

Amendment No. 1**Sub: Amendment to the referred tender enquiry****Ref.: Tender Enquiry HITES/PCD/PMSSY-III/33/NRLG/18-19 dated 24/07/2018**

The following changes are being incorporated in the above referred Tender Enquiry Document.

**Section VII
Technical Specification**

Schedule No. 01 -8 Channel EMG -NCS-EP system		
Para	TENDER SPECIFICATION	READ AS
3	Must have 18 bit A/D conversion for high fidelity waveforms.	Must have minimum 16 bit A/D conversion for high fidelity waveforms
11	Low filter settings: 0.05 Hz to 3 KHz and high filter settings: 10 Hz to 10 KHz with AC interference notch filter 50 Hz	Low filter settings: 0.2 Hz to 3 KHz and high filter settings: 30 Hz to 10 KHz with AC interference notch filter 50 Hz
12	Amplitude calibration 2 micro volt to 10 milli volt	Deleted
13	Averager: 18 bits, number of averaging 9,999	Deleted
25	Should have automatic separation of AP and CM waveforms in EcochG.	Deleted
26	Should have Visual Evoked Potentials with Pattern, flash and goggles (LED) protocols (ERG, EOG PRVEP & LEDVEP) – EOG velocity waveform display with original EOG signal.	Should have Visual Evoked Potentials with Pattern, flash and goggles (LED) protocols (EOG PRVEP & LEDVEP)
27	Should have Somatosensory Evoked potentials with signal triggering and back averaging (SEP, SSEP, ECG triggered SSEP and ESCP) simultaneous SSEP and SEP measurement with accessories	Should have Somatosensory Evoked potentials (SEP, SSEP and ESCP) simultaneous SSEP and SEP measurement with accessories
31	Should have tremor analysis protocol software	Deleted
33	Workstation Should be with latest i5 processor, 4 GB RAM, 1 TB Hard Disk or better, 4 USB ports or better, DVD-RW, Latest Operating System, 22inch LED Monitor, Color Laser Printer, Speaker, Suitable UPS with 15min Backup, MS office , and OEM Trolley	Workstation Should be with latest i5 processor, 4 GB RAM, 1 TB Hard Disk or better, 4 USB ports or better, DVD-RW, Latest Operating System, minimum 22inch LED Monitor, Color Laser Printer, Speaker, Key Board, Mouse, Suitable UPS with 15min Backup, MS office , and Matellic Trolley with complete mounting provision"
35.a	Shielded EP electrodes – 10 sets	Shielded/ Twisted EP electrodes – 10 sets
35.f	Conductive paste (3 Jars of 300 gms) - 5 sets	Conductive paste (3 Jars of 225 gms or more) - 5 sets
35.p	Trolley from OEM- 2 No (One for main machine and 2nd for review station)	Metlalic Trolley (with mounting provision for accessories with Main machine and suitable space for printer & UPS for review station)- 2 Nos (One for main machine and 2nd for review station)
BOQ Amendments		
2	Shielded EP electrodes - 10 Sets	Shielded/ Twisted EP electrodes - 10 Sets
7	Conductive paste (3 Jars of 300 gms) -5 Sets	Conductive paste (3 Jars of 225 gms or more) - 5 sets
17	Trolley from OEM- 2 No (One for main machine and 2nd for review station)	Metlalic Trolley - 02 Nos.(One for main machine and 2nd for review station)

