1. Flexible Video End Viewing Oesophago-Gastroduodenoscope

Specifications:

A. Flexible Video End viewing Oesophago-Gastroduodenoscope –

1. Should have built in HDTV compatible CMOS/CCD with Close observation capacity up to 2 mm.
2. Should have LCI (Linked Colour imaging) /RDI & TXI – Advance Image Enhancement Endoscopy, Special light function for detection of surface patterns and vessels and slight color difference should be visualized with natural tone using Red Component.
3. Suitable for BLI/BLI-Bright/NBI/ISCAN-OE real time optical chromo endoscopy system.
4. Should have Electronic Zoom function up to 2X or more.
5. In built scope identification memory chip for monitor display of scope's model no. serial no., white balancing memory, no. of connections/cumulative uses etc.
6. Fully immersible in disinfectant solution (no need to attach water resistant cap) & one touch connectivity Should have Electronic Zoom function up to 2X.
7. Scope should be latest launch in India at the time of quoting the tender.

Field of view	140°
Observation range	2.0mm-100mm
Bending capability	Up 210° /Down 90°
	Right 100°/Left 100°
Distal end diameter	9.2 mm or less
Insertion tube diameter	9.3 mm or less
Working channel diameter	2.8 mm or more
Working length	1100 mm or less
Total length	1400 mm or less

B. Full HD Video Processor Module:

- Should be compatible with Analog, HD-SDI/3G-SDI/DVI-D(Any two HD Outputs), RGB-TV x 1, S VIDEO x 1, VIDEO x 1(Any two SD Outputs) for a HDTV monitor should be available.
- Should contain the electronics to operate Multi optical zoom for clear visibility of near & far objects.
- Suitable for Optical enhancement technology to provide high Contrast Images while performing Optical Magnifying Endoscopy and while observing microvascular and micro surface patterns of the mucosal layer.
- System should support Close focus up to 1.5 mm to get enhanced image for diagnosis

- Should have LCI (Linked Colour imaging) /RDI & TXI – Advance Image Enhancement Endoscopy, Special light function for detection of surface patterns and vessels and slight color difference should be visualized with natural tone using Red Component.
- Suitable for BLI/BLI-Bright/ NBI/ISCAN-OE, Optical enhancement technology to provide high Contrast Images while observing microvascular and micro surface patterns of the mucosal layer.
- Should be compatible with Optical zoom with provision of Step wise & continuous zoom.
- System should be compatible and upgradable with AI (Artificial Intelligence) in future.
- Equipped with high resolution HDTV Imaging capacity and have stand by option to exchange the Scopes.
- No white balance compulsion.
- Compact, lightweight (10-15 kg) and ergonomically designed.
- Recording of both still & moving images.
- Should be compatible and upgradable with Enteroscopy scopes & EUS system for future up gradation.
- System should be equipped with one touch connection of scopes and should have Contact free technology with Power feed should be through Wireless electrical supply, Image Transmission should be through high-speed optical fiber.
- Portable Memory & USB Slot for image recording with 4 GB internal memory and external USB (2GB) Automatic IRIS control & automatic white balance
- Electronic Zoom 2.0 X or more with Recording of both still & moving images.
- Equipped with automatic light adjustment forced air cooling, regulated air feeding pump and fan with low noise.
- Light weight not more than 12 kg.
- Processor should be latest launch in India at the time of quoting the tender.

C. <u>Light Source (Quantity 1):</u>

- Long life Multi LED light source (3 or more LED bulb) with minimum lamp life of 6000 hours/Xenon 300 watt (additional 5 bulbs to supplied to equate lamp life)
- Backlit front panel indicators.
- Equipped with automatic light adjustment forced air cooling, regulated air feeding pump and fan with low noise.
- Compatible for waterproof one touch connector.
- Compact & light weight design weight up to 15 Kg.
- Integrated/Separate, light weight and ergonomically designed.
- Should be latest launch in India at the time of quoting the tender.

D. <u>Medical Grade Monitor (Quantity 2)</u>

- 26” or more medical grade monitor compatible with the above quoted system.
- Screen size 26 inches or more.
- Medical Grade monitor
- Full HD display (1920x1080)

- Compatible picture in picture display with compatible video processor and endoscopes.

E. <u>System should be supplied with below mentioned items -</u>

- Compatible trolley to mount the system
- HD Reporting and Reporting Software
- Computer system with i5 processor, 8GB RAM & 1 TB HDD or higher
- Laser color printer.
- Biopsy Forceps (2 No.)

<u>Terms and conditions:</u>

- The system must have standard comprehensive warranty of 5 years and should quote CMC for next 5 years.
- Should be European CE/US FDA certified/BIS/CDSCO/Indian Standards.
- CMC offered for the quoted equipment should not be more than 5% of the quoted model with not more than 5% escalation per year after completion of CMC period.
- CMC offered for the quoted equipment must be on OEM letterhead for further years. CMC offered on distributors / vendor letterhead will not be considered
- Installation process should be performed by OEM trained service engineer/ service representative on OEM's letter head/ service report, with a mandatory provision of providing preventive service visits of OEM trained service engineer/ service representative quarterly per year till completion of warranty period (i.e. 20 visits for first five years) and further quarterly visit (04 visits/ year) till the completion of CMC period.
- The installation process must be completed by the OEM/ Service provider within 30 days of supply.
- The accessories/ consumables utilized during the period of installation process should be taken care FOC by OEM/ Service provider.
- The equipment complies with the requirement of the Medical Device Directive of class I equipment and Electromagnetic compatibility; all supporting documents must be provided.
- Equipment should have brand name / model number embossed/ etched on the equipment.

In case of technical snag/ failure/ breakdown, the response time for Inspection should be within 72 Hour and repair within 10 days, otherwise provide a service machine until the period of recovery of breakdown of the unit. Failing which will attract penal action as per the decision of the INSTITUTE (Uptime guarantee of 95%).

1. **Fiber Optic bronchoscope (may be shared with TB & CD)**

Specifications:

Fiberoptic Bronchoscope:

Should have following specifications:

1. Lighter and possess high-definition image quality with camera on the tip.
2. Fully immersible in disinfectant solution.
3. Scope should have image enhancement function.
4. Two or more no. of remote-control switches on control body.
5. Compatible with leakage testing device Manual/Automatic.

Field of view	:	120 degree or more
Direction of view	:	0-degree, forward viewing
Depth of field	:	3 to 50 mm or better
Distal end outer diameter	:	5.9 mm or less
Insertion tube outer diameter	:	5.9 mm or less
Tip Bending rage	:	Up 180 deg & more, Down 130 deg & more
Working length	:	600 mm or more
Channel inner diameter	:	2.8 mm or more

Fiberoptic Bronchoscope Full HD Video Processor Module:

1. Equipped with high resolution HDTV Imaging capacity.
2. Should be compatible with Analog and Digital output with 1920X1080P output.
3. Minimum 2 HDTV image output (HD-SDI/DVI/HDTV) for HD image transfer.
4. Integrated/Separate, light weight and ergonomically designed.

