NATIONAL INSTITUTE OF MENTAL HEALTH AND NEURO SCIENCES
(Institute of National Importance), Bengaluru- 560 029
राष्ट्रीय मानसिक स्वास्थ्य और तंत्रिका विज्ञान संस्थान, (राष्ट्रीय महत्व संस्थान), बेंगलूरू - 560 029
ರಾಷ್ಟ್ರೀಯ ಮಾನಸಿಕ ಆರೋಗ್ಯ ಮತ್ತು ನರ ವಿಜ್ಞಾನ ಸಂಸ್ಥೆ, (ರಾಷ್ಟ್ರೀಯ ಪ್ರಾಮುಖ್ಯತಾ ಸಂಸ್ಥೆ), ಬೆಂಗಳೂರು - 560 029
Phone 26995023/5913/5923/5024/5025/5780 Website http://www.nimhans.ac.in/tender
Fax 080-26571563/26564830/2121/6811 E-mail aaos@nimhans.ac.in

E-Procurement Tender No. NIMHANS/2019-20/IND740 **05.12.2020**

TENDER NOTIFICATION

(Through Karnataka e-procurement portal only)

The Director, NIMHANS invites tender from eligible tenderers through the Karnataka Government E-Procurement portal for supply of following equipment.

Sl. No.	Name of the Item	Quantity	EMD
1.	**Portable 32 channel digital EEG system with accessories**	01	Rs 1,10,000/-
2.	**EEG cap for the above Portable Digital EEG system**	07	Rs 20,000/-

Tender Schedule

Downloading of Tender documents from website https://eproc.karnataka.gov.in/eportal/index.seam	From 05.12.2020 Onwards
Last date for tender enquiry	26.12.2020 upto 11:00 AM
Tender submission last date and time	29.12.2020 upto 11:00 AM
Technical bid will be opened online by the authorized officer on	30.12.2020 at 11:00 AM

Sd/-,
Director

TENDER DOCUMENT

Terms and conditions

1. The bid documents for the above items should be **addressed to "The Director, National Institute of Mental Health & Neuro Sciences, Post Box No. 2900, Hosur Road, Bengaluru – 560 029, Karnataka, India"** and should uploaded in E Procurement portal only on or before the **due date.**
2. The tender bid should be valid for **120 days** from the due date (Tender submission last date) NIMHANS, Bengaluru will not take any responsibility for any technical issues.
3. **Earnest Money Deposit (EMD):**
   - **a.** The (EMD) shall be denominated in Indian Rupees and should be paid in the e-procurement portal as per the facility provided.
   - **b.** The EMD shall not bear any interest and will be refunded to
     - **i.** successful tenderer on receipt of Agreement and Bank Guarantee.
     - **ii.** unsuccessful tenderer upon finalization of tender bid and award of tender to successful bidder.

iii. All the tenderers if the tendered item is cancelled or retendered.
iv. EMD amount is exempted, if there enclose valid NSIC/MSME Certificate.

