3. Technical Specifications For The Supply, Delivery & Installation of Modular Operation Theatre in Turn Key

S.N.	Proposed Specifications	Bidders Compliance Data			
			Yes/ No	Page no. in catalogue	Remarks (if any)
Brand:					
Type / Model:					
Country of Origin:					
1	**Description of Function**	Qty.			
	The modular operating theatre satisfies the conditions consists of wall, ceiling and slanted panels, and is capable of incorporating not only electrical equipment, medical gas system and lighting gears but all the necessary functions and equipment at need.				
2	**Wall & Ceiling Construction (PVC Hygienic 2.5mm Antimicrobial Cladding System)**	as per requirement			
2.1	Wall PUF panels MOC : SS 304 Standard Wall / Celling Panels Made of composite construction of skins of outer skin SS 304 (0.8mm) thick and backside PPGL(0.5mm) with a sealed and insulated interior. PUF insulation density - 40kg/Cum. Panel Dimensions & thickness - Standard panel dimensions are 1000*2400mm. The Panel interlocking and strengthening by hollow PPGL pipe. Standard panels have an overall thickness of 50 mm. Bidder Should submit the TDS of MOC. Certifications and Compliance: Panel Certified for Basic Safety and Essential Performance in Accordance with IEC 60601-1 CE Certification Manufacturer Certified for EMS ISO 14001:2015 (Environmental Management System)				
2.2	Ceiling PUF panels MOC : SS 304 Standard Ceiling panels Made of composite construction of skins of outer skin SS 304 (0.8mm) thick and backside PPGL(0.5mm) with a sealed and insulated interior. PUF insulation density - 40kg/Cum. Panel Dimensions & thickness - Standard panel dimensions are 1000*2400mm. The Panel interlocking and strengthening by hollow PPGL pipe. Standard panels have an overall thickness of 50 mm. . Bidder Should submit the TDS of MOC. Certifications and Compliance: Panel Certified for Basic Safety and Essential Performance in Accordance with IEC 60601-1 CE Certification Manufacturer Certified for EMS ISO 14001:2015 (Environmental Management System) Manufacturer ISO 13485 Certified (Quality Management System for Medical Devices) Manufacturer ISO 14971 Certified (Risk Management for Medical Devices) Manufacturer ISO 45001:2018 Certified (Occupational Health and Safety Management) Complies with the RoHS Directive (2011/65/EU) for Restriction of Hazardous Substances				
2.3	Density - D-792 g/cm3 1.4 Heat deflection temperature (HDT) - D-648 Load: 1.82MPa °C 65-68 Service temperature °C-10 to +50 Thermal conductivity - C-177 W/m K 0.15 Coefficient of linear thermal expansion - D-696 cm/cm °C 6.7 x 10-55 Rockwell hardness - D-785 R Scale 97R Tensile strength at yield - D-638 10mm/min MPa 50 Tensile strength at break - D-638 10mm/min MPa 45 Elongation at yield - D-638 10mm/min % 3 Elongation at break D-638 10mm/min %>80 Tensile modulus of elasticity - D-638 1mm/min MPa 2,900 Flexural strength-D-790 1.3mm/min MPa 80 Flexural modulus- D-790 1.3mm/min MPa 2,700 Impact falling weight - ISO 6603/1 E50 3mm sheet J 95, EN 13501 B, S3, d0, DIN 4102 B-1, BS 476/7 Class 0, NSP 92501,5M-1, ASTM E 84 Class-A, CE Certified, EEC Food Hygiene Directive 64/483 Compliant.				
2.3	Method Of Fixing: The Cladding to be fixed with Aluminum pipe of 25*40 mm with thickness of 1.20 mm on grid framework of 600 mm* 600 mm accurately aligned with 6 mm thick Bison Board using raw plugs etc. Site dimensions: Take as necessary before starting fabrication. Discrepancies with drawings: Report without delay and obtain instructions before proceeding HOLES/CUT-OUTS Internal corners: Formed to a radius, minimum 5 mm when not specified otherwise. Holes for fasteners: Formed slightly oversize.				
2.4	Services, pipes,conduits etc. to be run within the cavity.				
2.5	It should comply with the following characteristics: • Light weight, compact & construction friendly • Withstand against storm, heavy rainfall, wind • Sturdy enough for temperature (-180°C to + 140°C) • Easy to install • Portability and re-locatability • Save energy and cost • Fire retardant and Self-extinguishing • Low maintenance				
3	**Hermetically Sealed Automatic Sliding Door**	1 Set			
3.1	To maintain sterility and the correct air pressure in the room, all doors provided shall be hermetically sealing type. The door frame and door shall be made of high-quality extrusion aluminum profile.				
3.2	Automatic sliding door of size 1500 mm x 2100 mm, Flush door 50 mm thick should be made of 0.8 mm thick PU powder coated GPSP sheet with honeycomb kraft paper as infill, 1.2 mm thick GPSP powder coated frames, with 300 mm x 300 mm double glazed view window and hardwares like SS push plate, SS door closures, SS D handle, SS ball bearing butt hinges, concealed tower bolt for the double door.				
3.4	Vision Panel should be double glazed IG unit with 5mm tempered glass on both sides. Lever handle should be solid AISI 304 stainless Steel with rubber spring system. Rail should be 6mm deep indentations with down and in movement at the angle of 45 degree. Rollers should be made of special grade self-lubricating PA and bearings should be 2X per roller.				
3.5	Air permeability should have air leakage at +-100 Pa (pressure difference) = 0.07 m3/h.m.				

3.6	Automation for door of should be done with Microprocessor based Electronic Control Unit for controlling movement of Open/Closing timer with low noise level high quality motor for motorized function. The acceleration and speed of the door can be adjusted by software operated controller. The system should come complete with Elbow switch/ foot switch & radar switch (touchless sensor) for operations. It should be ISO, CE and Fire Rated CBRI certified and certificate should be provided with the bid documents. Manufacturer authorization letter should be provided along with bid documents.				
4	**Hermetically Sealed (90%) hinged door**	1 Set			
4.1	The doors shall be 46mm thick fully flush double skin door with vision lite. Door leaf shall be manufactured from 1.2mm (18guage) minimum thick galvanised steel sheet. The internal construction of the door should be rigid reinforcement pads for receiving appropriate hardware. The infill material shall be honeycomb core. All doors shall be factory prepped for receiving appropriate hardware and provided with necessary reinforcement for hinges, locks, and door closers. The edges should be interlocked with a bending radius of 1.4mm. For pair of doors integral astragals has to be provided on the meeting stile for both active and inactive leaf.				