Schedule No. 02 - EMG-NCV-EP MACHINE 4 channel		
Para	TENDER SPECIFICATION	READ AS
4	Two channel monophasic/biphasic constant current/Voltage electrical stimulator	Should have Monophasic/ biphasic constant current /Voltage electrical stimulator
5	Input impedance: above 100 M ohms differential mode, > 1000Mohm in common mode	No Change
7	Noise < 0.7 micro volt RMS	Noise < 1 micro volt RMS
9	Low filter settings: 0.05 Hz to 3 KHz and high filter settings: 10 Hz to 10 KHz with AC interference notch filter 50 Hz	Low filter settings: 0.05 Hz to 2 KHz and high filter settings: 10 Hz to 10 KHz with AC interference notch filter 50 Hz
12	Must have trigger EMG, Single Fiber EMG(jitter analysis), Stimulated SFEMG, and QEMG with the system.	Must have trigger EMG, Single Fiber EMG(jitter analysis) with the system as standard
18	Should have Somatosensory Evoked potentials with signal triggering and back averaging (SEP, SSEP, ECG triggered SSEP and ESCP) simultaneous SSEP and SEP measurement with accessories	Should have Somatosensory Evoked potentials(SEP, SSEP and ESCP) simultaneous SSEP and SEP measurement with accessories
21.c	With 22" color LED touch screen display	With minimum 22" color LED display"
22.a	Shielded EP electrodes – 10 sets	Shielded/ Twisted EP electrodes – 10 sets
22.f	Conductive paste (3 Jars of 300 gms) - 5 sets	Conductive paste (3 Jars of 225 gms or more) - 5 sets
22.p	Trolley from OEM- 1 No	Matellic Trolley with complete mounting provision- 1 No
BOQ Amendments		
2	Shielded EP electrodes - 10 Sets	Shielded/ Twisted EP electrodes - 10 Sets
7	Conductive paste (3 Jars of 300 gms) -5 Sets	Conductive paste (3 Jars of 225 gms or more) - 5 sets
17	Trolley from OEM	Metlalic Trolley

Schedule No. 03 - Autonomic Function Testing Lab with Comprehensive Software		
Para	TENDER SPECIFICATION	READ AS
2	Should be capable of Performing Heart Rate variability (ECG), Beat-to Beat Blood Pressure measurement,Heart Rate Response to Deep Breathing (HRDB),Valsalva Maneuver,30:15 Ratio,E:1 ratio, Sweat quantitative measurements ,Head-up tilt analysis,Baroreflex Sensitivity, Olfactory quantitative evaluation	Should be capable of Performing Heart Rate variability (ECG), Beat-to Beat Blood Pressure measurement,Heart Rate Response to Deep Breathing (HRDB),Valsalva Maneuver,30:15 Ratio,E:1 ratio, Head-up tilt analysis,Baroreflex Sensitivity, Olfactory quantitative evaluation
4	Licensed software (test works)	Licensed software (Two Licences with free upgrade upto warranty and CMC period)
6	Sturdy Equipment cart provided by the principal	Matellic Trolley for both workstations
12	<u>Quantitative Sweat Measurement System:-</u>	Deleted
a	4 Channels for simultaneous dynamic quantitative evaluation of sweat rate and volume Measurement by direct vapour pressure calculation	
12 b	Dry airflow rate 60.0 5CCM	
12 c	Volume-0.0 to 1000.0 nano L at 0.1nano L per minute sensitivity Rate 0.0-1000.0 nano L per minute at 0.2 nano L per minute sensitivity.	
12 d	Should be able to be integrated with modules for cardiovagal and adrenergic testing of the autonomic nervous system.	
14	<u>Sniff Magnitude Device</u>	Deleted

Schedule No. 03 - Autonomic Function Testing Lab with Comprehensive Software		
Para	TENDER SPECIFICATION	READ AS
14 a	Device with its accessories (with 4 canisters) to be able to determine quantified olfactory loss. Software including its license	
14 b	Tilt Table	
14 b i	Rapid Tilt (0 to 70° in 9-10 seconds) with a choice of patient positions from 85 to -12° Trendelenburg.	
14 b ii	At least three pre-set tilt angles programmable and accessible at the push of a button	
14 b iii	2 Restraining belts for patient with floor level removable footboard.	
15	<u>Quantitative Sensory Testing</u>	Quantitative Sensory/ SSR Testing
		Added Para 18: System should be FDA/CE/BIS Certified and minimum a week training should be provided to end user at consignee site only by certified expert.
		Added Para 19: System Should be supplied with suitable tilt table with accessories.

Schedule No. 04 - Portable EEG 32channel		
Para	TENDER SPECIFICATION	READ AS
1	The system should be able to run on laptop battery for minimum 4 hours to acquire EEG signals artifact free in ward/ ICU and OT environment.	Amended as "The system should be able to run on laptop battery for minimum 1.5 hours to acquire EEG signals artifact free in ward/ ICU and OT environment"
11.a	Laptop core i5 , 6 GB RAM, 1TB Hard Disk, 3 USB ports or better, more than 4hrs backup	Amended as "Laptop core i5 , minimum 4 GB RAM , 1TB Hard Disk, 3 USB ports or better, more than 1.5 hrs backup with EEG Machine "
12.d	Noise < 1.5 micro volt Peak to peak	Noise < 1.5 micro volt Peak to peak or 0.65 RMS or less
12.l	ECG Elimination filter in both acquisition and review mode.	Deleted
12.t	10-20 or equivalent Conductive Paste – 30 Nos (300 grms or more)	10-20 or equivalent Conductive Paste – 30 Nos (225 grms or more)

