

ΚΤΙΡΙΑΚΕΣ ΥΠΟΔΟΜΕΣ Α.Ε.

Διεύθυνση Συμβάσεων Έργων & Προμηθειών

Στο πλαίσιο διαβούλευσης επί των τεχνικών προδιαγραφών δημοπράτησης Αξονικού Τομογράφου 16 τομών για το Γ.Ν. Λευκάδας, προϋπολογισμού 350.000 € (συμπεριλαμβανομένου Φ.Π.Α.), παραθέτουμε σχετικό σχέδιο προδιαγραφών και αναμένουμε επισημάνσεις και σχόλια από κάθε ενδιαφερόμενο.

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CT SCANNER, MULTI SLICE-16

Complete CT scanner system, state of the art slip-ring technology (continuous rotation), suitable for head and whole body scanning, using volumetric techniques. It must produce sixteen simultaneous slices per rotation for every scan technique. To be offered from the latest manufacturer line of production.

It should consist of the following:

1. X-RAY GENERATOR

High voltage generator mounted on the rotating part on the gantry permitting low voltage power transmission via the slip rings. System to perform in wide range of kV, in order to prosecute all necessary clinical examinations.

Continuous or pulsed high-frequency generator with max power during scanning at least 50 kW.

Maximum voltage more or equal of 130 kV, maximum load more or equal of 400 mA. Specify maximum 3 values of mA and KV to access the maximum power.

2. X-RAY TUBE

General: It should have two focal spots, with small dimensions; a rotating anode and automatic system for overheat protection.

Characteristics of tube:

- The Focal spots must be as small as possible.

- The anode heat capacity at least 5MHU and the anode cooling rate min 800 KHU/min. Capable of a large number of scans per minute during dynamic and volumetric mode. Specify values accordingly.

- Guaranteed number of scan seconds per tube: 200.000.

3. PATIENT POSITIONING

Motorized patient support computer controlled with longitudinal travel and variable table height to be defined. Tabletop Composed with low attenuation properties. The table speed, especially for volumetric examinations, must be with selectable pitch per rotation user selectable.

The Movements should enable whole head and body examinations with accuracy of positioning ± 0.25 mm.

4. SCAN SYSTEM - GANTRY - DETECTOR

Gantry aperture of at least 70 cm and gantry tilt of at least $\pm 30^\circ$ with high tilting accuracy.

The scan FOV must have maximum value more or equal of 500 mm. Specify values accordingly.

The slice thickness, during acquisition, must be selectable at least in the range of 0.75mm to 1.5mm.

Minimum slice thickness less or equal to 0.75mm

. The total efficiency of the detectors should be as high as possible.

Scan speed should be with full rotation (360°) and at least four (4) acquisition speeds, less or equal to 0.6 sec (360°)

5. ACQUISITION MODES

To have at least four (4) scanning modes:

- Radiographic mode: Real time digital radiograph, scannable length equal or more than 150 cm, necessary for the exact positioning of the patient.

-Serial mode

-Dynamic mode with examination protocols to be programmed for table movement, position of scanning, interscan time

- Helical or Volumetric mode: Continuous radiation with continuous table movement.

To be capable of performing at least 100 seconds continuous rotations in order to cover a large anatomic area.

-To have wide range of table speed movement per rotation.

6. IMAGE RECONSTRUCTION & ANALYSIS

The CT-scanner should be able to reconstruct images in a multi-plane manner. This means that coronal, sagittal, oblique and paraxial images should be produced. At least one Reconstruction matrix 512x512 and at least one image display matrix 1024x1024. Iterative reconstruction algorithms from raw data (low dose technique).

- To have the ability to reconstruct raw data after acquisition with reconstruction index different from that one during acquisition. The reconstruction rate must be equal or more than 10 images/sec for every available mode.

The processing facilities of CT scanner should include:

1. Zoom.

2. Double window facility.

3. ROI analysis and Dynamic analysis

4. Profile, histogram, grid, HU, computation of angles, CT values density etc.

5. Standard processing including:

- Real-time MPR (Multi Planner Reconstruction) with CINE display

- 3D display,

- CT angiography,

- Perfusion,

-Virtual endoscopy,

- Injection Bolus Timing, Cone Beam Reconstruction algorithms, dynamic scan evaluation,

- Lung Nodule

- Advanced Virtual Colonoscopy.

- Volume rendering

Specials algorithms for reducing metal artifacts.

7. IMAGE QUALITY

Spatial resolution with a minimum value of 15lp/cm @ cut off, as high as possible and to be specified. Auto techniques for dose reduction.(specify)

8. IMAGE STORAGE:

Should have at least one hard disk for about 500.000 images with 512x512 matrix. Also available CD/DVD/USB for image storage.

9. COMPUTER

CPU unit, multi-tasking, 64-bit processor. It should consist of CPU,16 GB RAM, 19 "monitor, a mouse and a keyboard.

10. MEDIA INJECTOR

Automatic type, with programmable control panel.

To accommodate both contrast agent and/or physiological saline syringes or bottles.

To include contrast heating or pre-heating mechanism (included in the unit).

Console with digital panel, allowing programmable injection rates in ml/min or equivalent.

11. U.P.S.

UPS for the electrical line stabilization, with adequate electrical power for the computer of the CT unit

12. DICOM-CONNECTIVITY

Full DICOM images, communication, with all Dicom services (print, send,, etc.).

To include Dicom interface for the communication of the CT Unit with the laser printer of the Hospital and the existing PACS/RIS system of the Hospital.

To include remote service modem.