4.2	Hermetically sealed Double Swing Doors: Frame: SS 304 Insulation : Puff Insulation of 40kg/m3 densityDoors are designed to fit flush into the wall on both sides and are supplied in different dimensions. Doors are fabricated from SS 304 Sheet & Shutter has sheet thickness of 0.8mm and the frame of 1.2mm. Standard 50 mm panel has frame width of 50 mm and shutter width of 45mm. Doors are available in various sizes as per the requirement of the client. The following accessories are a part of the door : Stainless steel hinges per leaf should be 4no or 3 no as per leaf size. Door should have Stainless Steel 'D' type of handles on pull side.				
4.3	Fire rated doors as per BS 476 part-22 for stability and integrity. Pressed Galvanized steel confirming to IS 277 with the following specification. Recommended fire door shall have doors tested and third party certified by CERTIFIRE, for maximum rating of 120mins. Labled doors with certifciation shall be with vision glass as a part of complete assembly. Manufacturer test certificate shall cover doors both single and double leaf and all doors supplied shall be within the tested specimen, deviation inspecification and sheet thickness other than what is mentioned in the test certificates are not allowed. Proper label confirming the type of door and the hourly rating is mandatory..The suppliers facility must be ISO 9001:2015, green rated have a IGBC platinum rating and the product must be Green Pro certified.				
4.4	It should be ISO9001:2015 & European CE certified and certified should be submitted with bid docuuments. Manufacturer authorization letter should be provided along with bid documents				
5	**Flooring**	as per requirement			
5.1	It should be 2mm thick of weight 2750g/m2, 100% recycled PVC flexible, homogeneous antistatic calendared compacted floor covering in sheet of size 2mtrsx20mtrs in approved pattern & colour combination with PUR surface treatment having abrasion resistance of≤2.0mm3 as per EN660 and wear group Group Pasper EN- 649 and should have a residual indentation of<0.03mm confirming to EN-433. The laid flooring should have non-directional design, colour dyed as a raw mixture to ensure even colour throughout the thickness and its surface should be densely compacted for improving wear and ease of maintenance with Anti-bacterial and fungicidal properties. Corner should be provided with Cove Former (15mm x 15mm). The vinyl flooring should have wear layer binder content Type I confirmed by ISO 10581; Residual indentation should be ≤0.10mm confirming to ISO 24343-1-EN433. Vinyl flooring must be follow the fire rating of EN 13501-1 class **BflFs1** with surface treatment PUR reinforce and effect of castor chair suitable with standard ISO 4918-EN 425.Flooring containing Electrical insulation Ri≥5x104 Ohm;Electrical resistance EN1081.Chemical resistance good confirmed by ISO 26987–EN 423 ;Thermal conductivity ISO10456:EN12524 should be W/(m.K) as per EN 12524.Anti-bacterial activity(E.coli- S. aureus-MRSA) ISO 22196 >99% Inhibits growth. Slip resistance dry EN 13893. Slip resistance wet EN51130. European classification ISO 10874: EN 685 It should be laid over the copper strips for conductivity. It should be ISO and CE certified. Manufacturer authorization directly or from the Nepal authorized distributor should be provided along with bid documents.				
5.2	Self Levelling, Zero Level: The Self levelling compound (SLC) should be of Portland cement-based, self-leveling underlayment formulated with a special blend of polymers used to level and smooth interior concrete, terrazzo, ceramic and quarry tile, epoxy coating systems, metal and non-water soluble adhesive residue on concrete prior to the installation of finished flooring – on, above or below grade. It can also be installed over concrete treated with certain curing compounds (see below). Designed specifically for the fast leveling of floors, The SLC should provide a durable, flat, smooth floor surface with minimum labor and installation time. It should be pourable or pumpable when mixed with water and seeks its own level to produce a smooth, flat,hard surface.The SLC should be Portland cement-based. It should be able to Installs up to 1 1/2" (4cm) neat, 5" (12.7cm) with aggregate. It can be featheredged to meet existing elevations.				
6	**Laminar Flow Plenum & HVAC system**	**1 Set**			
6.1	The operating theatre should be equipped with a supply air ceiling of size 1800 mm x 2400 mm to the following specification. The LAF system creates a positive pressure in the OT especially giving out fresh air on the operating area. It shall be designed in accordance with HTM 2025 -114 for ventilation in Hospitals. The ceiling shall be constructed with a plenum box made of stainless steel sheet that will supply the highest air quality into the Operation Theatre. The Laminar Air Flow system shall have class 1000 rating and should be equipped with 6-8 HEPA filters of 0.3 micron to ensure high quality clean air under tight control for bacteria and infection control providing efficiency 99.97% to 0.3 micron. Laminar Air Flow Unit shall be made of 1.2mm thick SS304, No.4 finish sheets as per the approved drawing. LAF shall include mini fleet HEPA filters (H-14), suitable for bottom access and SS Perforated Grill. Suitable provision shall be given with flanges to connect the supply air duct and necessary supporting system. It should be CE certified and a copy of certificate should be provided. It should be ISO, CE certificate should be provided with the bid documents. Manufacturer authorization letter should be provided along with bid documents.				
6.2	The lighting should be sufficient to provide an illumination level of 1500 Lux (with 40 Illumination lights) at the wound-site and should be dimmable down to 3% of full lighting, without flicker. Lighting should be generated from high frequency electronic ballast's complete with colour corrected fluorescent tubes. The air light diffusers should be installed in a manner, which allows them to be removed for access to the lamps and air filters. Control equipment for the general lighting and the light dimming should be provided in the theatre control panel. The Airlight diffusers should consist of two layers of monofilament precision woven polyester bonded to aluminium frames. The screens should have uniform porosity, with an open area of sufficient resistance to create laminar airflow from the diffuser face. The operating lamps should be secured directly to the framework of the supply ceiling in such a way as to minimise deflection. It should be ISO, CE certificate should be provided with the bid documents. Manufacturer authorization letter should be provided along with bid documents.				

