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**REQUEST FOR EXPRESSIONS OF INTEREST (EOI)**

**CONSULTANCY TO PREPARE TECHNICAL SPECIFICATIONS OF THE  
INFRASTRUCTURE FOR THE AUC CLIMATE SERVICES AND RELATED  
APPLICATION (CLIMSA) PROGRAMME**

**PROCUREMENT NUMBER: AUC/DARBE/CS/038**

## SECTION I: LETTER OF INVITATION

1<sup>st</sup> December 2021

Dear Applicants,

### **REF: CONSULTANCY TO PREPARE TECHNICAL SPECIFICATIONS OF THE INFRASTRUCTURE FOR THE AUC CLIMATE SERVICES AND RELATED APPLICATION (CLIMSA) PROGRAMME**

1. The African Union Commission wishes to recruit highly qualified African experts to undertake the above assignment. The AUC now invites interested **Individual Consultants** to submit CVs for the assignment as per attached Terms of Reference (TORS).
2. A Consultants will be selected under the Fixed Budget Selection method and the pass mark shall be 70%.
3. Methodology & understanding of the assignment as part of the criteria
4. The Eols must include the following:
  - (i) A Cover Letter outlining the understanding of the assignment and methodology
  - (ii) CV demonstrating experience with similar assignments.
5. This assignment has **fixed amount of 21,000 USD** for the whole period of the activity
6. The Eols must be submitted to the following e-mail address: **tender@africa-union.org with a copy to Aidarush@africa-union.org**
7. The title of the Procurement and Procurement Number must appear as subject of e-mail submissions
8. The Deadline for submission of Eols is 14<sup>th</sup> December 2021 at 1500 hours Addis Ababa Time. Late applications will not be considered.
9. This call for Request for Expressions of Interest comprise of the following:
  - Section I – This Letter of Invitation
  - Section II - Terms of Reference

Yours sincerely,

**Ag OSSD**



## TERMS OF REFERENCE

### **CONSULTANCY TO PREPARE TECHNICAL SPECIFICATIONS OF THE INFRASTRUCTURE FOR THE AUC CLIMATE SERVICES AND RELATED APPLICATION (CLIMSA) PROGRAMME**

#### **1. BACKGROUND/CONTEXT**

Africa is one of the most vulnerable continents to the impacts of climate variability and change (IPCC 2014). Virtually every African country and sub-region is increasingly prone to weather and climate-induced phenomena forcing them to continually adjust their development programmes, often at huge costs. The continent's limited capacity to provide adequate and reliable climate information affects its efforts on building resilience to the impacts of climate variability and change.

In recognition of the seriousness of the climate challenge and the need for urgent action, the African Heads of State and Government, through Assembly Decision, Assembly/AU/Dec.134 (VIII) of January 2007, expressed *"grave concern on the vulnerability of Africa's socio-economic and productive systems to climate change and variability and to the continent's low mitigation and response capacities."* The Executive Council adopted the Integrated African Strategy on Meteorology (Weather and Climate Services) in 2013 with one of its five pillars dedicated to *"the provision of weather and climate services for climate change adaptation and mitigation."*

Furthermore, the African Union Commission (AUC), Regional Economic Communities (RECs), and the ACP Secretariat, signed the Addis Ababa Declaration in September 2012, calling for the implementation of the Global Framework on Climate Services (GFCS) in Africa. Partners, including the European Union (EU), the African Centre of Meteorological Applications for Development (ACMAD), the European Organisation for the Exploitation of Meteorological satellites (EUMETSAT), the EU Joint Research Centre (JRC), and the United Nations Economic Commission for Africa (UNECA), witnessed the signature. The Declaration called upon the AUC to bring the Addis Ababa Declaration to the attention of the EU in recognition of the fact that climate related activities form an important part of the Joint Africa EU Strategy (JAES) and its related Action Plans.