5. Suitable for BLI/FICE/ NBI/ISCAN-OE, Optical enhancement technology to provide high Contrast Images while observing microvascular and micro surface patterns of the mucosal layer.
6. Should have advanced LCI (Linked Color imaging) /RDI & TXI – Advance Image Enhancement Endoscopy facility or equivalent.
7. Should have Special light function for detection of surface patterns and vessels and slight color difference should be visualized with natural tone using Red Component.
8. System should support Close focus up to 1.5 mm to get enhanced image for diagnosis.
9. System should have Edge & Structure enhancement.
10. No white balance compulsion would be added advantage.
11. Recording of both still & moving images
12. Portable Memory & USB Slot for image recording with 4 GB internal memory and external USB (8GB) Automatic IRIS control & automatic white balance.
13. Automatic IRIS control & automatic white balance
14. Should be compatible with Pead bronchoscope (4mm OD or less), Latest EBUS scopes, for future upgradation.
15. Electronic Zoom up to 2X or more.
16. Equipped with memory back up for settings & Lithium battery.

Fiberoptic Bronchoscope Light Source:

1. Long life Multi LED light source (3 or more LED bulb) with minimum lamp life of 6000 hours, & light intensity equivalent to Xenon 300 watt/300-watt xenon with extra 5 xenon bulbs.
2. Backlit front panel indicators.
3. Equipped with automatic light adjustment forced air cooling, regulated air feeding pump and fan with low noise.
4. Compatible for waterproof one touch connector
5. Compact & light weight design weight up to 15 Kg.
6. Integrated/Separate, light weight and ergonomically designed.

Fiberoptic Bronchoscope Medical Grade Monitor

26” or more medical grade monitor compatible with the above quoted system.

Fiberoptic Bronchoscope system should be supplied with below mentioned items -

- Compatible trolley to mount the system
- HD Reporting and Reporting Software
- Computer system with i5 processor, 8GB RAM & 1 TB HDD or higher
- Laser color printer.
- Biopsy Forceps (2 No.)
- Mouth Guard (2No.)

Terms and conditions:

- The system must have standard comprehensive warranty of 5 years and should quote CMC for next 5 years.
- Should be European CE/US FDA certified/BIS/CDSCO/Indian Standards.
- CMC offered for the quoted equipment should not be more than 5% of the quoted model with not more than 5% escalation per year after completion of CMC period.
- CMC offered for the quoted equipment must be on OEM letterhead for further years. CMC offered on distributors / vendor letterhead will not be considered
- Installation process should be performed by OEM trained service engineer/ service representative on OEM's letter head/ service report, with a mandatory provision of providing preventive service visits of OEM trained service engineer/ service representative quarterly per year till completion of warranty period (i.e. 20 visits for first five years) and further quarterly visit (04 visits/ year) till the completion of CMC period.
- The installation process must be completed by the OEM/ Service provider within 30 days of supply.
- The accessories/ consumables utilized during the period of installation process should be taken care FOC by OEM/ Service provider.
- The equipment complies with the requirement of the Medical Device Directive of class I equipment and Electromagnetic compatibility; all supporting documents must be provided.
- Equipment should have brand name / model number embossed/ etched on the equipment.

In case of technical snag/ failure/ breakdown, the response time for Inspection should be within 72 Hour and repair within 10 days, otherwise provide a service machine until the period of recovery of breakdown of the unit. Failing which will attract penal action as per the decision of the INSTITUTE (Uptime guarantee of 95%).

Central Cardiac Monitor Console

GENERAL DESCRIPTION

1. Modular & Suitable for Adult/Paediatric/ Patients monitoring .
2. Minimum 15 inches multi color TET display screen.
3. Eight Channel digital and waveforms/ traces display.
4. Capability of storage of patient data and printing of patient reports.

PARAMETERS

1. Eight digital and waveforms/traces display
2. Facility to monitor and display – ECG, Respiration, NIBP, SpO2, EtCO2, Temp

ECG

1. Multichannel (up to 12 lead) ST segment analysis
2. 3 or 5 lead with cascade waveform facility.
3. Monitoring, Diagnostic & OT modes of monitoring of ECG
4. Simultaneous Multi-lead ECG monitoring of 7 ECG lead
5. HR range 20-350 BPM
6. HR/PR Source selection facility from Automatic, Spo2 IBP and NIBP.

7. Automatic arrhythmia detection & alarm for standard & lethal arrhythmia

PULSE OXYMETRY

1. Nellcor or Masimo technology.
2. Display of Plethysmograph with Pulse Strength indicator & SpO2 values & perfusion index.
3. SpO2 Range – 1-100%
4. PR Range – 20 to 230 BPM

ETCO2 **

1. Should be Main Stream capnography with display of CO2 and digital Values of EtCO2, FiCO2 & RR.
2. EtCO2 Range – 0-99 mmHg
3. FiCO2 0 to 20 MMHg.
4. Flow rate – 50ml/min
5. Units – mmHg, KPA/Vol%

NIBP

1. Measurement and display of systolic diastolic and mean pressure values of NIBP measurement for adult, child & neonate.
2. User selectable alarm settings, Mode : Manual, STAT (continuous 5 minute operation) and automatic (selectable time interval 2-90 minutes).
3. Range 20-250 mmHg

TEMPERATURE

1. Two channels and with two units (0 c and 0 F) selectable
2. Temp. Range – 0- 50 Deg C.
3. Option for differential temperature should be provided

RESPIRATION

1. RR range 1-150bpm,
2. Sourced through ECG cable or CO2. Priority to CO2.
3. Apnea alarms should be provided.

TRENDS & ALARMS

1. 72 Hrs. non volatile graphical/tabular trends with zoom facility and separate dedicated trend for storing min 200 NIBP readings
2. Should have multiple patient data storage facility
3. Auto-setting of alarm limits depending on present patient condition for all the parameters
4. Should have Alarm recall facility for last 24 Alarm events with date, time and Message
5. Should have facility to print Graphical trend, tabular trend and alarm recall.

RECORDER

1. Inbuilt dual channel thermal array recorder
2. Include Laser Printer and dual channel strip chart recorder

OTHERS

1. Defibrillator and cautery protection should be provided
2. Should work on Mains as well as battery (backup for 2 Hrs)
3. Automatic zoom in Facility in the monitor display.
4. Should have facility to download trend data on USB and SD Card.

ACCESSORIES

1. Lead ECG with clips – 2 sets
2. NIBP Cuffs for Adult – 2, Child – 2 each
3. EtCO2 module with all accessories.
4. Esophageal/Rectal Temperature probe – 2 and skin temperature probe 1 per monitor.
5. Reusable SPO2 probes adult 2 and paediatric 2 per monitor

ENVIRONMENTAL FACTORS

1. The unit shall be capable of operating continuously in ambient temperature of 10-40 deg c and relative humidity of 15-90% The unit shall be capable of being stored continuously in ambient temperature of 0-50 deg C and relative humidity of 15-90%

POWER SUPPLY

1. Power input to be 220-240 VAC, 50Hz fitted with Indian plug .
2. Voltage corrector/ stabilizer of appropriate ratings meeting ISI Specifications. (Input 160-260 V and output 220-240V and 50 Hz)
3. Suitable ONLINE UPS with maintenance free batteries for minimum one-hour back up should be supplied with the system

STANDARDS, SAFETY & TRAINING

1. Should be USFDA, CE approved product
2. Shall meet the safety requirements as per IEC 60601 – 2- 27: 1994 – Medical electrical equipment – Part 2:
3. Should have local service facility. The service provider should have the necessary equipments recommended by the manufacturer to carry out preventive maintenance test.
4. Back to back warranty to be taken by the supplier from the principal to supply spares for a minimum period 10 years.
5. Comprehensive warranty for 2 years and provision of CMC for next 8 years.

