAO. In addition, in coordination with ICAO AGA section, ACIP developed and conducted an Aerodrome Safety Inspector Course.
3. ACIP conducted a survey on aviation training needs and available capabilities to identify the barriers to the availability of affordable and quality training programmes in Africa. The result of the survey was analyzed by the Training Expert Working Group (TEWG) and a roadmap for the harmonization of aviation training in Africa was later developed on this basis by the Second Pan African Aviation Training Conference.

**Focus Area 3:**

*Enhancing the aviation safety culture of African aviation service providers.*

1. ACIP conducted three State Safety Programme (SSP) and Safety Management Systems (SMS) seminars and training courses, as well as various high-level meetings in 2009.
2. ACIP adopted a 'Development of African Capabilities' theme in 2010. As a result, a total of 12 SMS courses in English and French were conducted throughout the continent. In addition, half-day, high-level SMS awareness seminars were provided to senior management personnel of AFI States and service providers. During this period, 29 SSP/SMS instructors from 14 African States and two regional organizations were successfully trained and approved.

As of 2011, the implementation of the AFI Plan has been more comprehensively integrated into the regular activities of ICAO's AFI Regional Offices in Dakar and Nairobi.

Republic; Chad; Congo; Equatorial Guinea; Gabon) and the Sao Tome e Principe. Required documentation to allow these new bodies to be formed has now been finalized by national experts and Directors General of Civil Aviation (DGCA) and has been submitted to the

respective Commissions of the Regional Economic Communities for due process.

A similar level of RSOO establishment has also been accomplished for some of the UEMOA Member States, including Benin, Burkina Faso, Cote d'Ivoire,

Guinea Bissau, Mali, Niger, Senegal and Togo. Mauritania is also participating in the UEMOA process.

With respect to Africa's Seven Partner States (Djibouti; Egypt; Eritrea; Ethiopia; Libya; Somalia; Sudan) it was noted that

## The AFI Plan will continue to support States, aviation services providers and aviation training organizations in the implementation of the framework for the harmonization of AFI aviation training, seeking-out additional long term partnerships to accelerate these efforts.

the prevailing political situation in the region would not yet provide for the carrying-out of the planned support activities. AFI Plan stakeholders will continue to monitor this situation and present a progress report at the Steering Committee's next gathering.

Regarding the SADC Member States (Angola; Botswana; Democratic Republic of Congo; Lesotho; Madagascar; Malawi; Mauritius; Mozambique; Namibia; Seychelles; South Africa; Swaziland; Zambia; Zimbabwe) the Committee noted that nine States have currently signed the Letter of Understanding (LoU) related to the implementation of the support to the SADC Member States for the establishment of their Regional Safety Oversight System, in line with Council Decision 191/3. The SADC Ministers of Transport also recently approved a charter for the establishment of the first SADC Aviation Safety Organization (SASO).

The Steering Committee also stressed the need for continuing AFI Plan support to the BAG Member States (Cape Verde; Gambia; Ghana; Guinea; Liberia; Nigeria; Sierra Leone) as they continue to set into action the new BAG Accident Investigation Agency (BAGAIA). The BAG States have already established an effective Safety Oversight Organization (BAGASOO).

As a guiding principle, the Committee agreed that State's may only participate in a single RSOO.

Concerning the advances being made in the establishment of Regional Office Safety Teams (ROSTs), related activities have been intensified and the Steering Committee recommended that States take advantage of the assistance available to support the implementation of their respective Corrective Action Plans and ensure that the targets set by the joint ICAO-AFCAC Meeting (Ndjamena, May 2010) are met to the fullest extent possible in advance of the 38<sup>th</sup> ICAO Assembly in 2013.

### Acknowledgements and Outcomes: Training-related

The Steering Committee took note of the successful conclusion of the Third Pan-African Training Coordination Conference and the adoption of a master plan for the harmonization of aviation

training in Africa. It stressed the need for immediate action on the establishment of effective institutions to pursue the master plan's implementation in order to address the significant gaps between existing demand and available supply of aviation-related training in Africa.

The AFI Plan will continue to support States, aviation services providers and aviation training organizations in the implementation of the framework for the harmonization of AFI aviation training, seeking-out additional long term partnerships to accelerate these efforts. This framework is aligned with the new ICAO Training Policy and, in support of its progress,

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existing and new AFI aviation training centres will be assisted in attaining ICAO TRAINAIR PLUS certification.

Safety-related training courses, seminars and workshops have been conducted across Africa recently, with a total of 278 participants trained in ECCAIRS, airworthiness, operations, aerodrome safety, safety management, and accident investigation. ECCAIRS and SSP/SMS training courses will continue to be offered only on a cost recovery basis, except in the case of RSOOs where they may be offered as part of the development and implementation programmes for regional safety plans.

A special Train-the-Trainer course for instructors of Government Safety Inspector (GSI) courses (airworthiness and operations) is also being undertaken by the AFI Plan with the support of the United States DoT 'Safe Skies for Africa' programme. U.S.-led GSI courses in Personnel Licensing and other areas will be provided (in English) as well as accident investigation training courses for the Regional Accident Investigation Agencies. State Safety Organization Management courses would be conducted in English and French and the material for an Air Navigation Inspectors course will be developed in cooperation with the ICAO Air Navigation Bureau.

To evaluate the effectiveness of the activities conducted, a series of surveys will be conducted in 2012 on the training activities followed by a comprehensive survey in early 2013.

**Acknowledgements and Outcomes:  
AARB-related Corrective Action Plans**

With regard to support to AFI States under the Audits Results Review Board (ARRB) list, a process is now in place for the development of Action Plans tailored to the needs and situation of each State.

These Plans are developed on the basis of an analysis of the status of implementation of a State's Corrective Action Plans (CAPs) and take into

account existing initiatives and cooperation arrangements. The Steering Committee was informed that, by the end of 2011, CAPs will have been tailored to the needs and situations of 20 separate AFI States. Upon acceptance by these States and, in coordination with AFCAC and other partners (as approved by a given State), implementation of the CAPs is being duly encouraged.

To facilitate the mobilization and coordination of the CAP support required, the Steering Committee requested the AFI Plan stakeholders to ensure that a list of all support projects, including those identified during the gap analysis, are included in dedicated AFI Plan Web pages and linked with the ICAO Safety Collaborative Assistance Network (SCAN).

A successful ICAO Coordinated Validation Mission (ICVM) conducted in Mozambique was highlighted in this context and the State is presently expected to be removed from the ARRB list as a result of this mission's accomplishments. The Steering Committee supported the initiative to change the ARRB into a Monitoring and Assistance and Review Board (MARB), putting an emphasis on its support role.

**Acknowledgements and Outcomes:  
Cooperative Inspectorate Schemes**

The Steering Committee noted that the AFI Cooperative Inspectorate Scheme (AFI-CIS), a programme managed and implemented by AFCAC with the support of ICAO, is one of the tools that can be used for the implementation of the CAPs in support to the States.

The primary aim of the AFI-CIS initiative is to create a pool of qualified and experienced Aviation Safety Inspectors from within the AFI region. It has demonstrated excellent success in two pilot missions conducted in Gabon and Zambia in September 2011, as reported to the Steering Committee by AFCAC and the respective missions' team leaders. At the recommendation of AFCAC, the Steering Committee agreed the project

should be adequately manned by AFCAC to be able to undertake subsequent follow up missions.

The Steering Committee also endorsed a proposal from AFCAC that States receiving AFI-CIS support should be responsible for the preparation, planning, and coordination of AFI-CIS missions and subsequent implementation of the recommendations that may arise from them. It was agreed that ICAO will continue to support AFCAC with the finalization of the AFI-CIS Policy and Procedure Manual and other guidance material taking into account the lessons learnt from the successful pilot missions.

**Global Harmonization and Next Steps**

To assist with the continued implementation of the strategic ICAO Global Aviation Safety Plan and Global Aviation Safety Roadmap (GASP/GASR), the Committee approved the organization of two focused workshops, one targeted to those States who did not participate in the GASP/GASR events conducted in 2009/2010, and a second to review more continent-wide concerns. These workshops will be followed by State-specific gap analyses to assess the maturity levels reached regarding the Focus Areas of the GASR.

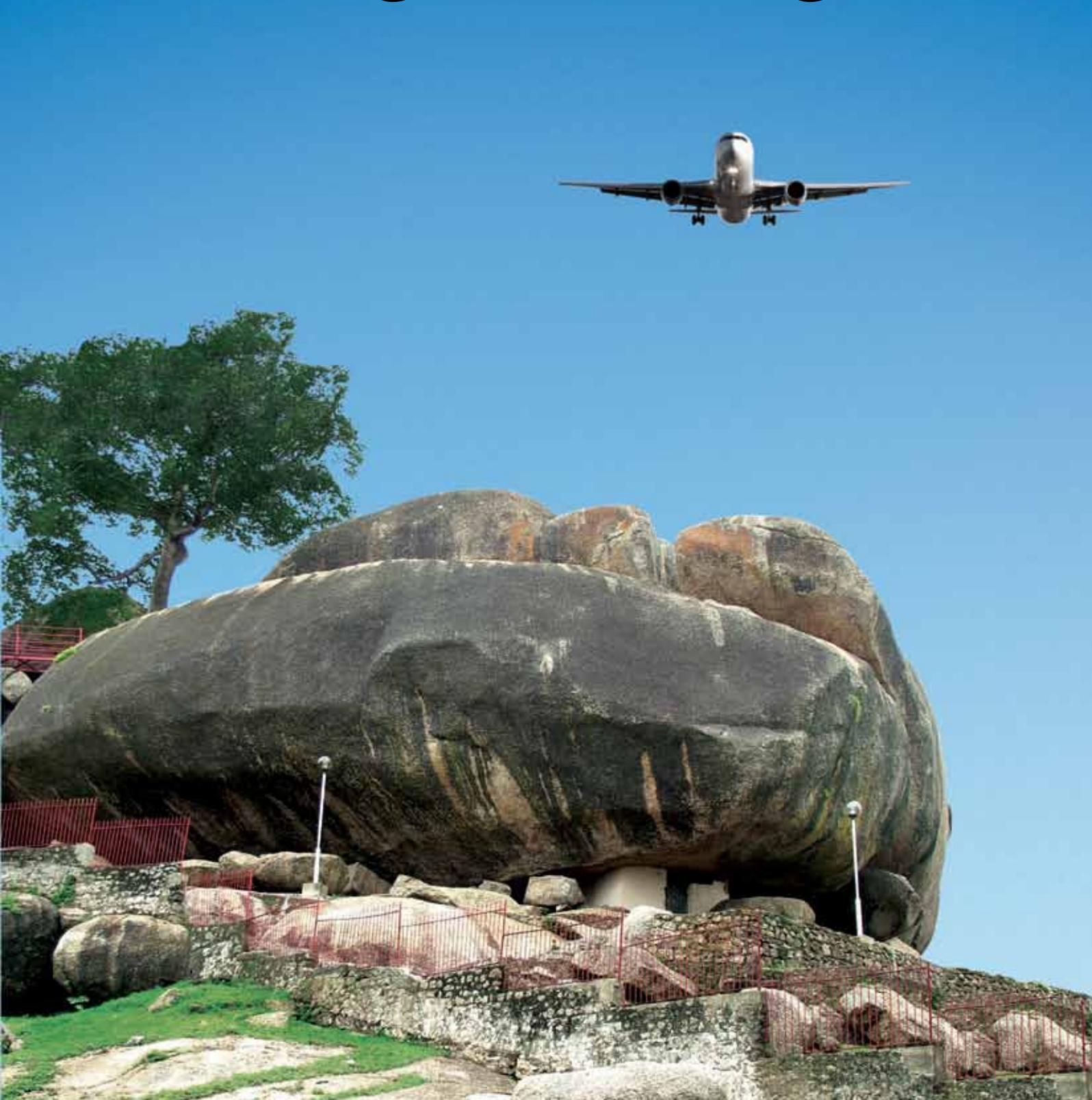
The AFI Plan programme of activities for 2012 will continue to provide support to States for the effective establishment and strengthening of Regional Safety Oversight Systems in line with the relevant Council Decisions.

