



**REQUEST FOR EXPRESSIONS OF INTEREST
(CONSULTING SERVICES – INDIVIDUAL CONSULTANT)**

Country: Ethiopia

Name of Project: The Building Institutions and Systems to Harness and Realize Agenda (BIASHARA) 2063 Project

Grant No: P180117

Assignment Title: Individual Consultant to Undertake Aeronautical Infrastructure Gap Analysis and Air Navigation Services Architecture to Support the Single African Air Transport Market (SAATM) and the Prospects of a Seamless Airspace

Reference No. ET-AUC-424510-CS-INDV

The African Union Commission has received financing from the World Bank toward the cost of *The Building Institutions and Systems to Harness and Realize Agenda (BIASHARA) 2063 Project*, and intends to apply part of the proceeds for consulting services.

The consulting services (“the Services”) include: to support the AUC in coordinating the implementation of the SAATM and contributing to the operationalization of SAATM and ensuring that an effective, safe, and sustainable air transport market is achieved in Africa contributing to Africa's economic development agenda. The SAATM will bring about enhanced connectivity across the continent leading to sustainable development of the aviation and tourism industry with immense benefits.

Specific tasks include:

- (a) **Benchmarking.** Prepare a benchmarking table of ICAO Universal Safety Oversight Audit Program scores for Air Navigation Services and the last audit date for AUC states.
- (b) **Review and assess data:** (i) the current status of all ongoing or planned projects (over the next three years) pertaining to African airspace; (ii) available data collected, State data sheets and collect any supplementary data required for the diagnostic. Collection of supplementary data collect: The project Technical Working Group (TWG) has gathered some data, with known existing gaps. The consultant is to review the data collected and to facilitate completing all gaps in data collected for the principal parameters to produce updated Data Sheets for each of the 55 African Union Member States and eligible African airlines (The list of eligible African airlines in the context of SAATM will be provided to the consultant). The data collection questionnaire developed for the project will be shared to the consultant
- (c) **Review Traffic Data and forecasts** produced by the TWG, to determine major air traffic corridors, and traffic flows. Identify and determine those areas of the African airspace that present the highest air traffic demand over the next five and 10-year periods.
- (d) **Initial Workshop.** Facilitate TWG workshop to perform the baseline analysis and the aviation gap analysis with a focus on those sub-regions, countries, airports, or airspace areas where the highest air

traffic demand.

- (e) **Market Scan:** The consultant shall identify all critical ANS infrastructure, including but not limited to system wide information management (SWIM) equipment, VHF/HF communication equipment, VSAT, ground based nav aids, i.e., instrument landing system (ILS), distance measuring equipment (DME), VOR, Non-directional beacons (NDBs), etc. and undertake a market scan of global and/or continental equipment providers, to produce a set of indicative cost norms for related ANS equipment and investments.
- (f) **ANS Infrastructure Financing Options.** The consultant shall assess potential financing through two work streams: bankable projects - whereby the level of traffic and aeronautical pricing is sufficient such that asset owner is likely to be able to finance the investment internally through commercial banks; and non-bankable projects, whereby the operator would need either State or donor support. Specifically, the Contractor shall reach out and discuss the interest of potential financiers of non-bankable projects in providing financing, the expected terms, and financial structures.
- (g) **Assessment of Potential for Harmonization:** This will include assessment of the potential for harmonization of CNS/ATM systems identified under the gap analysis exercise. Specifically, the consultant shall identify the disparities in CNS/ATM capabilities among African States, recommend whether harmonization can be achieved, and if so, develop a high-level strategy for such harmonization. It may be possible that such recommendation may result in a grouping of countries, by sub-region, level of equipage/technology, level of traffic or others as the Contractor deems adequate. The consultant shall provide a high-level plan for such strategy with specific action items to achieve the proposed goals.
- (h) **Risk Assessment.** The consultant is to identify and take into consideration key risks and other externalities (including potential for harmonization/interoperability, governance, institution, and regulatory issues). Incorporate the USOAP scores in this assessment. Undertake Preliminary Impact and assessment of proposed projects (considering safety, social, and environmental impacts)
- (i) **Development of an implementation roadmap and tentative timelines.** This plan shall include, but not be limited to: A recommendation of systems, technologies, or capabilities that may be subject to harmonization; A prioritization of CNS/ATM capabilities required; A recommended methodology for harmonizing the systems (by region, demand, or operational capacity); An analysis on how harmonization can be achieved by working through existing projects and regional initiatives; An overview of the technical and operational and regulatory challenges
- (j) **Development of Key Performance Indicators (KPIs).** Define KPIs to measure the performance and effectiveness of ANS infrastructure enhancements. Action: Develop a set of KPIs to monitor progress and effectiveness of ANS infrastructure upgrades, including metrics for safety, capacity, cost-efficiency, and environmental performance, establish baseline values and targets for each KPI to facilitate ongoing performance tracking and assessment.
- (k) **Final Workshop.** Facilitate meeting of the TWG to identify prioritized projects/costing to address the major deficiencies and/or lack of capabilities identified.