4. The tender documents and all correspondence's relating to the bid should be in **English language only.**
5. Technical bid should comprise of (uploaded copy of documents should be self-attested, stamped and better quality – preferably .pdf format) –
   - **a.** Brochure/Catalogue and Data sheet of the equipment.
   - **b.** Technical Compliance Statement as per the specification sheet from point A to E to be enclosed as per the Annexure-1.
   - **c.** Proprietary certificate from the manufacturer mentioning the unique technology or feature/s mentioned apart from the brand name (If applicable).
   - **d.** Pre requirements required at the installation site (Before submitting the bid, the tenderer should make pre-visit to the installation site and indicate the requirement along with the price bid wherever necessary)
   - **e.** Delivery Period of the item to be supplied and Time required for installation from the date of purchase order has to be indicated.
   - **f.** List of Institutes where the equipment has been supplied with copy of purchase orders.
   - **g.** Copy of GST, PAN, TIN document
   - **h.** Whether tenderer is manufacturer / accredited agent / sole representative, indicate details of principal's name & address. The offers of tenderer who are not manufacturer or direct authorized agent will be summarily rejected. Sub-distributors will not be accepted.
   - **i.** Non blacklisting certification that the firm has not been blacklisted in the past by any government/Private institution and certification for No Vigilance/CBI case pending against the firm/supplier by making an affidavit on non – judicial stamp paper of Rs 100/-.
   - **j.** Declaration towards acceptance of all terms and conditions should also be provided.
6. **Financial Bid should comprise of-**
   - **a.** Price quoted should be for DAP (INR or foreign currency) only i.e. NIMHANS Door Delivery Price inclusive of main equipment cost, each article wise/spares rates, taxes, other Government levies, Customs duty, any local agency commission, transportation, delivery of the equipment to the Institute premises, installation and commissioning etc. with a detailed break up mentioning manufacturers name, License number and name of the brand/make. Tender bids without price bid/quotation will be rejected.
   - **b.** Detailed breakup of the cost should be provided under icon "Action column" by clicking the % symbol which will be mentioned as Added statutory components like Base Value of the equipment quoted, GST percentage, etc.

Note: Price quoted will be Inclusive of taxes for DAP.

c. The tenderer should also provide the quote for regular servicing/maintenance duly mentioning the number of visits per annum for the AMC & CMC period after the warranty period is over. AMC & CMC should be quoted in INR only.

i. If the tenderer is quoting in Indian Rupees (INR) for items NOT MANUFACTURING IN INDIA (NMIC), the CUSTOM DUTY EXEMPTION CERTIFICATE WILL NOT BE ISSUED BY THE INSTITUTE. The Rate quoted should be inclusive of Custom duty & other incidental charges, the break of the cost should be provided under icon "Action column".

7. Successful tenderer decision will be made on the basis of total cost of the equipment (Inclusive of all miscellaneous charges as mentioned in Clause 6a).

8. The cost of the "**Portable 32 channel digital EEG system with accessories** & **EEG cap for Portable Digital EEG system**" will be freezed for 1 Year from the date of purchase order; however Institute reserves the right to procure/reject the purchase of equipment with the successful tenderer on repeat order basis within 1 year from the date of purchase order.

9. The tender bids (technical and price bid) should be typewritten; every correction in the tender should be initialed along with seal by the tenderer, failing which the tender will be rejected. All pages of the bid submitted must be signed along with seal and sequentially numbered by the tenderer.

10. Evaluation of Bids:-
The technical bid of the tenderer will be evaluated to determine whether

a. They are complete with respect to specifications.

b. They are free from computational errors.

c. The requisite documents have been submitted and properly signed.

11. Tender Opening:

a. The Technical bids will be unlocked through E procurement portal in the Committee Room, Adjacent to Registrar Chamber, NIMHANS, Bengaluru on the date specified in tender.

b. The Financial bid of the technically qualified tenderer/s only will be opened on a notified date.

12. Equipment and its accessories should be covered with minimum warranty period of 5 years for normal or regular wear & tear from the date of complete installation (Ready to use in all respects). In case of software's, the validity of the license key should be clearly mentioned and should have user define provision with option to switch over from one system to other system of the same kind within the validity period.

13. Software Updates:

The selected firm for the supply of tendered item should provide free updates of software up to 5 years from the date of complete installation.

14. Supply of spares should be guaranteed for a minimum period of 10 years from the date of supply or from the date of cessation of production of the model for 10 years, whichever is later, at the rates prevailing against payment.

15. Any modification or revision of bids after submission will not be entertained under any circumstances. Conditions such as "subject to the availability of stocks", supplies will be made as and when supplies received from the principles etc., will not be considered under any circumstances.

16. A tenderer having once given a tender bid shall not withdraw it after its acceptance/opening and if does, the EMD paid by the tenderer will be forfeited and the tenderer is liable to make good the loss sustained.

17. If required, the tenderer should demonstrate the quoted model of the equipment at the institute during the technical evaluation, failing which their bid/offer shall be rejected. The tenderer will be intimated that they should get ready for demonstration. No request for extending time for demonstration will be entertained. Failure to demonstrate, their offer will be rejected.