With regards to the funding and continuation of the AFI Plan beyond 2011, the Steering Committee agreed that the efforts be increased to obtain donor funding for the AFI Plan. It was also agreed that funds remaining at the end of 2011, be maintained in the AFI Plan Fund, with all other voluntary contributions received.

The Steering Committee will hold its next meeting during the week April 2012. ■

State Profile

# Nigeria's Aviation Sector: Earning its Wings



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Air Transport is a key driver of the ongoing transformation of Nigeria's infrastructure. No other transport sector comes close to commercial aviation with respect to the speed and efficiency with which it can foster economic growth. While upgrades to Nigeria's ground-based transport networks are indeed vital for business and social needs, air transport is felt to be the only sector which can truly catapult the West African State into a new development paradigm.

And civil aviation is already booming: more and more today Nigeria's inhabitant are travelling by air. The growing middle class of the State's 150 million-strong population represents enormous growth potential and the flourishing tourist industry and ever-widening business opportunities represent important complimentary prospects for growth.

Despite tough conditions faced by local airlines, growth for both domestic and international passenger traffic in Nigeria has been running around 20 percent a year. There has been a marked increase in the pace and breadth of air transport progress in Nigeria, with its newly appointed Minister of Aviation, Princess Stella Adaeze Oduah having assembled a team of managers capable of overseeing the massive programme of upgrades.

Since her assumption of duties in the Ministry, duties in the Ministry, Oduah has focused on revamping Nigeria's aviation

infrastructure, improving aviation safety and security and protecting consumers. She has said that it is no longer business as usual. In line with President Goodluck Jonathan's transformation agenda, growth of the industry and provision of employment opportunities will be her topmost priorities.



H.E. Dr. Goodluck Jonathan, GCFR  
President of the Federal Republic of Nigeria

"The Administration of President Goodluck Jonathan is committed to continue to make significant investments in the provision of aviation facilities for safe, secure, environmentally friendly air transport and for the sustainable development of international aviation," Oduah emphasized.

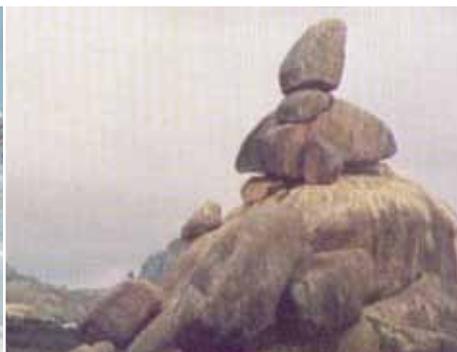
The Nigerian Government has stressed that it is going to use the aviation industry to drive its economy, pointing out that Nigeria has already fine-tuned its economic development strategy by

preparing the aviation industry as a launch Pad for future success.

As confidence in the sector builds, Nigeria is positioning itself to take advantage of both its substantial population and its advantageous location at the center of Africa. The Nigerian Government sees its State as a natural air transport hub and it is trying to promote it as such for West and Central Africa. It is working on various projects in Lagos and Abuja to open up the airspace and create more direct flights to long-haul destinations. Future growth will be fueled by new routes to Europe, the Middle East, Asia-Pacific, Latin America and North America.

With new routes and carriers there will doubtless be a need for better airport and airspace management. As with other sectors in the transport industry, the federal government is pursuing Public-Private Partnerships (PPPs) as a cost-effective means to upgrade the country's airports. A study by the Technical Cooperation Bureau of the International Civil Aviation Organization (ICAO) was commissioned in June, 2009, providing a roadmap for the State's airport concession programme. The vision now being pursued is to make the four major airports at Lagos, Abuja, Port Harcourt and Kano the envy of Africa, but to accomplish this funding is needed from the private sector and there are on-going communications with various international groups that have expressed interest in running these airports.

In order to avoid a situation where investors cherry-pick the largest operations and ignore Nigeria's smaller players, airports will be bundled into PPP packages—a system that has seen excellent results in other countries. Some operational responsibilities, such as fire-fighting and security, will remain under the control of Nigeria, while concession-derived assets will be closely monitored to ensure that they continually meet international standards.



One of Nigeria's many tourist beaches (left) and the State's famous Riyom Rock (right), a tourist attraction in its Western Lagos region. Tourism is playing an increasingly important role in Nigeria's economy as air transport advances its growth and development.



Nigeria's Murtala Muhammed Airport is privately operated on the basis of a Build, Operate and Transfer (BOT) arrangement. The State is pursuing similar Public-Private Partnerships (PPPs) for its other facility needs as well.

### The Nigerian Aviation Industry: Governance Structure and Policies

Nigeria's Ministry of Aviation was created by the Nigerian Civil Aviation Act of 1964. It now oversees a number of departments which share the responsibility for all elements of Nigeria's air transport system. Key duties are held by five Parastatals, namely: the Nigerian Civil Aviation Authority (NCAA); the Nigerian Airspace Management Agency (NAMA); the Federal Airports Authority of Nigeria (FAAN); the Nigerian Meteorological Agency (NIMET); and the Nigerian College of Aviation Technology (NCAT). In addition, the State maintains a Permanent Mission at ICAO.

Prior to 1950, civil aviation activities in Nigeria were overseen by the then Public Works Department. During that year, however, the Department of Civil Aviation was created and, with the achievement of the country's independence in 1960, the department was moved within the newly-formed Ministry of Transport. At different times over the subsequent years, civil aviation responsibilities were either handled by the Ministries of Works, Communication and Transportation, as well as being made a standalone Ministry at other times. It was separated from the Federal Ministry of Transport in 1980, for instance, only to be re-merged in 2007 with the Ministries of Works and Transport to form the Ministry of Transportation.

The present Federal Government later found it necessary, however, to restructure the Ministry of Transportation. As part of that process aviation regulation reverted again to a separate Ministry of Aviation. This restructuring will allow the air

transport industry to fulfill its role more effectively as a pivotal factor in the government's pursuit of a seven-point agenda for expedient national development.

The Aviation Ministry, as presently constituted, has as part of its responsibilities the formulation of general policy frameworks that encourage the healthy growth of aviation and allied businesses in Nigeria. The Ministry is mandated to ensure an enabling environment for the safe, secure and sustainable development of air transport in Nigeria and, towards this end, it updates and implements a National Aviation Master Plan in line with ICAO Standards and Recommended Practices (SARPs) and other national objectives.

The Ministry, which has five main departments (Finance and Accounts; Human Resources; Planning, Procurement, Analysis and Research; Safety and Technical Policy; and Air Transport Management), is currently headed by Mrs. Stella Adaeze Oduah, the Honourable Minister of Aviation.



Mrs. Stella Adaeze Oduah, the Honourable Minister of Aviation.

### Collaboration with ICAO

Nigeria fulfills an important role in the field of air transport in light of the air services and air navigation facilities it provides for international civil aviation. The country, since becoming a member of the ICAO Council in 1962, has continued to collaborate with ICAO in making valuable contributions to the sustainable development and growth of international civil aviation—especially in Africa.

The Nigerian Representative on the ICAO Council, Olumuyiwa Benard Aliu, is the current First Vice-President of the ICAO Council and the Chairman of the Steering Committee for the AFI Comprehensive Implementation Programme (ACIP). He has also served the Organization in various additional capacities, including as Chairman of the Finance Committee; and Technical



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Co-operation Committees, President of the ICAO Conference on Aviation and Alternative Fuels and as member of several other ICAO committees and working groups.

Nigeria continues to contribute actively to the work of ICAO through the participation of its experts in the Organization's various Technical Panels and Working/Study Groups, such as:

- Safety Management Panel
- Committee on Sharing of Safety Information
- Group on International Aviation Climate Change (GIACC).
- DGCA Climate Group (DGCIG).
- Committee on Aviation Environmental Protection (CAEP).
- Aviation Security (AVSEC) Panel.
- Airport Economic Panel (AEP).
- Air Navigation Services Economic Panel (ANSEP).
- Air Transport Regulation Panel (ATRP)
- Statistics Panel (STAP).
- Facilitation Panel (FALP).
- Technical Advisory Group on Machine Readable Travel Documents (TAG/MRTD).
- Regional Traffic Forecasting (Africa/ Indian Ocean Traffic Forecasting Group).
- Aviation Security Panel.
- Governing Body of International Financial Facility for Aviation Safety (IFFAS).
- Commission of Experts of Supervisory Authority of the International Registry (CESAIR).
- Public Key Directory (PKD) Board.
- Study Group on New and Emerging Threats to Civil Aviation.
- Aeronautical Information Services— Aeronautical Information Management Study Group (AIS-AIMSG).
- Medical Provision Study Group.

Nigeria has become a major partner with ICAO in advancing aviation in Africa through various programmes, in line with the Organization's strategic objectives of enhancing air transport safety, security, sustainability and environmental friendliness. In the last triennium, Nigeria sponsored major ICAO initiatives,



The Honourable Minister of Aviation for Nigeria, Mrs. Stella Adaeze Uduah, and the Director General of the Nigerian Civil Aviation Authority (NCAA), Dr. H. O. Demuren.

including the AFI Comprehensive Implementation Programme (AFI Plan) to enhance Aviation Safety in Africa, the establishment of a Regional safety organization and various international as well as Regional conferences, seminars, symposia and workshops, such as:

- Global Aviation Safety Roadmap Workshop, 2008.
- Performance Based Navigation Seminar, 2008.
- Air Transport Symposium 2008.
- SMS Training Seminar, 2008.
- Regional Seminar on Machine Readable Travel Document (MRTD), 2009.
- Regional Ministerial Conference on Aviation Security, 2010.

Similar efforts are also being made to support the African Civil Aviation Commission (AFCAC) and the African Union in their programmes towards accelerating the growth of aviation in the continent. Nigeria's efforts in this regards include financial contributions and secondment of experts to AFCAC. Nigeria is the headquarters of the Banjul Accord Group (BAG) Safety Oversight Organization (BAGASOO).

The Government of Nigeria was re-elected in part II of the Council of ICAO at the 37<sup>th</sup> Session of the ICAO Assembly which was held from 28 September to 8 October 2010.



ICAO President Roberto Kobeh González meets with Nigeria's first female pilot and the Rector of the Nigerian College of Aviation Technology (NCAT), Capt. Chinyere Kalu, during a recent visit. In the center is the Director General of Nigeria's CAA, Harold Demuren.

“It goes without saying that the Government of Nigeria will continue to support the increased effectiveness and efficiency of the Organization and the achievement of its Strategic Objectives, in collaboration with other Member States,” Aliu remarked.

### The Nigerian Civil Aviation Authority: Overseeing a Safety and Security Turnaround

The Nigerian Civil Aviation Authority (NCAA) is the regulatory body for aviation in Nigeria. It was established in 1999 to oversee all aspects of the safety and reliability of air navigation, in line ICAO SARPs. Current NCAA Head, Harold Demuren, was appointed in December 2005 following a series of accidents in Nigeria.



A sampling of some of the aircraft now operated by Nigeria's airlines.

The Civil Aviation Act of 2006 granted the NCAA autonomy and freedom from political interference, giving it the tools it needed to oversee a broad-based revision of the entire air transport sector. The management team of the NCAA has set out to create a dynamic sector that could compare with the best in the world, its goal being to make the industry not just accident-free but also investment-friendly. Nigeria's first success was receiving a passing grade from the ICAO Universal Safety Oversight Audit Programme (USOAP). This was achieved in no small measure by the total re-certification of the entire industry, including: airlines, airports, aircraft and human resources. Levels of skilled personnel across all these areas of aviation activity have been boosted in Nigeria through an aggressive training programme.

The upgrading of Nigeria's aircraft fleet was a fairly straightforward task, due in no small part to the leasing arrangements facilitated by the Cape Town Treaty, which came into force five years after the associated 2001 conference in South Africa and has allowed brand new aircraft to become virtually standard in

the State. Demuren points out that new-generation aircraft reduce maintenance and fuel costs significantly while enhancing safety and passenger comfort. His hope is that the local aviation industry will develop five or six airlines that are strong enough to service the domestic, intra-African and international routes on the basis of good governance, talented management and public-private participation.