The detailed Terms of Reference (TOR) for the assignment are attached to this Request for Expression of Interest.

The African Union Commission now invites eligible individuals (“Consultants”) to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The shortlisting criteria are:

- a. General profile: Senior aviation infrastructure planning Expert with an in-depth knowledge of the aviation infrastructure planning, project costing, facilitating aviation technical meetings, facilitate the drafting of technical reports and able to work independently either in person or remotely.
- b. Qualifications and skills : Master’s Degree in Air Transport Economics/ Transportation Planning/ Aeronautical or Electrical Engineering or any other closely related field
- c. General experience:
At least 10 years in Aviation Infrastructure planning including knowledge on prioritization of Aviation infrastructure projects i.e. aerodrome and CNS/ATM related facilities and services; aircraft avionics and equipage.
- d. Specific experience
 - i. Knowledge of air transport demand analysis and forecasting
 - ii. At least 5 years’ experience with Africa Aviation sector and working with African Aviation Institutions;
 - iii. Knowledge of aviation infrastructure projects structuring and costing.
- e. Other relevant Skills
 - Planning and organization - Proven ability to plan and organize work within a project and independently; ability to make timely decisions;
 - Communication - Effective written, oral and presentation skills, particularly ability to draft/present information in a concise and accurate manner;
 - ability to develop consensus among people with varying points of view;
 - Teamwork: Excellent interpersonal skills and ability to operate effectively across organizational boundaries; ability to establish and maintain effective working relations with people of different national and cultural backgrounds with respect for diversity;
 - Judgment/Decision-making - Good judgment and initiative, imagination and resourcefulness, energy and tact, ability to ensure an effective work structure to maximize productivity and achieve Unit’s goals;
 - Well-developed ICT skills including efficient use of word processing, spreadsheets and other important computer applications;
 - Proficiency in one of the African Union working languages.
 - Knowledge of multimodal transport analysis and modelling
 - Fluent reading, writing and speaking abilities in English are essential.
 - Proficiency in more than one AU languages will be an added advantage

The attention of interested Consultants is drawn to Section III, paragraphs, 3.14, 3.16, and 3.17 of the World Bank’s “Procurement Regulations for IPF Borrowers” July 2016, revised November 2020 (“Procurement Regulations”), setting forth the World Bank’s policy on conflict of interest.

A Consultant will be selected in accordance with the Individual Consultant selection method set out in the Procurement Regulations.

Further information can be obtained at the address below during office hours *i.e. 0900 to 1700 hours*.

Expressions of interest must be delivered in a written form to the address below (in person, or by mail, or by e-mail) by **05 August 2024**

African Union Commission,
Attn: Head of Supply Chain Management Division
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E-mails: tender@africa-union.org



TERMS OF REFERENCE

INDIVIDUAL CONSULTANT TO UNDERTAKE AERONAUTICAL INFRASTRUCTURE GAP ANALYSIS AND AIR NAVIGATION SERVICES ARCHITECTURE TO SUPPORT THE SINGLE AFRICAN AIR TRANSPORT MARKET (SAATM) AND THE PROSPECTS OF A SEAMLESS AIRSPACE

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1. BACKGROUND

The African Union (AU) launched in January 2018 the Single African Air Transport Market (SAATM) initiative with the objective, inter alia, of developing a seamless African Airspace Architecture that would provide safe, efficient interoperable air navigation services throughout the continent. As part of this initiative, the AU in collaboration with AFCAC and ICAO Intends to undertake a continental aviation infrastructure gap analysis with the objective to establish the gaps existing in the airports and Air Navigation Infrastructure and services with a traffic projection of 25 years.