18. The tenderer should supply the circuit diagram and instruction manual of the tendered equipment/s at the time of supply of the equipment.

19. Necessary training / instructions on operation of the system should be given by the qualified engineers of the tenderer firm to NIMHANS technical staff/s at free of cost after completion of the installation.

20. The successful tenderer should immediately submit an acceptance letter duly signed and sealed for the rate/s and offers agreed by both the parties to the Head of the Institution within reasonable time on receipt of the Purchase Order (Agreement Specimen will be enclosed with Purchase order & Stamp duty to be paid by the tenderer). The successful tenderer should also furnish a Bank guarantee only from a Nationalized bank to the extent of 10% of the total purchase order value, valid for 60 days beyond the completion of the warranty period of the equipment, no split period bank guarantee will be entertained. In the event of the successful tenderer failed to supply the item/execute the agreement/submit the Bank Guarantee the EMD deposited by them shall stands forfeited.

21. Payment terms:
Payment will be made only after good working condition of the equipment certified by the end user. NO ADVANCE PAYMENT WILL BE ENTERTAINED.

22. Uptime Guarantee:
Penalty Clause for non-functioning of equipment in term of hardship to the patients and financial loss to institute: 95% up time of 365 days (24 hours a day) that is from the day of successful handing over of the whole complex. The company takes the responsibility for the

functioning of all the components and equipment, including the third party items supplied and included in the project. The total downtime annually for any reason/involvement of any of the components cannot exceed 5% (all inclusive). Subsequently if downtime exceeds 5% of 365 days, 1% of PO Value will be levied as penalty for every 24 hours of downtime until 7 days from the day of breakdown. If downtime exceeds 7 days the penalty will be 2% of PO Value from the date on which the equipment broke down beyond 5% permissible downtime. In addition to this, warranty period will be extended at double the rate of the downtime period.

23. If, at any time, during the said period, the supplier reduce the said prices of such Materials/Equipment or sales such Materials/Equipment to any other person/organization/ Institution at a price lower than the chargeable, the company shall forthwith notify such reduction or sale to the Director, NIMHANS and the price payable for the Materials supplied after the date of coming into force of such reduction or sale shall stand correspondingly reduced.

24. The losses to NIMHANS, Bengaluru, if any incurred on account of purchase made elsewhere by failure, neglect or refusal on the part of the tenderer to supply according to the terms of agreement will be recovered from them. If any article or things supplied by the tenderer have been partially or wholly used or consumed in the hospital and they are subsequently found to be in bad condition, unsound, inferior in quality or description, not in accordance with samples or otherwise faulty or unit for use, the wholesome of the contract price or price of such articles or things will be recovered from the tenderer. The tenderer will not be entitled for any payment whatsoever, for such articles for infringements of the stipulation of the conditions or for justifiable reasons the contract may be terminated by the Director and the tenderer shall be liable for losses sustained by the NIMHANS on the consequences of the termination which may be recovered from the EMD/Bank Guarantee or from their invoices due to them. In the event of such amount being insufficient, the balance will be recovered personally from the tenderer.

25. Any corrections/changes in the tender will be uploaded as corrigendum in the NIMHANS and E procurement websites only.

26. If the tender last/opening date falls on any general/government/institute holiday(s), then the successive dates will be postponed by equivalent days of holiday(s), however the time remains unchanged.

27. The Director reserves the right of ordering/not ordering/cancelling/increase or decrease the quantity and to reject any or all tender quotations without assigning any reason. The decision of the Director, NIMHANS, Bengaluru, shall be final in all the controversies that may arise in the matter. Any dispute arising out of this will be subject to the jurisdiction of the Court in Bengaluru.

28. Failure to adhere any of the above terms and conditions the bid(s) may be rejected and

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EMD may be forfeited.

