



## Notice Inviting e-Tender

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Supply and Commissioning of Arthroscopy Machine for IPGME&R and SSKM Hospital  
(Submission of Bid through *online*)

2<sup>nd</sup> call of Bid Reference No.: WBMSCL/NIT-560/2022,(Schedule-I&II); dated-07.12.2022

**Bid Reference No.: WBMSCL/NIT-009/2023**

**Dated-06.01.2023**

## **Amendment-I**

### REVISED TECHNICAL SPECIFICATION

#### Schedule-I

4K Arthroscopic Camera System with Monitor and backup with attachments (High End)

#### 4K Camera System

##### Camera Control Unit:

- System must have 4k UHD Camera Console, inbuilt / separate LED Light source & - LAN enabled image management system with recording via USB port along with recording in APP through in built wifi / LAN.
- Camera resolution must be 3840\*2160 (native) 4k
- Shutter speed should be 1/60 second through 1/10,000 second or more shutter speed (60 Hz)
- It should have 4k Series digital interface (4k-SDI): Four serial digital interface (HD-SDI) with 4:2:2 component digital video output on BNC / HDMI / DP connector.
- It should have HD Series digital interface (HD-SDI): One serial digital interface (HD-SDI) with 4:2:2 component digital video output on BNC / HDMI / DP connector
- USB Storage must accommodate 1 TB or more sized storage device, Class 10/Huss Speed Class 1// UHS (Ultra High Speed). FAT32 or more NTFS formatted.

- USB Output Two USB type A connectors; provides USB-compatible connection to flash or hard drives.
- Standby button option should be available.
- Standby Illumination option should be available.
- Multiple white balance option – white balance can be done by console head / App remote access.
- LED Light source with life span of 30k hours,
- LED Light source with control options on Camera head and remote access / App remote access.
- IMS console must have built in wifi / LAN for connectivity of App and printer
- Video Accessory controls Two mini-phono connectors (3.5mm)
- Fuse Type F10AH250V;V and I rating: 250V, 10A;
- Temperature: Transport and Storage should be mentioned.
- Humidity: Transport and Storage should be mentioned.
- Atmospheric pressure: Transport Storage should be mentioned ( no condensation is allowed)
- Altitude: 3000 meters maximum
- 

#### **Camera Head:**

- Camera head should have 4k, 3 chip MOS video sensor technology
- Camera head should provided minimum 6 different custom button setting on minimum 3 camera head button
- Camera head should be autoclavable and / or soak able
- Camera Control Function – should be able to change camera setting by console, Camera Head and / or App
- Camera head cable should be minimum 10 feet long
- Camera head weight should be mentioned.
- Must have transport shock and vibration compliance with ISTA 3A
- Video Field Rate 60 Hz
- Must have c-mount autoclavable and / or soak able coupler with more than 16 mm coupler length opt for 4mm scopes
- Must have digital zoom
- Video Data Transmission High-Speed, low-voltage differential serial (LVDS), digital transmission via 12-foot camera cable
- Video Output Format Full UHD 2160p, 100% compatible with SMPTE ST-425-5 when used with the CCU
- Temperature: Transport and Storage should be mentioned.
- Humidity: Transport and Storage should be mentioned.
- Atmospheric pressure: Transport Storage should be mentioned ( no condensation is allowed)
- Altitude: 3000 meters maximum

