



**Republic of Moçambique
Ministry of Economy and Finance
Directorate of Cooperation**

TERMS OF REFERENCE

**Design, Development and Implementation
of the new Aid Information Management System for
Mozambique**

Maputo, 21 May 2020

I. BACKGROUND

Following the Paris Declaration on Aid Effectiveness and the efforts to improve the management of foreign aid flows into Mozambique, an Aid Information Management System (AIMS) called ODAMoz¹ was created in 2005 and updated in 2012, with the aim of serving as the main information channel on external aid finance into the country and to support the key Public Financial Management (PFM) processes such as the preparation of the Economic and Social Plan (PES in Portuguese), the Government Budget (OE in Portuguese) and the Medium Term Fiscal Framework (MTFF, CFMP in Portuguese).

However, although ODAMoz provides relevant information on external aid channelled to Mozambique, it has become apparent that the current AIMS has a series of weaknesses, such as:

- It is neither user-friendly nor linked to the Public Finance Management processes (planning and budgeting, public debt management, monitoring and evaluation, budget execution).
- It does not use Government Budget classifiers and lacks an administration module that allows managing and adjusting the information fields without resorting to the company responsible for its initial development.
- The source code is owned by the company that developed the AIMS, thereby not allowing the Government to make adjustments to the IT platform if needed.
- The current AIMS technological functionalities are now obsolete, making it difficult to register, organize, search and analyse the available data.

In view of these limitations and the new developments in the fields of information management systems, it is essential to build a new AIMS for Mozambique that is simple, flexible, linked to the rest of Public Finance Management processes and able to capture Off-Budget aid finance.

In this context, the Ministry of Economy and Finance (MoF), through its Directorate of Cooperation (DC), is receiving financial and technical support from the World Bank to strengthen its aid data management processes to support the Government of Mozambique (GoM).

¹ ODAMoz is the current IT platform that stores all data on aid finance channelled into Mozambique.

For this purpose, a consulting company was hired to design the Business Model for the new AIMS (Annex 1), which is the basic documentation for the design, development and implementation of the new Mozambican AIMS.

Apart from the business model, DC prepared additional documents which can be used as a reference for the design and implementation of the new AIMS:

- Annex 2- CRUD Matrix
- Annex 3- Technical Specifications
- Annex 4- List of Fields in User Interfaces
- Annex 5- List of Predefined Reports and Graphs
- Annex 6- Alerts and Notifications

II. OBJECTIVES OF THE CONSULTING SERVICES

2.1. General Objective

Design, develop, test, deploy the new AIMS and ensure the correct skills transfer for the new AIMS management and maintenance.

2.2. Specific Objectives

- a) Review and, if necessary, update the business model documentation and technical specifications;
- b) Review and, if necessary, update and suggest innovations for Annexes 2-6;
- c) Elaborate using UML standards the Component, Implementation and Interaction Diagrams, a Diagram with the general AIMS architecture and any other Diagram that the awarded company deems necessary for AIMS development, implantation, maintenance and future software developments;
- d) Develop AIMS computer code, as well as integrations with other IT systems, using the IT languages indicated in Annex 3, and propose an iterative prototype validation methodology with the MoF counterpart and the Project Management Committee;
- e) Prepare and test (reliability, features, products and application and system performance, including the use of fictitious test databases) a software prototype (beta version) until final validation with the institutions involved in the process;
- f) Define and validate with DC and *Centro de Desenvolvimento de Sistemas de Informação de Finanças (CEDSIF)* AIMS hosting hardware, software, technical specifications and procedures;
- g) Deploy AIMS at CEDSIF premises;

- h) Define and implement, with CEDSIF and DC, AIMS back-up, restoration and IT security procedures;
- i) Carry out correctly data migration from the current ODAMoz to the future AIMS;
- j) Prepare user, system administration and security manuals, which reflect workflows of all AIMS user profiles;
- k) Prepare and implement a change management plan for all AIMS operation and maintenance key stakeholders;
- l) Train the future AIMS users and administrators (approximately 20-25 people);
- m) Train CEDSIF and *Departamento de Organização e Gestão do Sistema de Informação* (DOGSI) IT staff -approximately 8-10 people- in the technical aspects regarding AIMS hosting, back-up, restoration and security;
- n) Provide preventive, corrective and evolutionary maintenance of AIMS software and hardware during a 12-month warranty period, starting after the date of certification/go-live, solving all incidents under a detailed Service Level Agreement (SLA) that clearly defines service quality, type of incidents, response and resolution times;
- o) Train CEDSIF, DOGSI and DC IT staff (approximately 8-10 people) on the AIMS source code, ensuring a complete skills transfer that allows the trained staff to perform future system updates after the end of the 12-month warranty period.