6.3	Supply, install, testing and commissioning of Smart Air handling unit for OT with the following specifications: - (i) AHU's, Floor Mounted double skin type with thermal break and complete with casing, IP 55 TEFC Efficiency 1 motors, 1 direct drive type backward curved fans, insulated drain pan, prefilter-EU4, Media of HDPE, non-woven, Al Mesh, Efficiency of 90% down to 20 micron ,MOC Aluminium excluded. Also have sections with EU7(fine filter) filters, Media of HDPE, non woven, Al Mesh, Efficiency of 99% down to 3 micron ,MOC Aluminium. Vibration isolator isolators, flexible connections, etc. All as per specs. AHUs shall have 43mm thick PUF. AHU to have ADRL Approved DX cooling coil with 6/8 row cooling coil and the cooling coils shall be provided with hydrophilic coating. The AHU should have Heating coil which uses to provide Reheat. The AHU should have 15 watt U.V. tube with quartz glass which provide continuous U.V. output as a supplemental air-cleaning measure to stop the growth of vegetative bacteria and fungi. The UV lamp operation shall interlock with the limit switch and door. Air handling unit shall be provided with air percentage adjustment facility, designed for 20% fresh air and 80% return. AHU motors shall have VFDs. All VFD's shall have RFI filters type C1 conforming to Standard IEC 61900-3. All VFD's shall have Harmonic filters - line reactor & must conform to Standard IEEE 519 - 5% distortion permitted. FAN Air Static 125 mmWG. Blower impeller should made up of aluminium. Capable of maintaining temperature 20+/- 4 Deg Celsius and humidity at NMT 55% RH for the OT. Refrigerant piping in compliance with ASME B31.5.The AHU should have integrated Condensing Coil and compressor system. It should be high efficiency refrigeration system designed for reliable dew point control and condensate management. System should have Heat exchanger optimized for efficient moisture removal with minimal energy consumption. The system will use Corrosion-resistant materials used in the condensation unit to prevent contamination. The Heat load calculations and Control philosophy for Humidity control for NMT 55%. AHU should be supplied with appropriate tonnage of Cooling and Condensing Capacity Provision for Electronic plasma incineration chamber for killing bacteria technology, which uses a plasma discharge to generate large numbers of positive and negative ions from airborne water and oxygen molecules, and then releases the ions in large quantities back into the air. By taking advantage of the properties of positive and negative ions to form cloudy-ion environment around micro particles and react chemically with them. Airborne fungi, airborne bacteria, etc., are rendered inactive. AHU should have Appropriate Reheat Functionality without the use of Heaters.				
	a. Notes for AHU/HVAC System: - Testing, adjusting and balancing of exhaust system at site. Comply with current editions of all applicable practices, codes, methods of standards prepared by technical societies and associations including: ASHRAE : 2007 HVAC Application. SMACNA : Manual for the Balancing and Adjustment of air distribution system. Standards: Confirms to ASTM E 1730 for AHU (i) The system shall have provision of creating positive and negative pressure area with the help of PLC as per the instructions of the Engineer-in-charge. System shall have provision to adjust the respective pressure (positive and negative Pressure). (ii) AHU Compliance to the below standards • Mechanical strength of Casing – En1886 D2 • Casing Air Leakage Test – En1886 L2 • Casing Thermal Transmittance & Thermal bridging – En 1886 T2 & Tb2 • Noise Level @ 1mtr. From the unit - < 85Db (iii) All Internal connections to be done as per specification by manufacturer. (iv) SYSTEM SHOULD BE WITHOUT ELECTRICAL HEATER I.E NO ELETRICAL HEATERS SHOULD BE USED				
	(v) One additional set of motor with transmission for each AHU as a standby to be provided. (vi) Designed to maintain temperature 20+/- 2 or 20+/- 4, 22+/-2 Deg. and humidity at not more than 55% RH for the OT & in passage. AHU should design to provide 48-50 ACPH. (vii) To make sure RH REMAINS STABLE most of the time refrigerant should be passing through evaporator tubes in AHU and removing /holding moisture. Arrangement should be done so that till load drops down to 50% no condensing unit should shut off (viii) For providing reheat use of electrical heaters should be prohibited. For such reheat internal heat of refrigeration machine/s should be used (ix) ODU should be run at least down to 50% of total load & it should nit shutting down 100% and provision of reheat are considered in design with description of the arrangements. Bidder should provide Fabricated structure / shed for AHU & Outdoor units, Supports / Stands / Ladders for Ducting, Scaffolding for ducting, AHU Cement Block , AHU, ODU, Electrical wiring & Copper piping, Drain etc. Panel shall be approved by CPRI. Supply, Laying, Testing and Commissioning of Industrial Grade Flexible single core / multi-core cables as per site requirements Standards .AHRI certified coils as per test standard ARI-410 for performance and UL certified for safety. It should have low air-leakage cabinet design on all inside and outside panel.To reduce the noise it should have rock wool insulation with perforated inner skin. It should have ultra seal low leak dampers and hydrophilic anticorrosive blue aluminium fins. It should be ISO certified.				
6.4	Outdoor Heat Pump condensing unit suitable for mentioned air changes and maintaining suitable temperature and humidity as per ISO & ASHRE conditions should be top flow type. It should be having DC Invertor Compressor, Scroll Compressor, DC Fan Motor, accumulator, saftey devices, electronic expansion Valve etc. It should have environment friendly R410A refrigerant. It should have one inverter controlled directly driven propeller fan. Scroll compressor should be inverter type hermetic compressor. External finish should be pre-coated galvanized steel sheets (+powder coating for -BS type), Munsell 5Y 8/1 or similar. It should have high pressure sensor and high-pressure switch at 4.15 MPa for high pressure protection. Heat Exchanger should be salt-resistant cross fin & copper tube type. It should be tested as per JIS B8615-2 standard. It should have wired/wireless remote controller for indoor units. It should be installed using only factory made AHU installation kit with required sensors. It should be ISO & CE certified. Temperature 19°C-21°C and humidity 35-45 Rh should be maintained according to ASHRE guideline.Two or more ODU System should be provided to avaoid minimum downtime after breakdown & the capacity od ODU should be decided as per heat load calculation. Manufacturer authorization directly should be provided along with bid documents.				
6.5	Aluminium Ducting (22G) should be with curves & bends where indicated for easy flow of air tight by applying silicon sealant after fabrication. Hangers should be provided to ducts &will be suspended be means of G.I. coated rod & these will not be more than 2.5 mtrs apart.Thermal Insulation of Nitrile Rubber Insulation Sheet(9mm thickness) with wrapping of aluminium foil at one side to make a vapour barrier. Aluminium ducting should be washable.				
