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**Caisse Nationale de Sécurité Sociale - CNSS**

# **SAINT PEREGRIN REFERENCE HOSPITAL**

**Tender Specifications**

**ACQUISITION, INSTALLATION AND  
MAINTENANCE OF A 1.5T MRI**

**TECHNICAL SPECIFICATIONS**

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## 1. Context

### 1.1. Description of the project

This tender take place during the creation of the new Saint Pérégrin hospital in Lomé, Togo. This hospital will bring healthcare solutions of great quality at an affordable price for the local population. The ambition of this hospital is to become a reference in Togo with occidental standards of quality thanks to the best training of the medical team and the accreditation of the staff and equipment.

The hospital, which constructions have started, is in Lomé in the Agoenyive district at the intersection of the "nationale 1" road and the main ring road. Therefore, the road access is excellent from the harbour.

In that regard, this specifications document's goal is to present to the different suppliers of magnetic resonance imaging (MRI) equipment the needs of the hospital and its expectations. The opening of the hospital is planned to be in April 2020.

### 1.2. Planned activity

The healthcare offer of this new hospital of reference will be deployed on the whole Lomé agglomeration (1,500,000 inhabitants). In the following table are detailed the planned amount of **consultations per day and per specialties**:

Specialty	CONSULTATIONS
Cardiology	3
General surgery	1
Dermatology	6
Endocrinology, metabolic disorder	1
Gynaecology and obstetrics	3
Hepato-gastro-enterology, nutrition	3
Infectiology and parasitology	46
Family medicine	6
Neurology	1
Ophthalmology	4
ORL	11
Orthopaedic traumatology	9
Paediatrics	9
Pneumology	3
Stomatology	1
Urology	1
<b>Total</b>	<b>116</b>

And in the following table is detailed the estimated hospitalisations per week and per specialty:

Specialties	Hospitalisations /week
Cardiology	3
Endocrinology	1
Gynaecology	1
Haematology	2
Hepato-gastro-enterology	1
Infectious disease	12
Family medicine	2
Nephrology	1
Neurology	3
Paediatrics	3
Pneumology	1
Rheumatology	1
Digestive surgery	2
Ophthalmology	<1
ORL / Stomatology	1
Orthopaedic Traumatology	4
Urology	1
<b>TOTAL</b>	<b>39</b>

**The estimated activity is set to 35,000 consultations for medical specialties and 11,000 hospitalisations. To which we need to add 50,000 consultations for general medicine which some of those will require imagery.**

### 1.3. Presentation of the Purchaser

The "Caisse Nationale de Sécurité Sociale" (CNSS) of Togo. As it has a special status, the CNSS is **exempted of taxes and customs clearances**. It is important to know that the Purchaser will be helped by the French company Altao to analyse the technical aspects of the offers.

### 1.4. Consultation procedure

During the consultation phase, this specifications document is addressed by the Purchaser to the economic operators of its choice, selected during a prior identification phase of the suppliers.

In return, the receivers of this scope statement can submit to the Purchaser propositions of products and services accordingly to these specifications. The Purchaser will proceed to the selection of the supplier with an analysis of the different propositions received according to their adequacy with the needs, their price and respect of the general aspects described in this document.

## 2. Specifications of the 1.5T MRI

### 2.1. Overview of the Imagery offer at the Saint P ergrin Hospital

The acquisition of this 1.5T MRI at the Saint P ergrin Reference Hospital will be integrated in a service with: a bones/lungs radiography room, a mammography room, an echography room, a 64-slices CT scan and, most importantly, a 0.35T MRI.

In each offer regarding this document, the advantages of the solution regarding the available equipment shall be described. It will also be important to describe the opportunities of using both a low-field MRI and the offered 1.5T MRI.