DOCUMENTATION

1. Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.

Specifications For Central Station

Central station should have facility to display upto 20 real time waves at a time and upgradable upto 32 beds in future

Central station should have separate patient window for viewing detailed real-time or stored data for individual patient

CNS should have 24 hr stored patient data monitoring – trends

CNS should have 24 hr event review facility CNS should have multi lead arrhythmia and ST review facility.

CNS should have 50 alarms strips storage per bed

CNS should offer wave review with 24 hr full disclosure

CNS should support HL7 output

CNS should have option for 12L ECG monitoring

CNS should have optional facility for dual display for detailed analysis of individual bed without compromising on full ICU monitoring.

CNS should have facility for interfacing Holter data for analysis, in case of the Holter from the same brand is available.

CNS should export the ICU patient data to Holter for analvsis Remote display (Slave) facility should be available if necessary Real time recording thru dual channel recorder should be possible.

CNS should have facility for interfacing a laser printer for printing patient information and trend formats.

CNS should have advanced arrhythmia analysis package (more than 20 arrhythmia analysis should be possible)

Should have 12 LECG Monitoring & view possible at CNS.

Continuous full disclosure of up to 4 configurable waves per patient Alarm condition should be stored with waveforms (up to 4 waves per event) Alarm search should be possible by alarm severity CNS should operate on Microsoft Windows NT workstation operating system CNS should be supplied with UPS back up. Central Station Central Station Central Station Should be supplied with : 19" flat screen TFT display Laser printer and Recorder UPS Entire networking and cabling with hardware Wall mounts Fairly good installed base of similar model in the near by are is highly preferred Company should be selling the quoted series of model since last 3 years in India

4. Ambu Bag

Description of Function

An Ambu Bag (also known as a Bag Valve Mask or BVM or Ambu bag) is a hand-held device used to provide ventilation to a patient who is not breathing or who is breathing inadequately

Operational Requirements

1. Ambu bag must be autoclavable
2. Should be adaptable to all type of face masks.
3. Ambu bag should be self inflatable and should have pop up valve, attachment for oxygen tube & oxygen reservoir

Technical Specifications

1. Bag should be made up of Silicon, latex free double layered rubber and should retain sensivity and should be resistant to rough use.
2. Inlet end of the bag should have separate port for Oxygen supplement.
3. Outer port should be such that re-breathing valve or non return valve can be attached.
4. Should be supplied with Oxygen reservoir bag and should deliver tidal volumes of 250/500/750 and 1000 mL.

Environmental factors

1. The unit shall be capable of being stored continuously in ambient temperature of 0-50deg C and relative humidity of 15-90%
2. The unit shall be capable of operating continuously in ambient temperature of 10 -40 deg C and relative humidity of 15-90%

Standards, Safety and Training

1. Should be FDA , CE,UL or BIS approved product
2. Manufacturer should be ISO certfied for quality standards.

Documentation

1. User/Technical/Maintenance manuals to be supplied in English.
2. Certificate of calibration and inspection.
3. List of important spare parts and accessories with their part number and costing.
4. Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job descriptin of the hospital technician and company service engineer should be clearly spelt out.

5. Tread mill test machine

General Specifications

1. System should be PC based
2. The system should be supplied with a compatible NIBP system
3. Should be capable of Integration with Gas Exchange equipment
4. Company should make spares available for the entire life of the system.
5. Quality certifications like ISO-9001:2008, ISO-13485:2012 or equivalent
6. All-inclusive warranty of 5 years.

Specification for Acquisition / Stress Test Software

1. Automatic Arrythmia detection, print & capture : VBP and SVPB
2. Real time and retrospective J Point and isoelectric identification
3. User initiated and automatic capture of events
4. User defined Exercise Protocols
5. Real time Super imposition QRST Complex
6. Should acquire data from 12 Lead simultaneously
7. Should have notch filter around 50 Hz
8. Retrospective ECG & Arrythmia analysis even during Test
9. Scroll back during the Test
10. Should be capable of displaying real-time or stored ECG tracings.
11. Should display and regularly update ECG 12 leads, 12 medians, 1 expanded median, HR, BP, METS, Stage time, test time, protocol name, stage name, speed and grade of treadmill.
12. Should have automatic stage print out facility at the end of each exercise
13. Should have capability to display real-time ST running trend.
14. Should have ability to display trend graph for HR, BP, ST level, ST slope and J amplitude
15. Should have automatic detection, display, storage and review of rhythm events
16. Should be able to display ECG in various formats like 3 Lead + 12 Median; 6 Lead + 12 Median; 12 Lead + 12 Median
17. Should have base line correction (BLC) for stable baseline during test
18. Should run various test protocols like Bruce, Modified Bruce, Balke, Ellested, Naughton and user defined protocols.
19. Acquisition and analysis softwares should be upgradable to latest version free of cost
20. Should have capability to import patient data from HIS and also manually edit/add data of patient
21. Raw data from software should be made available in standard formats for further analysis with softwares like MATLAB.
22. Should be able to print report in PDF format.
23. Should able to print reports with standard Laser printers on A4 Plain sheets.

Specifications for treadmill

Treadmill should have:

1. Fully interfaced - controllable from software and Non interfaced – Independent mode with Programmable Controller
2. Controllable speed of 0.16-24 Km/H
3. Variable inclination (grade) from 0 – 25%
4. Adequate walking area ~ 1600 mm X 560 mm
5. Controlled by optically isolated RS 232 or USB
6. Heavy duty AC motor 4 HP(6 HP peak) drive
7. Emergency stop feature
8. Power requirement 230 V,50 Hz, 15 A

Specification for computer

System should be supplied with Trolly mounted branded all in one PC which should have:

1. i5 processor, 4 GB RAM, 1TB Hard Disk, DVD Drive, ~ 19" LED display or higher configuration.
2. Windows 8/10 (64 bit) Operating System.
3. Color Laser Printer for printing on A4 Sheets.
4. 1 KVA UPS for Computer.

Should be supplied with required standard accessories including 500 pieces of disposable ECG Electrodes

Hemodialysis machine

Description of Function

- Haemodialysis is a method for removing waste products as well• as free water from the blood when the Kidneys are incapable of this.

Operational Requirement

- Bicarbonate/Acetate Haemodialysis.
- The blood pump should run even in the absence of water or dialysate flow.
- Single needle dialysis using one blood pump.
- Isolated ultrafiltration/Sequential dialysis should be possible.

Technical Specification.

- Should have facility for conventional & high flux dialysis.
- The Machine should have a colour monitor display.
- Blood flow rate range should be 50 – 600ml/minute & adaptable to standard AV blood lines.
- Dialysate flow rate ranges from 300 – 800 ml/minute.
- Heparin pump: Delivery range 0 ml/min – 10 ml/min, Bolus function Max 5 ml per bolus.
- Automatic set up and priming is preferred.
- Positive and negative extracorporeal circuit pressure shall not affect the infusion rate.