III. DELIVERABLES

SERVICES/STAGES	DELIVERABLES
1 - Consultancy planning	1. Detailed workplan including prioritized processes, team project management, work structure, roles, responsibilities and reporting lines, issue identification, escalation and remediation procedures, project risk management plan, training and knowledge transfer plan, expected schedule, with a detailed list of activities, necessary resources and timeline.
2 - System prototype analysis, design and validation	2. Assessment, and if necessary, updating of requirements, business model documentation as well as all other Annexes; 3. Validation and, if is necessary adjustment of all of the new AIMS products identified in Annex 5 with a sample of AIMS users using a methodology based on user-centered design principles; 4. Certification report of Annexes 1-6; 5. Representation of the future situation using UML with Component, Implementation and Interaction Diagrams, a Diagram with the general description of the system architecture and any other additional Diagram deemed necessary for AIMS development, implementation, maintenance and future updating, including activities, executors, information, procedures and standards, legislation, systems, decisions and control points;

SERVICES/STAGES	DELIVERABLES
	<p>6. Spreadsheet containing the activities and their respective control items (checklist), with clear information about those responsible for executing and validating each item;</p> <p>7. Test and quality assurance plan;</p> <p>8. System prototype design and validation.</p>
<p>3 - System implementation and testing</p>	<p>9. First AIMS prototype (beta version) that can be tested (fuzzy tests, logical consistency, deliberate introduction of incorrect, poorly formatted, random data to break the application, broken links, verification of quality in terms of reliability, functionalities and performance of the application and the system, use of fictitious databases, etc.) and piloted by the DC and CEDSIF as well as by some users, including source code duly documented in Portuguese and English, as well as all IT integrations with other computer systems in place with all necessary accompanying documentation prepared during system implementation;</p> <p>10. Worksheet to certify the proper system functioning, with all updates and tests performed after each review iteration;</p> <p>11. Scripts, executable files, change log and source code for all successive updates until final prototype validation;</p> <p>12. Test report;</p> <p>13. Certification report and validation of the final version of the system after Project Management Committee review.</p>
<p>4 - AIMS deployment and hosting</p>	<p>14. Technical specifications for AIMS hosting hardware and software in CEDSIF premises and supporting documentation for installation, back-up, restoration and AIMS security configuration processes;</p> <p>15. Scripts, executables, log, source code and supporting documentation for AIMS hosting at CEDSIF premises;</p> <p>16. Certification and validation report of AIMS equipment deployment and hosting at CEDSIF premises, including the configuration of back-up processes, database restoration of the database and IT platform and database security.</p>
<p>5 - Data migration from the current ODAMoz</p>	<p>17. Cleaned database finalized and prepared for data migration from current ODAMoz;</p> <p>18. Scripts, executable files, change log and code for data migration from current ODAMoz;</p> <p>19. Certification and validation report on data migration from current ODAMoz to the new AIMS.</p>
<p>6- System adjustments and user trainings</p>	<p>20. User, functional administrator for DC, and technical administrator, system, hosting and security manuals for CEDSIF and DOGSI;</p> <p>21. Change management and communication plan for all key stakeholders;</p> <p>22. Agenda and training materials for users and administrators' trainings;</p> <p>23. Report on AIMS users and functional administrators' trainings;</p> <p>24. Worksheet for checking the proper functioning of the system, with all its updates and tests carried out after training with users and functional administrators;</p> <p>25. Scripts, executables, change log, user and administrator manuals, and source code of the AIMS version used for training users and functional</p>

SERVICES/STAGES	DELIVERABLES
	administrators; 26. Certification and validation report of the final AIMS version after adjustments and corrections suggested in the training sessions and by the Project Management Committee; 27. Go-live and certification of AIMS operational and in production.
7.- Transition/phasing-out: technical training, skills transfer and maintenance	28. Agenda and training materials for CEDSIF IT staff training on hosting, back-up, restoration and AIMS security aspects and change management, as well as the associated training reports; 29. Updated hosting, back-up, restoration and security manuals after training CEDSIF staff; 30. Training plan and materials to train CEDSIF and DOGSI IT staff on AIMS source code, ensuring a complete skills transfer that enables CEDSIF and DOGSI staff to perform AIMS updates autonomously without the need of any external support after the end of the 12-month warranty period; 31. Helpdesk support plan according to user types and warranty service plan; 32. Bi-monthly reports on training and knowledge transfer activities on AIMS source code for CEDSIF and DOGSI IT staff, as well as on the implementation of the change management plan; 33. Monthly reports on software and hardware preventive, corrective and evolutionary maintenance activities during the 12-month warranty period, starting from the certification date, solving issues based on detailed Service Level Agreements (SLAs); 34. Worksheet to verify the good AIMS functioning, with all updates and tests performed during the maintenance period; 35. Scripts, executable files, change log and source code for the successive AIMS updates during the maintenance period; 36. Final activity report at the of the maintenance period.