### 2.2. MRI lot

#### 2.2.1. Composition of the lot

This lot will include:

- a superconducting magnet MRI with a 1.5T field,
- the Faraday cage,
- the mobile patient support (maximum weight to be indicated),
- an automatic contrast media injector,
- the appropriate coils: head, neck, spine, thorax, abdomen and extremities;
- the restraints,
- a monitor for image acquisition and reconstruction,
- the equipment for the technical room,
- the standard acquisition and reconstruction software for the applications listed below, all upgrade of these software shall be free of charge during the whole lifetime of the equipment;
- a connexion to the hospital's network and possibility to export images in standard format (DICOM, ...) to the information system,
- any other associated and necessary equipment specific of the solution.

#### 2.2.2. Functional characteristics

Every equipment and software included in the offer will be specified. Furthermore, the software allowing the following explorations will be described:

- musculoskeletal,
- neurological (spine, brain, stroke detection, ...),
- thoracic,
- abdominal/pelvis,
- full body.

Every offer shall describe:

- the installation requirements of the equipment (please note that the architectural drawings are in annex of this document),
- the specifications of the equipment: weight, magnet's size, patient table's size, opening diameter of the magnet, maximum weight supported by the patient table;
- the specifications of the system: magnetic field power, homogeneity, stability, shim, gradient amplitude, slew rate, RF amplifier power, field of view, image acquisition and reconstruction speed, minimum slice spacing;
- helium-based cooling system specifications: volume of helium needed, zero-boil off system or not, helium loss rate due to normal use of the system, ...
- the specification of the electrical alimentation in order to ensure a proper use of the equipment,

- security standards,
- the available sequences,
- the standard time needed for an exam,
- any other technical specification of the offer,
- any option the supplier is planning to offer.

The image acquisition and reconstruction system shall be able to:

- enter the patient's information manually and with optical screening (barcode reader for example) or via an identification server.
- parameter the sequences,
- reconstruct the images,
- process the images,
- connect to the internet and export images with DICOM format to the information system (communication protocols must be described).

The main challenge in the acquisition of such an equipment is the need of liquid helium for the cooling system of the magnet. Therefore, the amount of necessary liquid helium will be described as well as the technology used around it (zero-boil off, ...). Furthermore, the overall system shall be able to monitor the volume of helium available.

### ***2.2.3. System scalability***

Within the scale of the warranty or the maintenance contract, every software shall be updated free of charge anytime a new version is available. These updates are available for the MRI, the acquisition system and the reconstruction system. If those evolutions require a hardware upgrade, the necessary upgrades shall be supplied free of charge as long as the equipment is covered by its warranty or a maintenance contract.

The supplier shall also describe the scalability of its solution, in term of optional software or hardware upgrades in the future.

## 3. Implementation and maintenance

***The handling, delivery and installation of the devices are part of this call for tender. Every chosen supplier will have to deliver, install and set-up its devices on-site.***

### 3.1. Delivery modalities

For every device, the on-site delivery will be included in the offer and in the incoterm used (Incoterms® 2010 version), therefore, the supplier shall take care of it.

In order to organise the delivery of the equipment with the architects and the hospital manager, the supplier shall give us a general calendar including every information about the production time of the products, the shipment process, the delivery time on-site at Lomé, Togo, and the required time for the installation and formation.

The reception modalities will also have to be described. It is important to remind that the Purchaser (CNSS of Togo) is exonerated of taxes and customs clearance thanks to its status.

### 3.2. Implementation

Every supplier is committed to give with each offer an implementation project of the equipment accordingly to the site's architectural drawings given with this document. The supplier will take care of the installation when the devices will be delivered. So, the supplier will consider the architectural environment and will provide detailed information about the minimum requirement for the preparation of the installation on-site (surface, weight/m<sup>2</sup>, ...) and the electrical alimentation. In that regard, the electricity source will come **from solar panels and batteries through an inverter**, each device will have to be compatible with this kind of electricity source. Every offer will include all the necessary devices for an optimal use of the solution, including the installation accessories.

It will be the supplier's missions to:

- create an implementation project based on the hospitals plans, with as many details as possible which will define the limits of the Supplier's missions and the Hospital ones;
- receipt on-site the delivery, unload the equipment, check and install them;
- ensure the initial filling of the helium tank,
- restore any goods deteriorated during the installation process,
- handle the packaging and any other waste due to the delivery and installation of the products,
- ensure the various informatic interfaces between the newly installed devices and those already installed,
- coordinate the whole operation and to manage the potential subcontractor working on behalf of the supplier.