- Optical Detector should be there to sense light and dark (blood and saline) and should not be affected by ambient light.
- Self-check test.
- Inbuilt NIBP monitoring.
- Should have inbuilt facility of hot & chemical disinfection with both short & long disinfection and 2 nos of 5 litres pack of hot disinfectant competent with quoted model with each machine should be supplied.
- Should have arterial & venous pressure monitoring range.
- Alarm should be activated for air bubbles and microbubbles over the entire blood flow.
- Should have facility to change sodium range 130 – 150 mmol/l
- Temperature control range should be 35.0 degree C to 39.0 degree C.
- The dialysate conductivity shall be adjusted by setting the sodium concentration.
- Machine should have inbuilt sodium & ultrafiltration profiling.
- Machine should have blood leak detector alarm.
- Ultrafiltration rate should be 0 to 4L/ hr given by the set values of UF volume and treatment time.
- Treatment Time adjustable up to 9 hr 59 min. in 1 min increment.
- TMP Monitoring should be displayed.
- Built-in device for measurement and monitor of effective urea clearance (K) dialysis dose (Kt/V), and plasma sodium (Na) automatically during treatment.
- The measurement of effective urea clearance (K), dialysis dose• (kt/V and plasma sodium (Na) shall be preformed in noninvasive, real-time mode without additional disposable required during treatment.
- Facility for heat, chemical disinfection and auto-switch off.
- Should have inbuilt Dry Bicarbonate powder module to provide hygiene online mixing to avoid precipitation and it should be supplied with each machine (10 nos) and should be competent with quoted model.
- Machine should have inbuilt facility of endotoxin retention filter and should have automatic programme and guidance message for changing the filter.

System Configuration Accessories, Spares and consumables

- All consumables required for installation and standardization of system to be given free of cost.
- Company must supply Bacterial filters-6 sets extra and 100 dialyzers with tubings free of cost.

Environmental Factors

- Machine should operate & being stored under extreme temperature conditions of lowest 2 degrees C and highest 48 degree C and humidity of > 80%.

Power supply

- Power input to be 220-240VAC, 50Hz fitted with Indian plug.
- Machine should have battery backup for at least 15 min in case of AC power failure.

- One 3 KVA online UPS with at least 30 min power backup must• be supplied with each machine.

Standard, Safety and Training

- The machine should be US FDA/European CE approved. The certificate should be provided.
- Shall comply with IEC 60601-2-16 SAFETY requirements of• medical electric equipment Part-2.
- Comprehensive training for lab staff and support services till familiarity with the system.
- The principal company should have its own office, distribution and service network in India. The company should have excellent service backup with resident engineers based in major cities of Rajasthan. The names of service engineers must be given along with the proof of employment of principal company.
- In case of breakdown it should be attended within 24 hours and repaired within 72 hours.

Documentation

- User/Technical/Maintenance manuals to be supplied in English.
- Certificate of calibration and inspection.
- List of Equipment's available for providing calibration and routine Preventive Maintenance Support. As per manufacturer documentation in service/technical manual.
- List of important spare parts and accessories with their part number and costing.
- Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist.
- Web site of the parent company to be mentioned, for verification of the detail and specification, if required.
- Machine at the time of supply will be of same year of manufacture.
- Company must ensure uninterrupted supply of consumables.
- The job description of the hospital technician and company service engineer should be clearly spelt out.
- Demonstration Is Must As And When Required.

EMG and nerve conduction velocity machines

1. Should have Nerve Conduction Studies MCS, NCS, F wave, H reflex, Collision, Blink reflex, RNST, Inching studies & CCV with temperature probe.
2. Main Unit should be connected to the Computer through the latest and powerful USB Interface.
3. Must have 16 bit A/D conversion for high fidelity waveforms
4. Must have Compact operation panel for easy management of waveforms and latency marking.
5. 2/4 channel system with head montage junction box with user configurable channels.
6. Single channel monophasic/biphasic constant current electrical stimulator, upgradable to 4 electric stimulator with artifact compensation and temperature measurement for CCV
7. Input impedance: above 100 M ohms.
8. Sensitivity 1 micro volt per division to 10 milli volt per division
9. Noise < 0.5 micro volt RMS
10. Common mode rejection ratio: above 100 dB isolation mode
11. Low filter settings: 0.02,2,20,30,100,200,500Hz and high filter settings: 100,200,500Hz;1,2,3,5,10khz
12. Amplitude calibration 1 micro volt to 10 milli volt
13. Averaging 9,999
14. Electrical Stimulator: 2 channels monophasic / biphasic, constant current with artefact compensation

15. Should have option of connecting stimulation pods with multiple output ports.
16. Should have compact stimulating electrode with convenient dials for stimulation intensity adjustment and delivery of electric stimulation with two user configurable switches.
17. System should have at least 1 triggers input / output, upgradable to 6 Triggers
18. Must have Single Fiber EMG, spontaneous activity
19. User should be able to open at least 8 test protocols simultaneously.
20. 2 minutes up to 99 sites. The system should have QEMG, Single fiber EMG, Stimulated SFEMG and Macro EMG
21. EMG play back with waveform and sound for 2 minutes should be possible in any PC.
22. Should have Brain stem auditory evoked potentials with click, burst & tone pip stimulation (ABR, MLR, SVR&EcochG).
23. Should have Somatosensory Evoked potentials with signal triggering and back averaging
24. Must have user friendly Data base management software and study schedule program for easy data management.
25. On-screen examination guide / Neuro navigator.
26. Should be able to perform Skin electrode impedance check at both junction box.
27. Should have option of directly interfacing high voltage stimulator in future without additional hardware
28. Should have option of P-300
29. Should have facility of exporting data to csv or any other suitable format for analysis with MATLAB or any other third party software
30. Should Support for PDF or any other file format
31. Accessories:
    a) Shielded EP electrodes – 2 sets
    b) Conductive paste (3 Jars of 300 gms) - 2 sets
    c) Skin preparation gel (Set of 2 tubes) - 2 sets
    d) EMG disposables needles (Box of 25) - 1 boxes (Pead size)
    e) EMG disposables needles (Box of 25) - 2 boxes (adult size)
    f) Single fibre EMG needle - 2 Nos.
    g) Temperature probe - 1 No.
    h) Acoustically shielded Head Phones - 1 No.
    i) Insert Ear Phones - 1 No.
    j) 17” VEP Monitor - 1 No

32. System should have following Safety Standard

    a) Manufacturer should have IS0 certification for quality standards.
    b) Should be CE approved product.
    c) Should be IEC 60601 -1 approved for electrical safety of Medical Equipment
    d) Shall meet IEC 60601-2-040 Safety requirements

Invasive Machine Ventilator

1. Should have facility for Invasive and Non-Invasive ventilation.
2. Microprocessor Control suitable for Pediatric and adult ventilation.
3. Electromagnetic Compatible Hinged arm holder for holding the circuit.
4. Should have built in touch color screen TFT display of minimum 10" or more for display of waveforms and Monitored value.
5. Should have inbuilt facility to upgrade with EtcO2.
6. **Facility to Measure and display:-**
7. Automatic compliance and leakage compensation for circuit and ET Tube.
8. Should have facility of log book, for events and alarms with date & time.
   a) Status indicator for ventilator mode.
   b) Battery indication.
   c) Pressure Vs time Vs volume Vs time, flow Vs time 3 curves/ waveforms.
   d) Alarm setting.
9. Should have following settings.
   a) Tidal volume (Minimum at least 50ml, Maximum up to 2000ml)
   b) Inspiratory Pressure (upto 80 cm of H20)
   c) Respiratory rate 1 to 80 bpm.
   d) Apnoea back up rate.

e) CPAP/PEEP f) Pressure support.
g) Fi02
h) Pause Time
i) Pressure & flow Trigger
j) Inspiratory flow up to 120 Lpm.

