

ΔΕΠΑΝΟΜ Α.Ε.

ΔΗΜΟΣΙΑ ΕΠΙΧΕΙΡΗΣΗ ΑΝΕΓΕΡΣΗΣ ΝΟΣΗΛΕΥΤΙΚΩΝ ΜΟΝΑΔΩΝ

ΓΕΝΙΚΟ ΝΟΣΟΚΟΜΕΙΟ ΣΥΡΟΥ

**ΠΡΟΜΗΘΕΙΑ - ΕΓΚΑΤΑΣΤΑΣΗ
ΣΥΓΚΡΟΤΗΜΑΤΟΣ ΜΑΓΝΗΤΙΚΟΥ ΣΥΝΤΟΝΙΣΜΟΥ (MRI)**

ΜΕΛΕΤΗ ΔΗΜΟΠΡΑΤΟΥΜΕΝΟΥ ΕΞΟΠΛΙΣΜΟΥ

- 1. ΚΑΤΑΛΟΓΟΣ ΕΙΔΩΝ ΚΑΙ ΠΟΣΟΤΗΤΩΝ (με τιμές προϋπολογισμού, μη συμπεριλαμβανομένου Φ.Π.Α.)**
- 2. ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ**

ΣΕΠΤΕΜΒΡΙΟΣ 2013

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ΚΩΔΙΚΟΣ	ΕΙΔΟΣ	ΙΤΕΜ	ΠΟΣ.	ΤΙΜΗ ΜΟΝΑΔΑΣ (ΕΥΡΩ)	ΣΥΝΟΛΙΚΟ ΤΙΜΗΜΑ (ΕΥΡΩ)
H0L05	ΑΠΕΙΚΟΝΙΣΤΙΚΟ ΣΥΣΤΗΜΑ ΜΑΓΝΗΤΙΚΟΥ ΣΥΝΤΟΝΙΣΜΟΥ (MRI)	MRI IMAGING SYSTEM	1	813.008,13	813.008,13

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ΣΕΠΤΕΜΒΡΙΟΣ 2013

Equipment Specifications
Project : SYROS HOSPITAL

Item	Description
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H0L05	MRI SCANNER, 1,5 TESLA, BASIC
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G/D

MR imager for whole body imaging /spectroscopy and MR angiography procedures. Field strength 1,5 Tesla.

To be offered from the latest manufacturer line of production

OF/OC Unit consisting of the following system:

1. MAGNET Actively shielded, superconducting type Magnetic shielding not required.

Field strength: 1,5 Tesla. Bore inside diameter min 60cm. Field homogeneity better than 0,1 ppm, measured at 10cm.DSV, measured with RMS or VRMS.

To include system of active/passive shimming. To consume only He, equal or less than 0,03 lt/hr (specify: consumption rate, refilling frequency)

Distance of fringe field (0,5mT) from centre of magnet on X,Y,Z max (3m,3m,4m).

Installation:

To include ventilation, lighting,piping, cooling systems, quench piping end communication subsystems.

Stability of Magnetic field less than 0,1 ppm /hr

2.GRAIDENT : To be actively shielded, with gradient strength of min 30 mT/m. Slew rate 120 T/m/s for each axis. Linearity about 2% over full FOV.

3.R/F SYSTEM of digital technology suitable for transmission / reception of RF pulses circular polarised (quadrature) and phased array or matrix coil.

Maximum R/F power min 15 KW . The R/F system to allow simultaneous connection with multiple coils.

To accommodate at least 16 channels with min bandwidth 1 Mhz.

To be capable of parallel imaging . Min parallel speed factors : 4 (Sense, iPAT , ASSET/GEM).

The system should include: RF Faraday cage with false walls, lighting and all cooling systems(Chiller, piping,etc)

To include the following coils :

Body coil (phased array or matrix)

Head coil,

Spine (phased array or matrix)

Neck (phased array or matrix),

Breast (phased array or matrix)

Knee, (phased array or matrix)

Extremities,

Flexible coils for small organs and limbs.