29. None of the terms and conditions of the supplier shall be applicable to the purchase contemplated hereunder, irrespective of it being attached to any documents to be provided to NIMHANS. Such exercise shall have no meaning and binding effect unless the same is accepted by NIMHANS in writing.

NOTE: Please keep checking the NIMHANS and E-Procurement websites regularly for any further updates.

Sd/-, Director

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DECLARATION

(TO BE GIVEN BY THE TENDERER

Name of the Equipment: EEG cap for Portable Digital EEG system

Name of the company:

To

The Director,

National Institute of Mental Health & Neurosciences
(Institute of National Importance)
Post Box No. 2900,
Hosur Road, Bengaluru – 560 029

Dear Sir,

1. I/We hereby submit my/our tender for the ……
2. I/We have made requisite payment against EMD as per the tender document vide reference No. & date ……., else my tender bid may be rejected.
3. I/We have gone through all terms and conditions of the tender documents before submitting the same.
4. I/We hereby agree to all the terms and conditions, stipulated by the NIMHANS, in this connection including delivery, warranty, penalty etc. Quotations for each group are being submitted and shall be considered on their face value.
5. I/We undertake to sign the contract/agreement, if required, within reasonable time from the date of issue of the letter of acceptance, failing which our/my security money deposited may be forfeited and our/my name may be removed from the list of suppliers at the NIMHANS, Bengaluru.

NOTE: ALL TERMS & CONDITIONS SUCH AS TAXES/LEVIES ETC, HAS BEEN INDICATED IN THE QUOTATIONS FAILING WHICH IT WILL BE PRESUMED THAT THE RATES ARE INCLUSIVE OF ALL TAXES/LEVIES AND OTHER TERMS AND CONDITIONS ARE ALSO AS PER YOUR REQUIREMENTS.

Yours faithfully, **Signature of Tenderer & seal**

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CHECK LIST

(TO BE FILLED BY THE TENDERER)

1.	Name & Address of the Tenderer				
2.	Name & address of the manufacturer				
3.	Name of the equipment & Model Quoted				
4.	Validity of the quotation		**120 days from the tender submission last date**		
5.	**a.**	Delivery Period			
	b.	Warranty Period	**5 years**		
	c.	Installation Period			
6.	Tender Bid uploaded details (YES or NO against each item)		**a.**	Application Fee submitted	
			b.	EMD submitted	
			c.	Brochure/Catalogue uploaded	
			d.	Technical Compliance Statement	
			e.	Manufacturer Proprietary certificate Uploaded	
			f.	Pre requirements details uploaded	
			g.	List of users uploaded	
			h.	Copy of GST/PAN/TIN & Bank details Uploaded	
			i.	Distributor authorization letter uploaded	
			j.	Non-blacklisting certification uploaded	
			k.	Declaration enclosed	
			l.	Equipment Door delivery cost quoted	
			m.	AMC & CMC cost for 5 years post warranty period	
7.	Training will be provided (YES or NO)				
8.	a.	Whether after sales, service is available in Bengaluru? If yes, q uote the details			
	b.	What is the arrangement for post contract / warranty monitoring of the equipment			
9.	Any other information (Enclosed separately in letter head – YES or NO).				

Signature of Tenderer along with seal

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Department	**Department of Psychiatry**	**EMD**	
End User Contact Details			
Name	**Dr. John P. John**		
Designation	**Professor of Psychiatry**		
		Portable 32 channel digital EEG system	**Rs 1,10,000/-**
Mobile No.	9480829475	**EEG cap for Portable Digital EEG system**	**Rs 20,000/-**
Office No.	**+91-80-26995350/5305**		
Email	jpj@nimhans.ac.in or jpjinc@yahoo.com		

1. Specifications for Portable 32 channel digital EEG system with accessories

A. The Portable Digital EEG system for continuous EEG and Polysomnography (PSG) recording should have the following essential specifications.