6.6	**Return Air Riser** Supply, installation & commissioning of single skin Triangular Return air riser of with insulation. The size,ducting etc. of the return air riser should be as per the cfm of AHU Each riser with 11-watt Germicidal UV light & Return air grills of SS 304 with the module of diffusion plate & Anodized Aluminium VCD with bevel gear arrangement to operating from peration Room to control the air flow. The duct shall be fabricated out of galvanized sheet, class VIII (Zinc coating 120 gm/m²) as per the parameters given below which are conforming to IS 655-1963 Compliance: Riser Construction in Accordance with SMACNA Standards (Sheet Metal and Air Conditioning Contractors' National Association)				
6.7	Seamless Copper Pipes should be with closed cell nitrile rubber insulation "Class 0", complete with Hangers, screws and required accessories as per site conditions. Pipe dia 9.5mm should have 13mm thick insulation and 22.22mmdia should have 19mm thick insulation.				
6.8	Grills & Diffusers: Supply Air Grill made of extruded aluminum powder coated with Hepa Filter and Volume Control Damper. Exhaust Air Grill made of extruded aluminum powder coated with VCD.				
7.0	**Air Purification System**	1 Set			

7.1	Air purification unit should be made for air purification inside the corridors & waiting area/lobby etc.. The unit should extracts dirty and supplies clean air to the area on a 360° basis. It should be ceiling mounted and should be made of aluminium with finishing in white epoxy, anti-bacterial and should be easily cleanable. The unit should be suitable for continuous 24/24 hr use and does not need maintenance except for the changing of the filter cartridge which is between 12 and 24 months. This unit should purifies the air inside a area and thus should significantly upgrades air quality. It should be able to cover an area of minimum 40 m2 and overall size of 57 x 57 x 38 cm. The filteration system should contains cartridge having F9 (prefilter) + activated carbon + HEPA14 level with PU sealing, respectively manufactured following SN EN779 and SN EN1822. Their should be a security control on filter status by sensor and timer. Maintenance time should between 12 and 18 months.It should be able to provide results within 20 minutes. It should be able to contributes to ISO 7/ ISO 6 cleanroom classification. It should deliver clean air capacity ranging 170 to 990m3/h. Their should be a wired remote controller with key to operate the unit. It should be ISO and European CE certified. All the test certificates shuld be availabe and a sample of past units produced should be submitted for reference.A manufcaturer authorization directly from manufacturer should be submitted along with tender documents.				
8.0	**PERIPHERAL LIGHTS:**	as per requirements			
8.1	Build in light access from downside RPBA 600600 1,000 282,00 Ral 9010. LED 3*2200 lm, Osram Linear Slim, access from down side, IP65 (downside). It should be CE certified and manufacture authorization letter should be provided along with bid docuements.				
9	**X-Ray Film Viewer**	2Set			
9.1	It should have LED type lamps X-Ray Viewing Screen, designed to provide flicker free luminance for clear film viewing. Each plate should be able to illuminate films up to 14"x17" size. 9-Level brightness control 'Dimming to be controlled using PCB mounted inside the box. The mounting of the Screen should be installed flushed with Operation theatre wall to avoid dust accumulation and microbial growth and ease of cleaning. The diffuser should diffuse the light evenly and to provide adequate luminance for film viewing. Body should be of extruded aluminum powder coated black with bacteria and disinfectant resistant finish. Proper spring loaded film clip with rollers should be provided to holes of the films firmly and to remove the film without scratches. The X-Ray Film viewer should comply with relevant Electrical Safety Codes for High and Low voltage system. Mounting should be flush with the wall to avoid dust accumulation and growth or organisms between wall and panel. It should be ISO and CE certificate should be provided with the bid documents. Manufacturer authorization letter should be provided along with bid documents.				
10	**Writing List Board**	2Set			
10.1	Operating recessed writing List Board of size 948mm X 648mm complete with all accessories.				
11	**Surgeon Control Panel**	1 Set			
11.1	Operating room control panels to manage various components, such as lighting, operation lamps, negatoscope, and more. It should be capable of providing real-time environmental data, including temperature, humidity, filter pressure, and room differential pressure. It can be connected to external sensors to gather the required data. Additionally, it should offers additional capabilities such as communication with gas panels and automation systems, hands-free phone functionality, and integrated music systems.				
11.2	It should be made of 304 SS with 1.2 mm brushed plate, cladded with 3mm tempered glass (AG & AR). Screen should be IPX4 capacitive and can be operated by hand and gloves. It should have gas spring arm installed on two sides. Writing desk with LED lamp which should turns on automatically when opened. It should be one block, one function menu type which should be customizable by dragging. It should have in-built speaker, mic, USB port, Power button, cooling fan.				
11.3	Hardware Configuration should be as below : Motherboard CPU: Cortex-A72 dual-core + Cortex-A53 quad-core 4GB RAM 32 GB storage (expandable up to 128GB) Bluetooth 4.0, Wi-Fi, and high-speed USB 3.0 2D/3D graphics processing, and full HD video encoding/decoding capabilities Communication Ports : RS485 & TCP LCD Display Resolution: 1920x1080 Aspect ratio: 16:9 32" Touch Screen should be made of Scratch-resistant glass. And should have Multi-touch support with 99% touch accuracy and Response time of <2ms and Lifespan should be >2 million touches Operating system should be android V8.1 and should be upgradable.				
11.4	1. Digital Clock :Time of Day Clock, Time Elepased Clock, Anesthesia Countdown 2. Ventilation Monitoring & Control :Temperature, humidity and pressure differentials. 3. Controls : Ambient Light and Surgical Light 4. Hands free Telephone : Regular, Video Calls, Intercom & Boradcasting 5. Medical Gas Alarm 6. Hepa Filter Status 7. Music : Local, Remote and Bluetooth 12. Size : 785*785*150mm				
11.5	It should be ISO, CE, and medical devise directives certified. Manufacturer authorization letter should be provided along with bid documents.				
12	**View Window**	1 Set			
12.1	View Window of size 1200 mm x 1000 mm size should be switchable double glazed glass with 4mm toughened outer glass with internal LCD element, argon gas cavity. low E planitherm total soft coat, 4mm toughened glass from inside. It should not have any moving parts.				
12.2	The glass should be clear when ON and should become haze when OFF. UV blocking should be min. 99%. In the clear state the haze should be less than 10% allowing good passive solar heat gain, good light transmission of 70% and clear visibility.				