The Purchaser's duty will be to:

- consider the weight per square meter of the devices,
- prepare the appropriate electrical alimentations,
- ensure that the site is ready to install the devices according to the supplier's information.

### 3.3. Formation

The supplier will include in its offer the method, place and cost of the formation of two engineers or technicians, employed by the Purchaser, so they can be able to realise maintenance and repairs of first level. A formation on-site will be preferred. The intervention of an engineer or technician from the Purchaser's team does not exonerate the supplier from its commitments.

The supplier shall also include an appropriate training of the users to allow them to properly use the devices.

### 3.4. Warranties and maintenance

Most important point in the evaluation of the different offers and turning point for the hospital. Hereafter a non-exhaustive list of information that will have to be given in that regard:

- the warranty period,
- the existence of a tele-maintenance or tele-diagnostic system in order to check the devices and anticipate the interventions,
- the existence of a hotline for the technical team and its availabilities,
- the amount of annual preventive maintenance,
- the amount of quality controls planned,
- the presentation of the potential subcontractors or technical partners that could intervene on behalf of the supplier,
- the location of the technical(s) team(s) and the **warranted** intervention time on-site,
- the details on where the spare parts will come from and the **warranted** delivery time (including shipment, delivery to Togo, customs clearance and delivery on-site),
- the warranted time to put back to work a device,
- the possibility to have a stock of usual spare parts on-site,
- the annual availability time **warranted** for each device,
- the potential warranty extension after a curative intervention,
- etc.

For each device included in an offer, the supplier will include warranty which will last at least 2 years, starting at the first use of the device. During this warranty period, the devices will be under a **total** warranty from the supplier. Therefore, any intervention, preventive or curative, will be completely handled by the supplier (spare parts, workforce, travel, ...).

During the warranty period and, later, in the maintenance contract, it will be necessary to write down the several commitments the supplier will take: time to answer if we have a problem, time to intervene on-site, time to repair a device when no spare part is needed, time to deliver a spare part on-site if needed, time to install the spare parts and the total time to bring back a product in use. The preventive maintenance frequency will also be specified for each device, two preventive maintenance per year will be the minimum. Every supplier will be responsible of the maintenance, whether he takes care of it himself or he delegate it to a subcontractor. After any intervention on a device, it will be able to accomplish the same initial functions in the same initial safety conditions.

### 3.5. Spare parts

In addition to the previous commitments discussed previously about the spare parts, any element or part of a device will be available for at least 10 years after the installation of the device. If this condition cannot be respected by a supplier, he will mention it into his offer and will specify the minimum availability period he can guaranty. If any spare part is needed, it will be delivered directly on-site, and this delivery will be coordinated with the intervention of a technical team to install it.

### 3.6. The liquid Helium

During the warranty and the maintenance contract, the supplier shall take care any helium loss, total or partial, causing the system to be unusable. In case of continuous helium loss due to a normal use of the system, the supplier shall take care of the regular liquid helium deliveries implied in order to ensure service continuity. The supplier shall precise the helium delivery delay and shall commit to this delay.

In case of helium loss, total or partial, causing the system to be unusable in a situation not covered by the terms of the warranty or the maintenance contract (misuse, bad alimentation, ...), the supplier shall commit to deliver the needed helium in the same delay. The hospital shall be charged for this punctual prestation.



### **3.7. Penalties if the commitments are not respected**

If any of the commitments taken by the supplier is not respected (delivery time, intervention time, time to bring back to work, annual uptime, delivery time of the liquid helium, ...) then penalties shall be applied. These penalties will consider the loss of activity related to the unavailability of the equipment and the impossibility to take care of patients in a critical situation. In that regard, every supplier will mention its usual penalty policy which shall then be discussed.