Schedule No. 05 -Video EEG System 32 channel		
Para	TENDER SPECIFICATION	READ AS
1	The system should have 32 active channels including minimum 04 bipolar channels and 2 DC channels	The system should have 32 active channels including minimum 04 bipolar channels and 1 DC channel
4	Multifunctional electrode junction box with 32 channel EEG, 4 Bipolar, 2 DC channels, Inbuilt SpO2, Respiration, ECG channels	Multifunctional electrode junction box with 32 channel EEG, 4 Bipolar, 1 DC channel , Inbuilt SpO2, Respiration, ECG channels
16	The system should have Core i5 PC with 6 GB RAM, minimum 21" color touch screen display, multimedia speakers, optical mouse, 1TB hard disk or better, latest windows software, latest MS office , DVD Writer, Laser printer, UPS – 1KVA and OEM trolley.	The system should have Core i5 PC with minimum 4 GB RAM , minimum 21" LED color display , multimedia speakers, optical mouse, 1TB hard disk or better, latest windows software, latest MS office , DVD Writer, Laser printer, UPS – 1KVA Metallic trolley
17.a	No of channels: 32 with minimum 4 bipolar & 2 DC	No. of channels: 32 with minimum 4 bipolar & 1 DC
17.a	EEG Electrode Gold Plated -100 Nos.	Reusable EEG Electrode -100 Nos
17.s	10-20 or Equivelent Conductive Paste – 30 Nos (300 grms or more)	"010-20 or Equivelent Conductive Paste – 30 Nos (225 grms or more)

Schedule No. 05 -Video EEG System 32 channel		
Para	TENDER SPECIFICATION	READ AS
BOQ Amendments		
2	EEG Electrode Gold Plated -100 Nos.	Reusable EEG Electrode -100 Nos.
3	10-20 Conductive Paste - 30Nos.	Conductive paste (Jars of 225 gms or more) - 30Nos.

Schedule No. 06 -Video EEG/ERP/EP System - 128 channel		
Para	TENDER SPECIFICATION	READ AS
B.8	The video frames should be user selectable up to 30 frames/sec	The video frames should be user selectable up to 25 frames/sec

Schedule No. 07 -Video Polysomnography with 1 Camera		
Para	TENDER SPECIFICATION	READ AS
2	Must have minimum 32 referential EEG Channels, 6 or more differential/bipolar channels and 2 or more DC Channels	Must have minimum 20 referential EEG Channels, 6 or more differential/bipolar channels and 2 or more DC Channels
15	Acquisition PC should have Core i7 Processor, 8 GB RAM, 2 TB Hard Disk, DVD Writer, 21" or better color touch screen, Mouse, Keyboard, Set of Speakers, mic, Laser Printer, UPS -1kva, Dedicated OEM Trolley.	Acquisition PC should have Core i7 Processor, 8 GB RAM, 2 TB Hard Disk, DVD Writer, 21" or better LED color screen , Mouse, Keyboard, Set of Speakers, mic, Laser Printer, UPS -1kva, Dedicated Metallic Trolley
16	Should have Sleep Analysis hardware and software in order to record various physiological parameters like SaO2,Heart rate, Respiration, CO2, Esophageal pressure , CPAP, Airflow, Leg movement and rapid eye movement apart from EEG,ECG and EMG.	Should have Sleep Analysis hardware and software in order to record various physiological parameters like SaO2,Heart rate, Respiration, CPAP, Airflow, Leg movement and rapid eye movement apart from EEG,ECG and EMG
19	Should be supplied with review PC with networking between acquisition PC and necessary sleep/PSG software for review & reporting with minimum Core i5 Processor, 6 GB RAM, 1 TB Hard Disk, DVD Writer, 21" color LED Monitor, Mouse, Keyboard, Set of Speakers, mic, color Laser Printer, UPS -1kva, Dedicated Trolley.	Should be supplied with review PC with networking between acquisition PC and necessary sleep/PSG software for review & reporting with minimum Core i5 Processor, minimum 4 GB RAM , 1 TB Hard Disk, DVD Writer, minimum 21" color LED Monitor, Mouse, Keyboard, Set of Speakers, mic, color Laser Printer, UPS -1kva, Dedicated Trolley
BOQ Amendments		
4	EEG Gold electrode-100 Nos.	Reusable EEG Electrode -100 Nos.