12.3	It should be ISO and CE certified and manufacturer authorization letter directly or from Nepal authorized distributor should be provided along with tender documents.				
13	**Scrub Station**	1 Set			
13.1	Compact Surgical Scrub Sink should be designed for use in Operation theatre complex providing surgeons with a convenient sink for pre-OT scrub up. The Scrub Sink should be made of 1.5mm thick AISI-304 Stainless Steel and top surface (Counter) should be made of one piece and polished to seamless satin finish. The scrub sink should be provided with a front access panel which should be easily removed for access to the water controlled valve, waste connections, stoppers and strainers. Hands free operation should include infra-red sensors with built-in range of adjustment. Thermostatic mixing, valve control should be located behind the access panel and maintain constant water temperature. User defined time 1, 3,5,10 min. are available.This timing should be adjustable to meet individual application requirements, provided with infrared sensors, thermostatic control taps with fail-safe temperature controls. All units should have reduced anti splash front. It should have manual foot and operation mode. Knee operated switch should be provided additionally.The station should also have inbuilt soap dispensers. Scrub station should be equipped with electrical Geyser for supply of hot water.Splash Waterproof basin should be provided.				
14	**Storage Unit**	2 Set			

14.1	Storage : SS 304 storage cabinet with SS 304 racks, glass doors for storage unit . Shelved should be height adjustable & removable. Size : 1180mm x 1800mm x 300mm Certified for Basic Safety and Essential Performance in Accordance with IEC 60601-1. CE Certification. Manufacturer Certified for EMS ISO 14001:2015 (Environmental Management System). Manufacturer ISO 13485 Certified (Quality Management System for Medical Devices). Manufacturer ISO 14971 Certified (Risk Management for Medical Devices).Manufacturer ISO 45001:2018 Certified (Occupational Health and Safety Management).Complies with the RoHS Directive (2011/65/EU) for Restriction of Hazardous Substances				
15	**Pressure Relief Damper**	as per requirement			
	PRD shall be provided in OT to maintain positive pressure inside the OT. PRD shall be constructed with material SS 304 graded including stainless steel blades and weight.Pressure relief Dampers should be provided to prevent cross contanimation odf air from clean and dirty areas. Suitably sized air pressure relief damper should be strategiclly placed, enabling differential room pressure to be maintained and ensure that when doors are opened between clean and dirty area. Counter-weight balancing operation room. Air pressure stbilizers should hae unique capability of controlling differential pressure to close tolerance. The PRD should remain closed at pressure below the set pressure and should open fully at pressre oonly functionally above the threshold pressure. The body should be epoxy powder coated as per standard BS colors. First class electrolyzed steel plate should be used for body and with high grade SS304 Stainless Steel for blade.				
16	**Pass/Hatch Box**	1 Set			
16.1	The pass box should be installed in every operation theater to eradicate waste materials from the operation theater to dirty linen area just adjacent to Operation Theater. It shall be designed in such a way that only one door should be opened at one time. Each box should be equipped with two doors and the door should be operated electronically. The UV light used for sterilization shall automatically turn off in case of opening of either of the doors. It should be made of 1.2 mm thick SS304 No. 4 finish sheets with 2 nos. of doors with view panels. It shall comprise UV light of adequate intensity, UV hour meter and door interlocking system. It should be ISO and CE certified and copy of certificate should be provided.				
16	**Music System**	1 Set			
16.1	USB concealed type music system with Bosch ceiling speaker (2 Nos.) and wiring.				
17.0	**Slave Monitor**	2 set			
17.1	Two slave monitor's of screen size 32" or more with HDMI input & output port of Full HD Resolution to be integrated with patient monitor attached to the anaesthesia workstation for the display of vitals. It must be supplied with suitable wall/pendant mount and HDMI cable of suitable length and other accessories, if any.				
18	**Ceiling OT Pendants**				
18.1	**Anesthesia Pendant:** Single Arm for Major OT as per specifications, drawings and instruction at site Stationary with 1 Arm rotation 330 deg + Utility Console 330 deg, lateral arm length 810 mm, functional arm radius 636 mm, rotational utility console 0 to 330 deg, Vertical arm made of Alloy 6063 T6 : Extruded round aluminium profile (T = not less than 3mm), Body as Alloy 6063 T6 : Extruded aluminium profile (T = not less than 2.5mm), Pre- engineered suspension assembly, Epoxy coating to RAL 7035 (Textured) finish, Rust-proof (passivate) Trivalent Zinc plated (8-10µm) steel, Earthing with Class II, IP51 protection, complete mounting system NIST connection for gas & vac services and terminal for power connection	1 Set			
18.2	**Accessories** : 1. Utility Console (TxWxH) - 170mmx160mmx1224mm : 1 No. 2. Medical Gas Outlets : Provisions as required (2x Oxygen, 1x Air, 2x Vacuum) 3. Electricals : 220V AC, 4 x multi-standard sockets compatible to 5-6-10-13A plugs and 3 x 16A sockets. 4. Communication Ports : 1 x RJ45 Data socket, 1 x RJ11 Telephonic socket. 5. Support System - 5.1 Horizontal Medical Rail 650mm length with clamps : 3 Nos. 5.2 Monitor stand with mounting bracket assembly and arm 5.3 Wire basket 650L x 175W x 100H (mm) Conforms to: Certifications:ISO 13485:2016 – Medical devices – Quality Management Systems ISO 9001:2015 – Quality Management Systems CE Certificate				
18.3	**Surgeon Pendant:** Single Arm for Major OT as per specifications, drawings and instruction at site Stationary with 1 Arm rotation 330 deg + Utility Console 330 deg, lateral arm length 810 mm, functional arm radius 636 mm, rotational utility console 0 to 330 deg, Vertical arm made of Alloy 6063 T6 : Extruded round aluminium profile (T = not less than 3mm), Body as Alloy 6063 T6 : Extruded aluminium profile (T = not less than 2.5mm), Pre-engineered suspension assembly, Epoxy coating to RAL 7035 (Textured) finish, Rust-proof (passivate) Trivalent Zinc plated (8-10µm) steel, Earthing with Class II, IP51 protection, complete mounting system NIST connection for gas & vac services and terminal for power connection.	1 Set			
18.3	**Accessories** :				
	1. Utility Console (TxWxH) - 173mmx662mmx1452mm : 1 No. 2. Adjustable Console Shelve (LxW) - 490mmx325mm : 3 Nos. 3. Medical Gas Outlets : Provisions as required (Gas outlets: 2x Oxygen , 1x Air, 1x Co2 & 2x Vacuum.) 4. Electricals : 220V AC, 4 x multi-standard sockets compatible to 5-6-10-13A plugs and 3 x 16A sockets. 5. Communication Ports : 1 x RJ45 Data socket, 1 x RJ11 Telephonic socket. 6. Support System - 6.1 Horizontal Medical Rail 650mm length with clamps 6.2 Vertical round pole for Syringe Pump cum IV stand 6.3 Shelves, Utility basket and Wire basket 650L x 175W x 100H (mm) Conforms to: It should be ISO13485 & CE certified and manufacturer authorization should be provided with bid documents.				