### **3.8. Replacement clause**

If the supplier is not able to fix a failure in a given time for any reason (unavailability of a spare part, cost of intervention, ...), the supplier will be able to provide a replacing device which will not exonerate him from the penalties agreed in the contract. The total price of this procedure will be negotiated between the supplier and the Purchaser.

### **3.9. Presentation of local partners or distributors**

If any of the missions described before were to be realised by one of the supplier's partner or distributor, he will be identified and presented in the offer. The supplier will prove that these partners/distributors have the necessary skills to complete their tasks and he is also responsible of the quality of their interventions. If it happens that one of these partners/distributors were not qualified to complete their tasks, then the supplier is committed to complete those tasks and he will take care of any resulting extra costs until the partner/distributor is appropriately trained.

## **4. Expected characteristics of the devices**

### **4.1. Accreditations: CE, FDA, other**

In order to ensure the quality of the devices and to ease the future accreditation strategy of the hospital, it is mandatory that the offered devices have recognized accreditations such as CE marking or the FDA approval. The suppliers will precise, for each device and each disposable every marking, norms, agreements and certifications it has, and he will provide these documents in its offer.

### **4.2. Available interfaces and communication processes**

#### ***4.2.1. User interface***

In order to ensure an optimal use of the equipment, the following criteria must be considered:

- ergonomic interface,
- interface in French preferably or in English,
- help menu for the user,
- user manual in French preferably or in English.

#### ***4.2.2. Electronic interface***

It is agreed that all electronic interface and various ports should be listed:

- Ethernet (norm and output detailed), Wi-fi, Bluetooth, RS232, USB, etc.;
- electrical alimentation from solar panels and batteries through an inverter.

#### ***4.2.3. Data transfer protocols***

The supplier will precisely define the available data transfer protocols between the device, the different acquisition or treatment systems and the central information system. These protocols will be open source and available.

## 5. Expected answer

In every offer presented by a supplier shall contain:

- information about the supplier and the constructor (if different),
- the extend of the offer,
- the prices of the offer,
- a complete description of the associated software,
- the environmental limits (hygrometry, temperature, air treatment, ...),
- the maintenance contract and the warranty,
- a list of spare parts which could be stocked on-site and their amount,
- references of similar project realised by the supplier in Africa and Western Africa with similar devices and possibility to contact those clients,
- general condition for the sell,
- the installation's plans,
- time to deliver the solution,
- official document of CE mark, FDA accreditations and any other accreditations available;
- user manuals,
- cleaning and disinfection procedures,
- any other technical and commercial document the supplier wants to share.

By default, all these documents shall be given in French. If these documents are not available in that language or cannot be translated, they can be given in English. Any document in another language will be considered.

## 6. Price and terms of payment

### 6.1. Payment method

The prices in the offer will be either in Euro or in American Dollar and in Francs CFA (XOF). The offer shall include the cost of the following elements:

- the equipment,
- the **on-site** delivery,
- the installation,
- the training of the end-users and the technical team,
- the **five-year** warranty.

### 6.2. Negotiations

The Purchaser keep the option to negotiate with the candidates. This negotiation can concern all the elements of the offer, including the price.

### 6.3. Variants

Every offer can have a classic form detailing the acquisition price and maintenance price. However, it can also have the variant form of a leasing/maintenance contract.

## 7. Evaluation criteria

Every offer submitted will be evaluated with the following criteria:

- the quality of the commitments taken for the maintenance and warranty,
- the global cost of the solution (devices, maintenance, disposables, ...),
- the image quality (evaluated during visits of showrooms/medical centres or with images data bank),
- the technical and functional characteristics of the solution,
- the amount of helium needed and the helium consumption,
- the available certifications,
- the supplier's presence in Western Africa and in Togo,
- the ease of use of the solution,
- the ability of the supplier to ensure liquid helium delivery at the hospital,
- the general calendar listing the various phases until the delivery and installation of the equipment.

Every supplier who will emit an offer will receive an answer, whether it is a positive or negative one. The suppliers whose offer have been selected will be invited to present their solutions in front of the team in charge of implementing the hospital.