The NCAA head has additionally been encouraging Nigerian carriers wishing to operate international routes to join IATA. Passing the IATA Operational Safety Audit (IOSA) is a precondition for membership and Demuren has been instrumental in getting IATA to set up an office in his State. IATA's facility was opened in 2008 by its CEO, Giovanni Bisignani, who noted at the time that he was pleased to see that air transport is among Nigeria's seven primary reform priorities and explained that his presence was to re-enforce IATA's commitment to Africa and launch a new approach to West Africa. IATA's Nigeria office will also cover Ghana, Sierra Leone, Gambia, Liberia and Cape Verde.



The National Assembly of Nigeria passed the Civil Aviation Act of 2006.



The main terminal building at the Murtala Muhammed International Airport in Lagos.



3-D total body imaging scanners recently installed at the Murtala Muhammed International Airport in Lagos.

### Nigeria's Airports: Evolving to meet 21<sup>st</sup> Century Regional and International Challenges

The Federal Airports Authority of Nigeria (FAAN), a member of the Airports Council International (ACI), manages all of the commercial airports in Nigeria, providing the necessary maintenance and services for air transport in the country. The FAAN's management recently ordered an infrastructure audit on all airport facilities across the country and, based on its results, was able to prioritize the considerable issues requiring attention. The audit revealed several issues requiring urgent attention, namely: airfield lighting systems; firefighting equipment; and the state and strength of State runways.

"We have now completely rehabilitated the Port -Harcourt International Airport runway, including the airfield lighting,"

stressed George Uriesi, Managing Director of the FAAN. "This was a massive challenge, but we are now very pleased to report that the re-opening of the airport has contributed very positively to the benefit of the Niger Delta region."

Despite the urgency of this work, FAAN has also begun addressing an issue of even greater importance: the customer service skills of its employees. Some 47 percent of the FAAN workforce was sent on various training programmes, either locally or abroad in the last 15 months.

Despite the current administration's commitment to upgrading State airports, there are limits to the funds available. With 20 airports in the country and a 12 month time frame to rebuild a runway, Nigeria would only finish its last runway

One of Nigeria's more pressing aviation challenges has been achieving the coveted Category One status from the U.S. Federal Aviation Administration (FAA). The FAA's Category One designation, part of their International Aviation Safety Assessment (IASA), permits State carriers to operate direct flights to the United States. The process normally takes five years but NCAA diligently worked to fast-track its application to achieve the required status in a shorter time. After almost four years, on 24 August 2010, Nigeria attained FAA IASA Category One status. Demuren congratulated all and said he was proud that Nigeria did not cut corners and that the main challenge going forward is to maintain the Category One status. He could foresee many positive benefits as a result of the overall process.

"This is not just about Category One status, but the achievement of a robust system that will serve Nigeria and the West African sub-region for a long time to come," Demeuren remarked.

Meanwhile, one of Nigeria's designated carriers, Arik Air, has already begun direct flights between Lagos and New York under an arrangement whereby the carrier wet-leases its aircraft from Portugal, a Category One rated country. In the meantime, the NCAA continues to coordinate with other parastatals, notably the Federal Airports Authority of Nigeria (FAAN) and the Nigerian Airspace Management Agency (NAMA), to ensure a cohesive approach to all aspects of aviation safety.



Nigeria's former Minister of Aviation, Fidelia Njeze, waves the FAA IASA Category 1 certificate as U.S. Ambassador Robin Sanders and NCAA Director General Harold Demuren applaud this important accomplishment.



NAMA

# NIGERIAN AIRSPACE MANAGEMENT AGENCY

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## Nigerian Airspace Management Agency (NAMA)—10 Years of Progress

### INTRODUCTION

Created in 1999, the Nigerian Airspace Management Agency (NAMA) is the nation's sole provider of air navigation services. As an ICAO contracting state, Nigeria operates under ICAO standards and recommended practices (SARPs). It is currently implementing its National CNS/ATM plan in tandem with the AFI and ICAO Global CNS/ATM plans.

The Agency is continuously upgrading and deploying new navigational equipment to meet demands for domestic and international services for both airports and overflying international traffic. Air Navigation services provided include integrated communication, navigation, surveillance and air traffic management activities (CNS/ATM).

### AIR NAVIGATION EQUIPMENT UPGRADE

NAMA has undertaken and proposed a number of projects to fast-track the upgrade of its Air Navigation Equipment/Airspace to world class levels.

#### 1. RADAR (Surveillance)

Nigeria's outdated analog-based radar technology for terminal approach did not provide total coverage of the entire airspace. The new Total Radar Coverage system for Nigeria (TRACON) is designed to modernize the country's air traffic management infrastructure. It includes: Primary Surveillance Radar STAR 2000 (PSR), Monopulse Secondary Surveillance Radar (MSSR-RSM 970), Integrated Flight and Radar Data processing (Eurocat 2000-C) at the four major airports – Lagos, Kano, Abuja and Port Harcourt, as well as stand-alone MSSR RSM – 970 at five other locations.

The Lagos and Abuja segments are currently flight-checked and fully operational, while the Port Harcourt and Kano segments are undergoing final testing and flight checking. The systems at Maiduguri, Obubra, Ilorin, Numan and Talata-Mafara are in various phases of testing prior to final flight checking. A 5-year technical support agreement was put in place effective January 2010. The completed system will provide the following:

- Enhancement of safety and security in the entire Airspace of the Nation.
- Reduce Air Traffic Delay, thus reducing cost for airspace users.
- Increased ATC capacity.
- Traffic conflict detection capability.
- Automatic billing system for NAMA.
- State of the art training facilities for ATCOs.

#### 2. COMMUNICATIONS

The aging Satellite Communications system (SATCOM) was reactivated with increased speed for both voice and data, thereby forming the backbone of the country's aeronautical communication system and will eventually be replaced by the ongoing VSAT deployment.

A total VHF coverage project is underway to deliver: Total VHF coverage of the Nigerian Airspace (Air-Ground/Controller – Pilot); ATS –DS (Ground – Ground/Controller –Controller). When completed in June 2010, it will be operational at eight airports and one non-airport location: Abuja, Lagos, Kano, Port-Harcourt, Ilorin, Jos, Maiduguri, Sokoto and Wukari, respectively.

VSAT backbone infrastructure for aeronautical communications is required to carry VHF voice, ATS DS, AFTN, Radar data, Video and Internet. Under the TRACON and AIS automation projects, VSAT components are to be installed as follows:

- TRACON: VSAT installed in Abuja, Lagos, Kano, Port Harcourt and the remote MSSR locations – Ilorin, Talata, Mafara, Numan, Obubra, and Maiduguri.
- AIS Automation: VSATs will be installed at: Kano, Lagos, Port Harcourt, Abuja, Maiduguri, Ilorin, Sokoto, Wukari and NEMA, Abuja.

The destination plan integrates all CNS/ATM projects to achieve total Radar and communication coverage of the Nation's airspace to enhance safety and security of all flights. ADS-B or C and CPDLC to enhance oceanic airspace coverage is also contemplated.

### 3. MOBILE CONTROL TOWERS

NAMA has acquired two motorized Air Traffic Control Towers (i.e. Mobile Towers) for air traffic management in emergency situations. They are currently located in the Southern and Northern zones to cover those airports.

Technical configurations of the towers include, among other things: four (4) aeronautical radio frequencies comprising two Very High Frequency Radio (VHF), one High Frequency Radio (HF), and one frequency modulated radio (FM).

The mobile towers also have voice-activated Very High Directional Finder (VDF) capability for indicating the bearing of an aircraft. There is also a 25kva generating set to power the system. The towers are motorized on brand new Renault 210 Trailers and have meteorological facilities including speed and wind direction.

In line with the international aviation move towards Global Positioning System (GPS) technology for air navigation, NAMA has configured the mobile towers with state of the art GPS receivers, should Nigeria decide to adopt the GPS mode for air navigation. The entire towers system has back-up spares to ensure continuous serviceability.

### 4. NAVIGATIONAL AIDS

Navigational Aids (ILS, VOR and DME) at most of the airports and enroute stations have recently been flight checked while new navigational aids have been procured.

### 5. CALIBRATION

NAMA ensures that its equipment meets acceptable parameters/criteria for the assurance of safety of air navigation as per the requirements of ICAO Annex 10. Flight checks are done twice yearly of its CNS equipment including: ILS, VOR, DME, and Radar.

### 6. WORLD GEODETIC SURVEY-84 PROJECT

Adoption of Global Navigation Satellite System (GNSS) technology in modern air navigation requires that spatial co-ordinates be established on an ICAO acceptable international terrestrial reference framework known as WGS-84. NAMA's future air navigation system will use communications, navigation, and surveillance (CNS) technologies compatible with the WGS-84 platform.

The WGS and Upgrading Contract signed with IATA in 2009 covered 22 Airports, all of which have been surveyed. Two state-owned airports, Akwa Ibom and Gombe, also asked to be included. All 24 airports have now been surveyed, and full reports delivered to NAMA.

The GNSS Procedures, including SIDs and STARs, for the four major international airports – Lagos, Abuja, Kano and Port Harcourt – are awaiting charting and publication prior to necessary flight validation, and NCAA's final approval.

This project is a pre-requisite for Performance-Based-Navigation (PBN) implementation with deliverables that will enable the transition from Terrestrial to Satellite-based systems. When fully implemented, the system will offer numerous benefits:

- More flexible and direct routing.
- Instrument approaches will be possible where/when NAVAIDs are unavailable.
- No requirement for ground-based equipment or electric power.
- Reduced fuel consumption and emissions.
- Increased availability of airports in poor weather conditions.
- Life-cycle cost savings.

### CONCLUSION

The CNS/ATM equipment deployment/upgrade and associated personnel training and implementation of Safety Management Systems (SMS) are being implemented in Nigeria in accordance with international best practices.

Because these projects are capital intensive and foreign exchange sensitive, substantial funding assistance has been received from the Federal Government and the World Bank.

NAMA therefore encourages prompt payment for navigational and other services provided to airlines so that it can ensure continuous availability of these services which are central to aviation safety.



Nnamdi Azikiwe International Airport (Abuja).



An airside view of Murtala Muhammed Airport's Terminal 2.

in time to start all over again with the first. FAAN is therefore anxious to encourage public-private partnerships so that investors can participate in and benefit from the State's ongoing facility development.

The intention is not to replace a government monopoly with a private monopoly, but rather encourage a competitive, free-market environment where investors can be confident in their return on investment.

#### *New Airport Partnerships*

Today's airports are technology-driven and Nigeria is embracing new technologies in its airports as the primary means for improving efficiency. To this end the government is seeking new partnerships. FAAN has partnered with Maevis Nigeria Limited, which has since provided the State with Airport Operations Management Systems (AOMS).

The Maevis AOMS encompasses various systems such as flight information display systems, Common Users Terminal Equipment (CUTE), and Baggage Reconciliatory Systems (BRCs)—all required elements for facilitating a modern and seamless travel experience. The passenger-related efficiency of a given airport is determined by how smoothly travellers can check-in and depart, or conversely pick up their baggage and depart the airport.

The FAAN hosted ACI's African Regional Conference in September 2010, an honour which Uriesi notes is yet further confirmation of the newfound respect for Nigerian air transport that has been inspired by the many recent developments in the State's aviation sector.

#### *MMA2 Developments*

Public-Private Partnerships are the current business model of choice for developing Nigeria's infrastructure. The first example of a successful PPP initiative in the country's aviation sector was the reconstruction of the main domestic terminal at Murtala Muhammed Airport, now known as MMA2. The structure needed to be rebuilt after a fire destroyed the original building in 2000. Work on the new terminal was begun in 2003 after Bi-Courtney Limited was awarded a 36 year concession on a Build-Operate-Transfer (BOT) basis. MMA2 opened four years later in 2007.

The financing for the MMA2 project provided a successful test case for the viability of BOT projects in Nigeria, at a time when long-term funding was nearly non-existent. As well as pioneering a new business model for infrastructure financing, the MMA2 terminal exceeded all expectations and provided a resoundingly modern and efficient service for both passengers and cargo.