1. The system should have high quality 32 Channel EEG amplifier for non-stop, continuous EEG recording. It should also have 32 channel USB EEG Amplifier with 32 EEG inputs.
2. The system should have provision for configuring 4 pairs of bipolar inputs for ECG, EMG etc., 3 respiration and 4 channels of external DC inputs. SpO2 & CO2 measurement should be inbuilt with minimum of 2 ECG channels for online heart rate monitoring for SUDEP. System should have numeric display of heart rate, SpO2 value and CO2 value, with the display of wave forms.
3. The EEG amplifier should be equipped with a minimum of 16 bit and above Analog-to-Digital Converter (ADC) with sampling rate of 1KHz and above, CMRR >160dB, input impedance of 100 Mega Ohms, signal band width of 0.08 Hz to 300 Hz, noise level<1.5 microvolt, peak-to-peak &system reference: C3/C4.
4. The amplifier should have both USB and Ethernet options to connect with the host PC; the amplifier head box should be able to connect to laptop through USB for low noise EEG recording. The amplifier must also have built-in patient event button/event marker.
5. Amplifier should have built in electrode impedance check facility and able to perform impedance check in numeric values from Console as well.
6. A Desktop PC loaded with all the EEG, digital video and PSG software for acquisition and review of acquired data as mentioned above. The PC should have the following minimum specifications: i7 core processor or above, 8 GB RAM, 2 TB HDD, 27" LED Monitor, current version of Windows 10 operating system).
7. The laptop PC unit should be supplied with the system, after passing the strict in-house quality checks by the manufacturer to comply with medical equipment standard.
8. The Laptop must be supplied with the following minimum specifications current version of Windows-10 OS, minimum 8GB RAM and least 500 GB Hard Disk.
9. A laser jet colour printer should be supplied along with the system.
10. Suitable trolley and carry case should be provided.

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11. Programmable Automatic Photic Stimulator with 4 Lux white light, Stim rate 0.5 to 60 Hz, Modes Automatic, Manual and Single, Duty cycle 5min continuous operation in 30min and Stim and pause time of 1 to 99sec with remote floor stand.
12. A set of 10 EEG electrodes, EEG paste 30 nos. and cleaning gel 20 nos. for recording using individual electrodes, when required.
13. Automatic online data back-up to minimize data loss on account of sudden power failure or computer crash
14. The system should have advanced patient administration software and advanced report generation software.
15. System should have facility for clipping of EEG, video or both before archiving to DVD.
16. Facility should be provided to export EEG Data to an external storage media in EDF, EDF+ or ASCII format for reviewing in any PC, with facility for reformatting and remontaging without the requirement of any additional software.
17. The system should have manual and automatic filter for removal of ECG artifacts in both acquisition and review modes.
18. The system should have 8 channel DSA trend graph for FFT trend analysis, 3D brain mapping, aEEG (Amplitude Integrated EEG), BSR (Burst Suppression Ratio), IBI (Inter Burst Interval), DSA (Density Spectral Array), Asymmetry, Edge frequency, FFT Power, Ratio, Asymmetry, and SpO2, EtCO2, trends.
19. The system should be able to display 64 traces of waveform display on the screen with a maximum of 5 minutes per screen.
20. The system should have Zoom & Analysis function in Review to magnify any selected portion of EEG wave and analyze peak by peak amplitude, frequency, and time interval of selected waves with result printout
21. It should have facility for acquisition and review by split screen mode to review at least 4 EEG windows simultaneously
22. System must have EEG Recording Navigation feature to set several measurements in advance as one routine including montages, recording duration/time, photic stimulation mode and other items for each stage and record the series of EEG data automatically
23. It should have the following additional features like data review during acquisition, and page-by-page addition of EEG data for review during acquisition, waveforms freeze facility with simultaneous background recording, file append feature, montage map, note window in EEG, 3D Voltage mapping and the following reference options: A1®A2, A1¬A2, A1«A2, A1+A2, VX, AV, BN, Avg, Org and SD
24. The analysis software should include spike and seizure detector and BESA. BESA analysis software should comprise the following: Research Basic, Source analysis, Coherence analysis and HASP dongle
25. The system should have FDA, CE approval and IPXO approval IEC 60601 standards for electrical safety.

