

Equipment Specifications for Complete Monitoring System for ICU (REVISED)

UNSPSC Code:

ECRI Code:

1 Description of Function

1.1	Critical patients need to be monitored continuously in ICU at the bedside as well as at the central nursing station.		
-----	--	--	--

2 Operational Requirements

2.1	ICU should comprise of monitors at the bedside and with central station.		
2.2	Capability of storage of patient data and printing of patient reports.		
2.3	Demonstration of the equipment is a must.		

3 Technical Specifications

3.1	Minimum 15 inches multi colored TFT display screen.		
3.2	Separate CPU/Module rack.		
3.3	Eight digital and waveforms/traces display		
3.4	Combination of single, dual and multi parameter modules.		
3.5	Parameter modules freely exchangeable between all the monitors.		
3.6	Multi channel (up to 12 leads) ST segment analysis.		
3.7	Facility to monitor and display - ECG, Respiration, NIBP, SpO2, CO2 with capnography, Temp, Cardiac output (optional), NMT (Optional), BIS/Entropy (optional), EEG (optional)& IBP – 2 Nos.		
3.8	Automatic arrhythmia detection & alarm for standard and lethal arrhythmia.		

3.9	EtCO2 -Main stream/ side stream. Display both inspired and expired values, showing capnography.		
3.10	NMT Module/monitor: For measurement and display of TOF count, TOF %, ST, DBS, Tetanic and Trend for continuous usage. Automatic measurement facility in selected time interval. Automatic selection of supramaximal current. Include standard accessories. (Optional)		
3.11	EEG Module with all accessories. (Optional)		
3.12	Central station for bedside monitors with independently controlled. 17" multi color TFT Monitor, complete with Ethernet LAN cabling, alarm management, 72 hours trending, bed to bed viewing of waveforms and remote alarm management like silencing of alarms etc.		
3.13	Should provide hemodynamic, oxygenation, Ventilation calculation package.		
3.14	Should have drug calculation package.		
3.15	Trend of at least 48 hours.		
3.16	200 nos. event recall/snapshot facility both manually and automatically triggered by alarm.		
3.17	Automatic Zoom In Facility in the monitor display.		
3.18	The monitors should have monitor-to-monitor overview facility and data transfer over the network.		
3.19	Web browsing facility to review each networked monitors data through hospital LAN via office PC in Hospital LAN Network and/or through dial up facility from remote location (OPTIONAL)		
3.20	CRT Slave monitors- 21 inches in ICU - one per central station		
3.21	Communications with Information Management Systems: A. To provide HL-7 compatible server for sending and receiving information to and from the monitoring network to and from Hospital Information System, Laboratory information etc for integration of various information (OPTIONAL)		

	B. To provide suitable facility for sending and receiving DICOM Compatible Radiological Images like Ultrasound, X-Ray etc to and from the monitoring network to and from Hospital Information System, Radiology Information System etc for integration of various information (OPTIONAL).		
3.22	Include Laser Printer and dual channel strip chart recorder.		
3.23	Specifications for Transport Monitor: 1.Portable and light weight preferably < 10 kg. 2.Modular with 12 inches multi color TFT Display. 3.Monitoring Parameters - ECG, Respiration, NIBP, SaO ₂ and temperature. 4.Digital and six waves/traces display. 5.Trends up to 24 hours. 6.60 minutes or more battery backup. 7.Convenient handle for carrying the same. 8. Able to fix with bed/ trolley.		

4 System Configuration Accessories, spares and consumables

4.1	ECG/Resp: 5 Lead ECG Cable with clip- 2 sets per monitor and 10 Lead ECG Cable with clip- 1 set per monitor.		
4.2	NIBP: Adult cuff- 2nos. per monitor and two sizes of pediatric cuffs- one per monitor (complete sets)		
4.3	Reusable SPO ₂ : Adult SPO ₂ sensor with cable- two nos. per monitor and Pediatric SPO ₂ sensors- one no. per monitor.		
4.4	IBP: Include four nos. per monitor of reusable pressure transducer with bracket, holder and 100 nos. disposable domes per monitor.		
4.5	Temperature: Rectal temperature probe- two per monitor and skin temperature probe- one per monitor.		
4.6	EtCO ₂ module with all accessories. In case of side stream EtCO ₂ -10 sets of sampling tubes for each module to be included.		
4.7	Cardiac Output: Should be by thermodilution method with all accessories		

4.8	EEG Modules- with all accessories. Should display at least two channels. (Optional)		
4.9	BIS/Entropy Module: Adult Sensors-200 numbers. Spectral analysis modules by compressed spectral array. (Optional)		
4.10	Necessary cabling for networking the monitors on turnkey basis.		
4.11	Necessary mounting solution/ mounting on any pendant for monitors		

5 Environmental factors

5.1	The unit shall be capable of operating continuously in ambient temperature of 10 –40 deg C and relative humidity of 15-90%		
5.2	The unit shall be capable of being stored continuously in ambient temperature of 0 –50 deg C and relative humidity of 15-90%		
5.3	Shall meet IEC-60601-1-2: 2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility or should comply with 89/366/EEC; EMC-directive.		
5.4	The supplier shall provide environment friendly furnitures and wall fittings for the entire system. Cabling has to be provided by the supplier.		

6 Power Supply

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

7 Standards, Safety and Training

7.1	Should be FDA, CE, UL or BIS approved product		
7.2	Shall meet the safety requirements as per IEC 60601-2-27:1994—Medical electrical equipment—Part 2: Particular requirements for the safety of electrocardiographic monitoring equipment.		
7.3	Manufacturer/Supplier should have ISO certification for quality standards.		
7.4	Should have local service facility .The service provider should have the necessary equipments recommended by the manufacturer to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual.		
7.5	Back to back warranty to be taken by the supplier from the principal to supply spares for a minimum period 10 years.		
7.6	Comprehensive warranty for 5 years and provision of AMC for next 5 years.		

8 Documentation

8.1	User Manual in English		
8.2	Service manual in English		
8.3	Must submit user list and performance report within last 5 years from major hospitals.		
8.4	Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/Para number of original catalogue/data sheet. Any point, if not substantiated with authenticated catalogue/manual, will not be considered.		
8.5	List of Equipments available for providing calibration and routine Preventive Maintenance Support as per manufacturer documentation in service/technical manual.		
8.6	List of important spare parts and accessories with their part number and costing.		

8.7	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		
-----	--	--	--