## **4K Monitor:**

- Monitor should have resolution 3840\*2160 pixel or more
- Monitor should support picture size (Diagonal) 30 inches or more.
- Monitor should support effective picture size 698.0 x 368.1 mm (27 1/2 x 14 1/2 inches)
- Monitor should support pixel pitch 0.1704 x 0.1704 mm
- Monitor should have aspect ratio of 16:09 or more
- Monitor should have Pixel Efficiency should be mentioned
- Monitor should have LED backlight; LCD with IPS Panel Technology
- Monitor should have Luminance (Panel Specification) of 770 cd/m<sup>2</sup> (typical)
- Monitor should have Contrast Ratio of 1450 : 1 or more
- Monitor should support Approx.1.073 billion colors
- Monitor should have Viewing Angle (Panel Specification) of 89°/89°/89°/89° (typical)
- Monitor should have Gamma 1.8, 2.0, 2.2, 2.4, 2.6, DICOM, Highlight
- Monitor should have HDMI (x 1) (HDCP 1.4 correspondence) Input
- Monitor should have Input DVI-D (x 1) (HDCP 1.4 correspondence) TMDS single link
- Monitor should have SDI Input: 3G/HD/SD-SDI and BNC / HDMI / DP (x 5)
- Monitor should have DC Input XLR-type 3-pin (male) (x 1), 26 V DC (output impedance 0.005 ohms or less)
- Monitor should have Serial Remote LAN D-sub 9-pin (RS-232C)(xl), RJ-45(x1) (Ethernet,10BASE-T/100BASE-TX)
- Monitor should have DVI-D (x 1) when HDCP disabling Output
- Monitor should have SDI Output BNC / HDMI / DP (x 5)
- Monitor should have DC 5 V/12 V Output 5 V Output (x 1), 8 W; 12 V Output (x 1) 20 W max
- Monitor Power Consumption: LCD monitor: Approx. 180 W (max.)
- Monitor Dimensions: 753.8 x 456.4 x 69.3 mm (Slimmest D 28mm) (29 3/4 x 18 x 2 3/4 inches)
- Monitor Mass should be mentioned
- Monitor should be supplied with below accessories: 0 AC adaptor: AC-300MD (1)
  - AC power cord (1)
  - Instructions for Use (CD-ROM) (1)
  - Abridged edition of Instructions for Use (1)
  - AC power plug holder (2)
  - Instructions for Use of the AC adaptor (1)
  - Service Contact List (1)
  - M4 x 0.12 mm Screw (4)
- Storage/Transport Humidity should be mentioned
- Operating Humidity should be mentioned (no condensation)
- Operating/Storage/Transport Pressure should be mentioned
- Storage/Transport Temperature should be mentioned
- Operating Temperature should be mentioned
- **App Specification (optional)**

- App must be able to do below listed functions
- Create new patient
- Create new procedure, view list of procedure
- Make necessary changes to camera head buttons
- Click picture and record video remotely
- Create annotations – voice, Text & graphical
- Applications must be able to control camera console and camera head programming
- Print images from app
- Create PDF of surgical pictures
- Email pictures directly from app device
- Email surgical video directly from app device
- Save pictures and video in through Wi-Fi enabled CCU
- Storage Configuration Minimum: 8GB

**Typical:** 16GB

- Media Objects Definitions Main Camera Input:

**Images Image Size:** 1920X1080 jpeg encoded

**File:** ~1MB 16 images is ~16MB

**Encoding:** JPEG 97 Quality

**Videos Video Size:** 1920X1080 H.264/Mp4 encoding (Apple Compliant mpa files)

**Capture Rate:** ~1.2MB per second thus 100 Second Video file size is ~125MB

**Encoding:** 30 FPS/10 Mbits/sec;

**Intraframe rate:** 5

### **Room Camera Images PAL**

**Image Size:** 720x576 jpeg encoded

**File Size:** ~125KB . Encoding: JPEG 97 Quality Videos PAL

**Video Size:** 720x576 H.264/Mp4 encoding (Apple Compliant mp4 files) Capture Rate: - 720MB per second thus 100 Second Video file size is ~72MB Encoding: 30 FPS/6 Mbits/sec: Intraframe rate: 5

Images NTSC

Image Size: 720x480 jpeg encoded

File Size: ~125KB Encoding: JPEG 97 Quality Videos NTSC

Video Size: 720X480 H.264/Mp4 encoding (Apple Compliant mp4 files) Capture Rate: -  
750KB per second thus 100 Second Video file size is -75MB Encoding: 30 FPS/6 Mbits/sec:

**Intraframe rate: 5**

Transfer Rates\* Transfer rates to/from Tablet is ~2MB/Second

125MB Video transfer from USB to Tablet: 60 seconds

300MB Patient Folder from Tablet to USB: 150 seconds

Calculation for Maximum Number of Media Objects: Pre-Connect: 4GB Reserved:

2GB to keep free

2GB in application/OS

Main Video Input /Gigabyte of Storage:

800 Seconds Video/ Gigabyte Storage

1000 Images / Gigabyte of Storage

Room Video Input:

1300 Seconds Video / Gigabyte Storage

10000 Images /Gigabyte Storage

Printing Air Print T is required.

### **Certification**

Whole system should be USFDA and EU CE(4 DIGIT) / UK Cert approved.

**Note: Whole system should be compatible with the existing Arthroscopy Machine.**



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## **Amendment-I**

### REVISED TECHNICAL SPECIFICATION

#### Schedule-II

#### Arthroscopic Camera HD with Shaver System and Hand Instruments (Standard)

#### **1. 3-Chip CMOS or equivalent High Definition Camera System**

The system should be high definition, with progressive scan with CMOS technology, 3-chip-endoscopic video camera. The system should consist of one Camera control unit/console and one Camera head.

- It should have pure digital signal with high definition video of 1920 x 1080p or more (min) native resolution and progressive scan technology both on camera head and console.
- Should have 9 dedicated Surgical Specialty settings.
- Should have optical Zoom.
- It should be LCD Touch Screen based.
- The system should have Digital Zoom to enhance the quality of image size & cross specialty standardization of the camera system, regardless of the telescope used.

- The camera head should be able to capture images and record video sequence using them.
- **The O/P's should be:**
  - \* DVI, RGBHV / VGA, S-Video optimized for medical display on flat screens, routing with Touch screen.

## 2. **400W or equivalent LED Light Source with Fiber Optic Cable or integrated system**

- Light outlets: 1
- It should have Standby mode which will reduce light output to a minimum, preventing the light cable from generation excessive heat.
- Universal Jaw Assembly to adapt any make of fiber Optic Cable
- It should have Electrical configuration
  - \* Primary: 100-240 VAC, 50/60 Hz, 300 W
  - \* Fuses (2): 5.0A 250V
- Should be supplied with fiber optic cable of 5 mm to 6.5 mm diameter

## 3. **Medical Grade 26'' LED High Definition Monitor**

Should be a 26'' LED Flat-panel High Definition Color Monitor (Medical grade) with suspension to support high-definition (1920 x 1080 or more) progressive Scan images and should at least have

Resolution	: 1920 x 1080 in Progressive Scan Technology
Inputs	: DVI, RGBHV / VGA, S-Video, composite Video
Pixel pitch	: 0.270mm
Response time	: <25ms
View angle	: +/-85° (L/R) x +/-85° (U/D)
Travel	: 330°
Forward Tilt	: 30°
Backward Tilt	: 45°

Cable Kit for integration: DVI, Fiber Optic, RGBHV, S-Video, Compos

### **Arthroscope :**

4.0 mm -30 degree with wide angle.

4.0mm -70 degree wide angle.

Sapphire tip for prevention from scratches

Length : 140-180mm

3 layered tube design for sturdiness and better results

5.8mm or more operative cannula with 2 rotating stopcocks – 2

Pencil tip obturator – 2

### **Shaver System:-**

- For use in a variety of surgical procedure, including orthopaedic, dental, ENT, ocuro, spine, and endoscopic application
- Powers small and large bone drills, saws and drivers; small and large joint shavers; ENT shavers; foot pedals; bone mill and irrigation.
- Two or more hand piece ports; runs two non-heavy duty band pieces simultaneously
- Colored illumination rings, display matched drills and foot pedals for free and confident workflow.
- Single/ double foot pedal ports; ability to assign two pedals to a single hand piece
- Integrated irrigation; one step insertion and removal
- Large icons and color touch screen with wide viewing angle

