Office of the Director

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Memo no/IGIMS/2018/ 7615 ...../ Adm (s) dated 12/3/2016

Corrigendum

The complete specification is herewith added in the Tender Notice no 19/2017-18/Biomedical equipment/IGIMS/Store:-

.Group- B Neurology :

FOR: Video EEG with Polyomnogrtaphy System specification

READ: As attached

Sd/-
So Cum Procurement Consultant
IGIMS, Patna

C C To Sr Biomedical Engineer for uploading at the Institute website.

This is having the approval of Director

So cum Procurment Consultant
IGIMS, Patna

Group-B-Neurology

Specification of Video EEG with Polyomnography System

The System hardware should consist of:-

- System should have at least 32 EEG channels with 9 Polygraphic channels including built-in SpO2.
- The amplifier should have USB powered and enabling the amplifier to be connected to any PC/Laptop and transfer data through same usb for portability.
- Should be supplied along with Video Camera (2MP, IR, PTZ Network Camera).
- The system should consist of LED Photic stimulator for EEG.
- The equipment shall incorporate features like full optical isolation and confirm to international standards with certification authorities.
- Should have facility to check electrode impedance from the head box through LED indicator (Red, Green & Yellow) of corresponding electrode impedance.
- System should be USFDA or European CE approved and meet international safety standards like IEC and Class IIb.

EEG channels specification:

- Common mode input impedance >400Mohm
- Sampling Rate - 2 KHz (2000 Hz)
- A/D convertor - 16 bits
- Band pass Filter - 0.16 to 200Hz
- CMRR > 120 dB
- Noise Level (RMS)< 0.25 µV
- Sensitivity 0.01 – 12000 µV/mm with user definable steps.

The System EEG software should consist of-

- Should have .NET based software for comprehensive database search & storage.
- Any electrode can be used as a reference one, and the bipolar derivations can be recoded without placing any other additional reference electrodes, for example ear ones.
- Provision for marking events along with VEEG recordings using Keyboard/mouse
- Complete programmable control of montage selection, acquisition Sensitivity, filter settings, photic stimulator sequences etc.
- Should have inbuilt facility in the same software of automatic spike and seizure detection software.
- Software should have facilities of Amplitude analysis, Spectral analysis, Coherent analysis and many more in 2D & 3D view. And also should have multiple EEG trends windows option simultaneously with live EEG recording.
- Photic stimulator with LED's.
- A high resolution 21" color monitor for display of waveforms
- Provision for hard copy output of recordings on a laser printer of 600 dpi resolution.
- Should have facility for User definable events and preferred recording and review settings such as amplifier set-ups, event palettes and views to be saved as specific user protocols.
- Should have provision for notch filter.
- Must be operating on Windows 7 and Windows 8.
- Should have option to save EEG as a video clip (*.avi), ASCII-text file (*.txt), XML file (*.xml), set of graphical files (*.bmp or *.emf) or in EDF+ format (*.edf).
- Should have facility to check electrode impedance from the head box through LED indicator (Red, Green & Yellow) of corresponding electrode impedance.
- DVD writer for recording the VEEG data.
- Facility for exporting data using the software for review on any PC without any additional software.
- Facility to transfer EEG recording through USB flash drive.
- Should have facility to prune recordings to store only sections of interesting records

- Facility to transfer EEG recording through USB flash drive.
- Should have facility to prune recordings to store only sections of interesting records
- The equipment shall incorporate features like full optical isolation, anti-cautery devices and shall confirm to international standards with certification authorities.
- There should be provision of event markers ideally for marking the recording either by patient or Attendant.
- Report generation to be customizable and in MS word format.
- The Test information database software which should include Information of patient database, resource scheduler and it should be customizable according to the end user.
- Should have synchronous Long-term recording of EEG with VIDEO (Accuracy is 1 Frame).
- The Video Camera should have facility to record in night mode also.
- Video camera should have autofocus zoom lens.
- Should have facilities to control the camera position and zoom from computer (Programming of up to 6 preliminary presets of camera position).