18.4	**CO2 Gas Manifold** :The supply for CO2 Gas to the Surgeon Pendant must be through pipeline and for which CO2 Gas Manifold of 1x1 or 2x2 bank with control should be constructed and made available outside the MOT.	1 set			
19	**Electrical Isolation Panel**	1 Set			

19.1	Isolated Power Distribution System as per IEC 60364-7- 710, Floorstanding Prewired Panel inclusive of following: - 1 No. 63A input & 1 No. 63A Output DP MCB, 10KVA, Schneider make. - Isolation Transformer ES710/10000, 10KVA, 230/230V, as Per IEC60364-7-710(low leakage)1 No. - 3 Nos LED Based, 230volts Indicating lamps. - Digital Voltmeter & Ammeter: 1 No. each - 12 No. 20A, 10KA, DP MCB - Insulation Monitor with Transformer Over load & Temperature monitoring IR427-2 + MK7(Remote Indicator) as per - IEC60364-7-710, Bender Germany Make: 1 no. - Load Current Current Transformer- STW2 The above shall be housed in 16-gauge MS pancel 450W x 400D x1900H(mm) Lockable viewing window door, cable entry from top. It should be IEC 60364-7-710: Electrical installation of buildings – Requirements for special installations or locations – Medical locations NEC 2011- India: Part-3, Section-4: Medical establishments.				
19.2	It should be ISO & CE certified and these certificates should be provided with bid documents.Manufacturer authorization letter directly from manufacturer should be provided with bid documents for this tender.				
20	**Electrical Wiring and Cabling**	1 Lot			
20.1	Inside OT laying of PVC conduits, Modular Switch Boxes, Modular Switches-sockets, Power and Light wiring including Earthing wire for all the lighting controls, Pendant and other equipment fixtures and fittings inside the theatre Wiring with low leakage current wires of FRLS wires should be as per requirements. 5/15 Amps antibacterial switch and socket outlet set- 2-3 Nos shall be placed at equidistant flushed on each wall at 325mm height from FFL of OT. Wiring for 250 volts single phase and neutral 5/15 Amps switched socket outlet with 4 sq.mm and 2.5 sq.mm PVC insulated copper conductor 1100 volts stranded flexible wires should be concealed with conduit. Installation of all electrical cabling and proper earthing of OT and other accessories in the OT room as per standard guidelines. Fittings should be sealed on accordance with the standard IP54. Earthed equipotent bonding of all exposed metal work should be provided. Power Socksts 8 nos. and 1 no. 32A power socket for C-Arm should be fixed on wall panels.				
21	**Main Electrical Control Panel and Cabling**	1 Lot			
21.1	Main Electrical Control panel should have separate switching system for each OT.It should have two separate supply system for mains and UPS.It should be fabricated in MS powder coated. The electrical It should be CPRI approved.				
21.2	Main electrical cables from main electrical control panel to OT isolation panel should be copper armoured cables. It should be NS or IS marked.				
22	**Medical Gas Pipeline**	1 lot			
22.1	**Copper Pipe and Fittings** All pipes shall be of Copper and Copper alloys – Seamless, round copper tubes for Medical gases or vacuum, conforming to EN13348:2016.All Pipes shall have manufacturer's name, number of this standard, nominal cross-sectional dimensions of pipe: outside diameter x wall thickness, temper (half hard) date of manufacture & Lot/Batch No and end capped. The manufacturer of Copper Pipe must be equipped with major manufacturing equipments namely Induction Melting Furnace, Extrusion Press, Pilger Mill, Draw Bench, Roller Hearth Bright annealing furnace with Temperature controller, Degreasing Station etc. & In-house test equipments like Direct Determinator, UTM, De-greasing station etc. Copper Pipe Dia and Thickness should be as below : 12 mm OD x 0.7 mm thk. 15 mm OD x 0.7 mm thk. 22 mm OD x 0.9 mm thk. 28 mm OD x 0.9 mm thk. 35 mm OD x 1.2 mm thk. 42 mm OD x 1.2 mm thk. 54 mm OD x 1.2 mm thk. 76 mm OD x 1.5 mm thk. 108 mm OD x 1.5 mm thk.				
22.1	**Markings** All Copper Pipes shall have be Inspected & Certified & CE & ISO13485 certified and and direct manufacturer authorization certificate to be submitted along with tender.. All Copper Pipes shall have be Inspected & Certified & Approved by Lloyd's Register Asia or CE Marks. The supplier should provide Manufacturer's Test Certificate of copper pipes for physical properties and chemical composition along with the Certificate of Lloyds Register Asia. All copper pipefittings like bends, Tees, Reducers, Elbows and Straight Couplings should be as per 93/42/EEC directives following EN 1254-1:1998, EN 1254-2:1998, EN 1254- 3:1998 and EN 1254-1:1998.Wherever the pipes cross brick walls, it should be covered with plastic pipes. All pipes should be protected against mechanical injury in a manner satisfactory to authorities having, jurisdiction.				
22.2	**Pipeline Supports**				
	C-Channel				
	Galvanized Perforated C-Channel,Width : 40mm (min.) Thickness 1.6mm (min.) Rubber Lined Split Clamp Rubber lined split clamp should be used for all the pipings running on ceiling. These split camps should hang on M8.BIS threaded rods (Threaded rods should be made of zinc plated steel manufactured as per according to used to hang these threaded rods on ceiling. These clamps should be made of electrogalvanized steel as per and lock bolts with combi cross recessed head for horizontal and vertical application. It should be profiled for extra strength, screws secured with anti-loss washer and temperature resistance from -20 °C t +110 °C. Noise insulating lining, rubber, black and noise reduction up to 18dB (A). Rubber Lined U-Strap Clamp Rubber lined U-Strap clamp should be used for all the pipings running on walls and drops. These U-strap clamps should be fixed with certified anchors and nut and bolts. These clamps should be made of electrogalvanized steel as per ASTM B 633 Standards (SC3) and lock bolts with combi cross recessed head for horizontal and vertical application. It should be profiled for extra strength, screws secured with anti-loss washer and temperature resistance from -20 °C t +110 °C. Noise insulating lining, rubber, black and noise reduction up to 18dB (A).				