IV. WORK METHODOLOGY

Bidders must detail in their technical proposals how they will fulfil the objectives of the consulting services, describing in detail the development methodology with all its phases and activities.

4.1. Duty station and trainings

Maputo will be the duty station for these consulting services. Bidders that don't have premises in Maputo must include in their technical proposals a calendar of work missions, the objectives and agendas of all work missions, their duration, team composition and roles.

AIMS configuration and deployment will be done in-person at CEDSIF facilities. Likewise, all training activities with AIMS users and administrators must be carried out in Maputo.

The awarded company will be responsible for preparing and providing all customized training materials for this contract. Trainings will take place at CEDSIF or MoF premises.

Bidders must include in their technical proposals a preliminary training plan, including details of:

- Course description;
- Course titles;
- Key learning objectives;
- Courses size and composition;
- Courses duration;
- Training contents (areas, topics and critical learning points);
- Training methodology;
- Training materials and logistics aspects.

The award company must implement a work methodology that allows the training plan to be updated, while training requirements are finalized, during the duration of the contract.

4.2. Consultancy follow-up and documentation

In order to ensure a proper follow-up and supervision of the work done by the consulting company, the following must be ensured:

- Existence of an online digital repository of the complete history of versions of the source code, following a standard version control methodology;
- Existence of 3 software environments: production, testing and quality assurance, and development;
- Access to the test environment of the successive AIMS prototypes of the using a browser, following a standard version control methodology;
- Software versions can be updated remotely.

4.3. Warranty period

During the warranty period, the awarded company will make available a technical team for consultations and technical assistance to respond to critical system failures that prevent business operations. For that purpose, Service Level Agreements (SLAs) to manage interruptions and flaws will be signed with the implementing party.

4.4. MoF counterpart for the awarded company

The implementation of all activities related to the requested consulting services requires a coordinated and fluid working relationship between the implementing party and MoF (DC, CEDSIF and DOGSI).

Responsibilities of MoF counterpart will include, among others:

- Supervise and control work implementation, ensuring strict compliance with the objectives and agreed deadlines for all deliverables;
- Analyse and approve deliverables, making comments and/or recommendations deemed appropriate to achieve the objectives of the contract in due time;
- Facilitate obtaining relevant documentation for the implementing party deemed required for the consultancy services, as well as arrange work meetings with different AIMS users and stakeholders.

The implementing party will report directly to the National Director of Cooperation at MoF and submit her all deliverables associated for approval.

V. INTELLECTUAL PROPERTY OF ALL CONSULTANY DELIVERABLES

The contracting party must be the sole owner of each and every product and document that is generated during the provision of the consulting services. The implementing party will relinquish all AIMS property and intellectual property rights to the Ministry of Economy and Finance, namely: any studies, reports, specifications, technical descriptions, prototypes, data, schemes, diagrams, plans, drawings, diagrams, software source code in any support, Intranet or Internet pages, manuals and training documentation on paper or electronic support, and any other intermediate or final output of these consulting services.

Thus, the contracted party will be prohibited from sharing and selling all products related to the object of the contracted services, unless previously authorized by MoF.

VI. CONTRACT DURATION AND PAYMENT SCHEDULE

The contract to fulfil the objectives of these Terms of Reference until the AIMS go-live must be executed **within twenty-six (26) weeks** counting from the contract sign-off by *Tribunal Administrativo* (TA), according to the work schedule previously presented by the implementing party and

formally approved by the contracting party. **After the official AIMS go-live, there will be a period of fifty-two (52) weeks during which the awarded company shall carry out the maintenance and skill transfer activities**, detailed in deliverables 28-36 regarding technical training, skills transfer and maintenance.

Payments for consultancy fees will be subject to delivery and acceptance of the deliverables described in this document and according to the payment schedule indicated in the following table.