The ultimate goal will be to develop a clear roadmap for achieving a seamless airspace and Air Navigation Systems Architecture to cope with the expected increase in traffic once the SAATM is fully operationalized, while addressing associated challenges in terms of aviation safety, airspace capacity and effectiveness of air transport operations in a seamless environment. Seamlessness of the Air Navigation systems operations should be achieved through investment and implementation in interoperable and integrated air navigation infrastructure supported by modern technologies consistent with the ICAO Global Air Navigation Plan Technology Roadmaps for air traffic management, communications, navigation, surveillance, information management and avionics.

In 2019, ICAO conducted and concluded an aviation infrastructure gap analysis as a follow-up to the above-referred IWAF/3 Declaration and Framework for a Plan of Action for Development of Aviation Infrastructure in Africa (November 2017). EASA had also conducted a study on monitoring and evaluation of the Aviation System Block Upgrade that clearly demonstrated the need to develop an aviation gap analysis for Africa. During the 2019 ICAO Gap Analysis, only 26 African member States responded to the infrastructure questionnaires circulated by ICAO and hence the results were not representative of all African Member States. In addition, the outcomes were only validated for five years beginning 2019. Considering the above background, AUC, ICAO and AFCAC joined efforts to initiate an aviation infrastructure gap analysis addressing the challenges faced during the 2019 gap analysis especially to ensure availability of data from all the 55 African Member States and to also include a 25 years traffic forecast

In line with the 2023 SAATM Joint Prioritized Action Plan and especially its Pillar 4 on Aviation infrastructure Improvement, AUC in collaboration with AFCAC and ICAO was requested to undertake a continental aviation infrastructure Gap Analysis to support the development of a seamless airspace and air navigation services architecture.

The AUC has received grant funding from the World Bank for a (BIASHARA) project to support the implementation of SAATM. Within this project framework, the AUC intends to carry out a Gap Analysis of Critical Infrastructure for Air Navigation Services. Consultant services are required for the Continental Study on the Gap Analysis of the Air Navigation Services in Africa.

This Gap Analysis of the Air Navigation Services in Africa can be used or incorporated into an Airspace Master Plan for AU Member States. The gap analysis shall be conducted based on the requirements of the International Civil Aviation Organization (ICAO) for the implementation of Basic Building Blocks (BBBs) and Aviation System Block Upgrades (ASBUs) as contained in the Global Air Navigation Plan (GANP) and the relevant Regional Air Navigation Plans (ANPs), and considering ongoing regional initiatives for the necessary harmonization.

These terms of reference seek the services of a senior aeronautical infrastructure planning Expert, to facilitate the completion of the aviation infrastructure data gathering, gap analysis and development of the seamless airspace and ANS architecture investment plan.

2. OBJECTIVES OF THE ASSIGNMENT

2.1. Global Objective: The objective of the air transport sub-component is to support the AUC in coordinating the implementation of the SAATM and contributing to the operationalization of SAATM and ensuring that an effective, safe, and sustainable air transport market is achieved in Africa contributing to Africa's economic development agenda. The SAATM will bring about enhanced connectivity across the continent leading to sustainable development of the aviation and tourism industry with immense benefits.

2.2. Specific Objective(s):

- (l) Determine current deficiencies and capabilities in the current ANS infrastructure in all the 55 AU Member States
- (m) Identification of prioritized projects to fill the deficiencies
- (n) Conduct an institutional gap analysis for investment coordination at a regional and continental levels.
- (o) Develop a costed investment plan for the identified prioritized projects, focusing on safety, capacity, cost-efficiency, and environmental impact.

3. SCOPE OF SERVICES

- a. **Benchmarking.** Prepare a benchmarking table of ICAO Universal Safety Oversight Audit Program scores for Air Navigation Services and the last audit date for AUC states.