This resulted in identifying the development and delivery of climate services as one of the priorities of the Eleventh European Development Fund (11<sup>th</sup> EDF) Intra-ACP Cooperation under objective 2.2. The objective is *"to strengthen production, availability, delivery and application of science-based climate prediction and services."* Two climate services-related results are expected:

- a) improved quality and quantity of climate products and services offered by ACP Regional Climate Centres (RCCs) and National Meteorological and Hydrological Services (NMHSs), initially for 5 climate-sensitive sectors (i.e. agriculture and food security, health, water, disaster risk reduction and energy); and
- b) African RCCs to become WMO-certified/designated and recognised as regional centres of excellence by the African Union Member States, RECs and other stakeholders.

Thus, the Intra-ACP Climate Services and Related Applications (ClimSA) programme, which implements the GFCS, was developed with financial support from the EU under the 11<sup>th</sup> EDF.

### **(a) The ClimSA Programme**

The ClimSA programme contributes to the realization of the goals of a number of African and international development frameworks. These include the Africa Agenda 2063, the UN 2030 Sustainable Development Goals, the Paris Agreement on Climate Change, and other multilateral environmental agreements, including, *inter alia*, the Sendai Framework on Disaster Risk Reduction, the Small Islands Developing States (SIDS) Accelerated Modalities of Action (SAMOA) Pathway, the UN Convention on Biological Diversity (CBD), and the UN Convention to Combat Desertification (UNCCD). The programme is a key initiative implementing the Integrated African Strategy on Meteorology (Weather and Climate Services) while at the same time addressing other relevant national, regional, continental, and international development frameworks.

#### *(i) Objective of the ClimSA programme*

The **main objective** of the ClimSA programme is *to foster sustainable development on the continent by improving the decision-making processes and practice through informed adaptation options to climate variability and change*. The programme enhances the African capacities to **better manage the risks of climate variability and change and adapt to climate change, through the development and incorporation of science-based climate information and prediction into planning, policy and decision-making, and practice at the African continental, regional and national levels**.

**Specifically**, the programme aims to strengthen the entire climate services value chain from access to information, generation and provision of climate services, stakeholder engagement, and strengthened capacity of users to ensure effective utilization of the services.

#### *(ii) Expected Outputs of the ClimSA programme*

The ClimSA programme has five key outputs:

- (a) Structured interaction between the users, researchers and climate services providers in Africa through User Interface Platforms (UIPs);
- (b) Strengthened provision of climate services at continental, regional and national levels, and Climate Service Information Systems (CSIS);
- (c) Improved access to climate information through strengthening observation and monitoring systems, as well as research, modelling and prediction;
- (d) Enhanced capacity of African regions to generate and apply climate information and products relevant to their particular concerns; and
- (e) Enhanced climate-informed decision-making in Africa including mainstreaming of climate services into policy processes at regional and national levels.

### **(b) Role of the African Union Commission**

The African Union Commission (AUC) has an overall mandate of ensuring coordinated, coherent and sustainable development and utilisation of climate services in Africa. This mandate was reiterated by the Second Ordinary Session of the Specialised Technical Committee on Agriculture, Rural, Development, Water and Environment (STC-ARDWE) which was held in October 2017. The STC-ARDWE called upon the AUC *“to continue taking its leadership role of ensuring coordinated and coherent implementation of the GFCS programme in collaboration with all relevant stakeholders.”* Thus, the AUC ensures

effective coordination of programme implementation across the African continent with RECs, Regional Organizations, Member States, RCCs, and other relevant stakeholders.

The AUC uses its established procedures to provide appropriate administrative guidance, standard procedures, internal controls and institutional capacity for it to carry out the grant management process and oversight, from contracting, implementation, monitoring and reporting, to the closure of the grant contract. The AU Commission further facilitates implementation of continental common actions including procurement of infrastructure to enhance the capacities of RCCs, Member States (NMHSs) and Training Centres.

### **(c) Technical Specifications for the Infrastructure**

Production and dissemination (delivery) of climate services require adequate infrastructure (hardware and software) and human capacities as well as reliable, timely and accurate access to scientific knowledge, observation and climate model outputs. The programme will strengthen capacities of RCCs and NMHSs in infrastructure and ensure continued training through Training Centres. RCCs require training, infrastructure, equipment, etc., to demonstrate their capacities with WMO, access climate information, provide climate services, and engage in structured interaction with users. The infrastructure provided will include both hardware and software and ensure sustained production and delivery of climate services, and support to the process of certification of RCCs by WMO.