Polysomnograph Software consists of:-

- Should have Sleep Analysis hardware and software for Long-term recording of the following channels during a sleep which allow to analyze both the sleep structure (sleep stage) and sleep-disordered breathing includes EEG, EOG, EMG from chin area, ECG, airflow, chest movements, abdominal movements, body position, snoring, SpO_2, EMG from limbs (limb movements), etc.
- Should have .NET based software for comprehensive database search & storage.
- Should be supplied with all the transducers required for recording the Pressure, Respiration, Body position etc.,
- Should have automatically and manual sleep stage scoring, automatic calculation of the large number of sleep parameters, displaying of bar chart of sleep stage distribution.
- Possibility of the synchronous recording of video and audio information during PSG recording and also synchronous review of video and audio during PSG scoring
- Should have complete programmable control of montage selection, acquisition Sensitivity, filter settings, photic stimulator sequences etc.
- Should have Quick disconnection and connection of the patient and the recording equipment which do not result in electrodes position removal if you use the patient unit.
- Should have automatic search and classification of apnea and hypopnea events, desaturation, snoring, limb movement and periodic limb movement events. HR, body position, SpO_2 trends visualization.
- Should be calculation of indices of apnea and hypopnea, desaturations, parameters of snoring, heart rate variability, limb movements and periodic limb movements, body position separately and in connection with sleep stages.
- Any electrode can be used as a reference one, and the bipolar derivations can be recoded without placing any other additional reference electrodes, for example ear ones.
- There should be provision of event markers ideally for marking the recording either by patient or Attendant.
- Generation of PSG checkup report including graphic data (hypnogram, trends, apnea and hypopnea, desaturation, snoring, limb movements and periodic limb movements events), calculation results of sleep parameters and sleep-disordered breathing parameters, bar charts of sleep stage distribution.
- The Test information database software which should include Information of patient database, resource scheduler and it should be customizable according to the end user.

- Should have facility for User definable events and preferred recording and review settings such as amplifier set-ups, event palettes and views to be saved as specific user protocols.

Set of PSG Accessories:-

- Gold plated Cup electrode - 20 pcs.
- Disposable Adhesive Surface Electrodes (2 mtr) – 100 Pcs.
- Airflow sensor – 1
- Airflow pressure sensor - 1
- Snoring sensor - 1
- Chest respiratory efforts sensor - 1
- Abdominal respiratory efforts sensor - 1
- Body position sensor - 1
- Finger sensor for SpO2 recording - 1
- Portable Patient Unit (Quick Disconnection Box) for Commutation to EEG and PSG Channels, It is mandatory that patient can go anywhere with detachable 32 channels 10-20 electrode system without any loss of EEG data.
- Compatible CPAP titration device - 1

The system should be supplied with:

- (Desktop) Intel Core i3 & above processor with 4GB RAM, network card, multimedia speakers, mouse, minimum 500 GB hard disk for storing, Laser printer (B/W), movable trolley, UPS (30 Min backup)
- Operating Manuals and user manual
- EEG Cup electrodes (Gold/Silver chloride) (35 nos.)
- Ten-20 Paste (03 Nos.)
- Neuprep Skin preparing gel (03 Nos.)

Safety and Electromagnetic Compatibility

- Electromagnetic compatibility (EMC) is provided by IEC 60601-1-2:2007 requirements Fulfillment.
- The device is intended for operation in electromagnetic environment, which special features are specified in Appendix 1. As for safety, each digital system satisfies IEC 60601-1:1988+A1:1991+A2:1995, IEC 60601-1-1:2000, IEC 60601-2-26:2002 and IEC 60601-2-40:1998 requirements.
- The digital unit is supplied by regulated power supply through USB interface, it has double isolation and BF type work parts according to IEC 60601-1.
- System should be European CE approved and meet international safety standards like IEC and Class IIb.

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