4.STATE OF THE ART COMPUTER system 32 (or 64)bit processing with min RAM 512 MB. Capable of multitasking. Simultaneous scan acquisition, reconstruction post-processing, display ,archiving.

Storage capacity:

Hard disk for software and images min 15 GB.

CD-R or optical disk min 650 MB.

To include: a) UPS b) Modem for teleservice

Software- Imaging Processing:

Reconstruction speed min 1000 images/ sec.

Software for pre and post processing.

5. OPERATING CONSOLE Consisting of a console with at least one monitor (38 cm diagonally) with 256 grey scales and easy ROI selection.

Analysis 1024 x 1024.

Multi task capability of imaging, programming, reformatting and automated examination. To include software for MIP, MPR, 3D

To include patient / operator intercom.

6. IMAGING CAPABILITIES

a) Imaging modes : single slice/multi slice/3D volume study, multi angle, dynamic

b) Slice orientation: Transverse, sagittal, coronal, oblique, radial

c) Special Imaging procedures:

To include Angiography (2D, 3D) specify : time of flight, phase contrast, TONE quantitative blood flow in capillaries. Vascular Imaging of angio thoracic / peripheral / abdominal with and without use of contrast media & automated movement of examination table.

To include complete Cardiology package for function coronary imaging, tagging techniques, viability, perfusion, Multi slice- Multi Phase

Imaging, Interactive Imaging in real time. Evaluation of parameters function (as ejection fraction)

To include Brain Imaging diffusion (single and multi-shot) /perfusion /functional

To include full range of oncology specific protocols: diffusion weighted body imaging, full protocols for breast imaging, brain etc.

d) Imaging Parameters : FOV in the range 6-48cm. Slice thickness min 0.5mm(2D), min 0.1mm(3D), Overcontiguous slices.

Acquisition and processing matrix : 256x256, 512x512, 1024x1024.

e) To include optimization / accelerating techniques: RF saturation, Gradient moment nulling, respiratory compensation and cardiac

peripheral gating, Half Fourier Imaging, Magnetisation Transfer Contrast (MTC), Fat Saturation, Water Excitation & accelerated acquisition

modes (reduced k-space, etc)

f) Pulse sequences : To include all classical & fast type sequences (2D, 3D, Multiple Spin echo, inversion recovery gradient echo (Flash), EPI

(single shot / multi shot), Turbo/Fast Spin Echo & Gradient Echo (turbo Flash), True FISP (2D &3D) (Fiesta, Balanced), Turbo/Fast single shot.

Specify permissible range of parameters (TE,TR, echo spacing) for each

g) Software for parameters as T1, T2, for tissue characterization

7. INTERFACING : To have interface for Laser imager. Able to connect with PACS, RIS, CIS, HIS

8. QUALITY CONTROL set of phantoms, devices suitable for the quality control including linearity, homogeneity, contrast, resolution.

9. PATIENT POSITIONING

To include examination table for easy patient positioning. Accuracy +/- 1 mm. Capability for emergency transportation of patient. To

include sensors for cardiac / pulmonary / peripheral synchronization.

10. COMPATIBILITY

Images to be DICOM -3 compatible for printing / archiving / querying

11. SECOND INDEPENDENT CONSOLE

Interfaced with main system for extensive image post processing.

Evaluation of cardiac parameters function (as ejection fraction, viability, perfusion), as well as software for diffusion, T1 perfusion, T2* perfusion

(alternatively on main console)

Including state of the art computing system with min 120 GB HD. To include CD-R./ USB

12. INSTALLATION

All necessary installation requirements are included. R/F cage with false walls, ceiling, lighting, medical gasses and electrical supply, floors.

Magnetic shielding if required. Chilling unit and piping. Quench piping. Endocommunication.