23	**Pipe Line Area Alarm & Area Valve Service Unit Combo**	1 Set			
23.1	Pipe Line Area Alarm & Area Valve Service Unit Composite unit enclosure should be made of tempered glass front panel. It should be surface mounted. It should conforms to ISO 9001. It should have 1- 6 gases configuration available.Pipes should be coming from top of the box to avoid unnecessary pipings.Doors should have t-holders and should be removable for easy installation.				

23.2	The AVSU in pressure watch or shut-off valve box variants should be used for monitoring and controlling the gas pressure from the source to the point of use on department and/or room level. In case of malfunction, maintenance or repair of the Medical Central Gas System the gas flow towards the point of use can be interrupted by closing the valves inside of the AVSU SLIDE. In case of emergency the emergency inlet points AVSU SLIDE allow external feeding of life supporting gases.The integrated alarm will notify the medical and technical staff of too low or high pressure in the Medical Central Gas System so they can take the appropriate actions. Front panel should be sliding vertical opening.				
23.3	It should have Integrated alarms with communication protocol Signal devices should have Microswitch(indication on door and/or valve), Pressure Switch and Pressure transmitter 4 – 20mA.				
23.4	The pipe sizes should be Oxygen – 22 mm, Vacuum – 22 mm, Air – 15 mm, Nitrous Oxide – 15 mm, CO2 – 15 mm				
23.5	It should have fixed emergency piping and QC inlet points and should be available in both recessed and exposed installation variant.				
23.6	Power connection : External 230 V AC (50 Hz) AC as integrated primary power supply and 24V as secondary power supply.				
23.7	It should be 'CE'marked under the Medical Devices Directive 93/42/EEC with approval from notified body no. Under this directive, the specified products are classified as Class IIb Medical. It should be ISO9001 and ISO13485 certified and certificates should be provided. It should be certified. Original manufacturer authorization should be provided.				
24	**Pipe Line Area Valve Service Unit**	6 nos			
24.1	Pipe Line Area Valve Service Unit enclosure should be made of tempered glass front panel. It should be surface/concealed mounted. It should conforms to ISO 9001. It should have 1- 6 gases configuration available. Pipes should be coming from top of the box to avoid unnecessary pipings. Doors should have t-holders and should be removable for easy installation.				
24.2	The AVSU in shut-off valve box variants should be used for monitoring and controlling the gas pressure from the source to the point of use on department and/or room level. In case of malfunction, maintenance or repair of the Medical Central Gas System the gas flow towards the point of use can be interrupted by closing the valves inside of the AVSU SLIDE. In case of emergency the emergency inlet points AVSU SLIDE allow external feeding of life supporting gases. Front panel should be sliding vertical opening.				
24.3	The pipe sizes should be Oxygen – 22 mm, Vacuum – 22 mm, Air – 15 mm, Nitrous Oxide – 15 mm, CO2 – 15 mm				
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25	**Medical Gas Outlets**	as per requirement			
25.1	Medical Gas Outlets to be used for central oxygen pipeline medical gas system. The medical gas outlets should completely comply with BS standard regulations and pass the test of leakage and connector stability.It should have double lock system for easy maintenance. It should be color coded according to HTM 02-01 standards. Medical Gas Outlet shall be gas specific for the services indicated and accept only corresponding British Standard Quick Connect Adapter.Specifically, Gas specific indexed to eliminate interchangeability of gas services.It should be wall mounted type with plastic box having no sharp corners.				
25.2	Terminal units shall be gas specific and only accept the correct medical gas probe. Gas specific components shall be pin-index /diameter index system to ensure that a correct gas specific assembly is achieved so that in normal course of dismantling for repair or maintenance, parts from other gases cannot inadvertently be used. Wall mounted terminal units shall incorporate an anti-rotation pin to engage with connected downstream medical equipment ensuring correct orientation.				
25.3	Quality Standards				
	It should be 'CE'marked under the Medical Devices Directive 93/42/EEC with approval from notified body no. Under this directive, the specified products are classified as Class IIb Medical. It should be ISO9001 and ISO13485 certified and these certificates should be provided with bid documents. Manufacturer authorization letter should be provided with bid documents.				
26	**Oxygen Flowmeter with Humidifier Bottle**	as per requirement			
26.1	Oxygen Flowmeter should be designed for use with hospital central supply system and must be compatible with standard outlets and adaptors for quick connection It should be made of lightweight anodized aluminum body with brass inner core. The flow tube should be made of crack-resistant polycarbonate housing with a flow rate of 0-15 LPM and should be calibrated at 50-60 psig inlet pressure,combined with a sturdy machined base.Flow indicator should be made of stainless steel with a leak-free flow control ring. It should have twin graduated scale which must provides precision control measurement and flow marking should be on inner tube.It should have a safety diaphragm for patient protection.It should be designed to be placed in paced position. It use it should have knob, which should be turned gradually to adjust the position of the ball in accordance with the desired flow rate.It should be back-pressure compensated to ensure precise flow rate stability so that accuracy is not affected by restrictions caused by humidifiers or ventilators.				
26.2	Reusable Humidifiers Bottle should be of working volume 315 cc at maximum fill line and should be made of autoclavable polycarbonate shatter-resistant bottle with maximum and minimum water level marking clearly defined. It should have a pop-off valve on cover which should automatically open at 2 psi when the outlet line exceeds and a whistle should alert the user.				
26.3	Quality Standards				
	It should be 'CE' marked under the Medical Devices Directive 93/42/EEC with approval from notified body no. Under this directive, the specified products are classified as Class II B Medical. It should be ISO9001 and ISO13485 certified and these certificates should be provided with bid documents. Manufacturer authorization letter should be provided with bid documents.				