Shaver Hand-piece Flash Autoclavable

- 10000 or more rpm for better burring
- DC brushless motor for minimal maintenance
- Do not require any lubrication be easy maneuverable and better balanceable
- Run in forward reverse and oscillating mode
- Be lightest in weight and should have revolving suction outlet so as to avoid the complication of rolling tube while operating
- The Shaver Hand piece should be provided with Hand control function
- One Hand piece run the cutters and burs for both small and large joints

### **Specifications for Foot Switch**

The footswitch should be completely programmable

Bi-directional footswitch, dual pedal with three feature button

Mode selection of forward/reverse/oscillating, change speed of RPM.

### **The system shall be supplied with the following:**

1. –Footswitch- Qty. 1
- 2 –Shaver hand piece – with buttons – Qty 1



## B) Shaver Blades & Burs

4.0 mm or more shaver blade for aggressive resection of meniscus and cartilage – 5 boxes

5.0mm or more shaver blade for aggressive resection of meniscus – 5 boxes

5-5.5mm barrel bur 6 Fluted/12 fluted for rapid, aggressive subacromial decompression – 5 boxes

5-5.5mm round bur 6 Fluted/12 fluted for general abrasion notchplasty and decompression without closing – 5 boxes

### **HAND INSTRUMENTS (1 EACH)**

Straight Punch width 3 to 3.5mm Working length 11 to 16 cm

Upbiter Punch width 3 to 3.5 mm working length 11 to 16 cm

Big bite punch 30 deg right width 3 to 3.5 mm Working length 11 to 16 cm

Big Bite Punch 30 deg Left width 3 to 3.5mm Working length 11 to 16 cm

Left Meniscal Punch width 3 to 3.5mm Working length 11 to 16 cm

90 deg Rotary Punch right 3 to 3.5mm Working length 11 to 16 cm

90 deg rotary punch left 3 to 3.5mm working length 11. To 16cm

Backbiter width 3 to 3.5mm working length 11 to 16 cm

Loose Body removal grasper width 3 to 3.5mm working length 11 to 16cm

Hook Scissors straight width 3 to 3.5mm working length 11 to 16 cm

Probe for 3mm

Sterilization tray keeping for minimum 24 instruments

### **Product Instruments:**

1. Suture Manipulator with atraumatic tip to spread parallel strands of suture with its jaw to create a close loop to allow suture slide freely during extraction
2. Bankart Rasp
3. Rotator cuff grasper with low profile for Arthroscopic procedures
4. Shoulder Elevator
5. Tissue penetrator cum suture retriever in below angles with small Sharp penetration tip:
  6. Straight
  7. 45 Deg Right
  8. 45 Deg left

9. Tissue penetrator cum suture retriever with small sharp penetrator curved tip so that it can be used to grasp the labrum at 6' o Clock position
10. Curved Left
11. Curved right
12. Multifunctional Suture passer with provision of only 1 needle, which can hold the cuff & at the same time pass the suture & retrieve it in one step
13. Nitinol needles for passing the suture (1 box)
14. Switching Stick 4.3mm, Non cannulated, 13" long
15. Open ended suture cutter, side loading with function of leaving sufficiently long tail without chance of cutting knot
16. Single hole knot pusher
17. Reusable cannulated obturator for 8 mm cannula for easy cannula insertion
18. Reusable cannulated obturator for 6.5 mm cannula for easy cannula insertion
19. Reusable cannulated obturator for 5.5 mm or more cannula for easy cannula insertion
20. Grasper with Ratchet
21. Crochet hook
22. Shoulder probe
23. 1.2mm or more Drill bit
24. 2.3mm or more Drill bit
25. 6"X3.5mm spiked tip drill guide
26. Sterilization Tray

\*\*\* Whole system Must be USFDA and EU CE(4 DIGIT) / UK Cert Approved.