#### **Transforming the Airspace: The Nigerian Airspace Management Agency (NAMA)**

The Nigerian Airspace Management Agency (NAMA) was established in May 1999 as part of an ICAO Compliance Programme which advocates the separation of aviation service providers from regulators. NAMA is also very active member of the Civil Air Navigation Services Organisation (CANSO).

The NAMA was given a clear mandate upon its inception: to provide a safe, efficient and economically cost-effective air navigation system, with a vision to make it a world-class Air Navigation Service Provider (ANSP) with leading Communications, Navigation and Surveillance (CNS) as well as ICT systems. It was also given the funds to get the job done: some 7 billion Naira (approx. \$50 million) was made available for the provision of modern air navigation services for Nigeria.

The NAMA has been a huge success story in terms of both the development of Air Traffic Management (ATM) services and the achievement and maintenance of higher safety standards.

"We have come a long way," commented Engr. Nnamdi Udoh, Managing Director of the NAMA, "and our vision remains clear: assuring the safety and economic well-being of Nigerian airspace users. NAMA is the live wire of the industry and,

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One of Nigeria's recent and very successful TRACON-enabling installations.

if we are to reposition the aviation industry properly, its viability and vision must remain a priority of the present government.”

NAMA has been pushing in recent months to complete two major projects. The first is the achievement of the total VHF coverage which, upon completion, will enhance communications between pilots and controllers to the extent that aircraft crew will now be in constant contact with any of the pertinent centers within Nigerian airspace. Aircraft will now have complete access to air traffic control services enabling safer and more efficient landings all over the country. This upgrade has taken into account the shift from terrestrial to satellite-based systems, a move that will be completed the world over by 2015.

#### Total Radar Coverage

The other major project underway within the NAMA is one that both defines past failures and enables future success: Total Radar Coverage of Nigeria, or TRACON. Exasperated by a five year delay on the project, Nigeria's former Minister of Aviation gave the contractor an 18 month deadline that has led to Lagos and Abuja stations being successfully completed and operational since August and September 2009, respectively. All other airports involved in the project are due to be completed during summer 2010.

NAMA's Udoh noted that the State's TRACON equipment is amongst the most advanced in Africa, if not the world. Accurate tracking of all aircraft entering Nigeria now brings not just security benefits but also commercial advantages. An Auto Billing System (ABS) is built into the TRACON system and captures any aircraft that enters Nigerian airspace.

“The minute aircraft enter our airspace and start communicating with controllers they are recorded,” explained Udoh. “Upon leaving Nigerian airspace they are billed automatically.”

#### Predicting the Unpredictable: The Nigerian Metrological Agency (NIMET)

Advances in aircraft design, radar systems, and air traffic management have all contributed to make air travel safer than ever. But there is one factor that cannot be controlled: the weather. It is the one part of the flight plan that the pilot always shares with the passengers and also one of the largest determining factors in aviation accidents.

The first question of any aircraft accident investigation is inevitably about the weather conditions. For this reason, meteorological services represent an area of aeronautical operations that is strictly regulated by ICAO in concert with the World Meteorological Organization (WMO). Every ICAO Member State is required to designate a national weather service provider, charged with the responsibility of providing aeronautical meteorological information for the safety of flight operations.

The Nigerian Meteorological Agency (NIMET) is the designated national weather service provider in Nigeria. The Agency was established in 2003 to provide meteorological services in support of human and environmental sustainability, policy development, and safe operation of air, land and marine transportation. Anthony Anuforum, an atmospheric physicist, is the current Director General of NIMET and has been coordinating the agency's policies to align it with the sweeping improvements that have characterized the Nigerian aviation sector in the last three years.

“You cannot achieve aviation safety without accurate and timely weather information,” explained Anuforum, “and for that you need a strong, well-equipped modern meteorological agency such as NIMET. I am happy to say that our government



fully understands this and we have enjoyed their support in providing the infrastructure necessary to supply vital safety information to Nigeria's aviation sector."

The government of Nigeria is investing millions of dollars to ensure that NIMET is properly equipped to perform its duties, and the agency now boasts a wide range of new technological developments that are revolutionizing its capabilities. NIMET's Doppler Weather Radar Project is a network of six radar facilities that will more effectively track weather systems.

Another NIMET project critical to air transport safety is the Low-Level Wind Shear Alert System (LLWAS). Wind shear is a sudden change in the direction or speed of wind that poses grave risks to aircraft on landing and take-off.

"We are implementing LLWAS immediately at all of Nigeria's four international airports, and then we will move on to secondary airports," assured Anuforum. "Thunderstorm detectors, another important safety implementation, have already been installed at eight airports across the country.

#### **The Nigerian College of Aviation Technology (NCAT)**

The Nigerian College of Aviation Technology (NCAT), located in Zaria, Kaduna State, is the foremost aviation training institution in the West African sub-region. The institution's primary responsibility is the provision of excellent abinitio training for commercial pilots, air traffic controllers, aircraft maintenance engineers, aeronautical telecommunications engineers, aviation technicians, and aeronautical meteorologists —among several other aviation specialist professions.

NCAT was established in 1964 for Nigeria and other African countries in collaboration with ICAO and the UNDP. The College boasts over 40 years of experience in the development of human resources for the aviation industry in Africa. Academic activities in NCAT are carried out in five main training schools, namely:

- Flying School.
- Aircraft Maintenance Engineering (AME) School.
- Aeronautical Telecommunications Engineering (ATE) School.
- Air Traffic Services/Communications (ATS) School.
- Aviation Management School.

#### **Nigerian Accident Investigation Bureau (AIB)**

The Federal Government of Nigeria, through the Civil Aviation Act of 2006, Section 29, established the State's aircraft Accident Investigation Bureau as a corporate body and an autonomous agency reporting to the President through the Minister in charge of aviation. It commenced operations in April 2007 and is headed by Commissioner/CEO Sam Oduselu.



# **ACCIDENT INVESTIGATION BUREAU**

Nnamdi Azikiwe International Airport,  
Abuja, Nigeria

PMB 016, Murtala Muhammed Int'l Airport  
Ikeja, Lagos, Nigeria

#### **24hr Emergency Lines:**

+ 234-807-709-0909- Duty Line 1  
+ 234-807-709-0908- Duty Line 2

#### **Commissioner/CEO Hotline:**

+ 234-807-709-0900

#### **Website/E-mail:**

[www.aib.gov.ng](http://www.aib.gov.ng)  
[enquiries@aib.gov.ng](mailto:enquiries@aib.gov.ng)  
[commissioner@aib.gov.ng](mailto:commissioner@aib.gov.ng)

*"Safety is no accident, it is planned"*

#### MAIN FUNCTIONS OF NIGERIA'S AIRCRAFT ACCIDENT INVESTIGATION BUREAU (AIB)

- To investigate air accidents and serious incidents that occur within Nigerian air space and anywhere Nigeria's interests are affected.
- To make safety recommendations.
- To gather and analyze air safety data for accident and incident prevention purposes.
- To ensure compliance with safety recommendations by carrying out accident prevention monitoring programs.
- To liaise and collaborate with industry stakeholders in ensuring aviation safety

The autonomy granted to the AIB was to ensure its independence from government bureaucracy and political influence to further ensure and enhance the credibility of its reports. The AIB's vision is to be a leading accident investigation body striving towards improved aviation safety, carrying out highly professional accident investigations with trained and dedicated aviation professionals using well equipped facilities.

#### AIB Accident Prevention Programme

Apart from investigating accidents and serious incidents, the Nigerian AIB also gathers air data and conduct studies to uncover trends and traps in the system that could impair safety. Prioritized data is relayed to the industry for necessary action. The Bureau also conducts inspections to various facilities to monitor compliance with safety recommendations.

#### AIB FDR/CVR Laboratory

The AIB will soon be operating an FDR/CVR laboratory where it will decode Flight Data Recorders and Cockpit Voice Recorders. The new facility for this purpose, in Lagos, will be operational shortly based on current timetables.

#### Nigeria's Resurgent Airline Sector

The global aviation industry has recently faced some difficult times. The last decade has been characterized by high fuel costs and cut-throat competition, and was bracketed by the 9/11 terror attacks and last year's global economic down-turn. The impact of the latter was confirmed by recent IATA figures which show that overall demand in 2009 fell by 3.5 percent, the worst-ever decline in passenger demand, with an average load factor of 75 percent.

Nigerian airlines have fared better than the industry average during this period, benefitting from the State's enormous investments and advances in technology and infrastructure and the deregulation of its airline industry. Nigeria now represents an excellent example of an emerging market economy that has bucked the trend in the

middle of a global slow-down, to the extent that last year the Federal Airport Authority of Nigeria (FAAN) reported that air traffic in the country had increased by 31 percent.

One of the most notable developments in Nigeria's resurgent aviation industry is the proliferation of domestic carriers. Improved access to finance has spurred operator competition within Nigeria while simultaneously encouraging increased standards of service, reliability and choice—all tremendous benefits to local passengers.

#### Aero Contractors

Aero Contractors celebrated 51 years of service in Nigeria last year by overhauling its management structure and streamlining its services. A new management team, headed by Captain Akin George, Managing Director and Mr. Obaro Ibru, Deputy Managing Director, was consequently named.



NCAT training aircraft (above) and students at work in its engineering facility (below).





**Like a doctor, NIMET prescribes  
the weather and climatic requirements  
for the Aviation sector**



## **Our Contact**

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# **NIMET**

*NIMET. . . Providing Weather, Climate and Water Information for Sustainable Development and Safety. . .*



“Aero Contractors has had some challenges of late” admitted George, “but we have since revamped our business model to address the fact that we had experienced losses on several contracts and below 50 percent load factor on our scheduled service flights.”

“We are rebuilding on the basis of these values to create a world class business that provides new successes for our shareholders, customers and staff alike,” George stressed. “By following principles that have been tried and tested in the Low Cost Carrier market, we have managed to drive down costs to offer the lowest fares now available, as inexpensive in some cases as US\$35 for a one-way domestic journey. This will be the way forward for our airline as we progress towards achieving our vision of being the airline of choice in Nigeria.”

### *Arik Air*

Arik Air is a new name in Nigeria aviation, but one that is rapidly establishing itself as the benchmark for quality air

transport in West Africa and beyond. A significant milestone was reached when the new carrier became the first contemporary Nigerian airline to commence operations to the US.

“The approval for our U.S. route signaled a return to strength for an industry that had experienced some difficult times in the last decade,” noted Arik CEO Michael Arumemi-Ikhide. “We are all incredibly proud to have played such a pivotal role in this turnaround.”

A large part of Arik’s success has been due to the incredible team of experienced industry professionals who strive to uphold the airline’s world-class credentials. Arumemi-Ikhide is particularly proud of the fact that that 95 percent of his staff are Nigerians.

“Nigeria has a vast pool of highly educated and skilled workers who need the opportunity to showcase their talents,” he commented. “For far too long, the country had seen an exodus of its best talent and we’re very pleased to be reversing that trend.”

The first challenge Arik faced was building faith among Nigerian consumers at a time when confidence in the State’s air travel sector was at an all-time low. Arumemi-Ikhide and his team knew that, if Arik Air was to be a success, it had to work hard to re-establish consumer confidence. The airline achieved this feat by acquiring brand new aircraft and establishing partnerships with the very best industry maintenance operators, such as Lufthansa Technik.

Arik Air then enacted a three tier strategy: consolidate domestically; then regionally; and finally internationally. The airline currently flies to 19 destinations in Nigeria and has over 40 percent of market share.



“Our focus now is on opening up the West African Sphere and interlinking key business and tourism markets in Ghana, Sierra Leone, Senegal and The Gambia,” continued Arumemi-Ikhide.

“Internationally, Arik has taken on the legacy carriers. From the onset we were determined not simply to replicate what those airlines do, but to be different and remain true to our heritage and culture. The Arik brand is designed to represent Nigeria and I feel that it is our showcasing of the very best of modern Nigeria that really sets us apart.”