Services/stages	Weeks passed since TA sign-off	% payment on total contract amount
1 - Consultancy planning	2	10%
2 - System prototype analysis, design and validation	16	30%
3 - System implementation and testing		
4 - AIMS deployment and hosting	26	35%
5 - Data migration from current ODAMoz		
6 - Prototype adjustments and user trainings		
7.1- Transition/phase-out: technical training, skills transfer and maintenance (first 6 months)	52	10%
7.2- Transition/phase-out: technical training, skills transfer and maintenance (second 6 months)	78	15%

VII. PROFILE OF THE CONSULTING COMPANY

This tender is aimed at consulting firms specialized in Information and Communication Technology and all expressions of interest must provide clear evidence and recommendation letters that prove the relevance of the company and its consulting team in this area, including all the CVs of key members of the consulting team.

7.1. Profile requirements for potential bidders

Bidders must be proficient both in Portuguese and English for the production of documentation and materials and engage with the technical counterpart, as well as meeting the following requirements:

- Minimum of seven (7) years of proven professional experience in the market and at least 4 projects in software development, working in high availability using Java EE programming language and Oracle Database;

- Minimum of seven (7) years of proven professional experience in the market in design and implantation of Aid Information Management Systems (AIMS) or Public Financial Management IT systems;
- Minimum of five (5) years of proven professional experience in the market in business processes design, analysis, modelling and validation using any of the following: UML, PMBOK, COBIT, PRINCE, BPMN or similar;
- Minimum of five (5) years of proven professional experience in the market in projects dealing with the design of middleware environments integrate remote applications;
- Have ISO/IEC 25000, CMMI or similar certifications or proven evidence of software development following these good practices in the last 3 years.

7.2. Team composition

Technical proposals must indicate the number of key people in the consulting team and the role of each person during the consulting services according to the following table:

Team role	Key qualifications	Responsibilities
Team Leader	BSc in Computer Engineering or equivalent; MBA, Master in Computer Engineering or related fields; 15 years of proven work experience in leadership and management positions in software design, development and implementation projects using frameworks oriented to business processes and distributed systems, as well as in the design, programming, development, installation, hosting and maintenance of database on foreign aid; Knowledge of public finance management; Certification in any of the following methods for creating, analysing, modelling and validating business processes, IT development and control, and project management: UML, PMBOK, COBIT, PRINCE, BPMN;	Lead the consulting team in all work phases according to the Terms of Reference.

Team role	Key qualifications	Responsibilities
	Fluency in Portuguese and English.	
Database Administrator	BSc in Computer Engineering or equivalent; 5 years of proven work experience in implementing database solutions and managing database management systems; Experience and knowledge of techniques for know-how transfer; Oracle DBMS certified; Fluency in Portuguese and English.	Implement the database solution and formulate and apply data management, maintenance and security policies.
Software developers	BSc in Computer Engineering or equivalent; 5 years of proven work experience in IT systems development using JAVA; 5 years of proven work experience in developing web solutions using HTML5, CSS3, JavaScript and in the use of frameworks for the development of interface components; 5 years of proven work experience in systems integration projects; Proven experience and knowledge of techniques for know-how transfer; JAVA EE certified; Fluency in Portuguese and English.	Design, implement and test the IT solution based on the defined requirements.
System Analyst	BSc in Computer Engineering or equivalent; Solid knowledge on databases and systems development; 5 years of proven work experience in analysing and modelling requirements and business processes for software development and web-service based platforms; 5 years of proven work experience in middleware environment design projects for	Review the quality and feasibility of the proposed business model and ensure the correct implementation of the defined requirements.

Team role	Key qualifications	Responsibilities
	integration between remote applications; Fluency in Portuguese and English.	
Infrastructure Architect	BSc in Computer Engineering or equivalent; 5 years of proven work experience in managing a network infrastructure; Proven work experience and knowledge of techniques for know-how transfer; CCNA certified; Fluency in Portuguese and English.	Configure files, database, hosts, routers and servers. Identify security needs and other technologies needed to deploy the IT solution.

VIII. EVALUATION AND SCORING CRITERIA

Bids will be evaluated following the Quality and Cost-Based Selection guidelines, established in the Procedures for the Selection and Employment of Consultants by the World Bank (2016 Edition), as well as with what is established on MoF's 8th March Decree 05/2016, as indicated in the table below.

EVALUATION MATRIX FOR TECHNICAL PROPOSALS

	Description	Pts
1	Bidder experience on similar works	10.0
2	Methodological approach, including chronogram and quality assurance	35.0
3	Composition of the key team	40.0
4	Capability for knowledge transfer	10.0
5	Presence of Mozambican nationals in the key team	5.0
	<u>TOTAL</u>	100.0

Technical and financial proposals weights are 80% and 20%, respectively. The minimum score required for technical proposals will be 80 points out of 100.