- b. **Review and assess data:** (i) the current status of all ongoing or planned projects (over the next three years) pertaining to African airspace; (ii) available data collected, State data sheets and collect any supplementary data required for the diagnostic. Collection of supplementary data collect: The project Technical Working Group (TWG) has gathered some data, with known existing gaps. The consultant is to review the data collected and to facilitate completing all gaps in data collected for the principal parameters to produce updated Data Sheets for each of the 55 African Union Member States and eligible African airlines (The list of eligible African airlines in the context of SAATM will be provided to the consultant). The data collection questionnaire developed for the project will be shared to the consultant
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- d. **Initial Workshop.** Facilitate TWG workshop to perform the baseline analysis and the aviation gap analysis with a focus on those sub-regions, countries, airports, or airspace areas where the highest air traffic demand.
- e. **Market Scan:** The consultant shall identify all critical ANS infrastructure, including but not limited to system wide information management (SWIM) equipment, VHF/HF communication equipment, VSAT, ground based nav aids, i.e., instrument landing system (ILS), distance measuring equipment (DME), VOR, Non-directional beacons (NDBs), etc. and undertake a market scan of global and/or continental equipment providers, to produce a set of indicative cost norms for related ANS equipment and investments.
- f. **ANS Infrastructure Financing Options.** The consultant shall assess potential financing through two work streams: bankable projects - whereby the level of traffic and aeronautical pricing is sufficient such that asset owner is likely to be able to finance the investment internally through commercial banks; and non-bankable projects, whereby the operator would need either State or donor support. Specifically, the Contractor shall reach out and discuss the interest of potential financiers of non-bankable projects in providing financing, the expected terms, and financial structures.
- g. **Assessment of Potential for Harmonization:** This will include assessment of the potential for harmonization of CNS/ATM systems identified under the gap analysis exercise. Specifically, the consultant shall identify the disparities in CNS/ATM capabilities among African States, recommend whether harmonization can be achieved, and if so, develop a high-level strategy for such harmonization. It may be possible that such recommendation may result in a grouping of countries, by sub-region, level of equipage/technology, level of traffic or others as the Contractor deems adequate. The consultant shall provide a high-level plan for such strategy with specific action items to achieve the proposed goals.
- h. **Risk Assessment.** The consultant is to identify and take into consideration key risks and other externalities (including potential for harmonization/interoperability, governance, institution, and regulatory issues). Incorporate the USOAP scores in this assessment. Undertake Preliminary Impact and assessment of proposed projects (considering safety, social, and environmental impacts)
- i. **Development of an implementation roadmap and tentative timelines.** This plan shall include, but not be limited to: A recommendation of systems, technologies, or capabilities that may be subject to harmonization; A prioritization of CNS/ATM capabilities required; A recommended methodology for harmonizing the systems (by region, demand, or operational capacity); An analysis on how harmonization can be achieved by working through existing projects and regional initiatives; An overview of the technical and operational and regulatory

challenges

- j. **Development of Key Performance Indicators (KPIs).** Define KPIs to measure the performance and effectiveness of ANS infrastructure enhancements. Action: Develop a set of KPIs to monitor progress and effectiveness of ANS infrastructure upgrades, including metrics for safety, capacity, cost-efficiency, and environmental performance, establish baseline values and targets for each KPI to facilitate ongoing performance tracking and assessment.
- k. **Final Workshop.** Facilitate meeting of the TWG to identify prioritized projects/costing to address the major deficiencies and/or lack of capabilities identified.

4. DELIVERABLES

Estimated timetable	Specific Task and Expected output
T0	Kick Off meeting
T0 + 0,5 month	Inception Report: Detailed project kickoff, work plan, and initial findings on ongoing projects.
T0 + 1 month	Baseline Data Report: Final collected data and updated state data sheets.
T0 + 1,5 month	Traffic Analysis Report: Detailed air traffic analysis, including major traffic flows and high-demand areas.
T0 + 2 months	Workshop Report: Outcomes of the baseline and gap analysis workshops
T0 + 3 months	Project Prioritization Report: List of prioritized projects with an implementation plan and financing options
T0 + 4 months	Harmonization Proposal: Strategy for CNS/ATM harmonization with a roadmap for achieving seamless airspace and ANS architecture
T0+ 5 months	Task 5: Draft a Final Report and Presentation of Study findings at a regional workshop
T0+ 5.5 months	Draft Final Report: Comprehensive draft of all findings and recommendations
T0 + 6 months	Final Report: Substantive and comprehensive report including all deliverables and a summary of findings and recommendations

