

30.01.2023

Tender For the Supply and installation of Physiological Monitoring - I For Tertiary Care Hospitals At Govt. Rajaji Hospital, Madurai Govt, Kilpauk Medical College Hospital, Chennai and Govt. Coimbatore Medical College Hospital, Coimbatore

Tender No: PKG1/C1/ICB/TNUHP/JICA/TNMSC/ENGG/2022, Dt. 29.307.2022

Corrigendum – II

a) The following Corrigendum are issued:

Sl. No.	Tender Reference	Instead of	Read As
1	Page No. 114 <u>Section VI</u> <u>3.Technical Specification</u>	Existing specification	Revised specification at Annexure - I

b) The following clarification is issued:

Sl. No.	Tender Reference	Amendment Requested	Clarification issued
1	Page No. 114 <u>Section VI</u> <u>3.Technical Specification</u> <u>1. Multi Para Monitor with EtCO2 & IBP</u> 11. EtCo2 is to be of side stream technology..	i) Requested to amend as, Both Main Stream and Side stream Etco2 modules of plug and play type should be supplied as standard with all necessary accessories suitable for use on both Intubated and non-intubated patients with each monitor. ii) Requested to amend as, EtCo2 is to be of side stream or main stream Technology.	No change. Hence Published specification prevails.
2	Page No. 114 <u>Section VI</u> <u>3.Technical Specification</u>	Requested to amend as, 10 Lead ECG cable with Leads - 1no.	No change. Hence Published specification prevails.

Sl. No.	Tender Reference	Amendment Requested	Clarification issued
	<p><u>1. Multi Para Monitor with EtCO2 & IBP</u> c) 5 lead wire- 2 Nos.</p>		
3	<p>Page No. 114 <u>Section VI</u> <u>3.Technical Specification</u> <u>1. Multi Para Monitor with EtCO2 & IBP</u> d) SpO2 finger sensor - Each 2 Nos. for Adult & Paediatric</p>	<p>Requested to amend as, Spo2 sensor - Adult finger. Pediatric and neonatal wrap - each one.</p>	<p>No change. Hence Published specification prevails.</p>
4	<p>Page No. 114 <u>Section VI</u> <u>3.Technical Specification</u> <u>1. Multi Para Monitor with EtCO2 & IBP</u> e) Skin temperature probe - 2 Nos. per monitor</p>	<p>Requested to amend as, Reusable Skin and Core temp sensor -each one.</p>	<p>No change. Hence Published specification prevails.</p>
5	<p>Page No. 114 <u>Section VI</u> <u>3.Technical Specification</u> <u>1. Multi Para Monitor with EtCO2 & IBP</u> f) NIBP Hose - 2 Nos. per monitor</p>	<p>Requested to amend as, Reusable NIBP Hose - 2 Nos per monitor.</p>	<p>No change. Hence Published specification prevails.</p>
6	<p>Page No. 114 <u>Section VI</u> <u>3.Technical Specification</u> <u>1. Multi Para Monitor with EtCO2 & IBP</u> g) Adult & Paediatric cuff - 2 Nos. each</p>	<p>Requested to amend as, Reusable Adult & Paediatric cuff - 2 Nos. each.</p>	<p>No change. Hence Published specification prevails.</p>
7	<p>Page No. 114 <u>Section VI</u> <u>3.Technical Specification</u></p>	<p>Requested to amend as, Reusable IBP Cable - 2 Nos.</p>	<p>No change. Hence Published specification prevails.</p>