“We set out to create an airline that Nigeria—and the rest of the world—would be proud to fly”, he concluded. “Our aim now is to exceed our passengers’ expectations internationally and to demonstrate our credentials as the flagship airline for Nigeria and the gateway to West Africa”.



In December 2010, Arik Air carried its six millionth passenger from New York-JFK to Lagos, shown above being presented with a gift from Arik staff. Arik became the first Nigerian airline with scheduled flights to the USA in over a decade when it started operations from JFK in November 2009.



*Dana Air*

Increasing demand has encouraged new players to enter the Nigerian aviation market. Dana Group is one such participant which has expanded from its pharmaceutical base to become a new and major player in trade and industry. It is also now entering the air transport sector with the launch of Dana Air.

The company's vision is to be recognized and respected as Nigeria's most reliable and customer-friendly airline. Jacky Hathiramani, Chief Executive Officer of Dana Air, says the airline is committed to delivering the highest quality of service onboard its aircraft, making huge investments in staff training.

"At Dana Air, our most prized asset is our staff, and we have stringent recruitment procedures to ensure that only the best join our team," he commented. "Dana has committed its staff to a programme

of continuous re-training and teamed up with Iberia for key resources in this regard."

Despite various challenges, Dana Air is also hoping to expand operations to more Nigerian cities in the coming months.

"We are committed to the development of the Nigerian aviation industry," stressed Hathiramani. "We will embrace economic growth and promote tourism."

*IRS Airlines*

IRS Airlines has remained a resilient and modest player in the Nigerian domestic airline market since 2003. Currently, the airline is a visible and dependable operator at the country's airports in Lagos, Abuja, Kano, Port Harcourt, Maiduguri, Yola and Enugu.

IRS is gradually but steadily growing into a major stakeholder in the air travel market

through operational consistency, utilizing a mix of Fokker and Embraer aircraft as well as a staff featuring skilled technical and administrative personnel who were drawn from various areas across the industry.

*Overland Airways*

Overland began scheduled domestic passenger services in 2003. It has since continued to carve a niche for itself as a dependable shuttle operator, linking not just Abuja and Lagos with several other airports, but also establishing an important Northern and Western route network connecting other Nigerian cities. This network comprises Kano, Kastina, Jos, Minna, Ibadan and Akure, while charter flights are operated mainly to Central and West African destinations.

Overland operates a new fleet featuring Beechcraft and ATR turboprops.





### *Air Nigeria*

Air Nigeria commenced operations in June 2005 as a private sector flag carrier for Nigeria, taking its leverage from a Memorandum of Understanding between the Federal Government of Nigeria and Virgin Atlantic Airways of the United Kingdom. It started operations simultaneously on both intercontinental and domestic/regional routes under the banner of Virgin Nigeria.

Following the eventual disengagement of Virgin Atlantic Airways from the joint venture, the airline went through a change of management and re-branding, including the new name, Air Nigeria, and a new livery. The company, according to CEO Jimoh Ibrahim, aims to expand its fleet by October 2010.

Air Nigeria's operations are fully automated and it was the first Nigerian carrier to totally embrace the IATA Billing and Settlement Plan (BSP), which is based on 100 percent e-ticketing in Nigeria.

Air Nigeria has a very strong presence and vast network of routes that extends to West, Central and South Africa. It enjoys appreciable patronage and customer confidence, which the CEO has pledged to enhance even further through corporate loyalty and a strengthened commitment to service delivery.

### *Kabo Air*

Kabo Air, a Kano-based airline, belongs to the first generation of scheduled, private commercial airlines that heralded the liberalization of Nigeria's domestic airline market in the early 1980s. It grew to become a dominant operator on both scheduled domestic and international charter operations.

In recent years, Kabo has withdrawn from the domestic scene and now concentrates on scheduled intercontinental services to Cairo, Dubai and Jeddah, in addition to its annual pilgrimage operations to Saudi Arabia and other charter services. It operates a fleet of B-747s and other long-haul Boeing jets.

### **Conclusion**

Aviation in Nigeria is on an upward swing and the Federal Government of Nigeria has continued to make concerted efforts to strengthen the industry by making substantial investments in the provision and maintenance of infrastructure, facilities and the creation of an enabling environment for private sector participation through PPP initiatives.

All of these efforts have further promoted safety, efficiency and security in the Nigerian air transport sector, and current statistics attest to the fact that aviation in Nigeria will continue to grow faster than the world average for some time to come. ■

# Air SAFETY. Every Detail COUNTS.



In the business of air safety, NCAA takes nothing for granted. From tracking the minutest maintenance detail on the aircraft to monitoring the health of the flight crew as well as the financial health of operators, NCAA's robust safety oversight has made air travel in Nigeria a much safer affair.



## **NIGERIAN CIVIL AVIATION AUTHORITY**

*Ensuring Safety and Efficiency in Air Transport and Navigation*

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# Leadership and Vision in Global Civil Aviation



# Advancing MET Capacity-building

**Aeronautical meteorological (MET) activities conducted by the two the ICAO Offices in the Africa and Indian-Ocean (AFI) region primarily serve ICAO's ongoing aviation safety and efficiency objectives.**

**As Benoit Akoa Okossi, Regional Officer, Aeronautical Meteorology, ICAO Dakar Regional Office writes, ICAO's AFI MET objectives surrounding volcanic ash forecasting, QMS implementation and additional MET-related capacity-building efforts are continuing on track in cooperation with local States and organizations.**

Aviation safety-related meteorological hazards can include thunderstorms, cumulonimbus cloud formations, tropical cyclones, volcanic ash clouds, severe turbulence and icing. Efficiency factors, meanwhile, mainly deal with the timely and accurate provision of weather information for pre-flight planning and the selection of optimized flight routes and levels.

## Volcanic Ash Advances

Monitoring and forecasting the movement of volcanic ash clouds is a major concern in the African Great Lakes region, the Indian Ocean Islands, Cape Verde and Cameroon. All of these areas feature active volcanoes which are under observation. ICAO's International Airways Volcano Watch (IAVW) detects and tracks the movement of volcanic ash in the atmosphere and warns aircraft in flight of potential hazards.

The ICAO Regional Office in Nairobi conducts volcanic ash training workshops to improve awareness and capacity building in this area. Recent activities in this regard include a December 2009 event for MET personnel from English speaking AFI States, and a December 2010 workshop at the Dakar Office for the French speaking States in the region.

## AFI MET QMS

Recent high-level meetings have identified the need for improved training in several areas for AFI MET personnel. One important area in this regard was the development of effective Quality Management Systems (QMS). The Ministers responsible for Meteorology in Africa, at their meeting in April 2010, issued the Nairobi Declaration

which committed them to improvements in this area.

Accordingly, the Regional Offices of Dakar and Nairobi, in close coordination with the WMO, conducted English and French workshops recently on the need for and development of QMS for aeronautical meteorological services. Two additional ICAO/WMO MET QMS workshops for the SADC States and ASECNA Member States were recently conducted in Pretoria, South Africa and Dakar, Senegal. Thus far some 88 individuals from over 40 States have benefited from this outreach.

To help address local capacities relating to ongoing QMS implementation, ICAO also conducted QMS train-trainer courses in Nairobi, Kenya and Dakar, Senegal during late 2010. A total of 42 participants from 29 AFI States attended.

## The CODEVMET Project

The CODEVMET initiative seeks to address safety-related meteorological deficiencies as part of a broader overall improvement of air navigation safety in nine WACAF States (Cape Verde, Democratic Republic of Congo, Gambia, Guinea, Guinea Bissau, Liberia, Nigeria, Sao Tome and Principe and Sierra Leone). Any AFI State or meteorological services provider seeking to participate in the CODEVMET project can apply through the Chairman of the Steering Committee copying the ICAO Dakar Office.

## ASECNA Symposium Participation

A Symposium on Meteorological Service to International Air Navigation was organized by the Agency for Air Navigation Safety in Africa

and Madagascar (ASECNA) from 23 to 24 November 2010 in Cotonou, Benin. It was attended by 151 participants from 37 ICAO Contracting States and by 27 international organizations from the AFI, EUR/NAT and MID regions, including the WMO and ICAO.

The purpose of ICAO's attendance at the ASECNA Symposium was to:

- a) Ensure a coordinated approach to the implementation and roll-out of Amendment 75 to Annex 3 — *Meteorological Service for International Air Navigation*, in accordance with the *Working Arrangements between ICAO and WMO (Doc 7475)*.
- b) Highlighting new developments in the area of aeronautical meteorology.

ICAO's attendance at the ASECNA event also served to bring AFI meteorological authorities up-to-date on QMS training and implementation, as well as to further inform them of ICAO's role as the AFI MET provider organization for enhanced implementation of the issuance of SIGMET information. Participants were also advised on the status of ICAO's volcanic ash regional contingency plan for the AFI region and of various outstanding MET deficiencies which ICAO is seeking to remedy on an ongoing basis.

These and other challenges, such as the implementation of digital meteorological prediction methods and related aeronautical communications advances, will continue to form the basis of the AFI MET work programme in the near-term as ICAO continues to modernize AFI MET operations in the interest of safety and efficiency improvements to benefit States and operators alike. ■



## **ECCAS : IMPROVING AIR TRANSPORT IN CENTRAL AFRICA**

# **CEEAC : POUR L'AMELIORATION DU TRANSPORT AERIEN EN AFRIQUE CENTRALE**



The Economic Community of Central African States (ECCAS) groups together 10 States, namely: Angola, Burundi, Cameroon, Congo, Gabon, Equatorial Guinea, the Central African Republic, the Democratic Republic of the Congo, São Tomé and Príncipe and Chad. These states cover a surface area of 6.64 million Km<sup>2</sup> with an estimated population of 124 million inhabitants.

Given the continental size involved and as a result of the dysfunctional nature of land-based means of transport, air transport plays a predominant role in trade and the movement of persons in Central Africa. However, for various reasons, air transport does not yet provide the services expected by users in a satisfactory way. The inventory of the situation has identified several shortcomings as regards security and safety; irregular flight services; the very high tariff levels for average quality services and the absence of a framework to guarantee healthy competition and ensure consumer protection.

After holding regional discussions, the ECCAS Competent Authorities adopted an Action Plan to correct the main weaknesses identified, with the aim of substantially improving air transport in Central Africa. This Plan recommends the establishment of a Regional Regulatory Agency to oversee the smooth functioning of the sector; this is an approach, which draws inspiration from the experiments underway in several sub-regions of the world.

The intended objective is to provide Central Africa with an autonomous community structure which groups together all of the ECCAS Member States and has sufficient capacity and authority to: (i) provide support to States to fulfil their safety and security oversight obligations by pooling resources and (ii) to promote the implementation of the Yamoussoukro decision by overseeing actions, in particular: to protect users; to promote and guarantee fair and transparent competition in this sector; to make the air transport industry more viable and to contribute to regional integration and development in Central Africa.

In short, through its Action Plan, ECCAS aims to contribute to the establishment and maintenance of a high level of safety and security across the board and to promote air transport development within the heart of Africa. Therefore, ECCAS will be relying on different contributions from International Civil Aviation Authorities and development partners in order to eliminate all of the deficiencies, which are presently hindering growth in this sector- a sector that is so vital for the international community.

**Général Louis SYLVAIN-GOMA**

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La Communauté Économique des États de l'Afrique Centrale (CEEAC) regroupe 10 États à savoir: l'Angola, le Burundi, le Cameroun, le Congo, le Gabon, la Guinée Equatoriale, la République Centrafricaine, la République Démocratique du Congo, São Tomé et Príncipe et le Tchad. Ces États couvrent une superficie de 6,64 millions de Km<sup>2</sup> avec une population estimée à 124 millions d'habitants.

Au regard de sa dimension continentale et suite au dysfonctionnement des transports de surface, le transport aérien occupe une place prépondérante dans les échanges commerciaux et dans les mouvements des personnes en Afrique Centrale. Mais, pour des raisons diverses, il ne fournit pas encore, de manière satisfaisante, les services attendus par les usagers. L'état des lieux relève plusieurs insuffisances en matière de sûreté et de sécurité, l'irrégularité de la desserte aérienne, le niveau très élevé des tarifs pour des services de qualité moyenne et l'absence d'un cadre garantissant une concurrence saine et assurant la protection des consommateurs.

