



UNIDADE DE GESTÃO DE PROJETOS ESPECIAIS

Av. Amílcar Cabral – Ex. Edifício do BCV, 4º andar,
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Terms of Reference

Technical Assistance for the Development and Implementation of the Territory Management Modules of SIMple

1. Introduction

The Government of the Republic of Cabo Verde has received a credit from the International Development Association (World Bank) in the amount of \$15 million dollars for the Harmonization and Improvement of Statistics in West Africa Project (HISWAP)/Cabo Verde. This project aims to strengthen the statistical system of participating countries and regional organizations in Africa to produce, disseminate and enhance the use of key economic and social statistics. Part of the consultancy services revenues will be allocated for this purpose.

In the course of implementing and consolidating e-governance in Cabo Verde, Municipalities were the first institutions computerized, with the introduction of the SIM (Municipal Information System) application.

The initial version of SIM was implemented in the municipalities between 2001 and 2003, starting with the pilot municipalities of Praia, Sal and São Vicente and later, in 2007, in São Nicolau. From 2008 to 2012, an upgrade to SIM 2.0 was carried out and it was implemented nationwide, except for São Vicente. Currently, SIM 2.0. is operational in all municipalities of country. Some functions were implemented in the municipalities of Sal, São Vicente and Praia, while in others they were not.

SIM 2.0 is essentially focused on accounting/financial management aspect, as it was created as an IT tool for the financial management of municipalities, and specifically for



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budget execution. Therefore, the majority of the services provided are oriented towards budget execution i.e. the allocation of revenues and expense, rather than procedural perspective.

Despite the improvements brought by SIM 2.0 to Municipalities, this system is now obsolete, as it was developed using the old framework, with a layout different from other modern applications, requiring significant maintenance costs.

In 2017, SIM LAND (SIM 3.0) was implemented in the municipalities of Sal, São Vicente, Maio and Boa Vista, for property management in registered areas introducing additional functionalities to these municipalities.

Figure 1 SIMple Principle

To achieve this, it is necessary to have an integrated vision of the services provided by the Municipalities, allowing citizens and businesses to be served quickly, with quality, lower cost, transparency and security.

The Citizen Service Life Cycle (CVAC) is therefore proposed as an integrating element of the entire Information and Management System of Municipalities.

2. Objective(s) of the Assingment

The objective is to contract a consulting firm to carry out the update of SIM, through the development and implementation of the Territory Management Modules of SIMple, in all Municipal Councils of the country, ensuring all necessary integrations.

2.1. Specific Objectives

- Provide Municipalities with an electronic platform to respond quickly and efficiently to user demands;



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- Integrate municipal services and enable the implementation of the One-Stop-Shop principle;
- Adopt the paperless principle for Municipal Councils;
- Improve inter-municipal communication systems with future regional structures, centralized government structures, and the private sector, promoting the creation of synergies among them;
- Focus municipal management on citizens and enable citizen participation in Municipal Management;
- Leverage objective-oriented planning and management by providing tools that aid in the decision-making process;
- Respect the autonomy of each Municipal Council while standardized rules and procedures.

2.2. *Main Focus*

a) Territorial Management (In Municipalities)

- Insert and manage cadastral information about properties within their jurisdiction: creation and modification of lots, buildings, and respective usage rights, cadastral valuation, toponymy plan, environmental plan, municipal signaling, among others;
- Provide a quick and efficient response to all competencies within cadastral management, including: identification of properties within each municipality, property assessment, property tax collection, urban management, issuance of location plans, construction licenses, project approval, among others.

3. **Scope, Tasks and Deliverables**

3.1. *Scope*

The scope of the SIMple Municipal Management Platform project for the Territory Management Modules includes the following components:



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- Process Analysis;
- Development;
- Testing and Quality Assurance;
- Implementation (Deployment);
- Preparation of Application Manuals;
- User Training;
- Stabilization Guarantee and Monitoring.

3.2. *Technical requirements of the solution*

SIMple shall be developed exclusively with the IGRPweb framework, installed in Kubernetes clusters, with High Availability and a generic Application template.