Sl. No.	Tender Reference	Amendment Requested	Clarification issued
	<p><u>1. Multi Para Monitor with EtCO2 & IBP</u> h) IBP Cable - 2 Nos.</p>		
8	<p>Page No. 114 <u>Section VI</u> <u>3.Technical Specification</u> <u>1. Multi Para Monitor with EtCO2 & IBP</u> i) Disposable IBP Transducers- 5 Nos</p>	<p>Requested to amend as, Disposable IBP Transducers- 6 Nos.</p>	<p>No change. Hence Published specification prevails.</p>
9	<p>Page No. 114 <u>Section VI</u> <u>3.Technical Specification and Corrigendum Dt. 05.01.2023</u> <u>1. Multi Para Monitor with EtCO2 & IBP</u> j. Side stream ETCO2 accessories including water trap collection tube – 50 Nos.</p>	<p>Requested to amend as, Plug & Play type Sidestream and Mainstream Etco2 module with Accessories - each one.</p>	<p>No change. Hence Published specification prevails.</p>
10	<p>Page No. 114 <u>Section VI</u> <u>3.Technical Specification and Corrigendum Dt. 05.01.2023</u> <u>1. Multi Para Monitor with EtCO2 & IBP</u></p>	<p>Requested to add the following points: i. Monitor should have monitoring, surgery and diagnostic mode of monitoring for ECG ii. Monitor should be HL7 compliant and the necessary paperwork to this evidence should be submitted iii. Display format should be able to be configured on user's preferences.</p>	<p>No change. Hence Published specification prevails.</p>

Sl. No.	Tender Reference	Amendment Requested	Clarification issued
		iv. Monitor should have a USB port for software upgrade and data download v. Should have inbuilt Thermal printer for alarm and ECG events printing at bedside vi. Should have Defib and ESU protection.	
11	Page No. 114 Section VI 3. Technical Specification 1. Multi Para Monitor with EtCO2 & IBP 2. Should have a minimum 15-inch-High Bright Screen, Portable, with Battery Backup at least 1 hour	Requested to amend as, Should have a minimum 15 inch colour TFT display with soft ready access keys, Rotary Knob, Full Touch screen and Remote control for operation of the monitor at various levels. The monitor should have a built in rechargeable battery backup for minimum 3 hours.	No change. Hence Published specification prevails.
12	Page No. 114 Section VI 3. Technical Specification 1. Multi Para Monitor with EtCO2 & IBP 3. Should have Display of atleast 7 Waveforms or more.	Requested to amend as, Should have minimum display with atleast 10 waveforms.	No change. Hence Published specification prevails.
13	Page No. 114 Section VI 3. Technical Specification 1. Multi Para Monitor with EtCO2 & IBP 4. Should have 120 hours or more graphic and	i) Requested to amend as, Should have 360 hours Graphical and Tabular trend of all parameters.	No change. Hence Published specification prevails.

Sl. No.	Tender Reference	Amendment Requested	Clarification issued
	tabular trend of all parameters.	ii) Requested to amend as, Should have 72 hours graphic and tabular trend of all parameters.	
14	<p>Page No. 114</p> <p><u>Section VI</u></p> <p><u>3.Technical Specification</u></p> <p><u>1. Multi Para Monitor with EtCO2 & IBP</u></p> <p>5. Should have ECG including, Heart Rate, 6 Channel ECG Waveforms, ST segment Analysis, Arrhythmia Analysis. Optional features: Advanced softwares like ST mapping, QT Analysis, HRV analysis, Oxygenation, Renal Calculations & Drug Dose Calculation.</p>	<p>Requested to amend as, Should have ECG monitoring including Heart Rate, 3, 5 8 12 lead ECG waveforms, ST Segment Analysis, Arrhythmia Analysis like Asystole. Tachy, Brady, Vtach, Ext Tacky, Ext Bra0y, V Brady, Prolonged RR, SV tachy, Irregular RR, VPC Run, R on T, Multiform, Freq VPC, couplet, Bigeminy, Trigeminy. V Rhythm, Early w, VF, Pause No Pacer Pulse, pacemaker spike detection, drug calMion & oxy-crg as standard feature.</p>	<p>No change. Hence Published specification prevails.</p>
15	<p>Page No. 114</p> <p><u>Section VI</u></p> <p><u>3.Technical Specification</u></p> <p><u>1. Multi Para Monitor with EtCO2 & IBP</u></p> <p>6. Should have Oxygen saturation (Masimo or Equivalent technology) including oxygen saturation, pulse rate, pulse wave.</p>	<p>Requested to remove this point.</p>	<p>No change. Hence Published specification prevails.</p>