26. Service and free training should be provided by principal company.
27. Uploading of system software on existing PCs/workstations at the Centre for Brain Mapping, Dept of Psychiatry, NIMHANS, along with periodic free software upgrades from time to time.
28. 5 years warranty and extension of AMC post-warranty for 5 more years (including all spares, batteries, circuit and other accessories) in accordance with NIMHANS policies.

B. Digital Video

1) Synchronized High-definition video (network camera) of patients with motorized PAN, Tilt and Zoom.
2) System should have facility for clipping of EEG, video or both before archiving to DVD
3) Facility to export EEG and Video Data to an external storage media for reviewing in any PC; it should be possible to reformat the data with existing software without the use of any additional software.
4) Possible to upgrade dual IP camera without additional license in future

C. Polysomnography (PSG)

1. A dedicated software for PSG acquisition and PSG online scoring should be provided.
2. The PSG software should allow automated sleep stage scoring in both real time and in offline mode using an algorithm that takes at least 3 EEG electrode data into consideration. Real time apnea scoring should also be possible. The system should permit simultaneous PSG recording and live scoring, while scoring pre-recorded data.
3. Provision for manual scoring using AASM guidelines should be provided
4. The system should have provision for automated analysis of leg movement, ECG, pulse transit time and arousal.
5. Comparative report of automatic and manual sleep scoring as per AASM guidelines.
6. Facility to generate html-based analysis reports including total sleep time, sleep stages, apnea/hypopnea events, Spo2, arousals, body positions and MSLT (Multiple Sleep Latency Testing)
7. Facility should be provided to save the report in pdf format and time link trend graphs superimposed on waveform data with epoch.
8. Sleep Accessories: AASM sensor starter kit with Minimum 6 EEG channels, 2 EOG Channels, 2 Chin EMG, Airflow, Snore, Respiration bands (Chest and Abdomen-Respiratory Inductive plethysmograph), ECG, SPO2, Periodic Leg Movement (PLM) sensors and Body position sensors.
9. Should be able to display SpO2, average pulse rate and online heart rate monitoring.

2. <u>Specifications for the EEG cap for Portable Digital EEG system should have the following essential specifications</u>.

1. The 32 channel EEG cap without embedded electrodes which is compatible with the EEG equipment being acquired simultaneously (further details will be provided regarding the EEG equipment, once it is procured).
2. 32 ring electrodes compatible for use with the above cap, plus 12 standby ring electrodes (total no of ring electrodes required=44)
3. The ring electrode sensors should be made with high purity sintered Ag/AgCl, resulting in highest signal quality.
4. The ring electrodes should be detachable from the cap to ensure fast drying and longer durability.
5. Electrode layout markers based on 10-20 and 10-10 systems, with equidistant layouts for all channel numbers and precise positioning of all electrodes.
6. The caps should be made of flexible material which adapts to the shape of the head and thus be comfortable for adult, elderly and paediatric patients.
7. The cap and the electrodes should be compatible for application of EEG paste and NOT gel.
8. The holes for fixing the ring electrodes to the cap should be wide enough to apply the EEG paste without the use of any accessories.
9. We require 7 EEG caps for the following head sizes as mentioned below:

Net size in cm	No of caps required
41-45	**1 No**
47-51	2 Nos.
51-54	2 Nos.
54-58	1 No
58-61	1No
Total no of caps	7 Nos.

<u>Quote must have a compliance report on all the above points.</u>

Optional:

a. Quotation for comprehensive maintenance care after 5 years of warranty
b. Quotation for annual maintenance care after 5 years of warranty

Note:

a. **The decision of L1 for Portable 32 channel digital EEG system (lowest price bid) will be decided based on the price quoted for the specification A to C of point No 1 for 5 years warranty only (excluding AMC & CMC price after warranty period)**

b. **The decision of L1 for EEG cap for Portable Digital EEG system will be decided based on the price quoted for the specification point No 2 only.**