The proposed architecture should:

- Separate the various municipal management businesses, allowing modular growth of SIMple;
- Ensure that the data of each municipality is separated, ensuring each Municipality owns its own data;
- Separate the municipal data layer from the system functionalities layer;
 - Each application module will have a dedicated connection to its database
 - Modules exchange services with each other at the application level and not at the database level
 - Services are catalogued and published for inter-municipal integration, and interoperability with external applications and with the private sector
- Facilitate SIMple maintenance;
- Global data involving Data Owners beyond the municipality will be queried via APIs, through the PDEX interoperability platform.



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3.3. *Modules*

In a nutshell, the modules to be developed are:

1. **LAND** - Management of buildings/land, allowing all transactions related to these properties;
2. **SNITE** - (National System of Toponymy and Addresses Information): Manages national and municipal toponyms;
3. **Urban Services** - Handles transactions related to the territory that are not specific to buildings, including the management of public roads and waste collection;
4. **Cemetery Management** - Manages cemeteries, including the sale of plots, works carried out in plots, and the registration of graves with precise location through georeferencing.
5. **Municipal Market Management** - Manages and handles charges for traditional structures of retail commerce organized by shops and stalls, georeferenced for location accuracy.
6. **Georeferencing of Municipal Services** - Enables the use of innovative tools that provide precise guidance on the location of key public services and points of interest in the Municipalities.

3.4. *Integrations*

The selected firm must ensure interoperability with the following entities:

- General Directorate of Registry, Notary and Identification
- National Directorate of State Revenue
- Institute of Territory Management
- Order of Engineers
- Order of Architects
- Interbank Society and Payment Systems



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4. Team Composition & Qualification Requirement of Consulting Firm

4.1. *Required experience and references*

The consulting firm should have a minimum of 3 years of experience in the development of electronic governance applications, with relevant experience in the developing Administrative and Financial Management systems.

It should be supported by at least two (2) client references for whom a similar service has been provided.

4.2. *The project team should be made up of the following key experts:*

1) **One (1) Team Leader**

- Degree in Computer Science, Engineering or equivalent;
- Proficiency in *Agile* Methodology;
- Minimum of 5 years of experience - experience in managing a software development team, leading the full (and correct) adoption of modern engineering and software delivery practices, in-depth knowledge and experience in designing and implementing cloud solutions, with a strong track record of analysis, planning, design, development, implementation and documentation of software solutions.

2) **Three (3) Developers**

- BA degree in Computer Science, Mathematics or equivalent
- at least three (3) years of experience in the development and programming of information systems;



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- Development experience in IGRPweb, distributed version control systems (such as Git) and CI/CD development;
- Proficiency in the following technologies: Object Oriented Programming (OOP), particularly Java; PL/SQL; JavaScript, HTML and CSS;
- Ability to work collaboratively with other team members to complete all levels of testing (e.g., system, integration and regression, etc.).

3) One (1) Web Developer

- Degree in Computer Science, Mathematics or related areas
- At least three (3) years of experience in developing and programming information systems;
- Experience with JavaScript and jQuery;
- Experience with browser development tools and browser compatibility;
- Experience in integrated development involving front-end and back-end code;
- Strong sense of aesthetics and design;
- Experience with web design and UI/UX
- Knowledge of web compatibility and performance;
- Familiar with Photoshop, Illustrator and InDesign;
- Knowledge of development tools such as GIT and code editors;
- Knowledge of the liferay framework.

4) One (1) Analyst

- Degree in Computer Science, Engineering or equivalent;
- At least three (3) years of experience as an analyst in the area of electronic governance;
- Proven knowledge and experience of a software lifecycle and all its phases, including requirements, design, development and testing;



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- Knowledge of object-oriented programming (OOP), specifically Java;
- Knowledge of PL/SQL languages;
- Knowledge of web languages (JavaScript, HTML and CSS)).