10. Monitoring and Display of the following Parameters.
    a) Airway Pressure (Peak & Mean).
    b) Tidal volume (Inspired & Expired).
    c) Minute volume (Inspired & Expired
    d) Respiratory mechanics.
    e) Spontaneous Minute Volume.
    f) Total Frequency.
    g) F102 dynamic.
    h) Intrinsic PEEP.
    i) Plateau Pressure.
    j) Resistance & Compliance.
    k) Use selector Alarms for all measured & monitored parameters.
    l) Occlusion Pressure.
    m) Pressure Flow & Volume curves
11. Modes of Ventilation equipped with newer modes of ventilation:-
    a) Assist /control.
    b) Volume Control.
    c) Pressure control.
    d) Pressure support.
    e) SIMV with pressure support (Pressure and volume control).
    f) PEEP.
    g) Inverse ratio Ventilation.
    h) Non invasive ventilator- BIPAP, CPAP.
    i) Apnea Ventilation, User selectable, volume & pressure control.
12. Should have built in safety alarms for Airway Pressure High & low, Minute volume, High & low, power failure, Low oxygen, High Respiratory Rate, Air Source in-operable.
13. Should have inbuilt exhalation filter.
14. Compressor should be of same company inbuilt/ mounted with ventilator assembly.
15. Should have compatibility with existing central pipe line.
16. Humidifier
    a) Servo controlled heated Respiratory Humidifier.
    b) Temperature of delivered Gas on LED display.
    c) Temperature should be adjustable.
    d) Jar should be autoclavable
17. Quality Certification : Valid CE/BIS/US FDA
18. Demonstration of the quoted model is must, preferable on site.
19. Nebulization assembly compatible with ventilator and circuit.

20. Should have interface facility.
21. Flow sensor-Should have life more than 1 year.
22. Expiratory Unit- Life should be more than 3yrs.
23. Data storage facility for at least 24hrs.
24. Internal rechargeable battery at least 30min. backup.
25. Should be supplied with compatible UPS.
26. Should have flow sensors having long life and the company shall specify the life cycle and the cost of the flow sensors at the time of quoting the tender.
27. CMC/ AMC for the atleast 5yrs and Cost of consumables spares.
28. Source :Indigenous/Imported
29. Warranty 2 years from the date of installation.
30. **Standard Accessories alongwith :**
    a) Patient breathing circuit of silicone for Adult & Paediatric (reusable).
    b) Non invasive ventilator mask reusable for adult (3sizes) and paediatric according to age-4set each.
    c) ET tube cuff pressure monitor and HME filter - 10.

Patient Examination table

1. Approx. Overall size 1820-1830mm L × 600- 610mm W × 750-760mmH.
2. All mild steel sheets used shall be of CRCA quality.
3. Table Top should be of 18G CRCA sheet in two sections.
4. The main top should be double bent four sides.
5. The top should have perineal recess made for 18G CRCA sheet and SS box at leg end with 'C' Channel sliding.
6. Complete with the pair of SS lithotomy rods made from 12mm dia SS304 grade round bars with rexine ankle straps insert gear arrangement.
7. The top should be of support of 31 × 35 × 2mm made from CRCA sheet one side having support of 31 × 3mm to receive the back section.
8. The back section shall be 18G CRCA sheet in double bend at three sides and one side closed beading having support of 35 × 3mm to receive main section a support must be provided with 25 × 5mm HR flat having welded to the support flat.
9. A ratchet flat shall be provided to with M.S. support rods 3/8".
10. The head flap adjustable on several indications both up and down and by easily accessible rack.
11. Foot endwelded tubular framework made of 31.7 O.D. × 18G tube for verticals & 25.5mm O.D. × 18G horizontal.
12. Gap between two legs must be 950-960mm lengthwise & 520mm-530mm widthwise.

13. Head end welded tubular framework made of 31.7mm O.D.× 18G tube for verticals & 25.5mm O.D.× 18G horizontal.
14. The leg must be fitted with rubber shoes with nylon inserts.
15. All components shall be thoroughly pre-treated chemically to remove rust & foreign matter like grease, oil etc by dip tank processes, including separate degreasing, derusting, phospating each followed by water rinsing & hot air drying to give phosphate coating conforming IS 3618-1966 class C.The treated metal surface should then be coated with epoxy polyester powder with paint film thickness of 50 microns & oven baked at 180 degree 200 degree centigrade. This finish should exclude stainless parts, some hardware, ebonite rubber, PVC, castor wheels, if any

Upper GI endoscope (Optional)

Specifications:

F. Upper GI endoscope (Pead) –

8. Should have built in HDTV compatible CMOS/CCD.
9. Should have LCI (Linked Colour imaging) /RDI & TXI – Advance Image Enhancement Endoscopy, Special light function for detection of surface patterns and vessels and slight color difference should be visualized with natural tone using Red Component.
10. Suitable for BLI/BLI-Bright/NBI/ISCAN-OE real time optical chromo endoscopy system.
11. Should have Electronic Zoom function up to 2X or more.
12. In built scope identification memory chip for monitor display of scope's model no. serial no., white balancing memory, no. of connections/cumulative uses etc.
13. Fully immersible in disinfectant solution (no need to attach water resistant cap) & one touch connectivity Should have Electronic Zoom function up to 2X.
14. Scope should be latest launch in India at the time of quoting the tender.

Field of view	140°
Observation range	3.0mm-100mm or better
Bending capability	Up 210° /Down 90°
	Right 100°/Left 100°
Distal end diameter	5.8 mm or less
Insertion tube diameter	5.9 mm or less
Working channel diameter	2.2 mm or more
Working length	1100 mm or less
Total length	1400 mm or less

G. Full HD Video Processor Module:

- Should be compatible with Analog, HD-SDI/3G-SDI/DVI-D(Any two HD Outputs), RGB-TV x 1, S VIDEO x 1, VIDEO x 1(Any two SD Outputs) for a HDTV monitor should be available.
- Should contain the electronics to operate Multi optical zoom for clear visibility of near & far objects.
- Suitable for Optical enhancement technology to provide high Contrast Images while performing Optical Magnifying Endoscopy and while observing microvascular and micro surface patterns of the mucosal layer.
- System should support Close focus up to 1.5 mm to get enhanced image for diagnosis
- Should have LCI (Linked Colour imaging) /RDI & TXI – Advance Image Enhancement Endoscopy, Special light function for detection of surface patterns and vessels and slight color difference should be visualized with natural tone using Red Component.
- Suitable for BLI/BLI-Bright/ NBI/ISCAN-OE, Optical enhancement technology to provide high Contrast Images while observing microvascular and micro surface patterns of the mucosal layer.
- Should be compatible with Optical zoom with provision of Step wise & continuous zoom.
- System should be compatible and upgradable with AI (Artificial Intelligence) in future.
- Equipped with high resolution HDTV Imaging capacity and have stand by option to exchange the Scopes.
- No white balance compulsion.
- Compact, lightweight (10-15 kg) and ergonomically designed.
- Recording of both still & moving images.
- Should be compatible and upgradable with Enteroscopy scopes & EUS system for future up gradation.
- System should be equipped with one touch connection of scopes and should have Contact free technology with Power feed should be through Wireless electrical supply, Image Transmission should be through high-speed optical fiber.
- Portable Memory & USB Slot for image recording with 4 GB internal memory and external USB (2GB) Automatic IRIS control & automatic white balance
- Electronic Zoom 2.0 X or more with Recording of both still & moving images.
- Equipped with automatic light adjustment forced air cooling, regulated air feeding pump and fan with low noise.
- Light weight not more than 12 kg.
- Processor should be latest launch in India at the time of quoting the tender.

