SPECIFICATION FOR 32-CHANNEL EEG SYSTEM WITH POLYSOMNOGRAPHY

A) Hardware

1) Should have 32 EEG channels including 7 Bipolar channels & additional channels for Spo2, EtCo2, Plath, PR & HR monitoring.
2) Should be able to measure the impedance both from the amplifier and on screen.
3) Facility for Simultaneous Sampling of all EEG channels with Multiple Sampling Rates of up to 1 kHz is a must.
4) Should have programmable Automatic Photic Stimulator with 4 Lux white light, stim rate 0.5 to 60 Hz, Duty cycle 5 min continuous operation in 30 min and stim and pause time of 1 to 99 sec.

B) Acquisition and review of Software

1) System should be able to record and monitor EEG, EOG, ECG, PR, SPO2, EtCo2, and Heart Rate
2) Should provide trend analysis of EEG signal as well as physiological parameters for easy clinical correlation.
3) Should have the facility to define traces in a montage, and define calculated channels.
4) Should have single click montage re-referencing option to access real-time data.
5) Facility for acquisition and review of at least 4 EEG data simultaneously by split screen mode.
6) System should be able to display 64 traces on the screen with a maximum of 5 minutes per screen.
7) Should support multiple protocols with user-specificsettings with individualized settings having password-protectable templates. Should have the option of changing marking settings as per user.
8) Should be able to give the EEG data output in ASCII format.
9) Should have Waveforms freeze facility with simultaneous background recording, facility to Prune/Trim down data to specified events, Zoom/Magnify selected portion of EEG trace for numerical analysis, copy & paste of EEG waveforms to reports and presentations, search EEG and view several recordings in tiled or cascading windows.

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10) System must have the option of comparing any segment of EEG with the current EEG by copying.
11) Review and add events to recorded traces in the Review Panel while still displaying live traces in Live Pane.
12) Facility to Review the data recorded from the system on a CD/DVD to any other PC without the need of loading additional REVIEW software.
13) Should have facility for DSA trend graph for easy review of EEG data
14) Should have 3D progressive brain mapping
15) Should have Voltage/CSD mapping
16) Should have the facility of Slow Shift EEG waveform auto analysis
17) Should have Wideband analysis for DC-shift as well as Ripple analysis for EEG waveform.

C) Patient Administration Software

1) Should be network-supported patient and test management software for patient administration, exam scheduling network connectivity, the launch of data acquisition, review, and transfer of patient data on the network. Should be HIS / HL7 compliant.
2) Should have data archiving, deleting & copying facility.
3) Should have function for audit trail.
4) Should be able to support multiple patient reviews simultaneously on a single screen.
5) Should have the facility to enter patient data after starting the recording or later
6) Should have the facility to generate reports without the need of MS Office for license-free operation.
7) The software should have the facility of connecting up to 4 systems on the network for simultaneous monitoring & alert in case of any abnormality.

D) Camera Specification:

1) It should be a Pan-tilt-zoom (PTZ) type IP dome camera with CMOS / CCD type image sensor having a minimum 2 Mega Pixel (MP) image sensing capacity for capturing images at 60 fps at all resolutions such as Full HD (1080p), HD (720p) as well as SD with good

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image sensitivity during day and night (Minimum Illumination for Capturing Color Image should be 0.05 lux or less).

2) Should have auto-focus facility with Optical Zoom of 12X or more and Digital Zoom of 16X or more having flexibility to zoom in to small details of objects.

3) The camera should have features such as bubble-free clarity, Dynamic Noise Reduction, remote camera access, White Balance, Auto Gain Control, and Backlight compensation through auto exposure.

E) The computer PC system

1) should strictly be supplied by the manufacturer along with the system, after passing the strict in-house quality checks by the manufacturer to comply with medical equipment standards. (Locally supplied PC system will not be accepted).

2) Should have intel i5 or better processor, 1 Tb or better HDD, 8 GB or better RAM, 24" Display & UPS

3) Should be supplied with power supply from manufacturer to comply with safety standards.

F) System should have the following minimum features for Polysomnography

1) Should have an automatic generation of event trend plots and hypnograms

2) Should have Sleep analysis Hardware and software in order to record various physiological parameters like SpO2, heart rate, EtCO2, Pulse, Airflow, and leg movements apart from EEG, EKG, and EMG.

3) Should have the facility of remote access scoring and must have Auto and manual scoring and staging also have advanced apnea analysis, Periodic leg movement analysis, ECG Analysis, respiratory disturbance index, and Apnea/Hypopnea index.

4) PSG electrode sensor kit should consist of: Sleep Transducer complete for airflow, Snoring sensor, Chest, abdomen and respiratory sensor, Body position, and Periodic Limb Movement.

5) Should be able to display multiple recordings in slide show and have the option of combining fragmented recordings

6) Should have the option of creating Custom MSLT files

7) Should have facility review mode by split screen and at least 3 reviews simultaneously.

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8) Should have the option of setting up three different scroll speeds for the different sets of data display
9) Should have an individualized set of data scoring as per user requirement
10) Should have Selectable video and audio quality
11) Should be Mini Junction Box for PSG studies

G) Accessories

1) PC system with the above specifications with a compact metallic trolley to incorporate all the components of the system.
2) Should be supplied with mono-color printer with 18 ppm speed
3) Should be supplied with 2 nos. of electrode set including 24 Sliver electrodes in each set
4) Should be supplied with a set of EEG paste (including 1200 gms of paste)
5) Should be supplied with Skin prepping Gel of 130 gms. 10 nos.
6) Should be supplied with PSG sensor kit 1 no.

Mandatory

Should have embedded Antivirus software from OEM to incorporate all software features.

Conditions for tender:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and European CE be approved by 4 digits notified body.
4. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period

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(i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.

6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
13. Company should quote their latest model and need to provide an affidavit for the same.
14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
15. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.

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18. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6^{th}, 7^{th}, 8^{th}, 9^{th} and 10^{th} years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6^{th} to 10^{th} year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

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