Sl. No.	Tender Reference	Amendment Requested	Clarification issued
16	Page No. 114 <u>Section VI</u> <u>3. Technical Specification</u> <u>1. Multi Para Monitor with EtCO2 & IBP</u> 17. Should comply with European CE or US FDA.	Requested to amend as, The quoted product model should have CE (from Notified body) or USFDA certification and the bidder shall possess current and valid ISO9001:2015 quality certificate from Notified body apart from the manufacturer certifications to prove the QMS system followed in their organisation. The manufacturer should possess ISO13485 from a Notified body. Should be IEC60601-1 compliant and papers to be submitted.	No change. Hence Published specification prevails.
17	Page No. 114 <u>Section VI</u> <u>3. Technical Specification</u> <u>1. Multi Para Monitor with EtCO2 & IBP and</u> <u>3. Multipara Monitor</u>	Requested to add the following points: i. The monitor must have the capability to monitor Etco2 using the mainstream technology which can be used on neonate, paed, and adult. As it's used in neonate the dead space of the Etco2 xdcr should be less than 0.5ml. which can be used in pre mature neonates too ii. The Weight of the ETCO2 Transducer at the Patient end	No change. Hence Published specification prevails.

Sl. No.	Tender Reference	Amendment Requested	Clarification issued
		<p>should be less than 10grams. The ETCO2 sensor should have warm up/calibration time should be less than 8 seconds. (Including Adaptor)</p> <p>iii. Should have technology to measure NIBP automatically in case of sudden blood pressure change in between automatic time interval.</p> <p>iv. Monitor should have Pulse Pressure Variability Index (PPV) and Systolic Pressure Variability (SPV) to show Intravascular Volume. This Feature is useful in guiding fluid therapy for patients on mechanical ventilation. This feature is very much useful for Fluid Management during monitoring of the Critical Patients</p> <p>v. Monitor should have facility to upgradation of Non-Invasive Continuous Cardiac Output. Totally Non-Invasive method for measuring the CCO. This will be very much needed in the patient end to understand the patient's hemodynamics without pricking the patient,</p>	

Sl. No.	Tender Reference	Amendment Requested	Clarification issued
		<p>and not inviting more infection to the patient.</p> <p>vi. Should provide a digital value of the arterial oxygen saturation as well as diagnostic plethysmograph pulse waveform, and perfusion index display.</p> <p>vii. Should have OCRG to analyze beat-to-beat heart rate, respiration, and oxygenation levels which can help doctors detect the cause of apnea attack in Pediatric Patients.</p> <p>viii. Should have 12 Lead ECG simultaneous display using 10 Lead ECG Cable as an optional facility.</p> <p>ix. Should have facility to print all the parameters and data using a direct connective printer.</p> <p>x. Should have upgradeable facility for the remote viewing capability to monitor data from a distance even when the clinician is away from the hospital premises, through mobile phone of the clinician.</p>	

Sl. No.	Tender Reference	Amendment Requested	Clarification issued
18	Page No. 117 <u>Section VI</u> <u>3. Technical Specification</u> <u>3. Multipara Monitor</u> 2. Should have a minimum 12.1-inch-High Bright Screen, Portable, with Battery Backup at least 2 hour.	Requested to amend as, Should have a minimum 12.1-inch- High Bright Screen, Portable, with Battery Backup should be not less than 1.5 hour.	No change. Hence Published specification prevails.
19	Page No. 117 <u>Section VI</u> <u>3. Technical Specification</u> <u>3. Multipara Monitor</u> 4. Should have 120 hours graphic and tabular trend of all parameters.	Requested to amend as, Should have 72 hours graphic and tabular trend of all parameters.	No change. Hence Published specification prevails.

All other terms and conditions of the tender remain unaltered.

The above forms part of the bidding documents. The bidder shall upload the copy of this corrigendum duly signed by their authorized signatory, along with their bid.