27	**Theater Suction Trolley**	as per requirement			

27.1	It should have a sturdy plastic molded trolley with 5-castors having two non-marking castors having brake facility complete with accessories. It should be designed to allow movement of the regulator in any direction making visual observation of the suction rate easier. It should have a ball-pivot holder for attachment of the suction canisters and the four-port, on-off valve allows quick change from canister- to-canister during the suctioning process. It should have one 3-stage continuous mode suction regulator should have OFF-REG-FULL mode with vacuum range of 0-760mmHg. It should be made of high quality ABS fire-retardant material with a centrally located easy to operate knob for regulation and a side mounted switch to change the mode from OFF-REG-FULL and vice-versa. It should have CE marked colour coded guage which should be covered with protective materials with Counter- Clockwise direction with a minimum accuracy of ± 2%. It should be able to regulate the flow rate from 0-60L/min without fitting at full increase. Non-interchangeable screw threads (NIST) to guarantee easy and safe operation				
27.2	It should have two numbers reusable suction collection Jars of volume 3000 ml each should be made of transparent polycarbonate materials autoclavable at min.121°C. It should have a positive shut-off cap and float assembly to interrupt suction to prevent fluid carryover into the regulator. It should have removable plastic bracket with hose barb connection for connecting with Vacuum regulator and patient connecting tube.				
27.3	It should be fitted with overflow safety trap which should be made of clear and autoclavable shatter-resistant polycarbonate bottle housing with antibacterial filter inside. It should have swivel female DISS connector made of aluminium for easy removal and setup.It should meet NFPA and ASTM standards.				
27.4	It should be supplied with hydrophobic Anti-bacterial filter with microporous membrane of 99.9997% filtering efficiency. It should have 1/8 NPT male pipe thread on end for connection to vacuum regulator and ¼ in., hose barb on another side for connection to vacuum tubing. It should be supplied with high pressure tube x 2 meters wit h adaptor and stainless steel basket x 2 numbers.				
27.5	Quality Standards				
	It should be 'CE' marked under the Medical Devices Directive 93/42/EEC with approval from notified body no. Under this directive, the specified products are classified as Class IIB Medical. It should be ISO9001 and ISO13485 certified and these certificates should be provided with bid documents.Manufacturer authorization letter should be provided with bid documents.				
28	**AGS System**	1 Set			
28.1	Anesthesia Gas Scavanging system should be mono skid mounted, pre-piped and pre-wired system. It should have minimum suction capacity of -125 mbar measured at intake of the unit. It should have a 0.85 Kw, 3 pH, 345-415V, 50Hz motor connected to the blower. It should be connected with ON-OFF switch in each OT.				
28.2	It should be supplied with BS compatible AGS evacuation hose assembly and waste transfer hose for each OT.				
28.3	It should have remote switch assembly installed in each OT.				
28.4	Sterilization chamber-air pressure sterilization chamber should be provided for staffs .				
28.5	It should be ISO & CE certified. Manufacturer authorization letter should be provided with bid documents.				
29	**Operational Conditions**				
29.1	The system offered should be designed to operate normally under the conditions of purchaser's country's specific place.The condition include Power Supply, Climate, Temperature, Relative Humidity, Altitude-M.A.S.L etc.				
30	**Standard & Safety Requirements**				
30.1	Bidder must submit all the valid quality and standard certificates as asked in technical specifications along with the bid documents.				
31	**Accessories, spares and Consumables**				
31.1	All the standard accessories, consumables and parts required to install & operate the MOT, including all the standard tools, cleaning and lubricant materials to be included in the offer. Bidder must specify the qty. of every item included in the offer.				
32	**User Training**				
32.1	Must provide onsite user training including how to use, operate and maintain the MOT & its equipment.				
32.2	Must provide service/maintenance to the Electro-Biomedical Staff @ a centre of repute.				
33	**Warranty**				
33.1	Comprehensive warranty for at least 2 years with all the parts & accessories along with labor must be provided after the installation and hand-over of the MOT. Provide any up-gradation & update of the system, standards & software (if any) free of cost.				
33.2	Letter of warranty must be submitted by the bidder as well as the manufacturer/principal.				
33.3	The MOT should have 95% uptime (functional) during the warranty period, if failing to do so double the time of breakdown shall be added to the warranty period.The bidder must ensure prompt service & repair in case of any breakdown within 48 hrs.				
34	**Maintenance Service During Warranty Period**				
34.1	During the warranty period supplier must ensure planned preventive maintenance (PPM) asper schedule and corrective/breakdown maintenance whenever required.				
34.2	Bidder must submitt letter for the rate of cmc after the expiry of warranty which shouldn't exceed more than 5% of the bid amount (excluding tax).				
34.3	Letter of assurance/commitment from the manufacturer itself for the after sales and service support, if bidder fails to do so.				
35.0	**Guarantee**				
35.1	Letter of commitment from the bidder as well as from the manufacturer/principal for the availability of spare parts, accessories, any consumables and service for at least 10 years				
36	**Manufacturer's Authorization**				
36.1	Manufacturer's authorization letter for each items are required directly from manufacturer or manufacturer authorized agent for Nepal to ensure the smooth supply of spare parts and maintenance services.				
37	**Installation, Testing & Commissioning**				
37.1	The bidder must arrange for the equipment to be installed ,tested and commissioned by certified or qualified personnel; any prerequisites for installation to becommunicated to the purchaser in advance, in detail.				
38	**Experience**				

38.1	Bidder /Installer/ Manufacturer must have done similar works in at least 10 Modular OT in Nepal in last 10 years reference letter required from hospital/medical college/end user.				
39	**Documentation**				
39.1	The bidder should submit the original brochure , techncial data sheet or e-copy.				
39.2	User (Operating) Manual in English.				
39.3	Service (Technical / Maintenance) Manual in English.				
39.4	List of important spare parts and accessories and its price.				
39.5	Certificate of calibration and inspection from the factory/rincipal.				
39.6	All of the civil works & electrical works from the floor control panel to the modular ot should be done by the bidder along with the plumbing and other maintenance work, coordinating with the hospital.				
39.7	Bidders should provide original catalogue or e-copy that corelates with yes/no chart.				
39.8	Modifications required in civil structure in the OT complex during installation is the liability of supplier and suppliers are encouraged to visit site before they quote.				
39.9	**Bidder must completely fill the Technical Specification Form (TSF). Only Yes/No /all complies should not be written. Page number in the catalogue of all the required parameters must be clearly mentioned and highlighted. Failure in doing so may lead to rejection of bid from the technical committee.**				