The infrastructure provided will be built on a long-standing cooperation between AUC, EC/JRC and EUMETSAT:

- The European Commission Joint Research Centre (JRC) leads the adaptation of the eStation 2.0/Climate Station and development/adaptation of relevant training for the data reception, processing and visualization, at the continental, regional and national levels. The Climate Station forms a critical part of the required infrastructure at RCCs, NMHSs and Training Centres for data reception, processing and visualization of climate related information, including linking with Copernicus Climate Data Store and EO data producers (satellite and in-situ). As such, technical specifications should fully take into account the integration of the Climate Station in the infrastructural hardware.
- Additionally, the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT) provides satellite-based weather and climate monitoring data, as well as systems, such as EUMETCast, to facilitate the access by NMHSs to climate, weather and environmental data (mainly observation and model outputs). It is, therefore, expected that the technical specifications will address foreseen development in the satellite products, particularly the compatibility of the infrastructure with both the Meteosat second generation (MSG) and the upcoming Meteosat Third Generation (MTG) satellite products and services including data sets, as well as technological evolution in the data access systems (e.g. EUMETCast-Terrestrial, access to cloud-based infrastructure or data sets).

In order to ensure that the infrastructural capacities on the continent are enhanced, the AUC seeks to engage the services of a Consultant to prepare technical specifications for the infrastructure to be supplied to NMHSs, RCCs and Regional Training Centres. The infrastructure will support enhanced generation and delivery of timely and reliable climate services to all their users. The infrastructure provided seeks both (i) to acquire relevant data sets and run the Climate Station software and (ii) to acquire data and products from EUMETSAT, process and visualize these data and products including from MSG and MTG, various weather and climate model as well as from EUMETSAT-SAFs on the PUMA-202X-MTG, i.e. the evolution of PUMA2015 station for MTG products and other third party data provider (e.g. TAMSAT, Dust forecast model, etc.). The terms and conditions for the consultancy are detailed below.

## **2. OVERALL OBJECTIVE OF THE CONSULTANCY**

Through the ClimSA programme, the AUC seeks to enhance the capacities of African NMHSs and RCCs to develop and deliver tailored climate services for Africa's sustainable development. The AUC also seeks to attain sustainability through supporting relevant infrastructural training through Training Centres. The delivery of infrastructure under this programme is based on the understanding that the infrastructure will be complementary to the one supplied and upgraded under previous and current projects such as PUMA, AMESD, MESA and GMES&Africa. The overall objective of the consultancy is, therefore:

- To define and prepare technical specifications for the infrastructure (software and hardware) that fully take into account climate and meteorological needs, integration of Climate Station software with infrastructural hardware, usability of critical and essential climate and meteorological software, and compatibility of the infrastructure with emerging developments in satellite-based meteorological products, particularly the MTG products.

## **3. SPECIFIC OBJECTIVES**

The specific objectives of the consultancy are:

- a) To define the basic requirements of infrastructure for the Climate Stations and Meteorological (PUMA-202X-MTG) stations for the ClimSA project;
- b) To outline technical specifications including environmental, electrical, mechanical, and other specifications for PCs, antennae, UPS, router, etc.;
- c) To specify requirements for hardware warranty, software evolution, as well as maintenance;
- d) To analyse and specify requirement for infrastructure connectivity to data access mechanism such as EUMETCast (-African and –Terrestrial) as well as Data stores (such as the EUMETSAT Data Store and the Copernicus C3S Data Store), and cloud-based infrastructure such as WekEO and/or the European Weather Cloud
- e) To elaborate required pre- and aftersales services including factory acceptance test services, training, helpdesk/support services;
- f) To propose specifications for integration of Climate Station developed by JRC with the hardware infrastructure to be supplied;
- g) To define specifications that will facilitate PUMA stations to support MTG (i.e. hereafter named PUMA-202X-MTG stations);
- h) To propose general hardware and software consideration for the equipment to be supplied under this Action;
- i) To propose appropriate software for both PUMA-202X-MTG and Climate Stations including software for protection from malware, viruses, etc.