Sd/-

General Manger (E)

3. Technical Specifications

Technical Specification for Multi Para Monitor with ETCO2 & IBP **(Lot/Contract no.1)**

1. Should have the following parameters – ECG + SpO2(with ability to work in low perfusion and identify Pleth Variability Index), + NIBP+ Resp + Temp (Dual) + IBP (dual) + EtCO2.
2. Should have a minimum 15-inch-High Bright Screen, Portable, with Battery Backup at least 2 hour.
3. Should have Display of atleast 7 Waveforms or more.
4. Should have 120 hours or more graphic and tabular trend of all parameters.
5. Should have ECG including, Heart Rate, 6 Channel ECG Waveforms, ST segment Analysis, Arrhythmia Analysis. Optional features: Advanced softwares like ST mapping, QT Analysis, HRV analysis, Oxygenation, Renal Calculations & Drug Dose Calculation.
6. Should have Oxygen saturation (with ability to work in low perfusion and identify Pleth Variability Index) including oxygen saturation, pulse rate, pulse wave.
7. Should have NIBP includes Systolic Pressure, diastolic pressure, mean pressure.
8. Should have 2 channels of body temperature.
9. Should have Respiration includes Breath rate, breath waveform.
10. Should have EtCO2 Channel includes CO2 wave, Breath rate, EtCo2 and FiCO2.
11. EtCo2 is to be of side stream technology.
12. Should have Dual IBP Channel configurable with Systolic, Diastolic and Mean Pressures.
13. Should be Suitable for Adult, Pediatric, and Neonate Patients.
14. Should have Multi graded Audio-Visual Alarms.

15. There should be alarm limit setting for every parameter.
16. Should have RJ45/USB/ LAN/WI for powerful CMS Networking and optional feature of monitor connecting to external Laser printer directly without any computer interface.
17. Should comply with European CE or US FDA.

Scope of Supply must include:

- a) Basic unit with ECG, Resp, SpO2(with ability to work in low perfusion and identify Pleth Variability Index), Dual Temp, NIBP, Two IBP, inbuilt battery - 1 No.
- b) 5 lead ECG Cable - 1 No. each per monitor
- c) 5 lead wire- 2 Nos.
- d) SpO2 finger sensor - Each 2 Nos. for Adult & Paediatric
- e) Skin temperature probe - 2 Nos. per monitor
- f) NIBP Hose - 2 Nos. per monitor
- g) Adult & Paediatric cuff - 2 Nos. each
- h) IBP Cable - 2 Nos.
- i) Disposable IBP Transducers- 5 Nos.
- j) Side stream ETCO2 accessories including water trap collection tube – 50 Nos.
- k) Wall mount bracket with cables holder for mounting the monitors should be provided.

Technical Specification for Multipara Monitor with IBP, ETCO2, CO, BIS MODULE & AGM With Slave Monitor (Lot/Contract no.2)

1. A true modular vital sign monitors suitable for use in advanced surgical procedures, clinical investigations & research with scope for future up-gradation should be quoted.
2. Advanced Modular Patient monitor having integrated basic measurements & features with capability to provide additional clinical measurements by attaching interchangeable single/dual/multi-parameter modules/servers.
3. The monitors should have a bright, highly visible, minimum 15 inch colour touch display for easy viewing from a distance in a large intensive care unit.

4. The unit should have an inbuilt continuous battery backup of minimum 2 hours.
5. Should have the capability to display at least 8 real time waveforms along with related numerical parameters on a single screen.
6. The Monitor should have a 12 lead ECG display (simultaneous) with capability to derive 12 leads with 5 lead ECG cable only with graphical representation of 12 lead ST segment analysis.
7. The size of the numeric should be adjustable & capable to become bigger for viewing from a very long distance. The size adjustment should be easily done using the keys on the screen by the user.
8. The monitor should have the capability to be operated through full touch screen operation.
9. Each monitor should have the capability to monitor ECG, Respiration, NBP, SpO₂(with ability to work in low perfusion and identify Pleth Variability Index), IBP, EtCO₂, BIS and Gas monitoring automatic detection of Anesthesia gases.
10. Should have automatic inhalation and exhalation of CO₂, N₂O and Anaesthetic Agents and display MAC value.
11. Bispectral Index Monitoring: The measurement of Bispectral Index should include EEG waveform, BIS trend and measurement values (BIS, SQI, SR, SEF, TP and BC).
12. Should have capability to get upgraded to connect third party devices such as Anesthesia Machines, Syringe Pumps etc.
13. The monitor should be capable of displaying 120 hours trends for all monitor parameters. Time resolution for trends should be selectable. Optional feature: Should store data on SD card/ Flash card memory which can be removed from one monitor and plugged in another monitor of same make and printout of same can be taken from computer without any special software
14. It should have Pleth variability Index (PVI) as standard to monitor fluid responsiveness of patients non-invasively.
15. It should have the capability to provide event review based on the events defined by the user of the monitor as per the specific condition of the patient.
16. The monitor should be able to work on mains even if batteries need

to be removed.