Pour remédier à ces principales faiblesses, les Instances compétentes de la CEEAC ont adopté, à l'issue d'une réflexion régionale, un Plan d'Action visant l'amélioration substantielle du transport aérien en Afrique Centrale. Ce Plan préconise la mise en place d'une Agence régionale de Régulation pour veiller au bon fonctionnement du secteur, approche qui s'inscrit dans la logique des expériences en cours dans plusieurs sous-régions du monde.

L'objectif visé est de doter l'Afrique Centrale d'une structure communautaire autonome regroupant l'ensemble des États membres de la CEEAC, jouissant des capacités et d'autorité suffisantes, en vue de : (i) appuyer les États à s'acquitter de leurs responsabilités en matière de supervision de la sécurité et de la sûreté, en mettant en commun les ressources et (ii) favoriser la mise en œuvre de la Décision de Yamoussoukro, en veillant particulièrement à protéger les usagers, à promouvoir et à garantir une concurrence libre et transparente dans le secteur, à viabiliser l'industrie du transport aérien et à contribuer au développement et à l'intégration régionale en Afrique Centrale.

Bref, à travers son Plan d'Action, la CEEAC vise à contribuer à l'établissement et au maintien d'un niveau uniforme élevé de sécurité, de sûreté et à promouvoir le développement du transport aérien au cœur de l'Afrique. Elle compte ainsi sur les contributions diverses des instances de l'aviation civile internationale ainsi que des partenaires au développement en vue d'éliminer toutes les carences qui empêchent la croissance de ce secteur vital pour la Communauté internationale.

**Général Louis SYLVAIN-GOMA**

# Performance-based Navigation and ATS Route Development

**After the 36<sup>th</sup> Session of the ICAO Assembly adopted Resolution A36-23: *Performance-based Navigation global goals*, the AFI Region participated in a series of worldwide seminars arranged for States by ICAO. These events introduced the concept of Performance-based Navigation (PBN) to AFI Air Traffic Management (ATM) stakeholders and initiated a process of education and training leading to the implementation of PBN.**

**As Seboeso Machobane, Regional Officer for Air Traffic Management in ICAO's Nairobi Regional Office writes, progress continues to be made in improving PBN implementation levels through the near-term establishment of a new ICAO Flight Procedures Programme (FPP) and continuing Air Traffic Services (ATS) route development.**

The Special AFI/08 Regional Air Navigation Meeting (SP AFI/08 RAN), introduced the performance-based approach to the planning of air navigation services in the AFI Region, including a set of performance objectives which were to be developed further by the AFI Planning and Implementation Regional Group (APIRG).

This framework included the objectives for the implementation of PBN, optimization of the ATS route Structure in en-route and terminal airspace, as well as implementation of vertically guided RNP approaches. As part of this process, the APIRG Air Traffic Services/Aeronautical Information Service/Search and Rescue Sub-Group (ATS/AIS/SAR SG), with the support of its contributing bodies, developed a Regional Plan for the implementation of PBN in the Africa-Indian Ocean Region and a review of the AFI ATS route network.

The AFI Regional PBN Implementation Plan serves to guide national planning. With the support of its Performance Based Navigation Task Force (PBN TF) working jointly with the Global Navigation Satellite System/Implementation Task Force (GNSS/I TF), the ATS/AIS/SAR SG also adopted guidance materials and tools that could be used by AFI States to support national planning processes.

The more recent amendment of the Performance-based navigation global goals by the 37<sup>th</sup> Session of the ICAO Assembly was welcomed by the AFI Region, as it introduced, amongst other advances, further means to enhance safety and the implementation of vertically guided approaches.

The Regional PBN Implementation Plan has since been updated accordingly and detailed, with consequential updates carried in the Performance Framework Forms to guide States.

## Implementation of PBN

Due to low levels of expertise in general, PBN implementation in the AFI Region has faced numerous challenges, particularly relating to the terminal and approach phases of flight. Nevertheless, many States have taken appropriate

steps to implement instrument approach procedures based on GNSS, most of which were developed with the support of the International Air Transport Association (IATA). In order to support this implementation, in 2010 ICAO conducted a PBN Procedure Design Course and a PBN Airspace Planning Workshop in July and September respectively.

## Flight Procedure Programme

The SP AFI/08 RAN in November 2008 discussed a number of challenges related to implementation of ICAO provisions including regional requirements in the implementation of PBN. The RAN Meeting noted in particular that most ICAO regions suffered the same difficulties with respect to the new types of flight procedures, and that ICAO was working to establish special offices in each region to assist and accelerate the implementation of PBN.

**“By the end of 2010, with the support of the International Air Transport Association (IATA) and its member airlines, more than 60 fuel efficient ATS routes, most of which are regarded as critical or high priority for operators, were agreed within the purview of the PRND Task Force for implementation, either as new, extension, or modified existing routes.”**



Participants to the First meeting of the PBN and GNSS Implementation Task Force (PBN/GNSS TF/1) held in Nairobi in October 2010.

Challenges identified in the AFI region in particular in this regard include the following:

- a) Lack of procedure design training: initial, OJT, and or recurrent.
- b) High turnover among procedure designers.
- c) Insufficient procedure design work in some States to attain or maintain proficiency.
- d) Lack of depth in procedure design organization to perform quality assurance (QA).
- e) Insufficient expertise in procedure design organization to provide adequate QA of procedures.
- f) Lack of procedure design and obstacle data storage automation in the States.
- g) Insufficient regulatory expertise to oversee the procedure design service provider.

In view of the above, the AFI region agreed to establish the AFI Flight Procedures Programme (FPP). The goal of the FPP would be to address some of the issues above and foster implementation of flight procedures, developed with the appropriate quality systems, especially PBN and vertically guided instrument approach procedures by:

- a) Assisting those States with sufficient procedure design requirements to establish a sustainable internal procedure design capability to meet the requirements of PANS OPS and their responsibility under Annex 15 for the quality of their procedures.
- b) Providing the appropriate level of technical expertise necessary to enable certain States, which do not have the density of procedures necessary to sustain an internal procedure design capability, to meet their responsibilities under Annex 15 and PANS-OPS.
- c) Providing a vehicle to improve quality in the States' procedure design process through access to procedure design automation solutions and associated data storage.

The FPP is envisioned to be a not-for-profit centre of excellence in the field of flight procedures design. It would employ best practices in training, automation and quality assurance to

address the procedure design needs of States. Options of services that may be offered by the FPP include the following:

- Services such as procedures and training made available on a cost recovery basis.
- Services provided on "free of charge" cost basis depending on contributing States' (and/or donor) support of such arrangements.
- Services provided on business principles in order to raise funds for the FPP.

Acknowledging that the concept of the FPP was new, agreement was reached within the framework of APIRG that, in order to improve the opportunities for success, the AFI FPP should draw on the establishment and operational experiences of the APAC FPP. Accordingly, establishment of the AFI FPP was put in abeyance.

Following consultations and observation of developments relating to the APAC FPP, in February 2011 it was recognized that valuable experience had been gained in the establishment of the APAC FPP. Accordingly, a State Letter was issued to States providing air navigation services in the AFI region, inviting them to indicate interest in the hosting and support of the FPP, as well as to assess the expected level of usage of the FPP services, when established.

It is expected that, based on the degree of support that will be extended by States and interested organizations, the AFI FPP could be established and operational by early 2012.

### ATS Route Development

In April 2010 the ATS/AIS/SAR Sub-Group established the PBN Route Network Development Task Force (PRND TF), charged primarily with the review of the AFI ATS route network, and development of fuel efficient ATS routes applying the PBN concept. By the end of 2010, with the support of the International Air Transport Association (IATA) and its member airlines, more than 60 fuel efficient ATS routes, most of which are regarded as critical or high priority for operators, were agreed within the purview of the PRND Task Force for implementation, either as new, extension, or modified existing routes.

Success in this effort has provided stakeholders in the region with confidence in the ability of existing mechanism to advance the concept of an efficient ATS route network in the AFI region, which paves the way for a comprehensive review of the route network.

The next task for the PRND Task Force will therefore be a comprehensive review of the AFI ATS route network and its optimization pursuant to regional performance objectives and the Regional PBN Implementation Plan. ■

# The ICAO/EAC Pilot Project for Regional Aviation Medicine Centres in Africa

**ICAO Aviation Medicine Workshops during 2009 identified a priority need in Africa for fully equipped and staffed Regional Aviation Medicine Centres. Accordingly, a pilot project has been undertaken with the East African Community Partner States that will serve as a template for other African regions as they seek to address current deficiencies in their aviation medical facilities, staffing and resources.**

**As Amal Hewawasam, Regional Officer for Aviation Medicine in the ICAO Eastern and Southern African (ESAF) Regional Office writes, the new East Africa medical centre will enhance participating States' conformance to ICAO USOAP audit recommendations in the area of aviation medicine.**

The present day Aviation Medicine related Standards and Recommended Practices (SARPs) in ICAO Annex 1 – *Personnel Licensing*, have evolved in unison with broader medical advances, improvements in modern medications and surgery and changes in patterns of disease.

Advancements particularly of note for Aviation Medicine stakeholders include provisions relating to use of antidepressant medication in licence applicants, increased emphasis on mental health, preventative advice provided during routine medical examinations and assessment of human immunodeficiency (HIV) disease.

ICAO's Universal Safety Audit Programme (USOAP) revealed that, although 83 percent of audited States have implemented an effective system to issue licences, 41 percent do not evaluate medical reports submitted by designated medical examiners.

With respect to the AFI Region, the lack of effective implementation in this particular area is much higher than the world average, primarily due to a lack of local resources and the shortage of qualified medical practitioners who are up to date on current developments in aviation medicine.

As part of its ongoing efforts to address these concerns, ICAO has organized Aviation Medicine Workshops in recent years. One such Workshop was held

in Kigali, Rwanda, in October 2009, attended mainly by medical practitioners representing various AFI Civil Aviation Authorities (CAAs).

The Kigali participants acknowledged, amongst other concerns, the priority need for fully equipped and appropriately staffed Regional Aviation Medicine Centres. It was stressed that these would be needed to address the fact that current facilities, within a majority of the States in the AFI region, are inadequate to meet the needs for ICAO-compliant aircrew and ground crew medical assessments.

As with similar situations that have highlighted the important role of collaborative AFI ventures to address common air transport-related objectives, it was acknowledged that the costs involved in developing and implementing the new centres would prohibit each State in the region from establishing proper facilities.

Considering these practical realities, the ICAO Eastern and Southern African (ESAF) Regional Office presented a working paper on this subject at the Directors General of Civil Aviation (DGCA) meeting held in Lome, Togo in November 2009. The DGCAs in attendance at the Lome meeting unanimously agreed on the need for the new Centres.

Subsequent to the Lome meeting, the Kenya Civil Aviation Authority suggested

that ICAO should present a proposal to the East African Community (EAC) Partner States, through the EAC Civil Aviation Safety and Security Oversight Agency (CASSOA), to establish the first regional aviation medicine centre to serve the EAC Partner States on cost recovery basis.

Since then CASSOA, in conjunction with the Chief of ICAO's Aviation Medicine Section and the ICAO ESAF office, has been working toward this goal. ICAO is in the process of engaging an experienced aviation medicine practitioner to visit all the EAC Partner States to conduct a study on the establishment of the centre, its management structure, a framework for its relationship with local CAAs, CASSOA, and designated medical examiners in the region, and the operational cost implications.

The new East Africa medical centre is expected to be completed by the end of 2012 and will enhance each State's level of conformance to ICAO SARPs relating to personnel licensing medical aspects, especially the Standards relating to effective implementation of ICAO USOAP audit recommendations in the area of aviation medicine.