Annexure-1

TECHNICAL COMPLIANCE FORMAT

Specification	Compliance (Yes/No)	Reference to the text in brochure with page No. (and indicate reference to the enclosed certificate/ document as applicable if any)
A. Portable 32 channel digital EEG system		
1 The system should have high quality 32 Channel EEG amplifier for non-stop, continuous EEG recording. It should also have 32 channel USB EEG Amplifier with 32 EEG inputs		
2 The system should have provision for configuring 4 pairs of bipolar inputs for ECG, EMG etc., 3 respiration and 4 channels of external DC inputs. SpO2 & CO2 measurement should be inbuilt with minimum of 2 ECG channels for online heart rate monitoring for SUDEP. System should have numeric display of heart rate, SpO2 value and CO2 value, with the display of wave forms.		
3 The EEG amplifier should be equipped with a minimum of 16 bit and above Analog-to-Digital Converter (ADC) with sampling rate of 1KHz and above, CMRR >160dB, input impedance of 100 Mega Ohms, signal band width of 0.08 Hz to 300 Hz, noise level <1.5 microvolt, peak-to-peak & system reference: C3/C4.		
4 The amplifier should have both USB and Ethernet options to connect with the host PC; the amplifier head box should be able to connect to laptop through USB for low noise EEG recording. The amplifier must also have built-in patient event button/event marker.		
5 Amplifier should have built in electrode impedance check facility and able to perform impedance check in numeric values from Console as well.		
6 A Desktop PC loaded with all the EEG, digital video and PSG software for acquisition and review of acquired data as mentioned above. The PC should have the following minimum specifications: i7 core processor or above, 8 GB RAM, 2 TB HDD, 27" LED Monitor, current version of Windows 10 operating system).		

7	The laptop PC unit should be supplied with the system, after passing the strict in-house quality checks by the manufacturer to comply with medical equipment standard.		
8	The Laptop must be supplied with the following minimum specifications current version of Windows-10 OS, minimum 8GB RAM and least 500 GB Hard Disk		
9	A laser jet colour printer should be supplied along with the system		
10	Suitable trolley and carry case should be provided		
11	Programmable Automatic Photic Stimulator with 4 Lux white light, Stim rate 0.5 to 60 Hz, Modes Automatic, Manual and Single, Duty cycle 5min continuous operation in 30min and Stim and pause time of 1 to 99sec with remote floor stand		
12	A set of 10 EEG electrodes, EEG paste 30 nos. and cleaning gel 20 nos. for recording using individual electrodes, when required		
13	Automatic online data back-up to minimize data loss on account of sudden power failure or computer crash		
14	The system should have advanced patient administration software and advanced report generation software.		
15	System should have facility for clipping of EEG, video or both before archiving to DVD		
16	Facility should be provided to export EEG Data to an external storage media in EDF, EDF+ or ASCII format for reviewing in any PC, with facility for reformatting and remontaging without the requirement of any additional software.		
17	The system should have manual and automatic filter for removal of ECG artifacts in both acquisition and review modes		
18	The system should have 8 channel DSA trend graph for FFT trend analysis, 3D brain mapping, aEEG (Amplitude Integrated EEG), BSR (Burst Suppression Ratio), IBI (Inter Burst Interval), DSA (Density Spectral Array), Asymmetry, Edge frequency, FFT Power, Ratio, Asymmetry, and SpO2, EtCO2, trends		
19	The system should be able to display 64 traces of waveform display on the screen with a maximum of 5 minutes per screen.		
20	The system should have Zoom & Analysis function in Review to magnify any selected portion of EEG wave and analyze peak by peak amplitude, frequency, and time interval of selected waves with result printout		