17. Continuous Cardiac Output Module must be included

18. A slave monitors of minimum 22 inch to be supplied & installed along with main monitor.

19. The monitor and its all modules must be US FDA or European CE approved (requisite certificates to be enclosed).

20. All standard accessories required to run all the parameters mentioned above to be provided with the unit.

Scope of Supply must include:

- a. Basic unit with ECG, Resp, SpO2 (with ability to work in low perfusion and identify Pleth Variability Index), Dual Temp, NIBP, Three IBP, inbuilt battery - 1 No.
- b. 5 lead ECG Cable - 1 No. each per monitor
- c. 5 lead wire - 2 Nos.
- d. SpO2 finger sensor - Each 2 Nos. for Adult & Paediatric
- e. Skin temperature probe - 2 Nos. per monitor
- f. NIBP Hose - 2 Nos. per monitor
- g. Adult & Paediatric cuff - 2 Nos. each
- h. IBP Cable - 3 Nos.
- i. Disposable IBP Transducers - 5 Nos.
- j. Necessary BIS module consumables - 10 Nos.
- k. Necessary Cardiac Output module consumables - 10 Nos.
- l. Side stream ETCO2 accessories including water trap collection tube - 50 Nos.
- m. Wall mount bracket with cables holder for mounting the monitors should be provided.

Technical Specification for Multipara Monitor (Lot/Contract no.3)

- 1. Should have monitoring the following Parameters - ECG + SpO2 (with ability to work in low perfusion and identify Pleth Variability Index) + NIBP + Resp + Temp (Dual).
- 2. Should have a minimum 12.1-inch-High Bright Screen, Portable, with Battery Backup at least 2 hour.
- 3. Should be able to Display up to 7 Waveforms.

4. Should have 72 hours graphic and tabular trend of all parameters.
5. Should have ECG including, Heart Rate, ST segment Analysis, Arrhythmia Analysis.
6. Should have Oxygen Saturation (with ability to work in low perfusion and identify Pleth Variability Index) including oxygen saturation, pulse rate, pulse wave
7. Should have NIBP includes Systolic Pressure, diastolic pressure, mean pressure.
8. Should have 2 channels of body temperature.
9. Should have Respiration includes Breath rate, breath waveform.
10. Should be suitable for Adult, Pediatric, and Neonate Patients.
11. Should have Multi graded Audio-Visual Alarms.
12. Alarm limit setting should be available for every parameter.
13. Should have RJ45/USB/ LAN/WI for powerful CMS Networking and optional feature of monitor connecting to external Laser printer directly without any computer interface.
14. Should have in-built Power supply and no external power adapter accepted.
15. It should be European CE or US FDA approved product.

1. Standard Accessories:

- a. Basic unit with ECG, Resp, SpO2(with ability to work in low perfusion and identify Pleth Variability Index), Dual Temp, NIBP, inbuilt battery - 1 No.
- b. 3 lead ECG Cable - 1 No. each per monitor
- c. 3 lead wire - 1 No.
- d. SpO2 Adult & Pediatric finger sensor - 1 No. each
- e. Skin temperature probe - 2 Nos. per monito
- f. NIBP Hose - 1 No. per monitor
- g. Adult & Paediatric cuff - 1 No. each per monitor
- h. User manual per monitor to be supplied
- i. Wall mount bracket with cables holder for mounting the monitors should be provided.