H. <u>Light Source (Quantity 1):</u>

- Long life Multi LED light source (3 or more LED bulb) with minimum lamp life of 6000 hours/Xenon 300 watt (additional 5 bulbs to supplied to equate lamp life)
- Backlit front panel indicators.
- Equipped with automatic light adjustment forced air cooling, regulated air feeding pump and fan with low noise.

- Compatible for waterproof one touch connector.
- Compact & light weight design weight up to 15 Kg.
- Integrated/Separate, light weight and ergonomically designed.
- Should be latest launch in India at the time of quoting the tender.

I. Medical Grade Monitor (Quantity 2)

- 26" or more medical grade monitor compatible with the above quoted system.
- Screen size 26 inches or more.
- Medical Grade monitor
- Full HD display (1920x1080)
- Compatible picture in picture display with compatible video processor and endoscopes.

J. System should be supplied with below mentioned items -

- Compatible trolley to mount the system
- HD Reporting and Reporting Software
- Computer system with i5 processor, 8GB RAM & 1 TB HDD or higher
- Laser color printer.
- Biopsy Forceps (2 No.)

Terms and conditions:

- The system must have standard comprehensive warranty of 5 years and should quote CMC for next 5 years.
- Should be European CE/US FDA certified/BIS/CDSCO/Indian Standards.
- CMC offered for the quoted equipment should not be more than 5% of the quoted model with not more than 5% escalation per year after completion of CMC period.
- CMC offered for the quoted equipment must be on OEM letterhead for further years. CMC offered on distributors / vendor letterhead will not be considered
- Installation process should be performed by OEM trained service engineer/ service representative on OEM's letter head/ service report, with a mandatory provision of providing preventive service visits of OEM trained service engineer/ service representative quarterly per year till completion of warranty period (i.e. 20 visits for first five years) and further quarterly visit (04 visits/ year) till the completion of CMC period.
- The installation process must be completed by the OEM/ Service provider within 30 days of supply.
- The accessories/ consumables utilized during the period of installation process should be taken care FOC by OEM/ Service provider.
- The equipment complies with the requirement of the Medical Device Directive of class I equipment and Electromagnetic compatibility; all supporting documents must be provided.
- Equipment should have brand name / model number embossed/ etched on the equipment.

In case of technical snag/ failure/ breakdown, the response time for Inspection should be within 72 Hour and repair within 10 days, otherwise provide a service machine until the period of

recovery of breakdown of the unit. Failing which will attract penal action as per the decision of the INSTITUTE (Uptime guarantee of 95%).

Flexible Video Colonoscope (Optional)

Specifications:

A. Flexible Video Pead Colonoscope -

- Should have built in Megapixel compatible CMOS/Full HD CCD.
- Should be equipped with auxiliary water jet function for flushing (mucosal cleaning).
- Should have LCI (Linked Colour imaging) /RDI & TXI – Advance Image Enhancement Endoscopy, Special light function for detection of surface patterns and vessels and slight color difference should be visualized with natural tone using Red Component.
- Suitable for BLI/BLI-Bright/ NBI/ISCAN-OE, Optical enhancement technology to provide high Contrast Images while observing microvascular and micro surface patterns of the mucosal layer.
- In built scope identification memory chip for monitor display of scope's model no. serial no., white balancing memory, no. of connections/cumulative uses etc.
- Inbuilt features like Advance force transmission & adaptive bending & Gradual/Variable stiffness or equivalent for ease of insertion.
- Fully immersible in disinfectant solution (no need to attach water resistant cap) & one touch connectivity with Contact free technology.
- Scope should be compatible with the Artificial Intelligence technology for future up gradation (early cancer/polyp detection and characterization feature).
- Scope should be latest launch in India at the time of quoting the tender.

Field of view	140° or more
Observation range	3.0mm-100mm
Bending capability	Up 210° /Down 160° or more
	Right 160°/Left 160°
Distal end diameter	9.8 mm or less
Insertion tube diameter	10.7 mm or less
Working channel diameter	3.2 mm or more
Working length	1690 mm or more
Total length	2010or more

B. <u>Full HD Video Processor Module</u>:

- Should be compatible with Analog, HD-SDI/3G-SDI/DVI-D(Any two HD Outputs), RGB-TV x 1, S VIDEO x 1, VIDEO x 1(Any two SD Outputs) for a HDTV monitor should be available.

- Should contain the electronics to operate Multi optical zoom for clear visibility of near & far objects.
- Suitable for Optical enhancement technology to provide high Contrast Images while performing Optical Magnifying Endoscopy and while observing microvascular and micro surface patterns of the mucosal layer.
- System should support Close focus up to 1.5 mm to get enhanced image for diagnosis
- Should have LCI (Linked Colour imaging) /RDI & TXI – Advance Image Enhancement Endoscopy, Special light function for detection of surface patterns and vessels and slight color difference should be visualized with natural tone using Red Component.
- Suitable for BLI/BLI-Bright/ NBI/ISCAN-OE, Optical enhancement technology to provide high Contrast Images while observing microvascular and micro surface patterns of the mucosal layer.
- Should be compatible with Optical zoom with provision of Step wise & continuous zoom.
- System should be compatible and upgradable with AI (Artificial Intelligence) in future.
- Equipped with high resolution HDTV Imaging capacity and have stand by option to exchange the Scopes.
- No white balance compulsion.
- Compact, lightweight (10-15 kg) and ergonomically designed.
- Recording of both still & moving images.
- Should be compatible and upgradable with Enteroscopy scopes & EUS system for future up gradation.
- System should be equipped with one touch connection of scopes and should have Contact free technology with Power feed should be through Wireless electrical supply, Image Transmission should be through high-speed optical fiber.
- Portable Memory & USB Slot for image recording with 4 GB internal memory and external USB (2GB) Automatic IRIS control & automatic white balance
- Electronic Zoom 2.0 X or more with Recording of both still & moving images.
- Equipped with automatic light adjustment forced air cooling, regulated air feeding pump and fan with low noise.
- Light weight not more than 12 kg.
- Processor should be latest launch in India at the time of quoting the tender.

C. <u>Light Source (Quantity 1):</u>

- Long life Multi LED light source (3 or more LED bulb) with minimum lamp life of 6000 hours/Xenon 300 watt (additional 5 bulbs to supplied to equate lamp life)
- Backlit front panel indicators.
- Equipped with automatic light adjustment forced air cooling, regulated air feeding pump and fan with low noise.
- Compatible for waterproof one touch connector.
- Compact & light weight design weight up to 15 Kg.
- Integrated/Separate, light weight and ergonomically designed.

- Should be latest launch in India at the time of quoting the tender.