Schedule No. 08 -Repetitive Transcranial Magnetic Stimulator (RTMS)		
Para	TENDER SPECIFICATION	READ AS
1.d	Burst Protocol option, such as Theta Burst and quadri pulse stimulation	Unique Burst Protocol option, such as Theta Burst
e	Should have external interface for software serial computer interface: i For taking full control of the system by writing software. ii Synchronize with other control software e.g.: MRI, visual stimulus. iii Remote operation.	Deleted

Schedule No. 08 -Repetitive Transcranial Magnetic Stimulator (RTMS)		
Para	TENDER SPECIFICATION	READ AS
5a	70mm Air Film/hydrothermal technology Coil which delivers up to 3000 pulses at 120% motor threshold at 10Hz stimulation (Biphasic waveform) over a 30 minute period and remains within allowed temperature limits. – 1 no.	Minimum 70mm Air Film/hydrothermal technology Coil which delivers up to 3000 pulses at 120% motor threshold at 10Hz stimulation (Biphasic waveform) over a 30 minute period and remains within allowed temperature limits. – 1 no.
5c	Air Film Sham Coil – 1 no.	Deleted
5 d	Figure eight coil atleast 25mm - 1 no (MRI compatible)	Figure eight coil at least 25mm - 1 no
5 e	70mm double placebo coil - 1 no	Minimum 70mm double placebo coil - 1 no
5g	EMG Interface Module	EMG Interface Module to integrate system with existing EMG machine
5h	The system should be supplied with desktop PC with the following specs : Intel i7 processor 4 GB RAM, 1TB Sata Hard Disk, 21" TFT monitor, compatible Latest OS, DVD Burner, UPS. Should offere dual monitors one for user interface and other for displaying/recording EEG/EMG data or other optional software	The system should be supplied with desktop PC with the following specs : Intel i7 processor 4 GB RAM, 1TB Sata Hard Disk, 21" TFT monitor, compatible Latest OS, DVD Burner, suitable UPS
6	The system should have facility for thermal print out for storing records of MEP.	The system should have facility for thermal/Laser print out for storing records of MEP
7	The system should be supplied with at least 3 Power Supply Units (PSU).	The system should be supplied with suitable Power Supply Units (PSU)
BOQ Amendments		
2	70mm Air Film Coil -1No.	Minimum 70mm Coil -1No.
3	70mm air cooled coil -1No.	Minimum 70mm Air Film/hydrothermal Coil -1No.
4	Air Film Sham coil -1No.	Deleted

Schedule No. 09 -Basic Repetitive Transcranial Magnetic Stimulator (RTMS)		
Para	TENDER SPECIFICATION	READ AS
4	The System should have pulse duration for biphasic range from 250-330us.	The System should have pulse duration for biphasic range from 160 micro sec. or more
8	The system should have facility to perform central motor conduction time (CMCT), silence period assessment (SP), intehemispheric inhibition(IHI), facilitation, root delay etc.	Deleted

Schedule No. 10 -Transcranial Doppler System		
Para	TENDER SPECIFICATION	READ AS
25	Should be supplied with dedicated equipment trolley(OEM)	Should be supplied with dedicated equipment trolley
BOQ Amendments		
6	OEM Trolley-1No.	Dedicated Equipment Trolley- 1No.
		Added Para 7(BOQ): 16Mz Probe (Optional Price)

Schedule No. 11 -Portable EEG-EMG-NCV System		
Para	TENDER SPECIFICATION	READ AS
B.1	Number of channels, should be 21 referencial + 4 polygraphic/Bipolar channels with minimum 1 DC channel	Number of channels, should be minimum 20 referencial + minimum 2 polygraphic /Bipolar channels with minimum 1 DC channel
B.8	Input noise: <0.25 microvolt RMS	Input noise: < 0.6 microvolt RMS
C.17	Auto Findings Composer (automatic comparison to norms and creation of sentences for NCV, F, H, EMG and EP findings).	Deleted

All other contents of the tender enquiry including terms & conditions remain unaltered.

Note:

- i. **Prospective Bidders are also advised to check the website regularly prior to the closing date and time of online submission of bids**