5) Um (1) GIS Analyst

- Degree in Geography or Spatial Planning, with specialization in Geographic Information Systems (GIS), IT and/or areas related to Geographic Sciences;
- Proven experience in the development of geographic information systems for electronic governance, specifically the development of WebGIS using OpenSource GIS technology (preferred);
- Experience in preparing and integrating spatial databases with non-spatial information using geographic information systems;
- Advanced user of QGIS and Geoserver (preferred);
- Experience in Postgres/Postgis (spatial component for GIS).



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5. Deliverables, Reports and Scheduling

Deliverables	Description	Type	Payment after client approval	Calendar
D.0. Inception Report	<i>Summary of the work to be carried out under the contract, including the training plan</i>	<i>Report</i>	<i>10%</i>	<i>Contract signature + 15 days</i>
D.1 Training in Modules: <ul style="list-style-type: none"> •SIT •SNITE •SIM LAND •Urban Services 	<i>Execution of training on functionalities developed so far; Delivery of Training Reports; Delivery of functionality manuals.</i>	<i>Training; Manual</i>	<i>20%</i>	<i>Contract signing + 4 months</i>
D.2 Module Delivery: <ul style="list-style-type: none"> •SIT •SNITE •SIM LAND •Urban Services Trainnig in Modules: <ul style="list-style-type: none"> •SIT •SNITE •SIM LAND •Serviços Urbanos •SIGPG 	<i>Modules “SIT”, “SNITE”, “SIM LAND”, and “Urban Services” developed and functional with respective integrations, statistical dashboards, and user manuals completed.</i> <i>Training in the new functionalities developed so far; Delivery of Training Reports; Delivery of functionality manuals.</i>	<i>Software; Manual; Training</i>	<i>20%</i>	<i>Contract signing + 8 months</i>
D.3 Module Delivery: <ul style="list-style-type: none"> •SIGPG Training in Modules: <ul style="list-style-type: none"> •SIGPG 	<i>Module “SIGPG” developed and functional with respective integrations, statistical dashboards, reports, and user manual completed.</i> <i>Conduct training on the newly developed functionalities; Delivery of training reports;</i>	<i>Software; Manual; Training;</i>	<i>20%</i>	<i>Contract signing + 11 months</i>
D.4 Final Report	<i>Delivery of the final report, after the client has signed the Acceptance Terms of the developed and implemented modules,</i>	<i>Report</i>	<i>30%</i>	<i>Contract signing + 12 months</i>



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6. Client Counterparts

The Association of Municipalities and of Municipal Councils should ensure a project execution team and a project manager on behalf of the client. This team must consist of at least one (1) person for each of the team's business areas.

The teams must work closely with all the Municipal Councils, sharing all the documents and ensuring councils validation for each document and in the Stage environment, and must respond to promptly to request and perform validation within specified timeframe.

Each team is responsible for:

- a) Meeting with system analysts to explain the business;
- b) Providing necessary information for requirements gathering;
- c) Validating the drafted specification documents;
- d) Validating the functionalities in the stage environment;
- e) Participating in validation workshops.

Núcleo Operacional para a Sociedade de Informação (NOSi), as the project's technological partner, will:

- a) Support and monitor the analysis of the system and Information structure;
- b) Ensure the infrastructure hosting the databases and application servers supporting the solution;
- c) Ensure interoperability and integration of the entire platform;
- d) Ensure security/auditing/pentest/vpn/vfirewall;
- e) Provide training to the consulting firm on the IGRPweb platform;
- f) Provide training to the consulting firm on the PDEX platform.



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7. Duration of the Assignment

This project must be implemented within a period of no more than twelve (12) months from the date of signature of the contract.

8. Organization of the assignment

The selected firm must undertake the assignment in close collaboration with NOSi and the Association of Municipalities (representing the Municipal Councils), shall follow and support the assignment. The Consultant will report to *Unidade de Gestão de Projetos Especiais* (UGPE) for contract administration.

9. Contract

A Lump-Sum form of Contract shall be signed, payments to the consulting firm are linked to approval of deliverables, and the payment of reimbursable expenses are made upon presentation of the receipt of the expenses occurred at the real cost.