The development of the new centre is being treated as a pilot project that will eventually provide a template for establishing additional fully equipped and self sustaining Regional Aviation Medical Facilities that can serve the needs of all States in the African continent. ■



# Towards an Integrated AFI Telecommunications Network

**The Limited Africa-Indian Ocean Regional Air Navigation Meeting of 1988 (LIM AFI RAN/1988) recommended feasibility studies on the use of very small aperture satellite terminals (VSAT) as a means to meet the requirement for efficient and reliable communications in the AFI Region. It also acknowledged the importance of the satellite communications project developed for Central and Western Africa.**

**As reported here by Prosper Zo'o Minto'o (Nairobi) and Francois Salambanga (Dakar), ICAO AFI Regional Officers for Communications, Navigation and Surveillance, a Joint Meeting of AFI Aeronautical VSAT Network Managers was held in 2011 by Air Traffic and Navigation Services (ATNS) of South Africa to discuss key issues related to aeronautical VSAT networks, including the development of a roadmap towards a modernized, interoperable, sustainable and integrated network.**

As a follow up to recommendations from the Limited Africa-Indian Ocean Regional Air Navigation Meeting of 1988 (LIM AFI RAN 1988), a VSAT project known as AEROSATEL was implemented in the early 1990s. AEROSATEL was later expanded to cover other Central and Western African States, as well as Southern African and Indian Ocean States, resulting in today's AFI Satellite Telecommunications Network (AFISNET).

A similar project was implemented in early 2000s by South African Development Community States (SADC VSAT/1). A new generation of this network (SADC VSAT/2) was launched in 2008 together with the inauguration of a new VSAT network designed for North-Eastern African States. At the same time, an inter-regional network involving

African, European and South American States (CAFSAT), was implemented to cater for communications requirements between South Atlantic Area Control Centres (ACCs).

The existing AFI VSAT networks, having been developed by different groupings of States at different points in time, are characterized by a number of conceptual and technical similarities and dissimilarities.

Working arrangements between these networks include administrative (supervision, cost recovery mechanism), technical (personnel, maintenance), and network management (monitoring and control) synergies. A supervisory committee has been established for each VSAT network to oversee their performance.

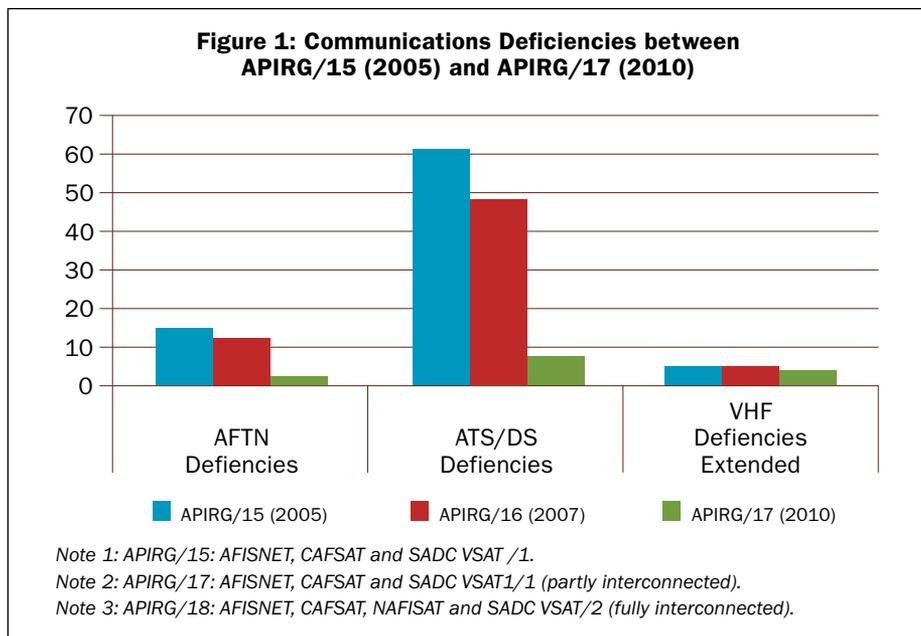
**AFI VSAT Network Services**

The scope of aeronautical VSAT networks includes a wide range of services which are intended to support the safe and efficient provision of Air Traffic Management (ATM), such as Aeronautical Fixed Services (AFS, i.e.: Aeronautical Fixed Telecommunications Network (AFTN); Air Traffic Services Direct Speech Network (ATS/DS); ATS Handling Message System (AHMS); and ATS Inter-Facility Data Communications (AIDC)) and Aeronautical Mobile Service (AMS), namely VHF radio coverage extension within flight information regions.

**Impact of States' VSAT Networks compliance with Air Navigation Plan Requirements**

The ICAO Special AFI Regional Air Navigation Meeting of 2008 (SP AFI RAN/08) acknowledged that ground-ground networks based on VSAT technology offered the best means of providing AFS connectivity as well as relaying air/ground communications between ATS centres and remote ground stations. The table (INSERT LAYOUT LOCATION) and figure (INSERT LAYOUT LOCATION) reveal the inarguable added value of VSAT networks in the reduction of major deficiencies affecting AFTN circuits, ATS/DS circuits and Extended VHF radio coverage in the AFI Region.

There are still a number of issues to be addressed to ensure that consistent and sustainable performance continues to be achieved through AFI VSAT networks. These include maintenance capabilities, the modernization of network components, as well as funding



arrangements together with associated cost recovery mechanisms.

**Integration of AFI VSAT Networks**

As there are many different ways a VSAT network could be implemented and because VSAT vendors used proprietary signal protocols, providing interconnectivity between nodes belonging to different VSAT networks was often difficult, costly, and sub-optimum in terms of performance.

On this basis, the ICAO SP AFI RAN/08 agreed that all VSAT plans should be coordinated and that further consideration should be given to integrating existing VSAT networks. These points were already addressed under Conclusion 5/18 of the Fifth meeting of All Planning and

Implementation Regional Groups (ALLPIRG/5, 2006) which requested PIRGs to work towards integrated regional/interregional digital communication networks with a centralized operational control and preferably based on the Internet Protocol (IP).

Furthermore, the Fourth Meeting of Directors-General of Civil Aviation (DGCA/4, Matsapha, Swaziland, November 2010) supported the development of a CNS Technology Roadmap and of an integrated regional CNS infrastructure in order to overcome fragmentation and help provider States to fully comply with relevant ICAO provisions. It accordingly requested the African Commission for Civil Aviation (AFCAC), ICAO and other groups to support the implementation of integrated programmes aimed at enhancing the regional air navigation infrastructure.

A Joint Meeting of AFI Aeronautical VSAT Network Managers in 2011 by Air Traffic and Navigation Services (ATNS) of South Africa discussed key issues related to aeronautical VSAT networks, including the development of a roadmap towards a modernized, interoperable, sustainable and integrated network. ■

APIRG Meetings	AFTN Deficiencies	ATS/DS Deficiencies	Extended VHF Deficiencies
APIRG/15 (2005)	18	64	07
APIRG/16 (2007)	14	51	07
APIRG/17 (2010)	04	10	05



# A Leader in African Airspace Management

**M. Guittèye, you have been appointed as Director General of ASECNA as of 1 January 2011. How are you planning to fulfil your mandate?**

I was appointed Director General after the meeting of the Committee of Ministers from the Member States of ASECNA, which was held during the month of July 2010, on the basis of the work programme that I have baptized as **'The Programme for the renewal of ASECNA'**.

In using the word 'renewal', I am not trying to obscure the immense work accomplished by my predecessors, whom I would like to sincerely thank. In fact, it is their collective wisdom and expertise that has allowed our Agency to successfully weather the many storms which it has experienced and which has allowed it to truly celebrate its existence and services for half a century now.

We have performed well during this period but we can also improve in order to put our work on a more permanent footing and increase stability with regard to the safety of our continent's air space. The kind of renewal that I wish to inspire within ASECNA, with the involvement of each and every one of us, basically means a change of mentality amongst all ASECNA staff and modernizing our technologies, as well as implementing a new strategy. This new strategy will help us to meet our objectives efficiently, while also mastering our responsibilities and banishing poor performance, lack of quality and the abuse of corporate assets.

**What are the main themes of this new programme?**

ASECNA's programme is based around two strategic objectives: the improvement of air navigation safety; and the improvement of economic governance and efficiency. Using these guidelines, we are planning, more than in the past, to focus our activities and resources on the satisfaction of air navigation services users, which is ASECNA's main task.

We must also streamline airspace management to take account of traffic flows and ensure the best flight profiles while using innovative technologies to make these advances compatible with new operating needs. Modernizing Human Resources Management to increase their abilities and efficiency to face up to competition, while implementing service and equipment projects, will also be important.

We are faced with significant challenges but they remain within the reach of the Agency. We must recover and make financial resources more secure and strengthen the communication and monitoring of our daily actions.

ASECNA will ensure that the agreements in force are strictly respected through healthy and transparent management in order that we continue to enjoy the confidence and credibility of our States and our different technical and financial partners.

**We have seen that in many of your Member States, governments are restructuring their air transport sectors. Are you involved in this process?**

ASECNA, in its role as Council, accompanies the efforts made by States in this regard. It is not directly involved in policy making. ASECNA itself needs to refocus on its own mission. Once we become the States' instrument, the fact that we have put our system in order will help States to have less cases of non-compliance.

**Generally speaking, what role do you play in the economic development of your Member States?**

ASECNA ensures flight safety in the spaces with which it is entrusted, thanks to the investments that we are making. We have to remember that under Article 28 of the Chicago Convention, States have the obligation to provide air navigation services and facilities. ASECNA Member States have decided to do this on a collective rather than an individual basis.

**How is ASECNA planning to contribute to the improvement of air navigation services in the Africa Indian Ocean Region?**

The basic idea is to ensure that the Agency increases its standing as a result of the quality of the services which it provides and then to encourage more States to become members of ASECNA. We presently cooperate within the framework of Cooperative Airspace Management—which allows us to work with third parties while still protecting everyone's individual interests. It is under these conditions that we will be able to move resolutely towards the achievement of a true Single Sky for Africa. ■



# A Leader in African Airspace Management

**Monsieur Guittèye, vous avez été désigné Directeur Général de l'ASECNA à compter du 1<sup>er</sup> janvier 2011, comment entendez-vous conduire votre mandat ?**

J'ai été désigné Directeur Général, à l'issue de la réunion du Comité des Ministres de tutelle des pays membres de l'ASECNA tenue au mois de juillet 2010, à Moroni, à l'Union des Comores sur la base d'un programme de travail que j'ai baptisé « **Programme pour le renouveau de l'ASECNA** ».

Derrière le mot « renouveau », je ne cherche point à occulter l'œuvre combien immense de mes prédécesseurs et de nos aînés à qui je rends un hommage sincère. En effet, la sagesse et l'expertise des uns et des autres ont permis à notre Agence de traverser avec succès les nombreuses tempêtes qui l'ont secouée tout au long de sa vie; ce qui lui a permis de fêter avec éclat son demi siècle d'existence et de services.

Nous n'avons pas été mauvais durant toutes ces années, mais nous avons les capacités d'être meilleurs pour donner une pérennité à notre œuvre et une stabilité plus grande à la sécurité de l'espace aérien de notre continent. Mais le renouveau que je désire insuffler à l'ASECNA, avec l'implication de chacun, réside essentiellement dans le changement de mentalité de tout le staff de l'ASECNA, dans la modernisation de notre outil de travail et dans la mise en place d'une stratégie nouvelle à même de nous aider à atteindre avec efficacité nos objectifs, tout en maîtrisant nos charges et bannissant la contre-performance, la non qualité et les abus de biens sociaux.

**Quelles sont les grandes lignes de ce programme ?**

Le programme de l'ASECNA s'articulera autour de deux objectifs stratégiques, incluant l'amélioration de la sécurité de la navigation aérienne et l'amélioration de la gouvernance et de l'efficacité économiques.

A travers ces lignes directrices, nous comptons : de centrer nos activités et nos ressources sur la satisfaction des usagers des services de navigation aérienne, le métier premier de l'ASECNA; rationaliser la gestion de l'espace aérien pour tenir compte des flux de trafic et assurer les meilleurs profils de vol; exploiter les technologies innovantes en vue de rendre l'outil de travail compatible aux nouveaux besoins de l'exploitation; moderniser la gestion des Ressources Humaines afin d'accroître leurs capacités et leur efficacité à faire face à la concurrence; réaliser les projets de services et équipements.