5. QUALIFICATION AND EXPERIENCE

- f. General profile: Senior aviation infrastructure planning Expert with an in-depth knowledge of the aviation infrastructure planning, project costing, facilitating aviation technical meetings, facilitate the drafting of technical reports and able to work independently either in person or remotely.
- g. Qualifications and skills : Master’s Degree in Air Transport Economics/ Transportation Planning/ Aeronautical or Electrical Engineering or any other closely related field
- h. General experience:
At least 10 years in Aviation Infrastructure planning including knowledge on prioritization of Aviation infrastructure projects i.e. aerodrome and CNS/ATM related facilities and services; aircraft avionics and equipage.
- i. Specific experience

- i. Knowledge of air transport demand analysis and forecasting
- ii. At least 5 years' experience with Africa Aviation sector and working with African Aviation Institutions;
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j. Other relevant Skills

- Planning and organization - Proven ability to plan and organize work within a project and independently; ability to make timely decisions;
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- Proficiency in one of the African Union working languages.
- Knowledge of multimodal transport analysis and modelling
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6. LOCATION, COMMENCEMENT AND REPORTING

6.1. Location of the assignment

The work is primarily desk-based research and analysis and can be conducted at any suitable location. Consultation meeting with the Client, AUC, and Stakeholders shall be held in Addis Ababa, Ethiopia.

6.2. Commencement date and period of implementation of the assignment:

The indicative starting of the services is envisaged for the July 2024 (kick-off meeting in Addis Ababa and in hybrid format with the participation of AUC, AfCFTA, AFCAC, AFRAA ICAO, and World Bank). The total duration of the contract is six calendar months.

7. REPORTING

- All reports will be submitted in one electronic version and two originals in hard copy to the Director of Infrastructure and Energy, designated as the project coordinator and will be responsible for approving the reports.
- The consultant is expected to produce separate reports as part of each deliverable. Each report to include: (i) an executive summary, (ii) electronic copies of all data, documentation and original source files for such Deliverable, and (iii) a cross-wall
- **Final Report:** The consultant shall prepare and deliver to the Client a substantive and comprehensive final report of all work performed under these Terms of Reference (the “Final Report”), The consultant shall organize the Final Report into chapters and sections with clear labels corresponding to each of the above tasks and sub- tasks of these Terms of Reference, and he shall include in the Final Report all deliverables and documents that have been provided to the Client under these Terms of Reference.
- The consultant shall incorporate into the Final Report (i) all of the findings, recommendations and conclusions in line with these Terms of Reference, and (ii) all other documents and/or reports provided pursuant to the tasks noted above, in each case clearly organized and labeled according to each task and sub-task under these Terms of Reference. The Contractor shall also include an executive summary to the Final Report as a whole, and provide a summary for each task under the Terms of Reference.

8. MONITORING, EVALUATION AND INTELLECTUAL PROTERTY

8.1. Monitoring and Evaluation

- The consultant shall report to the Director, Department of Infrastructure & Energy of the African Union Commission.

8.2. AU Commission Support

African Union Commission in collaboration with the African Civil Aviation Commission (AFCAC) and International Civil Aviation Organization (ICAO) will endeavor to provide necessary existing study reports, data and information relevant to the assignment to ensure its success; supervise, monitor and approve the processes adopted by the consultant and provide timely financial support for the smooth running of the project. However, the Consultant is required to ensure that all data essential for the completion of the project is accessed. The literature reviewed should be reflected in the inception report.

8.3. Intellectual Property

All information pertaining to this project (documentary, audio, theme song, digital, cyber, project documents, etc.) belonging to the client, which the consultant may come into contact with in the performance of his/her, duties under this consultancy shall remain the property of the Client who shall have exclusive rights over their use. Except for purposes of this assignment, the information shall not be

disclosed to the public nor used in whatever without written permission of the Client in line with the national and International Copyright Laws applicable