Technical Specifications for Patient Monitor with IBP & ETOC2 with AGM and BIS Module (Lot/Contract no.4)

- a. Should be suitable for adult, pediatrics and neonatal patients monitoring.
- b. Should monitor ECG, Respiration, NIBP, SpO2(with ability to work in low perfusion and identify Pleth Variability Index), Dual Temperature, Three IBP, AGM, BIS as standard.
- c. Should have ST analysis, Arrhythmia detection, pacemaker spike detection, Drug Dose Calculation, titration table.
- d. Should have integrated 15" or above TFT colour touch screen display (resolution min 1024 * 768) with minimum 10 channels of waveforms.
- e. Should have monitoring and diagnostic mode of monitoring for ECG to be used in OT and should have high-end filters.
- f. Should have Advance Arrhythmia monitoring for 20 or more types of Arrhythmia.
- g. Monitor should be capable of simultaneously performing ST segment analysis on all monitored leads and should display ST values.
- h. Monitor access should be with Touch screen, rotary knob and fast access key for quick function.
- i. Should have 120 hrs or more trend and 60 events with waveform as standard.
- j. Should be able to store and display 48 hours or more full disclosure waveforms.
- k. Should have pulse pressure variation for fluid management. Colour or position of waveforms or parameters.
- l. Should be able to be adjusted based on users preferences. Nurse call, VGA output / HDMI and RS232 ports should be standard.
- m. Should be able to provide a big font view by which parameters or waveforms can be observed from a distance.

- n. Monitor should have a USB port for software upgrade.
- o. Should have facility to connect to slave monitor.
- p. Should have battery backup of 2 hours or more.
- q. Should be able to display parameters, waveforms and loops on monitor from Ventilator/ Anesthesia machines.
- r. Should be European CE or USFDA certified.
- s. Should have inbuilt thermal recorder and anti theft lock facility should be possible for better hospital asset management. (Optional)
- t. Defib and ESU protection should be present.

Should have following parameters

1.ECG

- Monitor should have capability for display up to 7 Lead
- ST Analysis
- Waveform Freeze option with review of 120 sec
- Range: 15 to 350bpm

2. RESPIRATION

- Through impedance pneumography method.

3. SP02

- Should have ability to work in low perfusion and identify Pleth Variability Index
- Should provide value for arterial oxygen saturation as well

as plethysmography pulse waveform and Pulse rate

4. NIBP

- By oscillometric principle of measurement
- Should display Systolic, diastolic, mean pressure in large easy to read display
- Range: 10 to 270 mm Hg

5. Dual Temperature

- Should be able to display Rectal & skin temp and range: 0 to 50 DegC

6. IBP

- Should display three IBPs Simultaneously

16. AGM

- Should have inhalation and exhalation of CO₂, N₂O and Anesthetic Agents automatically
- Should be able to display MAC Value.
- Should be inbuilt or in the form of module.

8. Bispectral Index Monitoring

- The measurement of the Bispectral Index should include EEG waveform, BIS trend and measurement values BIS, SQI, SR, SEF, TP and BC.
- Should be inbuilt or in the form of module.

9. EtCO2

- Should have EtCO2 channel including CO2 wave, respiration rate, EtCO2 and FiCO2.
- EtCO2 should be of side stream technology.

B. Scope of Supply must include:

a) Basic unit with ECG, Resp, SpO2(with ability to work in low perfusion and identify Pleth Variability Index), Dual Temp, NIBP, Three IBP, inbuilt battery - 1 No.

b) 5 lead ECG Cable - 1 No each per monitor

c) 5 lead wire- 2 Nos.

d) SpO2 finger sensor - Each 2 Nos. for Adult & Paediatric

e) Skin temperature probe - 2 Nos. per monitor

f) NIBP Hose - 2 Nos. per monitor

g) Adult & Paediatric cuff - 2 Nos. each

h) IBP Cable - 3 Nos.

i) IBP transducers- 10 Nos.

j) Water traps -10 Nos.

k) Sample line- 10 Nos.

i) Adult BIS Sensor- 10 Nos.

j) Side stream ETCO2 accessories including water trap collection tube - 50 Nos.

- k) Wall mount bracket with cables holder for mounting the monitors should be provided.