Les défis auxquels nous sommes confrontés sont de recouvrer et sécuriser les ressources financières et de renforcer la communication et le contrôle de nos actions de tous les jours.

Nous veillerons au strict respect des textes en vigueur à travers une gestion saine et transparente pour continuer à mériter la confiance et la crédibilité de nos États et de nos différents partenaires tant techniques que financiers.

**Nous constatons que dans beaucoup de vos États membres les gouvernements s'attèlent à une restructuration du secteur du transport aérien, êtes-vous impliqué dans ce processus ?**

L'ASECNA, en qualité de Conseil, accompagne les efforts des États dans leur politique de restructuration du secteur aéronautique car elle n'est pas directement impliquée dans le processus de la conception de ladite politique. Comme souligné, l'ASECNA a besoin elle-même de se recentrer sur sa mission, son cœur de métier. Nous avons connu des situations difficiles qui nous exigent de revenir au plus vite à la normalité. A partir du moment où nous sommes l'instrument des États, le fait de mettre de l'ordre dans notre système amène les États à avoir moins de non-conformités. Cela est une contribution importante que nous apportons.

**De manière globale quelle part prenez-vous dans le développement économique de vos États membres ?**

L'ASECNA assure la sécurité des vols dans les espaces qui lui sont confiés à travers les investissements que nous réalisons. Rappelons qu'au titre de l'article 28 de la Convention de Chicago, les États ont l'obligation de fournir des installations et services de navigation aérienne. Les États membres de l'ASECNA ont décidé de le faire non pas individuellement mais collectivement. Cette mutualisation des moyens permet justement d'apporter une contribution significative dans le domaine spécifique de la gestion des espaces aériens au niveau des États.

**Enfin, quelle contribution l'ASECNA compte-t-elle apporter à l'amélioration des services de navigation aérienne dans la Région Afrique Océan Indien ?**

Vous avez bien compris que l'idée de base est de faire en sorte que l'Agence rayonne mieux par la qualité des services qu'elle rend. Mais à travers ces performances, l'objectif final est de fédérer davantage les États qui n'en sont pas encore membres. Nous cherchons en effet, à coopérer avec tous dans le cadre de ce que j'appellerai « la gestion coopérative des espaces aériens », un concept qui permet de travailler avec des tiers tout en préservant les intérêts des uns et des autres. Dans ces conditions, nous pouvons avancer résolument vers la réalisation d'un véritable ciel unique africain. ■

# Ethiopian AMHS Extended Service

In 1997, ICAO acted on behalf of the Ethiopian Civil Aviation Authorities (ECAA) and launched a public tender for the purchase of an AMHS Extended Service system for this country.

ICAO was tasked with the development of a technical specification and, together with ECAA personnel, determined what was needed in Ethiopia in order to equip four of the main country airports. These included the main capital city airport, Bole International in Addis Ababa, Alula Aba Nega International Airport in Mekele, Aba Tenna Dejazmach Yilma International Airport in Dire Dawa and Bahir Dar Airport.

All to be equipped with AMHS terminals, with the main command center located in Addis Ababa.

(Factory Acceptance Test FAT) in Radiocom's factory, took place. This was carried out in line with contractual obligations previously established with a Demonstration Acceptance Test (DAT) due to be carried out on customer site for ECAA to view the system prior to installation.

Installation commenced on schedule. Having successfully received all the equipment in Ethiopia, the plan was to carry out the DAT, and then start with the installation of the different sites in Bole Airport and adjoining locations.

**Map of AMHS Installations Ethiopia**



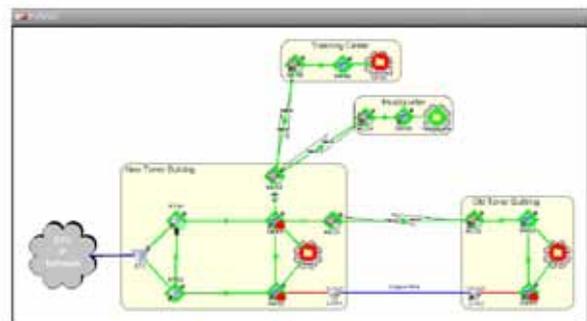
The tender document was received at Radiocom headquarters and the project structure was developed. Once the main project was settled on, the proposal was put together and sent in time for the tender opening date set as a deadline by ICAO.

The contract was signed in March 2009 and work began on the fine tuning of the equipment list, preparation, presentation and approval of the System Design Document (SDD). For this, one of the company engineers travelled to Addis Ababa to meet up with personnel from ICAO and the ECAA.

The final contract agreed on the provision of a fully configured AMHS Extended Service system including two optional Data Banks: DBAIS®, the Radiocom AIS data bank, and Aero Billing®, an airport services billing application as well as a fully configured AMHS Extended Service Training Centre.

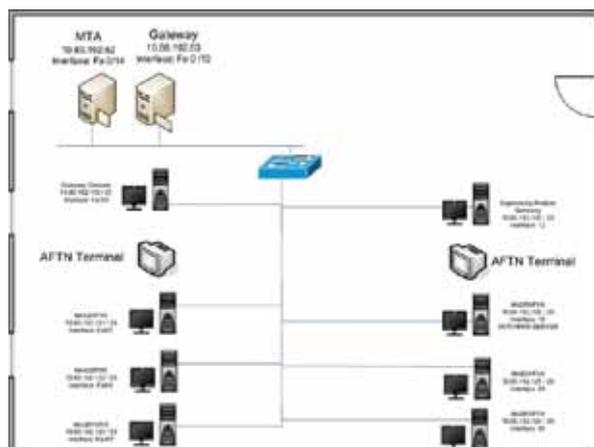
The revision of the SDD was thorough, with a few minor changes and adjustments which were carried out prior to equipment ordering, system assembly and first acceptance

**On Screen shot of AMHS Terminals in Addis Ababa**



One of these locations was to be a fully equipped AMHS Extended Service Training Center, to be located on the outskirts of Bole Airport. As part of the project, the ECAA had requested a second fully configured AMHS Extended Service system for this newly-designed training facility. The original idea included the periodic advanced training of existing ECAA personnel, as well as the training of new personnel and eventually the offer of the service to other Civil Aviation Authorities in the African region.

**Addis Ababa AMHS Training Center**

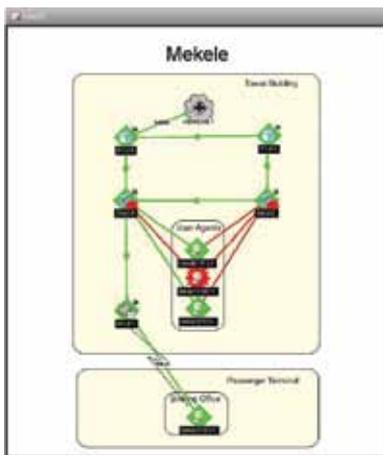


This AMHS Extended Service Training Center in Ethiopia is the first of its kind in Africa. This is an important step in the transition from AFTN to AMHS for the region as well as an important acquisition for the ECAA, showing a great deal of initiative in support of aeronautical safety in Africa as a whole, and the quest for a “Single African Sky”.

The system was approved for installation after the successful completion of the DAT and the installation plan for Bole in Addis Ababa, Mekele, Bahir Dar, and Dire Dawa was then implemented.

The remote location installations had been scheduled to take approximately a week at each location, allowing plenty of time for any unforeseen situations with network installation or site reconditioning. Each location installation was carried out successfully and soon the complete system was ready for its first operational trials.

**On Screen Image of MEKELE LAN Network**



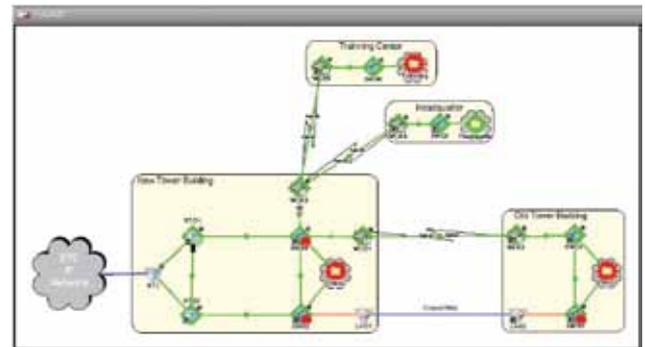
The Wide Area Network (WAN) was being provided by the local telecom company and, once this was also up and running, the trials leading up to the Provisional Site Acceptance Test and Provisional Link Acceptance Test (PSAT/PLAT) could be carried out.

Both trials and PSAT were carried out successfully and the system was then left in the hands of the local operators for a 30 day Operational Readiness Demonstration (ORD) period, during which any eventual problems, faults or failings were to be reported for their correction prior to the Final Site Acceptance Test (FSAT) and the official handing over of the system to the ECAA authorities.

The ORD went smoothly and the FSAT was carried out immediately afterwards, with the Final Site Acceptance Certificates being signed on 5 June 2010.

The Ethiopian AMHS Extended Service system is without a doubt a big first step in moving the region towards the transition to AMHS. Although not the only country to have AMHS in Africa, it is the first to install a fully-configured operational Extended Service Training Center.

**On Screen Image of Addis Ababa LAN Network**



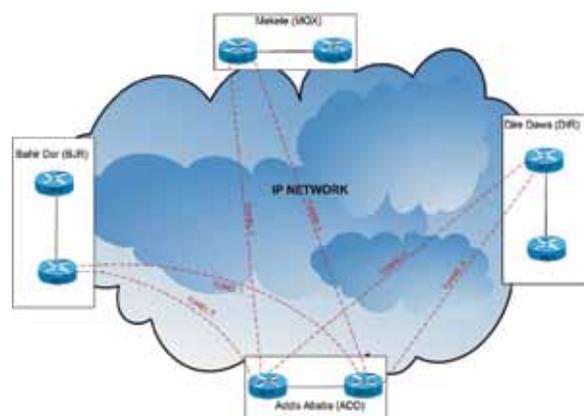
The system is fully configured, with a Gateway to maintain communication with the AFTN community surrounding it—both national and international. However the AMHS system has totally replaced AFTN in the four airports where it is installed.

The transition period was short and efficient, with the operators finding the switchover to AMHS a very natural cross over with little or no time needed for the operators to feel comfortable using the AMHS User Agents.

Currently, system maintenance and overall supervision is carried out locally, however Radiocom has a digital network link to the system for real-time remote monitoring, maintenance and repair from their offices. This enables Radiocom engineers to maintain an open communications link with the ECAA engineers in case any issues should arise that need immediate attention.

Additionally, the system is covered by a 24/7/365 support programme, which keeps track of performance year round. This type of support is paramount for an installation that is so far away from Radiocom company headquarters, with the added bonus that the customer has the certainty that the system will be operational constantly, insuring that maximum operational security status is available in an unrestricted fashion. ■

**Ethiopia WAN Layout**





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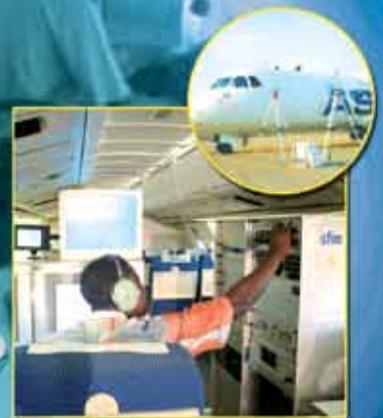
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# AMHS

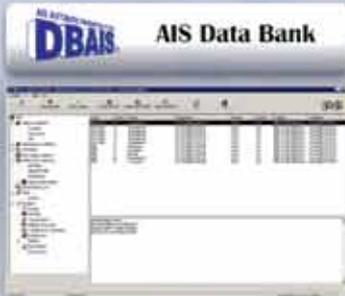
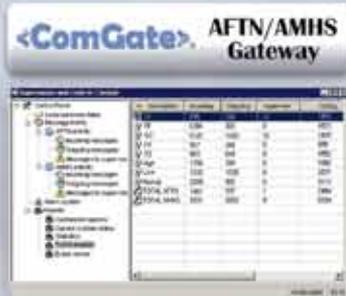
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