21 It should have facility for acquisition and review by split screen mode to review at least 4 EEG windows simultaneously		
22 System must have EEG Recording Navigation feature to set several measurements in advance as one routine including montages, recording duration/time, photic stimulation mode and other items for each stage and record the series of EEG data automatically		
23 It should have the following additional features like data review during acquisition, and page-by-page addition of EEG data for review during acquisition, waveforms freeze facility with simultaneous background recording, file append feature, montage map, note window in EEG, 3D Voltage mapping and the following reference options: A1®A2, A1¬A2, A1«A2, A1+A2, VX, AV, BN, Avg, Org and SD		
24 The analysis software should include spike and seizure detector and BESA. BESA analysis software should comprise the following: Research Basic, Source analysis, Coherence analysis and HASP dongle		
25 The system should have FDA, CE approval and IPXO approval IEC 60601 standards for electrical safety		
26 Service and free training should be provided by principal company		
27 Uploading of system software on existing PCs/workstations at the Centre for Brain Mapping, Dept of Psychiatry, NIMHANS, along with periodic free software upgrades from time to time		
28 5 years warranty and extension of AMC post-warranty for 5 more years (including all spares, batteries, circuit and other accessories) in accordance with NIMHANS policies		
B. Digital Video		
1 Synchronized High-definition video (network camera) of patients with motorized PAN, Tilt and Zoom		
2 System should have facility for clipping of EEG, video or both before archiving to DVD		
3 Facility to export EEG and Video Data to an external storage media for reviewing in any PC; it should be possible to reformat the data with existing software without the use of any additional software		
4 Possible to upgrade dual IP camera without additional license in future		
C. Polysomnography (PSG)		

1	A dedicated software for PSG acquisition and PSG online scoring should be provided		
2	The PSG software should allow automated sleep stage scoring in both real time and in offline mode using an algorithm that takes at least 3 EEG electrode data into consideration. Real time apnea scoring should also be possible. The system should permit simultaneous PSG recording and live scoring, while scoring pre-recorded data		
3	Provision for manual scoring using AASM guidelines should be provided		
4	The system should have provision for automated analysis of leg movement, ECG, pulse transit time and arousal		
5	Comparative report of automatic and manual sleep scoring as per AASM guidelines		
6	Facility to generate html-based analysis reports including total sleep time, sleep stages, apnea/hypopnea events, Spo2, arousals, body positions and MSLT (Multiple Sleep Latency Testing)		
7	Facility should be provided to save the report in pdf format and time link trend graphs superimposed on waveform data with epoch		
8	Sleep Accessories: AASM sensor starter kit with Minimum 6 EEG channels, 2 EOG Channels, 2 Chin EMG, Airflow, Snore, Respiration bands (Chest and Abdomen-Respiratory Inductive plethysmograph), ECG, SPO2, Periodic Leg Movement (PLM) sensors and Body position sensors.		
9	Should be able to display SpO2, average pulse rate and online heart rate monitoring		
D. EEG cap			
1	The 32 channel EEG cap without embedded electrodes which is compatible with the EEG equipment being acquired simultaneously (further details will be provided regarding the EEG equipment, once it is procured)		
2	32 ring electrodes compatible for use with the above cap, plus 12 standby ring electrodes (total no of ring electrodes required=44)		
3	The ring electrode sensors should be made with high purity sintered Ag/AgCl, resulting in highest signal quality		
4	The ring electrodes should be detachable from the cap to ensure fast drying and longer durability		

5	Electrode layout markers based on 10-20 and 10-10 systems, with equidistant layouts for all channel numbers and precise positioning of all electrodes.		
6	The caps should be made of flexible material which adapts to the shape of the head and thus be comfortable for adult, elderly and paediatric patients.		
7	The cap and the electrodes should be compatible for application of EEG paste and NOT gel		
8	The holes for fixing the ring electrodes to the cap should be wide enough to apply the EEG paste without the use of any accessories.		
9	We require 7 EEG caps for the following head sizes as mentioned below Net size in cm: No of caps required 41-45: 1 no 47-51: 2 nos. 51-54: 2 nos. 54-58: 1 no 58-61: 1no Total no of caps: 7 nos.		
E. Optional			
1	Quotation for comprehensive maintenance care after 5 years of warranty for **Portable 32 channel digital EEG system**		
2	Quotation for annual maintenance care after 5 years of warranty **Portable 32 channel digital EEG system**		

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