## **4. DESCRIPTION OF THE ASSIGNMENT**

Following the African Union Procurement Rules, the AUC will engage a contractor to supply specific infrastructure to RCCs, NMHSs and Training Centres. The contractor will also support maintenance of the PUMA 2015 stations supplied under the MESA project including training for both. The infrastructure contract will further cover procurement and supply of stations, software, installation, training, maintenance, and related tasks including aftersales services and customs clearance.

The Contractor will work in collaboration with JRC, ECMWF, EUMETSAT, and WMO to facilitate the deployment of the Climate Station and PUMA equipment to NMHSs, RCCs, and Training Centres. The Contractor will also work in collaboration with the RCC to facilitate the deployment to the NMHS in their respective region. The infrastructure is intended to improve the capacity of RCCs and NMHSs to access climate information, data,

etc. made available by international partners (Copernicus, ECMWF, EUMETSAT, and others), accommodation of data provided within Africa, and also facilitate sustainability through training.

It is in view of the above that the AUC seeks to engage a Consultant to prepare technical specifications for the infrastructure for the ClimSA project. In defining and preparing technical specifications, the Consultant is, therefore, expected to:

- a) Study the relevant project documents (including, but not limited to the Financing Agreement signed between the European Commission and the ACP Secretariat, the Contribution Agreement signed between the African Union Commission and the European Union Delegation to the African Union, MoU between the AUC and EUMETSAT on Earth Observation Cooperation, and any other relevant documents);
- b) Understand infrastructural needs (hardware and software) of NMHSs and RCCs through engagement with NMHSs and RCCs;
- c) Understand weather and climate data technologies, climate change services, including the Copernicus Climate Change Services, design of the Climate Station developed by the JRC, related integration requirements, software evolutions, and evolving weather and climate monitoring technologies;
- d) Understand current and future EUMETCast dataflow in particular the MTG EUMETCast Africa Product User Guide<sup>1</sup>, challenges and opportunities of MTG for Africa<sup>2</sup> long-standing work performed by the RAIDEG<sup>3</sup> in support to the transition to MTG.
- e) Define specifications for full integration of the Climate Station software with hardware for full exploitation of the software and ease of use;
- f) Propose appropriate infrastructural trainings for various players including system administrators, maintenance technicians, experts, users, etc.;
- g) Propose appropriate antennae and antenna requirements (transponder parameters, antenna size and others) when needed (as the PUMA-202X-MTG and Climate Stations will rely on existing antennas already installed in NMHSs, RCCs and Training Centres);
- h) Specify hardware specifications including antennae requirements, computer parameters, UPS, router, accessories, provision of hardware warranty, etc.;
- i) Specify software specifications;
- j) Define required contractor support for the validation of the upgrades before dissemination to the beneficiaries through the EUMETCast channel;
- k) Detail required contractor responsibility in preparation of an installation medium in order to perform the installation or re-installation of the Climate and PUMA Stations;
- l) Specify Helpdesk/Support Services required from the Contractor in the event of reported failure of one or more stations.

Under the overall guidance of the Directorate of Blue Economy and Sustainable Environment (SEBE), through the Head of Sustainable Environment Division and direct supervision of the ClimSA Programme Coordinator, the Consultant will work closely with the ClimSA Programme Management Unit based at the AUC and liaise with various key players including, but not limited to, stakeholders under 5 (Key Actors to Consult) below.

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<sup>1</sup> <https://www.eumetsat.int/media/47571>

<sup>2</sup> EUMETSAT webinar on MTG in Africa :

[https://www.eventsforce.net/eumetsat/frontend/reg/tvenue.csp?pageID=10401&ef\\_sel\\_menu=177&eventID=24](https://www.eventsforce.net/eumetsat/frontend/reg/tvenue.csp?pageID=10401&ef_sel_menu=177&eventID=24)

<sup>3</sup> <https://community.wmo.int/activity-areas/wmo-space-programme-wsp/ra-i-dissemination-expert-group>

## 5. KEY ACTORS TO CONSULT

The consultant is expected to engage with the following key players:

- i) African Union Commission (including the Directorates of MIS, ESTI, DIC, Partnerships and Resource Mobilisation, Finance – External Resources Management, GMES&Africa programme and other initiatives)
- ii) EU Delegation to the African Union
- iii) Regional Climate Centres (ACMAD, ECOWAS/Agrhymet, ECCAS/CAPC-AC, IGAD/ICPAC, IOC, SADC/SADC-CSC)
- iv) National Meteorological and Hydrological Services (NMHSs) through the Chairperson of the Technical Segment of the African Ministerial Conference on Meteorology (AMCOMET), RAIDEG group - represented by the Chairperson of RAIDEG and Chairperson of WMO-RAI
- v) European Union Joint Research Centre
- vi) EUMETSAT
- vii) ECMWF and Meteorological Technical Partners
- viii) Regional Training Centres (IMTR, AEMAC, SAWS, etc.)
- ix) AMCOMET Secretariat
- x) OACP ClimSA Technical Assistance Team
- xi) WMO Regional Office for Africa

## 6. KEY INPUT DOCUMENT

- i) Draft specifications for the infrastructure related to the Climate Station as prepared by JRC
- ii) Results of the survey of for the specification of the Climate Station performed by JRC in the course of 2020 and 2021
- iii) Draft specifications for the PUMA-202X-MTG station as prepared by EUMETSAT in cooperation with RAIDEG
- iv) Technical document related to data access mechanism (EUMETCast-Africa, EUMETCast-Terrestriat, Wekeo, EUMETSAT Data Store, C3S Data Store, and European Weather Cloud).
- v) Technical document of the PUMA-2015 station as deployed during the MESA project
- vi) List of products to be visualised in the PUMA-202X-MTG station
- vii) MTG Africa Product User Guide
- viii) Results of the survey on the status of the PUMA-2015 station as performed by EUMETSAT in September 2021.

## 7. KEY DELIVERABLES

The main deliverable of the consultancy are the technical specifications developed after consulting with key actors. The Consultant will:

- Submit inception report with detailed methodology and work plan (10 days after signing of the contract).
- Submit a report of the baseline study (25 days after signing of the contract).
- Submit the draft technical specifications for comments/inputs (60 days after signing of the contract)
- Submit final document of technical specifications (80 days after signing of the contract) as well as support document for the tender dossier (e.g. Specific Condition to tender, annexes, etc.)

## 8. PROFILE OF THE CONSULTANT



The successful consultant for this assignment must:

- Have at least seven (10) years of experience in the fields of Information Technology, Computer Science, Electrical Engineering, Remote Sensing, Meteorological, Forecasting infrastructure.
- Ability to communicate effectively, both orally and in writing in the required languages.
- Ability to consult / engage with a variety of stakeholders, to understand their needs and to translate this into technical User requirements then into technical specifications
- Ability to understand a variety of specialized tasks related to activities.

### **General Experience**

- Minimum of seven (10) years of experience as a remote sensing science professional.
- Experience working with/in developing countries in Africa, and in a multi-cultural environment;

### **Specific experience**

- Proven track record of Earth Observation data access and processing, in particular of meteorological satellite data ground reception station (in the design, administration and/or maintenance) ;
- Experience related to the application of Earth Observation techniques for Climate, Weather and/or Environmental monitoring, including the use of:
  - Data from meteorological satellites (GEO and/or LEO);
  - Products from Copernicus services and from EUMETSAT Satellite Application Facilities;
- Experience in integration and deployment of applications in operating systems (preferably open-source) and computer networks.

## **9. EDUCATION**

At least a master's degree in the fields of Information Technology, Computer Science, Meteorology, Earth Sciences, Remote Sensing and Earth Observation, Electrical Engineering, and related fields.

## **10. REMUNERATION**

It is a fixed budget of **21,000 USD**

## **11. LANGUAGE REQUIREMENT**

Fluency in English and a good working knowledge of other working languages of the African Union is an advantage.

## **12. TIME FRAME AND SCHEDULE**

The estimated duration of the assignment is 90 days effective from the date of signature of the consultancy contract.

The assignment will include the following meeting:

- i) Administrative kick-off meeting with AUC
- ii) Technical kick-off meeting with AUC, RCCs, JRC and EUMETSAT

- iii) First review meeting (based on initial draft of the specification)
- iv) Final review meeting (based on final deliverables)