D. Medical Grade Monitor (Quantity 2)

- 26" or more medical grade monitor compatible with the above quoted system.
- Screen size 26 inches or more.
- Medical Grade monitor
- Full HD display (1920x1080)
- Compatible picture in picture display with compatible video processor and endoscopes.

System should be supplied with below mentioned items -

- Compatible trolley to mount the system
- HD Reporting and Reporting Software
- Computer system with i5 processor, 8GB RAM & 1 TB HDD or higher
- Laser color printer.
- Biopsy Forceps (2 No.)

Terms and conditions:

- The system must have standard comprehensive warranty of 5 years and should quote CMC for next 5 years.
- Should be European CE/US FDA certified/BIS/CDSCO/Indian Standards.
- CMC offered for the quoted equipment should not be more than 5% of the quoted model with not more than 5% escalation per year after completion of CMC period.
- CMC offered for the quoted equipment must be on OEM letterhead for further years. CMC offered on distributors / vendor letterhead will not be considered
- Installation process should be performed by OEM trained service engineer/ service representative on OEM's letter head/ service report, with a mandatory provision of providing preventive service visits of OEM trained service engineer/ service representative quarterly per year till completion of warranty period (i.e. 20 visits for first five years) and further quarterly visit (04 visits/ year) till the completion of CMC period.
- The installation process must be completed by the OEM/ Service provider within 30 days of supply.
- The accessories/ consumables utilized during the period of installation process should be taken care FOC by OEM/ Service provider.
- The equipment complies with the requirement of the Medical Device Directive of class I equipment and Electromagnetic compatibility; all supporting documents must be provided.
- Equipment should have brand name / model number embossed/ etched on the equipment.

In case of technical snag/ failure/ breakdown, the response time for Inspection should be within 72 Hour and repair within 10 days, otherwise provide a service machine until the period of recovery of breakdown of the unit. Failing which will attract penal action as per the decision of the INSTITUTE (Uptime guarantee of 95%).

Proctoscope

- Working Attachment, for use with Proctoscope and Telescope Proctoscope with obturator O.D.: 24 mm, working length: 8 cm.
- Straight Forward Telescope 30°, Eyepiece 45° angled, diameter 4 mm, length 9.5 cm, autoclavable, Fiber optic light transmission incorporated
- Sponge Holder, working length 20 cm Dressing Forceps, total length 19 cm
- Fistula Hook, total length 19 cm
- Proctoscopy Punch, Through-cutting, cutting width 3.4 mm, straight jaws, sheath diameter 3.5 mm, working length 20 cm
- Injection Needle, straight, LUER-Lock, tip diameter 1.0 mm, working length 14 cm Hemorrhoid Grasping Forceps, for use with ligature instrument
- Ligature Instrument, for treatment of hemorrhoids, working length 17 cm including: Loading Cone
- Only US FDA (510 K) Approved model should be offered.

CPAP Machine

1.Device should able to deliver CPAP of 1 to 10 cmH2O increments of 1 cm, using an underwater bubble system.

2.100% (+/- 2%) with an adjustable flow in the range of 0-15 L/min (+/- 0.5 L/min); No change

3. Should have a heated wire servo-controlled humidifier with display temp near patient end of the circuit; to be supplied with 2 reusable infant water chamber. No change

4. Should be supplied with 2 reusable heated wire silicone tubing circuit for infant/New born. No change

5. Should be able to deliver CPAP using available patient interfaces nasal prongs/ nasopharyngeal prongs; No change

6. For devices based on underwater bubble systems the water chamber should be reusable; to be supplied with 2 reusable water chamber. No change

7. Should be provided pressure release valve at 15cm H2O to 17 cm H2O; No change

8. User’s interface: No change

9. For a flow driving system a pressure display is required. No change

10. Audio visual alarm for low pressure, high pressure, power failure, low O2. No change

11. Physical Characteristics No change

12. Weight (lbs, Kg) :< 8 Kgs No change

13. Noise (in dBA) : 65dB No change

14. Heat dissipation : Yes No change

15. Mobility, portability : Portable No change

16. Energy Source (electricity, UPS, Solar, gas, water, CO2 …) No change

17. Power requirement : 220VAC, 50 Hz No change

18. Battery Operated : with at-least 6 hours battery backup No change

19. Tolerance (to variations, shutdowns) : ± 10% of input No change

20. Protection : OVP, earth leakage protection No change

21. Power consumption :< 140 Watt No change

22. Other energy supplies: electric/battery driven. No change

23. Accessories, Spare Parts, Consumables No change

24. Each device should be provided with 30nasal prongs (At least three sizes suitable for neonates weighing < 1000grms, 1000-1500grms &> 1500 grams). No change

25. Air and O2 hose of 3m length each along with the appropriate socket; No change

26. Environmental and Departmental Considerations No change

27. Operating condition: Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90% in ideal circumstances. No change

28. Only US FDA (510 K) Approved model should be offered.

ABG Machine

1	Self contained cartridge system with internal automated programmes
2	The unit should be ready to use it at anytime and anywhere.
3	The system should have Disposable Cartridge / Cassette
4	The System should provide Blood gas, Electrolyte, Metabolites
5	The results should be available after analysis within 30 seconds which can be seen on the TFT Screen with Printout
6	The systems should have rechargeable battery back up a minimum of 8 Hours
7	Should have built in automated integrated calibration and Quality check, without the use of any reagents
8	The system should be Maintenance free, without any Hidden charges, Room temperature test card storage, Critical result reporting with Reference Values, Wireless Data capture and Transmission, Patient ID bar coding system,
9	Should have capability to store minimum of 2000 Blood Gas Analysis readings and able to display on demand.
10	To supply 100 nos. cartridges free of cost along with the machine
11	The product should have the Standard certificate of FDA Approval with CE Mark.

Flexible Video Sigmoidoscope

Specifications:

E. Flexible Video Sigmoidoscope -

- Should have built in Full HD Endoscopy with Close observation capacity up to 3.0mm.
- Should be equipped with auxiliary water jet function for flushing (mucosal cleaning).
- Suitable for FICE/BLI/BLI-Bright/ NBI/ISCAN-OE, Digital/Optical enhancement technology to provide high Contrast Images while observing microvascular and micro surface patterns of the mucosal layer.
- In built scope identification memory chip for monitor display of scope's model no. serial no., white balancing memory, no. of connections/cumulative uses etc.