Technical Specifications for Multiparameter Patient Monitor ETCO₂, IBP and AGM (Lot/ Contract no.5)

1. Should be suitable for adult, paediatric neonatal patients monitoring.
2. Should monitor ECG, Respiration, NIBP, SpO₂(with ability to work in low perfusion and identify Pleth Variability Index), Dual Temperature, Three IBP, AGM as standard.
3. Should have ST analysis, Arrhythmia detection, pacer spike detection, Drug Dose Calculation
4. Should have integrated 15" or above TFT colour touch screen display (resolution min 1024*768) with minimum 10 channels of waveforms.
5. Defib and ESU protection should be present.
6. Should have monitoring and diagnostic mode of monitoring for ECG to be used in OT and should have high-end filters.
7. Should have Advance Arrhythmia monitoring for 20 or more types of Arrhythmia.
8. Monitor should be capable of simultaneously performing ST segment analysis on all monitored leads and should display ST Values.
9. Monitor access should be with Touch Screen, rotary knob and fast access key for quick function. Should have 120 hrs or more trend and 60 events with waveform as standard.
10. Should be able to store and display 48 hours or more full disclosure waveforms
11. Should have Pulse pressure variation for fluid management.
12. Color or position of waveforms or parameters should be able to be adjusted based on users preference. Nurse call, VGA/ HDMI output and RS232 ports should

be standard

13. Should be able to provide a big font view by which parameters or waveforms can be observed from a distance.
14. Monitor should have a USB port for software upgrade.
15. Should have facility to connect to slave monitor.
16. Should have battery backup of 2 hours or more..
17. Should be able to display parameters, waveform and loops on monitors from Ventilator / Anesthesia machines
18. Should be US FDA or European CE certified.
19. Shall comply with European Directive 93/42/EEC Wired / wireless networking should be standard to connect to the central station.
20. Should have inbuilt thermal recorder.
21. Anti-theft lock facility should be possible for better hospital asset management. (optional)

Should have following parameters

1. ECG

- Monitor should have capability for display up to 7 Lead
- ST Analysis
- Waveform Freeze option with review
- Range: 15 to 350bpm

2. RESPIRATION

- Through impedance pneumography method.

3. SP02

- Should have ability to work in low perfusion and identify Pleth Variability Index
- Should provide value for arterial oxygen saturation as well as plethysmography pulse waveform and Pulse rate

4. NIBP

- By oscillometric principle of measurement
- Should display Systolic, diastolic, mean pressure in large easy to read display
- Range:10 to 270mmHg

5. Dual Temperature

- Should be able to display Rectal & Skin temp and range: 0 to 50 Deg C

6. IBP

- Should display three IBPs Simultaneously

7. AGM

- Should have inhalation and exhalation of CO₂, N₂O and Anesthetic Agents automatically and able to display MAC value.

8. EtCO₂

- Should have EtCO₂ channel including CO₂ wave, respiration rate, EtCO₂ and FiCO₂.
- EtCO₂ should be of side stream technology.

A. Scope of Supply must include:

1. Basic unit with ECG, Resp, SpO₂(with ability to work in low perfusion and identify Pleth Variability Index), Dual Temp, NIBP, Three IBP, inbuilt battery - 1 No.
2. 5 lead ECG Trunk Cable - 1 No. each per monitor
3. 5 lead wire - 2 Nos.
4. SpO₂ finger sensor - Each 2 Nos. for Adult & Pediatric
5. Skin temperature probe - 2 Nos. per monitor
6. NIBP Hose - 2 Nos. per monitor
7. Adult & Paediatric cuff - 2 Nos. each
8. IBP Cable - 3 Nos.
9. Disposable IBP Transducers- 5 Nos
10. User manual per monitor to be supplied
- 11.. Side stream ETCO₂ accessories including water trap collection tube - 50 Nos.
12. Wall mount bracket with cables holder for mounting the monitors

should be provided.

Note:

1. Bidders shall furnish technical compliance statement for the model quoted, details of manufacturer including deviations if any. Technical catalogue /data sheet shall also be furnished in support of technical compliance statement without fail.
2. JICA logo indicated below in durable form should be fixed in each of the equipment supplied at a place visible to the viewer.