Field of view	140° or more
Observation range	3.0mm-100mm
Bending capability	Up 180° /Down 180°
	Right 160°/Left 160°
Distal end diameter	12.8 mm or less

Insertion tube diameter	12.8 mm or less
Working channel diameter	3.8 mm or more
Working length	790 mm or less
Total length	1090 or less

F. **Full HD Video Processor Module**:

- Should be compatible with Analog, HD-SDI/3G-SDI/DVI-D(Any two HD Outputs), RGB-TV x 1, S VIDEO x 1, VIDEO x 1(Any two SD Outputs) for a HDTV monitor should be available.
- Should contain the electronics to operate Multi optical zoom for clear visibility of near & far objects.
- Suitable for Optical enhancement technology to provide high Contrast Images while performing Optical Magnifying Endoscopy and while observing microvascular and micro surface patterns of the mucosal layer.
- System should support Close focus up to 1.5 mm to get enhanced image for diagnosis
- Should have LCI (Linked Colour imaging) /RDI & TXI – Advance Image Enhancement Endoscopy, Special light function for detection of surface patterns and vessels and slight color difference should be visualized with natural tone using Red Component.
- Suitable for BLI/BLI-Bright/ NBI/ISCAN-OE, Optical enhancement technology to provide high Contrast Images while observing microvascular and micro surface patterns of the mucosal layer.
- Should be compatible with Optical zoom with provision of Step wise & continuous zoom.
- System should be compatible and upgradable with AI (Artificial Intelligence) in future.
- Equipped with high resolution HDTV Imaging capacity and have stand by option to exchange the Scopes.
- No white balance compulsion.
- Compact, lightweight (10-15 kg) and ergonomically designed.
- Recording of both still & moving images.
- Should be compatible and upgradable with Enteroscopy scopes & EUS system for future up gradation.
- System should be equipped with one touch connection of scopes and should have Contact free technology with Power feed should be through Wireless electrical supply, Image Transmission should be through high-speed optical fiber.
- Portable Memory & USB Slot for image recording with 4 GB internal memory and external USB (2GB) Automatic IRIS control & automatic white balance
- Electronic Zoom 2.0 X or more with Recording of both still & moving images.
- Equipped with automatic light adjustment forced air cooling, regulated air feeding pump and fan with low noise.
- Light weight not more than 12 kg.
- Processor should be latest launch in India at the time of quoting the tender.

G. Light Source (Quantity 1):

- Long life Multi LED light source (3 or more LED bulb) with minimum lamp life of 6000 hours/Xenon 300 watt (additional 5 bulbs to supplied to equate lamp life)
- Backlit front panel indicators.
- Equipped with automatic light adjustment forced air cooling, regulated air feeding pump and fan with low noise.
- Compatible for waterproof one touch connector.
- Compact & light weight design weight up to 15 Kg.
- Integrated/Separate, light weight and ergonomically designed.
- Should be latest launch in India at the time of quoting the tender.

H. Medical Grade Monitor (Quantity 2)

- 26" or more medical grade monitor compatible with the above quoted system.
- Screen size 26 inches or more.
- Medical Grade monitor
- Full HD display (1920x1080)
- Compatible picture in picture display with compatible video processor and endoscopes.

I. System should be supplied with below mentioned items -

- Compatible trolley to mount the system
- HD Reporting and Reporting Software
- Computer system with i5 processor, 8GB RAM & 1 TB HDD or higher
- Laser color printer.

Standard accessories - (2 No. Each)

- Biopsy forceps

Terms and conditions:

- The system must have standard comprehensive warranty of 5 years and should quote CMC for next 5 years.
- Should be European CE/US FDA certified/BIS/CDSCO/Indian Standards.
- CMC offered for the quoted equipment should not be more than 5% of the quoted model with not more than 5% escalation per year after completion of CMC period.
- CMC offered for the quoted equipment must be on OEM letterhead for further years. CMC offered on distributors / vendor letterhead will not be considered
- Installation process should be performed by OEM trained service engineer/ service representative on OEM's letter head/ service report, with a mandatory provision of providing preventive service visits of OEM trained service engineer/ service representative quarterly per year till completion of warranty period (i.e. 20 visits for first five years) and further quarterly visit (04 visits/ year) till the completion of CMC period.
- The installation process must be completed by the OEM/ Service provider within 30 days of supply.

- The accessories/ consumables utilized during the period of installation process should be taken care FOC by OEM/ Service provider.
- The equipment complies with the requirement of the Medical Device Directive of class I equipment and Electromagnetic compatibility; all supporting documents must be provided.
- Equipment should have brand name / model number embossed/ etched on the equipment.

In case of technical snag/ failure/ breakdown, the response time for Inspection should be within 72 Hour and repair within 10 days, otherwise provide a service machine until the period of recovery of breakdown of the unit. Failing which will attract penal action as per the decision of the INSTITUTE (Uptime guarantee of 95%).

Colonoscope

Specification

1. 1. Adult Video Colonoscope, High Definition (Qty 1)

2. Compatible Video Processor — digital signal processing of signal from colour CCD chip. Should have memory card slot for image recording, automatic iris control and option for electronic zoom. Should be equipped with high resolution HDTV imaging capacity. Should provide optical enhancement technology like NBI/BLI/OE-iScan or equivalent.

3. Compatible Xenon Light Source {250-400 Watts} (Qty.1) with extra Xenon bulbs (2 No.). Should have automatic switch off function, compatible with NBI/OE ISCAN/FICE.

4. Compatible high resolution, high definition medical grade Monitor with size 24" or more

5. Portable high quality Trolley for the whole system (Qty. 1)

6. Biopsy channel rubber valves (50 pieces)

i. All standard accessories, Air Leakage Tester, User/Operator Manuals,

ii. A fully loaded Windows based PC of reputed company with all necessary features

iii. Endoscopic software,

iv. UPS (3 KVA or better),

v. High quality color printer with scanner

vi. Scope hanger and Scope hanging almirah

vii. Portable suction machine viii. High quality anti-virus software with 5 years single time/renewable subscription

7. Scope Specifications:

i. Built in HDTV compatible CCD

ii. Suitable for NBI/OE iSCAN/BLI

iii. Direction of view should be "0" degree forward

iv. Field of View: 140 degree or more

v. Depth of View: 2-100 mm or better

vi. Distal End (OD): 14 mm or less

vii. Bending sectionUp: 160-180 deg or more, Down: 160-180 deg or more, Right & Left: 150 deg or more

viii. Insertion tube (OD): 13.2 mm or less

ix. Working Length: 1500-1800 mm

x. Instrument Channel (ID): 3.7 mm or more xi. Auxilary water jet and variable stiffness are optional

8. Comprehensive warranty of 5 years followed by 5 years of free CMC

9. Compulsory provision for loaner endoscope within 72 hours of detection of any major breakdown/defects in the endoscope system4

10. Biopsy forceps 5 in nos, EST needle 5 in nos

Equipment for Cardiac pacing

Specifications for Temporary External Pacemaker

1. It should have option of all basic modes like DDD, DOO, DDI, AAI, AOO, VVI, VOO (Demand and Asynchronous)

2. Voltage output: 0.1 TO 20 mA or wider for both atria and ventricle.

3. Pacing rate 30-200 or more ppm with rapid atrial pacing available.

4. Pulse width 1 millisecond or wider.

5. Display should demonstrate both sensing and pulsing.

6. Dimensions- should be compact and light in weight.

7. Control: All controls are to be located on the face and are to be protected by a transparent cover.

8. Should have safety lock for set pacing parameters.

9. Sensitivity: Should be continuously variable from 1 to 20 mV or more in ventricle and 0.4 -10 mV in atrium.

10. Refractory period –Atrial 200-500 millisecond, PVARP.

11. Inhibit sensitivity 1-20 mV.

12. Should have pacing pause mode.

13. AV interval-manual range 200-300, sensed A-V 100-200.

14. Power backup to be 9 volts, pacing should continue during battery change period.

15. Should be CE/FDA/BIS approved.

16. Should have low battery indicator.

17. Six Pacing cables should be provided with each unit.

18. 5 years' warranty should be available.

19. CMC after 5 years should be quoted separately. For final comparison, CMC price of five years will be taken into account.

20. Adequate service backup should be available.

Rubber Hammer

Light Microscope

Specification: