आईसीएमआर-राष्ट्रीय प्रजननस्वास्थ्य अनुसंधानसंस्थान
ICMR-NATIONAL INSTITUTE FOR RESEARCH IN REPRODUCTIVE HEALTH
भारतीय आयुर्विज्ञानअनुसंधानपरिषद
Indian Council of Medical Research
जे, एमस्टीट, परेल, मुंबई– 400 012
J.M. Street, Parel, Mumbai - 400 012.
दूरभाष संख्याः 022.24132111/2/6/7 फैक्स संख्या : 022–24139412
Telephone No. 24192134/2011/2019 Fax No. 022- 24139412

TENDER DOCUMENT

No. NIRRH/ST/2017-2018/01 dated 23rdAugust, 2017

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Chapter 1 : INSTRUCTIONS TO BIDDERS

1. **Technical Bid:** This should be sealed in a separate envelope marked **Envelope I** indicating on the cover Tender No. and product description. This envelope should include list of users of the product quoted along with adequate technical literature. No indications pertaining to price or commercial terms should be made in this envelope.
2. **Financial Bid:** This should be filled up only in the form attached with the tender and signed and be sealed in a separate envelope marked **Envelope II** indicating on the cover Tender Number and Equipment / Instrument / System Number and Description.
3. The **Envelopes I and II** should be put together in a big envelope sealed and marked on the cover **Tender No. and Equipment / Instrument / System Number and Description**.
4. Tender should be accompanied by **Earnest Money Deposit (EMD)** of the amount as indicated against each item (as indicated in Detailed Tender Notice / Chapter 3 Schedule of Requirements) in the form of Demand Draft drawn in favour of **Director, National Institute for Research in Reproductive Health**). The EMD will be forfeited if the tenderer fails to complete the contract according to his tender, if accepted. Tender without EMD will not be considered unless supported with documents for exemption.EMD. of the unsuccessful bidder will be refunded soon after the tender is finalized. **(Envelope-I).**
5. The name of Indian Institution(s) where the similar work has been carried out may also be given along with full postal Address/Telephone/Fax/E-Mail Address of the clients**. (Envelope-I)**.
6. Solvency certificate of appropriate value not less than 40% of the approximate estimated amount put to tender issued by a nationalized or scheduled bank and issued within a period of 12 months from the final date of submission of tender. Valid Income-tax Clearance Certificate *(*ITCC) should also be submitted with tender document**. (Envelope-I).**
7. The offers should be kept valid for acceptance for a period up to **19th February, 2018.**
8. The Bank Guarantee equivalent to 10% of the contract cost (5% towards security + 5% towards performance), which is compulsory and will be required for three years after completion of the work of installation and testing of Equipments.
9. The complete work of supply, installation, testing and commissioning should be completed within the period of **8 weeks**from the date of receiving the confirmed order.
10. The prices quoted shall be firm for the duration of contract period. The tendered price should be quoted as the basic cost, without taxes and duties which may be indicated **separately**. Institute is exempted from the levy of Central excise duty and Custom duty at reduced rate as applicable to Central Government against form/certificate and authorised to pay Central sales tax the at the reduced rate against Form D**.(Envelope-II)**

11. **The prices should be quoted in the Financial bid provided for in the tender document only and nowhere else. (Envelope-II). Bid/offer prices shown except in Envelope II will be rejected.**
12. Exact, earliest and clear delivery period should be quoted. **(Envelope-I)**
13. Conditional offer will not be accepted and liable to be rejected without any further reference.
14. The successful bidder should undertake to extend the validity of the Bank Guarantee, if offered as security deposit and performance guarantee, in case, the tendered work is delayed beyond the validity period of the Bank Guarantee.
15. The tenderer should attach a copy of the power of attorney in respect of the person who attends the tender opening, further follow-up work and also who is authorized to sign tender, agreement and other relevant documents thereof. **(Envelope-I).**
16. The tenderer should invariably quote a list of documents enclosed with the tender and the list should be duly signed by the authorized person. **(Envelope-I)**
17. **Very important Instructions to be followed by the Tenderers**:

i The commercial bid should be submitted in sealed cover to the Director, National Institute for Research in Reproductive Health, J.M. Street, Parel, Mumbai- 400012, along with the tender.

ii Full address and name of the tenderer should be indicated on the envelope.

iii The cover should also bear the Tender number, the last date and time of submission of Tender and the date and time of opening of the tender and the name of item tendered for.

iv The Tender is likely to be ignored in case above details are not furnished on the sealed Tender.

18. Whenever Tendered offer for an item is other than from manufacturer, such quotation must be accompanied by letter of commitment from the manufacturers and Memorandum of Understanding (MoU) executed duly between them on stamp paper that they would be supplying goods to the concerned trader/supplier in case trade supplier secured the order**.(Envelope-I).**
19. The bidders must provide complete circuit diagrams, wiring diagrams, component layout diagrams, Service/Maintenance manuals and component identification catalogue along with equipment free of charge in case order is placed to them. Also supplier to provide Technical Maintenance/Service training at manufacturing unit or principal company to our Technical Officer Instrumentation. All Expenses for travel, Accommodation etc. to be borne by the supplier or company to whom order is placed
20. **The equipment / instrument / system must come with inbuilt 3 years comprehensive warranty and 2 years comprehensive / non-comprehensive warranty at no extra cost.**
21. The maximum response time during the warranty would be 48 hrs. 0.1% of FOB as penalty per week till the warranty would be applicable.
22. The bidder must certify that the item will be kept under Annual Maintenance Contract at least for a period of **5 years** after the expiry of the Warranty Period and the necessary consumable and non-consumable parts shall be made available for carrying out preventive maintenance and remove the defects.

23. The reasonable Annual Maintenance Service Charges (**both Comprehensive and Non-Comprehensive**) after the end of 5 years of warranty must be fixed / indicated in the Financial Bid, attached separately.
24. The last date for receipt of tenders in NIRRH is **22nd September, 2017** up to **12.30 hrs.** Tender will be opened (Technical bids) at **15.00 hrs. on 22nd September, 2017.**
25. Late/delayed Tenders shall not be considered under any circumstances.

I have quoted my prices for the tendered equipment / instrument / system after having read the above conditions as well as conditions stipulated in General and Special Terms and Conditions enclosed.

Signature and Name with Designation of

Tenderer with Rubber Stamp

Chapter 2 : GENERAL TERMS AND CONDITIONS OF TENDER

1. Sealed tender will be received on the prescribed form in the office of the Director, National Institute for Research in Reproductive Health, J.M. Street, Parel, Mumbai 400012, up to the date and time mentioned in the Tender.
2. The document should be put and sealed in an envelope while submitting to the Director, NIRRH with Tender No. and date of opening of the tender.
3. The Tender not submitted as per the above prescribed manner will be treated as invalid. All outstation tenders should be sent within time limits. Delay in postal delivery will not be condoned and Institute will not be responsible in any manner thereof.
4. Opening of Tender – The tenderer is at liberty to be present or authorize his representative to be present at the opening of Tender at the time and date specified in the Schedule.
5. In the event of the work order being placed against any of the tenderers and if the tenderer fails to undertake and execute the tendered work according to the terms and conditions of acceptance of tender or fails to replace the parts/material rejected by the Director or by any person on his behalf within such time as may be stipulated, the Director shall be entitled to get the tendered work through other suitable party. In such case Earnest Money Deposit (EMD) of defaulting party will be forfeited and difference of cost shall also be recovered from the defaulted bidderand Bank Guarantee will be encashed.
6. Successful Tenderer will be required to pay Bank Guarantee (Nationalized Bank)/Demand Draft equivalent to 10% (5% towards security + 5% towards performance) of the price of the work to be executed after entering into an agreement for the performance of the contract. The Bank Guarantee should be valid for five years after the successful installation/utilization of the equipment.
7. Certified copy of valid Income Tax clearance certificate in the prescribed form should be enclosed with the tender. Quotations received without the above certificate are liable to be rejected.
8. The Director, NIRRH, reserves the right to call for break-up of the quotation if it is found necessary.
9. Incomplete specifications offered by the tenderer(s) will not be considered and are liable to be rejected.
10. Tender will not be considered/accepted, if it is sent by Fax.
11. Financial bids of qualified technical bid found suitable/acceptable as per prescribed technical specifications as given in tender schedule will only be opened.

12. The Director, National Institute for Research in Reproductive Health (NIRRH), Mumbai reserves the rights to accept or reject any lowest tender in full or in part of any tender or all tenders without assigning any reasons.

13. Interim queries will not be entertained after submission of the bids.

14. Late/delayed Tenders shall not be considered under any circumstances.

15. Work order will be placed and the same will be binding till the execution of necessary agreement will be compulsory.

16. Price Tender form should be filled in, signed with seal, failing which quotation will not be considered.

17. The tenderers should please note that Tender Form should be filled in serial order of item Nos. 1,2,3 etc.

18. Any correspondence regarding reduction in price unless asked for after opening of tender enquiry will not be entertained at all and their tender will be liable for rejection.

19. No price escalation on any account shall be taken into consideration.

20. Please note that if a firm quotes NIL charges/ consideration, the bid shall be treated as unresponsive and will not be considered.

21. Dates quoted in the Tender Forms shall be changed for next working day in case fixed date is suddenly declared holiday by the Institute/ Government.

22. Failure to comply any of the conditions mentioned above will result in the quotations being summarily rejected.

23. Any of the disputes if arise between the Supplier/Tenderer and the NIRRH/ICMR shall be resolved by the sole arbitrator which will be appointed by mutual consent of both the parties thereof failing which one of the Director of other Institute of ICMR in Mumbai (NIIH or EVRC) shall be appointed within 30 days from the date of cause of action of dispute and the award as may be given by the sole arbitrator shall be binding on both the parties within the Civil Jurisdiction of Hon'ble High Court of Bombay.

24. Supplier should provide complete Service & Maintenance Manual of Equipment and all accessories. Also Service & Maintenance training to NIRRH Technical Officer (Instrumentation), at Factory/Manufacturing Unit/Principal Company.

25. Terms & Condition of Payment:

a) Payment for equipment / instrument / system supplied from abroad:

i) On shipment 90% of the contract price shall be paid through irrevocable letter of credit established in favour of the foreign supplier upon submission of necessary documents.

ii) Remaining 10% of the contract price after successful installation, testing, commission and having trial run of the equipment / instrument / system.

b) 3 Years Comprehensive Warranty and 2 Years Comprehensive / Non-Comprehensive Warranty commencing after successful installation.

c) **Comprehensive and/or Non-Comprehensive Annual Maintenance Service Contract for the period of 5 years after completion of warranty period of 5 years.**
d) **No advance payment would be made towards Annual Maintenance Service.**

26) The tenderer should note that the entire Earnest Money Deposit shall be **forfeited** by the NIRRH if the Tender Offer is withdrawn after acceptance of the Bids and fail to execute the agreement within 10 days on acceptance of the Tender.

27A) SPECIAL CONDITIONS:
THE SUPPLIER SHALL HAVE TO EXECUTE AN AGREEMENT ON THE PRESCRIBED NON-JUDICIAL STAMP PAPER CONTRACT/AGREEMENT FOR SALE AND AFTER SALE WARRANTY OF INSTRUMENT/ EQUIPMENT (AS PER ANNEXED DRAFT OF AGREEMENT).

27B) THE SUPPLIER WILL HAVE TO SUBMIT BANK GUARANTEE FROM A NATIONALISED BANK-SCHEDULED BANK AS PER SATISFACTION OF NIRRH, MUMBAI TOWARDS PERFORMANCE SECURITY IF IT IS NOT SUBMTITED OR DEDUCTED FROM THE BILL, ON NON-JUDICIAL STAMP PAPER IN ACCORDANCE WITH STAMP ACT (AS PER ANNEXED DRAFT OF BANK GUARANTEE.

Chapter 3 : SCHEDULE OF REQUIREMENTS

ICMR-National Institute for Research in Reproductive Health (NIRRH) is a Premier Research Institute under the Indian Council of Medical Research, Department of Health Research, Ministry of Health & Family Welfare, Government of India, engaged in medical research. Sealed Tenders are invited by the undersigned in Two Bid System i.e. Technical Bid and Financial Bid from the reputed foreign/Indian manufactures and their authorized suppliers, National Small Industries Corporation Limited (NSIC) approved registered firms and in case of imported items from their authorized Indian agents for supply and satisfactory installation of following scientific equipment/instruments/systems for its research laboratories. The Tender should be submitted in two separate sealed envelopes i.e. (i) Technical Bid and (ii) Financial Bid. The details of technical specification of the equipment/instruments/systems should be provided in the cover marked as **"Technical Bidfor----------".** This envelope should also contain bank draft for the Earnest Money Deposit (EMD). The cost of the equipment/instrument, percentage of taxes/duties (GST etc.) should be clearly indicated in the Financial Bid (marked **"Financial Bid for ----------".** The Financial Bid should be submitted in sealed envelope in the cover indicating the name of the equipment/instrument/system.

S.N.	Equipment Name / System Name	Qty.	EMD Amount (in Rupees)
1	Confocal Microscope	1	1500000
2	*In vivo* Imaging Workstation	1	1000000
3	Individually Ventilated Cages for Rats	1	625000
4	Tissue Microarray Workstation	1	400000
5	Automatic Tissue Processer, automatic slide stainer and cover slipper	1	250000
6	High Performance Liquid Chromatography	1	150000
7	Automated Fluoresence Microscope with Karyotyping and FISH Software	1	500000
8	Gel Imaging System	1	400000
9	Fluorescent Auto Imaging System	1	225000
10	High Sensitivity Quantitative PCR System	1	350000
11	Immunoassay System	1	175000
12	Rack Server	1	130000
13	CO2 Incubator	1	25000
14	UV Visible Spectrophotometer	1	40000
15	Gel Documentation System	1	40000
16	Agarose Gel Visualiser	1	5000
17	Liquid Nitrogen Container [Cryocan]	3	37500
18	Refrigerated Microcentrifuge	4	100000
19	Clinical Analyser	1	100000
20	Liquid Scintillation Counter	1	10000
21	Five Part Differential Hematology Auto Analyser	1	75000
22	PCR Machine	1	10000

S.N.	Equipment Name / System Name	Qty.	EMD Amount (in Rupees)
23	Automated Cell Counter	3	20000
24	Deep Freezer -20° Celsius	3	25000
25	Refrigerated Table Top Centrifuge	5	300000
26	Uninterruptible Power Supply	1	22500
27	Water Purification System	4	220000
28	Laminar Flow Cabinet	3	60000
29	Weighing Balance	1	5000
30	ELISA Reader with Fluorescence and Luminescence	1	85000
31	Agarose Gel Electrophoresis Apparatus with Power Pack	2	20000
32	Optical microscope with inbuilt camera	1	12500
33	Automatic Sterilizer	1	50000
34	Real Time PCR	1	125000
35	Workstation	1	30000
36	Wireless Network Setup	1	40000
37	B.O.D. Incubator	1	30000
38	Sonicator	1	30000
39	Mini SDS-PAGE Equipment with Transblot	3	37500
40	Single Detector Gamma Counter	1	15000
41	Incubator Shaker with Refrigeration	1	125000
42	Automated Colony Counter and Zone Sizing	1	50000

Chapter 4 : SPECIFICATIONS AND ALLIED TECHNICAL DETAILS

1. Confocal Microscope

The self-sufficient, optimally functioning confocal microscope system should be of latest model and modular technology suitable for biological applications. The confocal system should be capable of high sensitivity detection mechanism meeting various applications of biological samples including multichannel fluorescence imaging with Z-stack, Live Cell imaging, time lapse applications including co localization, FRAP, FRET & FLIP. The system should be upgradable.
The system should be offered with the following configuration:

Microscope:

1. Fully motorized inverted microscope with left and right side port and capable of Bright field, Fluorescence and DIC imaging with touch screen TFT display for controlling motorized components of the of the microscope.
2. Motorized Z-focus drive with minimum z-step resolution of 30 nm or better.
3. Tilting binocular head.
4. 10X eyepieces with a minimum 22 FN or better.
5. 6 position motorized FL filter wheel & 6 position motorized nosepiece.
6. Computer controlled continuous correction of Z drift with Laser/LED based system having wavelength above 800nm.
7. Motorized X-Y scanning specimen stage with universal sample holder for slides and 35/60mm petridish, 24/96 well plate for multiple position time lapse imaging and stitching and linear encoders for high reproducibility in positioning.
8. A complete automated digital environmental control stage type incubation system (incubator) for long term live cell time lapse imaging with temperature, CO2 and Humidity sensing and control. The system should be able to use 100% CO2 gas supply and to provide 5% pre-heated CO2 gas to the chamber. Should be compatible with piezo/galvo stage.
9. Quote separately for Piezo/Galvo stage with 5nm or better step size for high speed Z acquisition (The Z-speed should be enough to perform 10 frames/sec or better
10. 12V /100W halogen illumination for transmitted light or high power LED. Metal Halide/ Mercury Arc lamp 120/130W illumination for Fluorescence with lamp life of minimum 2000 Hrs.
11. High resolution Semi Apochromat objectives 2.5X/5X with high NA, Plan Apochromat Confocal Grade 10x/0.45 or better, 20x/0.70 or better, 40x/0.85 or better, 60/63x/1.40 oil & 100X/1.4 oil (wide angle for TIRF application) with DIC prisms for all objectives.
12. Fluorescent bandpass filters for DAPI, FITC/GFP and TRITC/Rhodamine.

Confocal system:

High sensitivity confocal laser scanning with built in/separate spectral detectors for efficient fluorescence signal collection. The detectors should be capable of working in intensity and spectral mode imaging.

Scanner should be with the following configuration

1. High speed scanner with min. 180 deg scan rotation with total scan flexibilities of Line, free hand curved line, XY, XYZ, XYZT,XYZλ and XYZTλ combinations.
2. Maximum scan resolution with spectral detectors should be at least 4K x 4K for all channels or higher
3. The scan field diagonal should be at least 18-20 mm F.O.V. or more
4. Scan Zoom range 1:40x or more and should be adjustable in steps of 0.1X.
5. Spectral System should be capable of acquiring minimum of 4 or higher frames per second @ 512x512 pixel resolution with scan rotation, ROI, stimulation and simultaneously for 4 channels. It should be able to perform fast dynamic live cell time lapse imaging with a high speed of 110 fps or better @ 512x16 resolution or more**.** Digitization capability of 8/12/16 bit should be available with the system.
6. Quote separately for a high speed scanner which can offer atleast fps of 25 at 512X512 full frame without ROI and maximum speed up to 400 fps at 512x16
7. Computer controlled continuously variable confocal pinhole (aperture size and position) with software control
8. The spectral dispersion of the emission light should be based on either reflection or transmission grating with enhanced/improved spectral signal collection device or with prism based spectral dispersion with high efficiency.

Lasers & Laser Combiner:

1. An AOTF or similar technology controlled laser combiner
2. A longer life time **(~15,000 working hours and above**) stable and easy to switch on and switch off solid state/Diode/Gas lasers with powers ≥20mW lasers and >30mW in case of Argon lasers

   Laser lines - 405, 488, 515, 552/561, 638/641

   Quote separately for Laser line: 594nm
3. All laser should be connected to the scan head through fiber optic cable and controlled through AOTF for fast laser switching and attenuation in pixel precise synchronization with the laser scanner for ROI scan for FRET, FRAP, Photoactivation /conversion experiments and image analysis. List out all applications
4. The system should be able to perform multicolor imaging in long duration live cell imaging.
5. The Laser line/s chosen should be reflected on the sample in any combination as per experimental demand.
6. All the visible and UV laser lines should be computer controlled for fast laser switching and attenuation in synchronization with the scanner.

Detectors configuration:

The system should come with either hybrid PMT - GaAsP based detectors.

An additional transmitted light detector should be offered for bright field and DIC imaging.

PMT and GaAsP Detector configuration:

1. Four detectors with atleast one detector should be tunable spectral detector and at least two should be high sensitive GaAsP/Hybrid detectors detector with more than 40% QE.

2. The system should be capable of recording emission spectra with minimum spectral resolution of 5nm or better.

Acquisition and Analysis Software

1. Latest computer control Software capable of controlling motorized functions of microscope, scan head control, laser control including AOTF and Image acquisition & processing etc.
2. The image acquisition and analysis software should have all standard confocal features such as microscope control, Confocal system control, basic modules for ROI imaging bleaching FRET/FRAP/Photoactivation modules for acquisition and analysis. XYZ time lapse, spectral profiling in all the channels and multi-channel sequential and simultaneous image acquisition. Intensity profile over Z time, online spectral fingerprinting/ unmixing/deconvolution, High Dynamic range imaging, 2 D image deconvolution of confocal data sets, Measurements, batch processing, A dedicated 3D & 4D rendering software, 3D imaging and reconstruction (Imaris/Velocity/Huygens), Co-localization, real time stitching, high content screening (Quote separately), etc.
3. Multi point and mosaic imaging facility to be offered.
4. Additional offline software with all the analysis modules as above should be offered.
5. Quote separately for confocal resolution improvement software that could be integrated in online system for improving XY resolution upto 140 nm and up to 400nm in Z.

Computer Workstation (2 numbers)

1. Factory supplied workstations and monitors (Xeon 10 core and above processor) with minimum RAM: 64 GB or more, HDD: 3TB SATA HDD or more and 512 GB SSD hard drive, Ethernet, DVD RW drive Large 30 inches or above LCD TFT monitor (refresh rate) or better. Graphics card with minimum of RAM: 12 GB or more (main system), 2GB or more (offline system), DVD writer.
2. Offline workstations and monitors for analysis. Xeon 8 core and above processor with minimum RAM: 32 GB or more, HDD: 3TB SATA HDD or more and 512 GB SSD hard drive, Ethernet, DVD RW drive Large 30 inches or above LCD TFT monitor or better. Graphics card with minimum of RAM of 2GB or more, DVD writer.

Anti- Vibration Table: should be included with the system from the same manufacturer of Confocal or imported one with active Air Compressor.

UPS

1. An appropriate UPS (6KVA or above) to give a backup of the entire system for at least 30 minutes.
2. Additional 1KVA UPS to support the offline system for 30 minutes.

Warranty

1. A comprehensive warranty for 3 years + 2 years AMC for the instrument including **lasers,** workstations from the manufacturer should be included.
2. Quote separately for AMC from 6th year up to 10th year; Both Comprehensive and Non-Comprehensive.

Additional requirements:

1. Onsite training should be provided for first six months and as and when required
2. All software upgrades should be provided free of cost.
3. The supplier should mention the after sales/service/application support capabilities.
4. Lasers and other spares needed for the machine to be fully functional should be available with the company for atleast 10 years
5. All specifications to be supported by documentary proof from principal.
6. The principal has to demonstrate and prove experimentally the technical specifications asked.
7. Additional staff from company.

All the claims regarding specifications shall be supported by original brochure/technical documents from the Principal company.

2. *In Vivo* Imaging Workstation

System should have:

1. The In-Vivo Optical imaging system should be licensed for biophotonic imaging for small animals such as bioluminescence, fluorescence (filters ranges up to 430nm to 875nm), chemiluminescence and radioisotopic Cerenkov studies for *in-vivo* and *in-vitro* use.
2. Complete system inclusive of light tight cabinet, CCD camera, excitation and emission filters, sample stage, computer workstation.

Light Tight Cabinet:

3. Complete light tight imaging chamber/cabinet.
4. Fitted with minimum of 15 excitation filters and min. of 7 emission filters wheels. Both Excitation and emission filter wheels should be motorized and software controlled.
    - Excitation filter range: 430nm to 740nm.
    - Emission filter range: 515nm to 875nm
5. Fitted with LED 's for photographic imaging.
6. Cabinet should be able to accommodate gas anesthesia manifold and its tubing.

Specimen Stage:

7. Stage movement should be software controlled to achieve images at different FOVs. Min FOV: 5x5 cm to Max FOV 12 x 12 cm or more.
8. Heated stage - temperature should be controllable between 20°C to 40°C.
9. Should be able to accommodate at least 3 nos. of mice.

CCD Camera:

10. Back thinned, back illuminated grade 1 CCD.
11. Pixel size: 13 x 13 microns.
12. Thermoelectrically cooled to -90°C absolute, ensuring low dark current and low noise.
13. Quantum efficiency: >85% for 500-700nm range.

Computer workstation:

- Suitable PC with latest computer configuration compatible with system hardware and software should be provided. Licensed operating system, 22 inch HD LED high resolution monitor, 1 TB HDD, 8 GB RAM, CD /DVD/combo reader/writer, etc. (Provide details of the configuration quoted) along with Printer and UPS battery backup of minimum 4 hours should be supplied, preferably through local vendor.

Software:

14. Licensed Software package for equipment control, image acquisition and analysis should be supplied. Software should also be able to do Absolute calibration, background subtraction and the image math algorithms for producing high-quality, reproducible, quantitative results.
15. Software for spectral library generation, software tools to ensure accurate autofluorescence removal, unmixing and fluorophore quantitation.
16. Software to build a customized library giving user a flexibility of Using more than 5 Optical reporters simultaneously inside the same animal.

17. The company should provide complete in house reagent & cell line support manufactured by the same company required for *in vivo* experiments; pre optimized on the instrument.
18. Data generated should be in absolute calibrated data according to the National Institute of Standards and Technology (NIST).
19. The company should have minimum of 5 such installations in India of similar systems with a few Indian publications.
20. Supplier/distributor should have a good track record of maintaining the in-vivo imaging systems in the past, have qualified application scientists and manufacturer trained service technicians to provide prompt after sales service supports.

Optional accessories to be quoted:

21. Module for optical bio distribution analysis and anatomical identification of organs.
22. Gas anesthesia system.
23. Animal Isolation Chamber.
24. Module for 360 Degree Surface Mapping.

3. Individually Ventilated Cages for Rats

System should have:

Individually Ventilated Caging System to house laboratory Rat including Cages Racks Air Handling Unit/Ventilator and other cage accessories.
Individually Ventilated Caging System for Rats: Each system should be inclusive of complete cage assembly (Metal grid, Microbiological filter on cage top to filter the air during power outage, gasket to make the cage air tight, Slot for animal food, calibrated water bottle minimum of 300ml capacity, etc.) cage holding racks, air handling unit/ventilator and other required accessories

A. <u>Air Handling Unit/ Ventilator</u>: Requisition: 5 No

1. Air handling unit should have a H14 HEPA filter at both supply and exhaust ends.
2. AHU should be capable of at least 80 HEPA filtered air changes per hour per individually ventilated cage.
3. Each AHU should be able to serve at least 4 single-sided or 2 double-sided racks while maintaining the air change rates indicated above.
4. Should have the ability to set the number and cage type easily via the control panel.
5. AHU should be isolated with no vibrations transmitted to the racks.
6. The unit should be made of high quality plastic and AISI 304 grade stainless steel.
7. It must be stand-alone unit and should be mounted on stainless steel ball bearing castors with nylon fiber glass reinforced wheels for easy roll in and out. At least 2 wheels should have brakes.
8. The unit should have a Microprocessor control board, for setting and control of parameters (Temperature, Relative Humidity, Air Changes per hour, Air pressure, Minimum and Maximum supply of air flow, etc.)
9. The unit should be of low power consumption (Energy Saving and Eco-compatible)
10. AHU should have a high quality sensor for regulating Temperature and Relative Humidity.
11. DOP (Dispersed Oil Particulate) test certification for HEPA filters (both supply and exhaust) is mandatory.
12. The AHU should be equipped with dry contact for alarm connection to integrate with the building management software.
13. Noise levels at maximum operational capacity should not exceed 50 dB (A).
14. The AHU should have easy access for pre-filters and without tools needed for change.
15. The unit should be with the thimble connection to exhaust air to the out of the room.
16. Test reports for positive and negative aeraulics (Air pressure gradient monitoring through device), DOP filter integrity, electrical and sensor calibration should be provided.
17. The efficiency level of the pre filter as well as HEPA filters should be 99.99% to prevent the entry of particles of more than 0.3 micron size.

18. The AHU should take the room air and after filtration should be delivered to the animal cages
19. Accessibility of the system should be user friendly and password protected
20. The AHU should be adequately light in weight and comfortably designed and operational for the operators or animal care staff
21. Exhaust air from AHU must be connected to room exhaust
22. It should be able to supply air to maximum number of racks (two double sided racks or four single sided racks or one double sided and two single sided racks).
23. Maximum Power required for the AHU to be indicated.
24. AHU should have monitoring device to check the status of the filters.

B. <u>RACK:</u>

Single Sided Rack ……..**Requisition: 3 No.**
Double Sided Rack …… **Requisition: 5 No.**

1. Single Sided Rack should hold at least 35 cages/rack
2. Double Sided Rack should hold at least 70 cages/ rack Rack should have a system of vertical plenums featuring air nozzles for the supply and exhaust of air individually to each cage. This should be positioned at the top of the cage and be easily removable.
3. Rack should have vertical plenums for supply and exhaust air to allow bedding particles and debris to fall by gravity.
4. The aeraulics should be designed to minimize clogging of the plenum and air nozzle system.
5. The main horizontal plenums should be cylindrical allowing uniform air distribution and should be capable of screw-free demounting.
6. Rack should be made of AISI 304 grade stainless steel with high-quality plastic runners, cage coordinates and spring-free, plastic visual indicators for properly docked cages.
7. The rack runners should have built-in stoppers precisely matched to the stopping lugs allowing each cage to automatically stop and silently lock into place.
8. The system should be on heavy duty, fully autoclavable fiber glass reinforced nylon castors with at least two with brakes.
9. Dimension of Cage rack should be approximately of 1800 L X 900 B X 2000 H mm including castors
10. Air changes per hour (ACH) inside the cages at all levels should not vary much from the mean ACH value (+/-15%) and it should be the same even with 50% cages removed from the rack. Third party validation (TUV) is a must.

C. <u>CAGES</u>: Requisition: 600 No.

1. For Rat System: Floor area should not be less than 800 cm2
2. The cage should be ventilated and allow running in positive or negative pressure modes. The AHU control should allow easy change of ventilation mode.

3. The cage body should be symmetrical allowing the possibility of using both the cage sides.
4. Cage should be equipped with stainless steel wire lid bar.
5. Caging system should have a nylon gasket over the stainless steel grill, between the top and the cage body.
6. Cage top should have an external self-centering depression for water bottle, microbiological filter (filtration efficiency 99.5% for 0.3µm particle size), supply and exhaust valve for air ventilation and nylon latches.
7. Water bottle should have a conical AISI 316 grade stainless steel cap.
8. Inlet and outlet air nozzles should not protrude inside the cage to avoid cross-contamination.
9. Inlet and outlet air nozzles should be at the rear top of the cage.
10. Air speed in the cage should not exceed 0.2 m/sec.
11. Individual cages should be removable while the whole system is operational without affecting the distribution of the air supply to the remaining cages.
12. All components should be washable and fully autoclavable.
13. Autoclavable plastic card holders should be provided.
14. The cage material (Cage Bottom and Cage Top) should of high quality polysulfone plastic which should withstand minimum of 200 autoclave cycles and should not became opaque and lose the transparency
15. Cage bottom should be symmetrical from both the ends and should have rounded corners without any projections inside.
16. Water bottle should be exterior/outside the top cover and it should make perfect sealing when nozzle inserted into the cage.
17. Water bottle should be of minimum 250ml capacity and should have silicon gasket on its neck for perfect capping to avoid water leakage.
18. Water bottle nozzle / caps should be made of AISI 316 quality stainless steel and should not have any wielded joints.
19. Cage top cover should have wider microbiological filter with air tight filter retainer. Microbiological filter should have third party certification for more than 99.9% virus and bacterial filter efficiency.
20. Air inlet and outlet ports should never come in contact with animals inside the cage.
21. Preferably ports can be above animal level or on the top.
22. Air speed inside the cage should not be disturbing to the animals (< 0.2m/sec). Third party certification is must.
23. Cage should have detachable and autoclavable card holder.
24. Cage assembly should be air tight and the gaskets used for airtight sealing should be made of silicon material (autoclavable).

D. <u>MANUFACTURER:</u>

The manufacturing company with International standard must be independently audited and certified to comply with ISO 9001 (quality management system) and ISO 14001 (environmental management system) standards.

GENERAL:

1. International Certification (ISO/CE etc.), validation for the system (Cage + Rack + AHU) is mandatory (including filter integrity test for HEPA filter).
2. The equipment must avail of a full validation protocol (IQ, OQ, PQ) option.
3. The total system should be certified by third party.
4. Please ensure that the specifications mentioned in the offers must cover all the parameters listed in our enquiry and should attach the supporting documents.
5. Installation testing, checking of specifications and the validation should be done at the specified area. Training of users to be done free of cost at the site.
6. Please indicate the year in which the model was introduced in the market and confirm whether the spares and consumables for the system would be available for a minimum period of 10 yrs.
7. Pre-installation and utility requirements for installation and running the system should be clearly mentioned.
8. Availability of local factory trained service support in and around Mumbai and response time for a service call during and after the warranty should be specified.
9. List of users in India and abroad of the similar models as the one(s) offered along with the names, addresses, telephone numbers and mail ID's to be enclosed separately
10. Technical presentation and Demo on the systems offered is to be made on request from NIRRH. In case any of the invited parties fails to demonstrate their compliance as per the demanded specifications, the party will be treated as disqualified.

SPECIFICATIONS FOR CAGE CHANGING STATION

Requisition: 3 No.

The equipment should satisfy the following minimum criteria:

1. Equipment should be suitable to use in GLP standard Lab/Animal facility
2. Can be easily calibrated
3. Can be validated
4. Functional data can be recorded and saved.
5. Should be suitable for clean animal facility (Specific-pathogen-free)
6. Should be compact in size
7. Should be mobile that allow the user to easily move the cabinet in side animal room.
8. Should have dual access.
9. Should ensure the protection to the operators from particulate dust and allergens.
10. Should ensure protection to the animal from contaminant by minimizing the exposure to aerosols
11. Should ensure protection to animal room environmental and should be safe during animal handling procedures while cage changing.
12. There should not be any sharp corners or edges.
13. Surface should be clean.
14. Work top should be autoclavable, scratch resistant and sound absorbent. Work surface and air flow grill should be removable for easy cleaning.

15. Collection tank should be removable to drain all the bedding and food particles accumulated underneath the work surface.
16. Protective net should be provided to avoid bedding and dust particles clogging the exhaust pre-filter and HEPA filter.
17. The cage change station should have perfectly rounded corners, smooth surface and edges with high chemical resistance to common disinfectants.
18. Functional acoustic and visual alarms should be functional as soon as operational conditions are outside the set parameter.
19. Laminar airflow speed should be higher in whole internal chamber and should be in the range of 0.25 and 0.5 m/s
20. Barrier air flow speed should be enough to protect the operator for allergens and bedding particles (should be tested by smoke test)
21. Filters efficiency should be of laminar air flow grade.
22. Weight should be less than 200kg
23. Incoming and outgoing air should be filtered through a particulate re-filter of at least G4 efficiency.
24. H14 HEPA filter (integrity should be DOP Tested) should follow ISO 14644-1
25. Efficiency should be 99.99% @ 0.3micron
26. FIVE (5) years full warranty on all parts, including repair and service charges
27. Cage changing station should come with a test report with the following parameters tested.
    A). Noise level and light intensity test
    B). Electrical test
    C). DOP test
    D). Particles counter
    E). Alarm clock.
    F). Functional test
    G). Aeraulic LAF test

4. Tissue Microarray Workstation

System should have:

- Automated Tissue Microarrayer system should be able to extract the sample tissues from the donor blocks and deliver into the corresponding hole of the premade recipient block automatically.

- The system should have 2 separate high resolution cameras to locate exact position of tissue at donor block and corresponding holes in recipient block with positional accuracy of minimum 10 microns at recipient block.

- Instrument must incorporate user friendly Software which enables user real time monitoring of above process, store data and Researcher should be able to access / share the data file for our TMA work.

- The instrument should have minimum 4 different sized tips which can be changed manually. Size of tip should be minimum 0.5 mm. The supplier should supply corresponding recipient blocks for 0.5 mm dia holes. Additionally 1mm, 1.5mm,2mm need to be offered with corresponding recipient blocks.

- Supplier should offer minimum 50 recipient blocks each of 0.5 mm, 1 mm, 1.5 mm and 2 mm.

- The system should have capacity to incorporate minimum 10 donor blocks and 2 recipient blocks inside the sample chamber. It should be able to prepare minimum 150 tissue cores per hour.

- The system should have capability to Auto calibrate and accurate movement of 4 axis to control the punchers automatically.

- The system should be offered with 3 years warranty.

- Power requirement should be 220 V ,5 Amps, Single phase 50 Hz

- Instrument must have ISO / CE certification

- Suitable PC with latest computer configuration compatible with system hardware and software should be provided. Licensed operating system, 22 inch HD LED high resolution monitor, 1 TB HDD, 8 GB RAM, CD /DVD/combo reader/writer, etc. (Provide details of the configuration quoted) along with Printer and UPS battery backup of minimum 4 hours should be supplied, preferably through local vendor.

- Supplier should have team of experienced service engineers for installation and servicing of Automated TMA

- Supplier should attach list of users with installation certificates of Automated TMA systems in India

- Supplier should be exclusive authorised sales and service representatives & Authorization letter from the principal should be attached with the offer.

- Additional Software for relatedness of prognostic marker expression & clinic pathological parameters, with capability of exporting graphs, data or reports in various formats, to be offered separately.

5. Automatic Tissue Processer, automatic slide stainer and cover slipper

System should have:

Automated Tissue Processor

1. Conventional overnight tissue processor with 200 cassettes per run capacity.
2. The LCD touchscreen, with multilingual intuitive interface, guides the technician safely.
3. Log files can be quickly downloaded via USB connection.
4. Standardize your workflow with three pre-validated processing protocols (Biopsy, Standard Overnight, Cleaning).
5. Should have Reagent Management System (RMS) tracks the usage of reagents per number of cassettes, processing cycles or days, Processing program: Cassettes/Cycles/Days, Cleaning program: Cycles/Days.
6. Should have three Number of paraffin baths Capacity: Max. 3.5 L per paraffin bath.
7. Support paraffin melting point: 50 °C - 64 °C, Temperature settings range: 50 °C - 70 °C.
8. Temperature range for processing reagents: Ambient temperature of 35 °C to 60 °C.
9. Temperature for cleaning reagents: Alcohol 62 °C, Xylene 67 °C.
10. Tissue processor should have 11 Reagent bottles in reagent cabinet, Condensate bottle: 1, Cleaning bottles: 2, Bottle volume: Max. 3.5 L
11. Should have access levels like Standard User level, Supervisor level and Service level.
12. Should have Password status like Supervisor level and Service level with Alphanumeric password
13. Should have reagent resistant Colour LCD touchscreen with Interactive software.
14. Should have Two USB 2.0 ports, DC 5V.
15. Alarm system with two alarm sockets (for local alarm and remote alarm).
16. Smart error-handling for specimen protection with Internet port.
17. Should have 10 freely configurable programs and 2 pre-installed programs, each consisting of up to 11 reagent and 3 paraffin processing steps.
18. Time selectable range per program step should be from 0 to 99 hours, 59 minutes.
19. Should have Delay time upto 7 days.
20. Up to 200 cassettes can be processed simultaneously.
21. Should have one 1 cleaning program for the retort.

Automatic slide Stainer

1. High throughput robotic stainer for Multiple staining applications and should run up to 11
   racks in parallel.
2. Simultaneous staining of various different staining protocols.
3. Solvent resistant screen to monitor the staining process.
4. Racks should be assigned to the correct Staining Protocol.
5. Total 26 stations with 18 reagent stations and maximum 5 wash stations of 450ml capacity
   and slide racks with 30 specimen slide
6. Programmable for 15 programs of upto 25 steps each with incubation time setting from

0 sec to 99 minutes 59 seconds.

7. Integrated oven with temperature setting from 30□ to 65□C for optimal slide drying.
8. Continuous loading and unloading of slides via rack entry and exit door.
9. Specimen slide throughput of atleast 200 slides per hour upto 600 slides per hour.
10. Agitation programmable from 0 to 20 times or continuous.
11. Programmable up and down movement of robotic arm.
12. Fume extraction fan with charcoal filter to remove hazardous fumes.
13. Gentle vibration to slide rack during lifting to reduce carry over contamination.
14. Audible warning buzzer in case of any error during operation.
15. Should have dimension (WxDxH) around 165 cm x 67cm x55 cm.
16. Should be UL/c-UL,CSA and ISO certified.
17. Can be attached to coverslipper.

Automatic Cover Slipper

1. Designed for histology sections and cytopathology smears.
2. High-throughput glass coverslipper, with a speed of 9 seconds per slide.
3. Compact bench top unit, requires very little space, works with high-quality standard coverslips in various sizes from 22-24 mm x 40-60 mm.
4. Minimized Operator Interaction, Broken coverslips detected by sensor.
5. 250-ml glass mountant bottle. Precise adjustment of mounting media flow volume and in accordance with mountant viscosity.
6. Works with most commercial mounting media. Wet coverslipping from xylene. Dispenser nozzle rests in xylene-filled receptacle.
7. Permanent fume extraction via activated carbon filter (integrated fume extraction system).asy to operate.
8. Should works with most commercial slide racks -included.
9. Permanent self-monitoring function with acoustic and optical instrument status indications like 'Add coverslips', 'Coverslipping completed'.
10. Error codes displayed in the event of malfunctions and other functional errors.
11. High-throughput glass-on-glass coverslipping: up to 400 slides / hour
12. Auto-slip magazine for automatic adaptation to different coverslip sizes
13. Avoids glass dust blocking the suction cup vacuum air lines
14. Suction cup filter system and Operator defined mounting media settings
15. Acceptance of a large variety of slide rack types & wet or dry cover slipping
16. Wet park position for nozzle module & Broken cover slip sensor with automatic disposal function
17. Software settings for main functions & easy access to all key components and Quick setup and installation
18. Option to connect to automatic slide stainer: Fully Integrated Workstation & CE-, CSA-approved.

6. High Performance Liquid Chromatography

System should have:

The HPLC system shall include the following individual stackable self-contained modules. The HPLC system must be controllable, monitored, capable of performing system maintenance using Microsoft Internet Explorer web browser. Modules must be connected via fibre optic noise resistant high-speed transmission technology to enhance the reliability and sensitivity of the HPLC.

1. Solvent Delivery System for Analytical & Semi-Prep Flow Rates
2. Column holder &switching valve
3. Photo Diode Array Detector
4. Autosampler with sample cooler
5. Column Oven
6. System Controller
7. Chromatographic Software with 3D software for PDA
8. General Requirements & conditions

1. Solvent Delivery System for Analytical & Semi-Preparative flow rates

- The pump should support both analysis & fractionation allowing efficient scaling up with a single instrument
- It should be high pressure binary pump with two individual flow lines
- The pump should be able to able to handle flow rates ranging from those used in analytical scale to those used in semi-preparative.
- It must be a parallel type double plunger in-parallel pump with automatic pulsation correction mechanism achieving pulse-free solvent delivery.
- Pump should have plunger capacity of 47ul or better
- Maximum operating pressure should be 49MPa or better
- Flow rate should be settable between 0.001 mL/min to 20.00 mL/min without any hardware changes
- Flow rate accuracy should be ± 1% or ± 10 µl of set value whichever is larger
- Flow rate precision should not be more than ± 0.08% RSD or 0.02 min SD
- The gradient formation should be produced through high pressure mixing
- The precision of composition must be less than 0.1% RSD
- It should employ active check valves that allow stable delivery of non-polar organic solvents
- Automatic rinsing of plunger must be available
- It should be supplied with Maintenance kit, reservoir tray with 5 solvent bottles, fittings
- It must have a leak sensor as safety feature
- Gradient mixer for analytical as well as semi-preparative scale should be supplied along with the pump

2. Column Holder & Switching Valve:

- Appropriate column holder with columns clamp assembly shall be supplied along with this HPLC system
- Column holder should support mounting of one column with inner diameters in the range of 20 to 50 mm, one analytical column, up to five manual selection valves of various types
- Manual column switching valve should be provided for switching between analytical and semi-preparative columns

3. Photodiode Array (PDA) UV-Vis Detector

- The wavelength range should be 190 nm - 800 nm
- The photo-diode array detector should have 512 elements and an element resolution of 1.2nm/element must be available.
- The detector must have 2 modes of operation using a variable slit: High Resolution mode at a slit width of 1.2nm and a High Sensitivity mode at a slit width of 8nm
- A Conventional flow cell [10 µL volume, 10 mm cell path length, 12 MPa pressure max.] with temperature control should be available
- It should also be supplied with preparative flow cell of 0.5mm path length for semi-preparative applications
- The flow cells must be temperature controlled from ambient ± 5˚C to 50˚C
- Wavelength accuracy should be ±1 nm
- A deuterium lamp [D2] and a Tungsten lamp [W] should be available as Light Source for UV and visible wavelengths respectively.
- The selection of light source must be flexible to select D2, W or both [D2 +W] the lamps for analysis (3 modes)
- The Drift must be smaller than 5 x 10-4 AU/Hour or better
- The Noise Level must be smaller than 0.6 x 10-5 AU or better
- Linearity should be equal or more than 2.0AU (ASTM method)
- It should have automatic wavelength accuracy check at 4 wavelengths (UV & Vis) & wavelength correction
- It should have a self-aligning mechanism for the light sources and cell.
- Light sources and cell should be accessible from the front for easy maintenance

4. Autosampler with sample cooler

- Sample injection volume should be variable between 0.1 µl to 100µl.
- Injection system should be variable injection volume type with zero sample loss during injection
- Number of samples to be processed automatically, random access up to 175 positions for 1ml vial volume, 70 for 1.5ml, 50 for 4ml, 192 for 2X96 wells microtitre plates, 768 for 2 X 384 wells microtitre plates
- Flow line rinse capability both before and after sampling should be possible
- It must be capable of a carry-over no more than 0.0025 %
- Injection volume accuracy within 1%

- The injection precision should be less than 0.3% of RSD value
- Autosampler should have cooling capability with block heating/cooling which can be used with dehumidifying function having temperature range of 4o to 40oC
- Maintenance kit should be quoted.
- It should have a leak sensor, automatic rack and vial recognition as safety feature
- It should be capable of coupling to an automatic rack changer in the future for high throughput analysis
- Supply of at least 200 sample vials of 1.5ml capacity, complete with caps and septa should be included. 2ml loop for extended sample injection should be supplied with autosampler

5. Column Oven

- It should be block heating type for uniform temperature distribution with a quick feedback mechanism to maintain constant temperature even when power source voltage fluctuates
- The temperature range should be from 4˚C to 80˚C
- Temperature control precision should be ± 0.1˚C
- The oven should have temperature limit device and temperature fuse and a solvent leak sensor
- It should have functions for maintenance and validation which are accessible by a dedicated operation button
- It should be able to handle up to 2 x 25 cm columns

6. System Controller

- It should function as a communication bus module with data buffering capability
- It should acquire up to 24 hours for one analysis, at 500ms sampling rate
- It must be controllable from a web-based interface via a network. It allows the system to be controlled, monitored and maintained via Internet Explorer Web browser
- It must be compatible with wireless networking
- It should support 8 units to be coupled together with 4 inputs & 4 outputs
- It should support 2 analog boards to be mounted

7. Chromatographic Software with PDA Software

- Operation of the system should be very easy and intuitive via a state-of-the-art 32 bit Windows 7 based software
- It should cover full one-point digital instrument control, qualitative and quantitative processing, report creation and self-diagnosis
- Sample schedule wizard function should be standard
- There should be an on-line help function context sensitive
- The reporting format should be flexible and easy to use in any desired format

- The data can be converted to other formats. Spread Sheet software and word-processing software can be readily employed to provide data in tables or graphs through industry standard protocols
- The software should allow automatic execution of system checks, auto-purge and baseline checks
- Software must have its own log files for complete audit trails
- An audio-visual multi-media CD-ROM for Maintenance and Troubleshooting must be provided
- System suitability, System security as well as System check functions must be provided which comply with Good Laboratory Practice (GLP) and Regulatory Conformity

8. General Requirements & conditions

1. Tendered price should include delivery, installation, commissioning and training (at least 4 users) at customer's location.
2. One Analytical C-18 Column (5um, 4.6 X 250) one Semi-Prep C-18 Columns (5um, 10 X 250) should be supplied along with HPLC system.
3. All required kits, tubings, joints, tool kit etc. essential for running & maintenance of the system shall be supplied along with the system
4. Complete support with comprehensive warranty for equipment for a period of 36 months from date of supply should be provided. It should include following at no extra cost
    - Travel and Labour expenses of Customer Engineer.
    - Service Parts used for repairs.
5. Vendor to provide service guarantee: should the system require service during the warranty period, vendor must guarantee or replacement of instrument for free.
6. Vendor to provide both on-site and operator training for users on the system start-up, usage, maintenance, quality control, trouble shooting, etc. including classroom training at their facility for a team of at least 4 persons (excluding travel & lodging)
7. Vendor must demonstrate that it has a proven appropriate set-up and capability to provide after-sales service efficiently and effectively. The supplier should have in his facility a similar system to that proposed in this tender for training purpose.

7. Automated Fluorescence Microscope with Karyotyping and FISH Software

System should have:

PART A: Motorized Fluorescence Microscope

- Fully motorized fluorescence microscope with apochromatically corrected beam path for Fluorescence analysis.
- Motorized Research microscope stand with Z step resolution 15 nm or better with adjustable height stop and torque of focusing. Objective specific focusing speed adjusting for scanning and capture.
- Microscope should have built in LED monitor to display the microscope parameters and controls the motorized functions like light manager, contrast manager, motorized nosepiece, motorized fluorescence turret etc.
- Motorized Microscope should have integrated light and contrast manager.
- Revolving Motorized Septuple nosepiece for accommodating upto 7 Objectives.
- 100-watt halogen illumination for Transmitted light applications and 100-watt mercury illumination for reflected/fluorescence applications.
- Fluorescence filters for DAPI, DEAC, FITC, Texas Red, Spectrum Orange & Cy5 to be offered for FISH and MFISH
- Fluorescence illumination with 100W mercury illumination. Fluorescence beam path should be apochromatically corrected for high contrast fluorescence illumination and should have a motorized shutter. 8-10 positions motorized reflector turret should be provided, no external filter wheel.
- Plan Apochromat Objectives for Bright field and Fluorescence of magnifications 10x (N.A:0.45), 40X (N.A: 0.75), 63x oil (N.A: 1.40) and 100X should be quoted.
- Motorized scanning stage for fast and convenient metaphase searching
- Trinocular phototube with 15° inclinations and a high field of view of minimum 25mm should be offered with 10X focusable eyepieces.
- Appropriate anti-vibrating table should be provided.

PART B: Cytogenetic Imaging Workstation

CCD Camera: Minimum resolution 1360 x 1024, 1.4 Megapixel, 12 Bit, minimum 2/3" CCD monochrome camera with minimum pixel size 6.45 µm x 6.45 µm and exposure time between 80 µs and 270 s with global shutter should be offered.

Metaphase Scanner: High speed metaphase scanner system of atleast 12 adjacent fields per second. Scanning of metaphase in both Transmitted light and florescence light mode. Unattended metaphase searching up to 8 slides, should be upgradable to 80 slides or more with autoloaders. Real-time analysis of grayscale images. Fast and adaptable search algorithm, Three-level statistical classification method for reliable metaphase recognition, User trainable classifier, Focus tracking for each metaphase by advanced autofocus algorithm. Fast monitoring and evaluation of found metaphases by image gallery with interactive scoring. Precisely centered relocation at different magnifications, Graphic presentation of search progress,

automated search protocols and evaluation list with transformed coordinates for relocation on other microscopes. User defined scanning area for faster scanning on screen aberration scoring from live image. Automatic light level adjustment during scanning. Automatic centering of object prior to high magnification capture integrated and customized classifiers for scanning. Automatic oil dispenser and automatic image capture under oil immersion objective to be included.

Karyotype software: Interactive and automated Karyotyping of Human, Animal and Plant species. Unlimited UNDO and log operations to overcome human errors with time and date record of every processing step. Interactive and automated Real time back ground correction and Chromosome separation. Keyboard shortcut keys for several functions like Chromosome separation (in case of over lapping chromosomes), image enhancement, back ground correction, contrast enhancement etc. Interactive and automatic Classification based on built-in classifiers for G-, Q- and R-banding. Ideograms according to ISCN standard for 400, 550, and 850 bands. Additional captures to encompass all chromosomes of widely spread metaphases in one karyotype; atleast 22 images to be incorporated into 1 to have one complete Karyogram in case of polyploids.

FISH Software: Image acquisition in up to 12 color channels with integrated microscope control for motorized microscopes. Extended focus image generation to have a very clear Fluorescence signal against clear dark background. User defined automatic processing functions significantly simplify the image enhancement immediately after the capture. Interactive and automatic integration time control for each color channel. Automatic and interactive background correction and thresholding for each color channel. Mask (exclude/include) function, Transient and permanent zoom, Presentation of individual colors, false colors, and gray levels, Annotation capabilities and Measurement functions

Multiple FISH/Band Software: Software should indicate intra or inter chromosomal features like rearrangements, translocation, deletion, addition etc. and label individually with different pseudo colors. Signal intensity of each chromosome displaying intensity of every fluorochrome with respective color should be possible. Fluorochrome color combination for every chromosome should be identifiable. Image acquisition for upto 12 color channels with integrated microscope control for motorized microscopes. Extended focus image generation to have a very clear Fluorescence signal against clear dark background. Software should scan for fluorescence stained metaphase spreads for easy identification of better spreads.

Report / Archiving Software: Dedicated software for Report generation, analysis, archiving and classifying with institute/university logo or other related images. Scheduled backup and notifies if data is not getting saved. Dedicated software for Report or case data searching and sorting. Editing can be done for a work group or multiple cases. Provides security check so that unknown user can’t modify data. User Defined report generation with graphic interface.

A suitable computer / workstation to be offered along with the system.
Warranty: Minimum of 5 years comprehensive warranty should be given.

8. Gel Imaging System

System should have:

1. System should be capable of detection and quantification of Chemiluminescence and Fluorescence dyes from gels and blots.
2. Should have user friendly and integrated software for imaging and densitometry analysis gels and blots.
3. Excitation should be Trans-UV, epi-White; optional trans-White with diffuser board, and epi-red, epi-green and epi-blue LED modules.
4. The system should have a large aperture lens with F-value of less than 1.0.
5. Detection system should have supercooled CCD camera up to -25 to -30 °C with automatic focus and exposure.
6. Image resolution should be of at least 4 megapixels or more.
7. Maximum scanning area should be more than 15 x 20 cm.
8. System should generate 16 bit images with dynamic range of at least 4.5 fold.
9. Image capturing modes should be automatic, semi-automatic, manual and incremental imaging without any requirement of calibration.
10. System should have at least three emission filters each for red, green and blue fluorescence.
11. Pixel size should be less than 11 microns
12. 3 year comprehensive warranty
13. Vender should provide list of equipment users and performance certificate from at least 3 users from reputed organizations in India.

9. Fluorescent Auto Imaging System

System should have:

1. Microscope body: Inverted microscope stand including Motorized Ergonomic Stand with inbuilt Z-focus drive with minimum step resolution of 15-20 nm or better. The system should have a microscope main body mounted touch screen panel capable of controlling all motorized functions of microscope.
2. Binocular observation tube ~28mm or better diopter included with 10X eyepieces and 22 mm field of view or higher.
3. Objectives and motorised nose piece: 6 position motorized nose piece with 4x objective, Semi - APO 10X phase, Semi - APO Phase contrast ELWD 20X Phase, Neo Fluor Phase contrast ELWD 40X Phase, APO 60 X /63 x 1.40 Oil or higher NA DIC objectives, Plan Apo 100X/1.40 oil or higher NA DIC Objective. Additional integrated magnification of at least 1.5 should be available for both camera ports as well as for eyepieces.
4. DIC: DIC optics for 40x and 60x / 63x magnifications should be provided.
5. Condenser: Motorized Universal Condenser suitable for all microscopy techniques such as Bright field, Phase, DIC with 5 or more slots.
6. High precision motorized stage: High precision motorized X, Y stage and Z axis with capability to universal culture dishes, conventional slides and standard microtiter plates. Joystick/software control: With stage control and a control panel for controlling acquisition parameters like marking points, controlling bright field and fluorescence shutter, changing the fluorescence filter, snapping image, stage control.
7. Fluorescence and bright field illumination: The system MUST have these features and controlled by company's own proprietary software.
   a. Brightfield: LED or Halogen bright field illumination for a uniform illumination and instanton - off computer controlled operation.
   b. Fluorescence: should be solid state illumination LED or mercury with fibre optics similar with instant on-off mechanism covering DAPI, FITC, Alexa 488, GFP, TRITC, Cy3, Alexa 546, Cy5,Alexa 647 or similar dyes and minimum life 10000 hrs.
   c. Fluorescence turret with minimum of 6-8 position filter cube slots for band pass (Excitation and Emission) interference.
8. Motorized 100:0 light sharing left & right side port. Left side port should have FOV of at least 18 mm or higher. Motorized switching for vibration free imaging.
9. Camera: monochrome and colour camera for left and right side motorized ports.
   a. CMOS monochrome Camera with 4mp or higher resolution; highest speed of 50 fps, Quantum efficiency: 80% or higher; Readout mode: Rolling shutter; Read out noise: <1 e-; pixel well depth: 30000; Linearity: 99.8%. Camera should have rolling shutter with global clear. Camera should have 12bit and 16bit mode.
   b. 5 mp CCD Cooled Colour Camera should be quoted with an imaging software from same manufacturer as the microscope.
   c. Environmental control: Stage top CO2 incubator should be capable of operating 100% CO2 supply, temperature and supply of humidifier air. The environment chamber and

stage should be able to accommodate and have sample holders/inserts for petri dishes, chamber slides & well plate holders. Incubator shall be controlled through imaging software.

10. Anti-vibration: Suitable anti-vibration plate to minimize any vibrations.
11. Computer: Workstation for Image Acquisition and Processing with 64 bit Operatinsystems. Minimum computer specs as follows.
12. Intel Xeon E5-1607v3 3.10GHz 10MB 1866 4C, 8GB DDR4-2133 (1x8GB) Reg RAM, 1TB 7200 RPM SATA 1st HDD, 9.5mm Slim SuperMulti DVDRW, NVIDIA Quadro K620 2GB 1st GFX Spl, Win8.1 Pro 64 downgrade to Win7 Pro 64 I
13. Software: The software should be company's own proprietary software and should control all the computer controlled components of the system including the camera and Incubator should be controlled through same microscopy imaging software.

    Following features must be a part of the imaging software –

    a. Automatic System control with sophisticated multidimensional data acquisition visualization, analysis, image restoration, image correction and image viewing management.

    b. Data acquisition MUST have the following features –

        i) Time lapse, Z stack, Multi-channel acquisition
        ii) 2D and 3D deconvolution should be virtual point spread function.
        iii) Colocalization analysis.
        iv) 3-D reconstruction of the images, Multi point imaging, stitching.
14. Microscope, color camera & software from a single manufacture. CMOS camera should be control through the same imaging software. The vendor must take entire responsibility of system from installation to application support/troubleshooting. Venders should provide list of equipment users in India.

10. High Sensitivity Quantitative PCR System

Overall features

1. System should provide an absolute measure of target nucleic acid molecules with high precision and sensitivity without the use of standards and standard curves.

2. System should support multiplexing experiments with probe base as well as dye base chemistry.

3. A single party must provide all the components and should be a single workflow

The System should have following components:

1. Droplet generator

a. System should be able to partition a 20 ul or more of sample volume into 1 Nanolitre sized partition
b. System should have a partition generator capable of generating partition for up to 96 samples in less than 30 minutes

2. Plate sealer

3. PCR machine

a. Gradient 96 well PCR which can be used as a standalone PCR machine as well.

4. Droplet reader

a. A two color fluorescent partition reader capable of reading 96 samples at a time and suitable software.
b. System should be capable of analyzing 96 samples at a time.
c. System should offered precision of ± 10%
d. System should have a linear dynamic range of five orders of magnitude for detection of input samples.
e. System should be able to detect and quantify one copy of target sequence.
f. System should use two light emitting diodes for illumination and differentially detect emission using two filtered multipixel photon counter.
g. The reader should be able to detect at least 2 colours from a single partition.
h. The reader must be sensitive to detect fluorescence from amplification of a single target molecule.

5. Software:

a. Should provide fraction of negatives droplets for each samples to fit to a poisson algorithm to determine absolute copy number of target DNA.
b. Should have the ability to count the number of partitions for each sample after every run. Should give concentration analysis for each sample.

c. Should have copy number variation, Gene expression, Absolute Quantification & Rare event analysis modes.
d. System should be capable of absolute quantification, rare mutation and sequences detection, SNP detection, copy number variation, gene expression analysis, single gene expression, NGS validation and library quantification.
e. Absolute quantification: The machine should be able to quantify nucleic acid molecules (both DNA and RNA) in the sample without the necessity of standards.
f. The machine should be able to detect a single copy of the target in the sample.
g. Rare mutation detection: The machine should be able to detect a single mutant copy in a background of a million wild type copies in a single run, using dyes, single probe or dual probes.

General requirements

a. The supplier should also be able to provide inventoried and custom designed prevalidated assays for the templates of interest.
b. All the above features must be supported by product/technical brochures, highlighted on Point-to-point basis will be only considered while technical evaluation
c. System should be supplied with all essential accessories and reagents.
d. Provide a list of consumables required to run the system and quote separately for each of them.

11. Immunoassay System

System should have:

1. Compact fully automated bench top analyzer based on principles of chemiluminescence technology with high linearity and sensitivity
2. The system should perform the qualitative and quantitative analysis of hormones, cancer markers, cardiac markers, inflammation and other special immunoassays from serum, plasma samples and others
3. Systems should have the facility to test special Immunoassays parameters like 25 OH Vit D, AMH, DHEA-s, SHBG, assays besides the other routine immunology parameters.
4. Built in quality control should be available on the system.
5. System should perform at least 60 tests per hour and additional facility for STAT sample testing with continuous sample loading facility.
6. System should have programs available on board for at least 80 different test parameters with all reagents available from manufacturer.
7. Sample volumes should be less than 10 - 50 ul per test with flexibility of using different sample containers including primary tubes and sample cups
8. User defined onboard sample dilution is must
9. On-board reagent stability should be up to 20 days and calibration of the parameter should be typically lot based. No daily calibration should be required by the system to save the reagents.
10. System to use latest mixing probe technology to mix the samples and reagents to have complete uniformity with clot detection facility/ duel sensing technology
11. System must use disposable cups for all Immunoassays to prevent any carryover contamination to have reliable patient results.
12. Barcode scanning for both reagents and samples should be available.
13. System should have on-board data control work station for easy data input and test programming as well as facility to store 2000 test results along with USB Interface for data communication. Facility to print out patient results.
14. Should be compatible for power supply of 220 V / 50 Hz.
15. Warranty of at least three year with AMC/CMC quotes for maintenance to be provided.
16. Compatible online UPS with 30 min. back up
17. Training of personnel to be provided after installation.

12. Rack Server

System should have:

SN	Items	Description	Qty
1. Master Node			1
1	Processor	2 x Intel Xeon E5-2630 v4 (25M cache, 10 Cores, 20 Threads, 2.20 GHz (85W) 8.00 GT/sec Intel® QPI, 14nm) or better (Total 20 Cores)	
2	Cache	25MB per processor	
3	Memory	64GB using ECC DDR4-2400 Mhz or better RAM (scalable Up to 1.5 TB; Should support RDIMM/LRDIMM)	
4	Media	DVD Drive RW, External or Internal.	
5	Disk	1x2000GB for OS plus 5x 4TB 6Gbps NL-SAS HDD (Total **16TB Usable**) (Scalable up to Up to 24 front and 2 rear 2.5-inch HDDs/SSDs; or up to 12 3.5-inch and 2 rear 3.5-inch HDDs + 2 rear 2.5-inch HDDs/SSDs) (Internal storage should be scalable up to 100 TB)	
6	RAID Support	RAID 0, 1, 5 (12 Gbps dedicated slot for the first RAID; support for up to four RAID adapters)	
7	Network interface	4 × 1 GbE (std.) and 1 x IMM; optional 10/40 GbE ML2 or PCIe adapter; Trusted Platform Module built-in. Should have provision for adding InfiniBand HBA Adapter card to enable IB Ports.	
8	PCIe 3.0 Slots	6 PCIe 3.0 slots (supports up to 2 x 300 W GPUs and up to 1 x ML2) and 1 dedicated RAID slot	
9	USB Ports / VGA Ports	Up to 3 front (1 x USB 3.0, 2 x USB 2.0) and 4 back (2 x USB 3.0, 2 x USB 2.0) and 1 internal (USB 3.0) for hypervisor/1 front and 1 back	
10	Power Supply	Two redundant hot-swap Power Supply	

11	Fans	Redundant and Hot swap	
12	Systems management	Advance Failure analysis support on systems for CPU, memory, HDD, Power supply and fans. LED diagnostics on server even without Power, Automatic Server Restart, and management port.	
13	Hot-Swap Components	Power supplies, fan modules and HDDs/SSDs	
14	Certified	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware vSphere	
15	Certified	Redhat Linux, Suse Linux, Windows 2008	
16	Form Factor	2U Rack-mountable.	
2. Compute Nodes			**5**
1	Processor	2 x Intel Xeon E5-2630 v4 (25M cache, 10 Cores, 20 Threads, 2.20 GHz (85W) 8.00 GT/sec Intel® QPI, 14nm) or better (Total 20 Cores)	
2	Cache	25 MB per processor	
3	Memory (max)	64GB using ECC DDR4-2400 Mhz RAM (Scalable to 1024 GB maximum with 64 GB LP LRDIMM)	
4	Disk (Disk Capacity)	1TB 7200RPM SATA HDD.	
5	Network interface	2 ×1 GbE ports having provision for adding Infiniband HBA Adapter card to enable IB Ports.	
6	Power supply	Redundant and hot-swap power Supply	
7	Power Management	Rack-level power capping and management via Extreme Cloud Administration Toolkit (xCAT)	
8	Fans	Redundant and hot-swap	

9	System management	Advance Failure analysis support on systems for CPU, memory, HDD, Power supply and fans.	
10	Certified	Redhat Linux, Suse Linux, Windows 2008	
	Optional: All Compute nodes to fit in single Chassis, chassis should support minimum of 12 or more servers. Chassis should be capable to include GPU enabled Server also.		1
3. InfiniBand Components/Interconnect			
1	IB Switch	InfiniBand 12-18 Ports 40Gbps QDR Switch	1
2	IB HBA/HCA Cards	InfiniBand Single Port Host Adapter with 40Gbps per port	6
3	IB Cables	InfiniBand Passive Copper Cable	6
4. Management Communication Network			
1	Ethernet Switch	L2, 24 ports Gigabit Ethernet switch with sufficient no. of ports to connect supplied servers for management network.	1
2	Ethernet Cables	Good quality Ethernet Cables/Cat6 Cables to connect all the nodes with the switch	7
5. Software Suit			
1	Operating System	Open Source Linux (clustering OS like Rocks) for all compute nodes and Master node.	6
2	Cluster Management	Open Source Linux based cluster management toolkit.	1
3	Compiler	Intel or Open GNU Compilers (C, C++ and Fortran Compilers).	1

6. UPS System			
	UPS System	A suitable branded UPS system for 30 Min. power backup on full load.	1
	Batteries	Required no. of batteries to support backup.	As per requirement
	Rack and Interlinks	Required Rack and Interlinks (fits in the existing server room)	1
7. Dehumidifier			
	Dehumidifier	Branded, digital auto cut off dehumidifier with 10L storage capacity	1
	Overall Scope of Work		
1	Operating System	Open Source Linux for all compute nodes and Master node.	
2	Cluster Management	Open Source Linux based cluster management toolkit.	
3	Compiler and others	Intel or Open GNU Compilers (C, C++ and Fortran Compilers). Rocks Cluster Distribution 6.0 or higher stable version. Installation of open source compilers for Fortran 77, 90, C, C++, essential cluster computing software, cluster management software.	
4	Other Application	Installation of open source Molecular Dynamics packages such as GROMACS,	
5	Cluster Manager Tool	Open source Cluster Manager tool.	
6	Installation	Installation and Commissioning of the cluster. The vendor shall install and configure all required hardware and	

		software suites, including but not limited to: racking & stacking.	
7	Testing	Job Scheduler installations and Cluster functionality tests needs to be performed by supplier.	
8	Application Installation	Installation of the Applications provided by the user at the time of installation.	
9	Training	Training on the cluster usage.	
4	Warranty/Support	Onsite comprehensive warranty and support for 3 years on all items.	

Terms & Conditions		**Compliance**
1	Hardware OEM should have direct local sales & support office in Mumbai.	
2	OEM must provide authorization certificate to Bidder.	
3	The bidder must submit the printed catalogues, literature of the proposed product in solution.	
4	Point by point compliance to all the above mentioned features should be provided by the firm. There should not be any deviation and if any, should be stated clearly.	
5	Full Server configuration as listed above should be tested and integrated at OEM manufacturing plant which includes all major components, power supply, cooling fan cabinet etc. No local site integration of server components will be allowed. Only Cluster integration and software stack installation is allowed at site.	
6	The firm must be authorized by the manufacturer to supply, install and maintain the system. The specific authorization by the manufacturer for participating in this tender should be enclosed, otherwise quotation may be	

	rejected.	
7	The bidder must give the power and cooling requirements for the cluster solution along with the proposal.	
8	The bidder must agree to install and configure the user sought operating systems, mostly open source linux versions, MPI libraries, Job schedulers plus cluster management tools and demonstrate its running in parallel as part of the system acceptance. Installation and maintenance charges, if any, should be mentioned separately. Zero or unrealistic cost quoted here will be liable to rejection.	
9	Vendor should provide the BILL of Material with manufacturer's part numbers for the items proposed to meet the complete solution. Vendor should verify and certify that the items proposed are sufficient to integrate the proposed solution into a production mode.	
10	Special instructions for site preparation if any should be clearly mentioned in the technical bid.	
11	The Supply, installation and commissioning of the system should be completed within 8 weeks from the date of purchase order. The project / activity must be completed on turnkey basis, integrating hardware, system software and application software by a single vendor / system integrator.	
12	The total cost for the purposes of comparison, will be determined by considering the total cost of the entire solution i.e HPC components, all software, storage and including three-year warranty and two-year post-warranty AMC, However Vendor must provide break-up of cost for the AMC separately.	
13	Bidder must quote item-wise and should give unit prices as well. We may increase or decrease the unit quantity based on our requirement.	
14	Warranty: Vendor should provide minimum Three years comprehensive On-site support warranty for all the deliverables, Hardware and software at no additional charges. Post Warranty AMC for two years should be quoted for the entire solution	

13. Specifications for CO2 Incubator

System should have:

- Microprocessor controlled CO2 incubator with Sealed inner glass door.
- Temperature Range: Ambient+ 3-4°C to 50°C.
- Capacity: 150-250L.
- Display readout: Temperature and CO_2 level and alarm settings.
- CO2 Sensor Technology: IR.
- CO2 control: ±0.1%.
- CO2 range: 0.2 – 20 %.
- Temperature control: ±0.1 °C.
- Relative Humidity: Ambient to >93%, controlled.
- High temperature disinfection.
- Fanless design.
- Shelves: At least 3.
- Shelf Material: Perforated stainless steel.
- Electrical Requirements: 230V 50/60Hz.
- Alarm: Standard.

14. UV Visible Spectrophotometer

System should have:

Microplate types: It should be able to read 6, 12, 24, 48, 96 and 384-well microplates
Detection mode: Absorbance
Cuvette Port: It should have dedicated cuvette port and should be able to read standard 10mm pathlength cuvette.
Other Labware: It should also be compatible to read 2 µL low volume microplate accessory with 16- sample microspots for direct nucleic acid quantification and other applications.
Wavelength range: 190-900 nm
Read methods: Should be able to perform end point, kinetic, spectral scanning and well area scanning
Temperature control: Ambient +4°C to 65°C. Temperature control should be by Natural Convection to prevent edge effects. Must have temperature gradient setting to prevent condensation in lidded plates
Spectral bandwidth: Variable bandwidth 0.5nm to 5nm
Wavelength Selection: It should have tunable grating Monochromator for wavelength selection. Should be able to select Wavelength in 1 nm or greater increments
Wavelength accuracy: ± 2 nm
Dynamic range: 0.0-4.0 OD
Wavelength reproducibility: ± 0.2 nm
Resolution: 0.0001 OD
Light source: Long- life stabilized xenon / D2 lamp
Stray light: 0.03% at 230 nm
Detector: Photo diode detector
Power requirements: 100 - 240 VAC+ 10% 50/60 HZ , 120 VA
Quartz cuvettes: For 50 ul to 2 ml volume range
Temperature control: Ambient +5 to 45 °C
Built in shaking for microplates: Linear , orbital , double orbital
Connectivity: It should have USB for PC connection.
Power: 100 - 240 VAC 50/60 Hz
Connectivity: It should have USB for PC connection.
Power: 100 - 240 VAC 50/60 Hz
Compatible software/s: Data Analysis software should be supplied with the instrument. Should be able to perform data analysis without need to export readings into excel.
Computer (Desktop/ Laptop): Core i5 computer system. Computer with 500 GB hard disk and 8 GB RAM with license copy of operating system, and high end graphic card.
Should have Temperature Control System.
Should be capable to measure the concentration and purity of nucleic acid and protein samples and cell density at a broad range of sample volumes (approx. 2 ul to 2 ml) including 96 well microplates.

15. Gel Documentation System

System should have:

Camera: CCD: 4 megapixels, 12-16 bit
Lens: f/1.2, 8-48 mm, automatic zoom
Camera cooling system: Peltier based (cooling temperature: Absolute: – 25 °C)
Darkroom: Wide front door with UV safety switch, gel viewer window, epi white light, side access doors, two-position emission filter tray
Filter position: 3 (Chemiluminescence, fluorescence – 2)
Emisssion Filters: SYBR green/green fluorescent protein/ETBr (red- 570-640 nm)
Illumination modes – Trans-UV, white and epi-white lights
Excitation source: 254nm UV lamp/302 nm UV lamp/365 UV lamp
Field of view: Min. 20x20 cm or more
Data transfer: fire wire/USB connectivity
Gel analysis software:

- Should be able acquire, analyze and quantitate electrophoretic gels, plates, membranes as well as colony counts
- Molecular weight determination
- Should have a 3D viewer
- Band/lane matching analysis, background subtraction, Saturation warning
- System should be supplied with free licence software which can be in multiple computers
- Latest branded PC with laser printer

The system should be able to UV, chemiluminescence and fluorescence imaging of gels, plates, membranes
Other requirements:

- Validation of the instrument – to be done every 6 months during the period of warranty
- Availability of local service support and faster response time for a service call during and after warranty

16. Agarose Gel Visualiser

System should have:

- DNA Stained with Green view dye can be visualized without UV exposure.
- Dark room should not be required.
- It can be viewed anytime and as many time without DNA damage.
- Sensitivity should be as good as EtBr on UV Transilluminator.
- It should able to accommodate and view mini, maxi and flexi gels.

17. Liquid Nitrogen Container [Cryocan] [3 Nos.]

System should have:

- Capacity: 90 liters.
- Liquid Nitrogen Container with Racks for storing biological samples in vials.
- Should have locking system.
- Racks, for large storing capacity;Plastic box or carton box, for storing in vials.
- Carrying Cart, for easy transportation.
- Liquid Nitrogen Measuring Scale, for measuring the capacity of LN2.
- Wheel Cart Trolley.
- Cryo Vial Picker / Canster for taking out fallen vials inside the vessel and to take liquid nitrogen from the vessel.

18. Refrigerated Microcentrifuge [4 Nos.]

System should have:

- Temperature setting ranges 0^0C to 40^0C.
- Standby cooling.
- Fast recovery of temperature form room temperature to 4^0C.
- Motorized lid latch.
- Microprocessor control.
- Drive: Induction drive without carbon brushes.
- Rotor for 24 or 18 x 1.5 / 2 ml tube with extra high rim to support open tube lid during centrifugation.
- Max RCF approx 16200 g or 15000 rpm.
- Autoclavable rotor.
- Imbalance recognition: electric, depending on speed.

19. Clinical Analyzer

System should have:

1. Fully automated random access benchtop clinical chemistry analyzer capable of analyzing a wide range of analytes from serum, plasma, and other body fluids.
2. The system with high throughput of at least 60 tests per hour and 80 tests per hour for electrolyte
3. It should be able to perform End-Point, Rate Assay, Point to point assays to enable all routine and special assay types
4. Should be based on analytical principles of absorbance photometry/ turbidometry.
5. Calibration should be Linear, Non Linear & Multipoint.
6. System should be used for testing HbA1c (whole blood application), hsCRP, microalbumin besides the routine clinical parameters.
7. System should have gradient wavelength photometer with mono and bi-chromatic measurements.
8. There should be atleast 30 or more on board programs with capacity to run 12-18 common tests with on-board refrigeration.
9. It should be capable of delivering 5-50 µl sample volume with suitable flexibility to utilize different sample containers including primary tubes 5-10 ml sample cups, micro cups which should be disposable or semi-disposable.
10. Sample loading should be enabled in continuous loading format.
11. Probe must have liquid level sensor with built-in crash detection to eliminate errors in analysis.
12. Facility of sample dilution should be available onboard.
13. Sample flagging for errors with system ability to re-runs with diluted sample or changed volume of sample would be preferable.
14. It should have barcode scanning facility for reagents and samples
15. Should have an interactive built in QC software with data being available upto 2 months with facility for calibration reports.
16. The system should also have onboard data storage facility. Complete backup of system database should be possible.
17. System should have on board microprocessor with color touch screen display for easy operation.
18. Compatible on line UPS with 30 mins back up.
19. Power supply of system to be 220 V / 50 Hz
20. The manufacturer should have relevant ISO certification and products should be accredited by agency like FDA/European CE/UL. The relevant certificates must be submitted in the tender.
21. Warranty period should be of one year. Quotes for AMC/CMC should be mentioned for the following 5 years.
22. Personnel's training after installation is mandatory.

20. Liquid Scintillation Counter

System should have:

1. Compuer controlled fully automated liquid scintillation counter with software on Windows 7 or higher operating system.
2. System should be featured with high sensitivity and able to detect small amounts of Alpha, beta and gamma radioactivity
3. The instrument should be able to read samples of different protocols without user intervention.
4. The system should have an external standard source for accurate quench determination through external standard method in dual label samples.
5. System should be fully accessible with sample capacity of either more than 300 standard vials or more than 600 small vials
6. System should be featured with advanced photomultipliers with effective lead shielding
7. System should be featured with high resolution multichannel analyzer with preset and user adjustable settings
8. System should have user interface with context-sensitive help screens and user-selectable output formats
9. System should be featured with electrostatic controlled to minimize such effects as static electricity
10. System should be featured with automatic data reduction includes averaging of repeat sample counts, percent C.V., low count rejection and result normalization
11. System should be able to calculate absolute activity via the Direct DPM technique
12. System should be featured with luminescence detection, half life correction and background subtraction
13. System should able to produce reliable results even with quenched sample
14. System should be installed with advance configured computer having multitasking operating system and multi user programs
15. The supplier should have a proven track record for service
16. All specifications should be supported by printed literature from manufacturer

21. Five Part Differential Hematology Auto Analyser

System should have:

1. Five-part differential hematology analyzer for mice, rats, rabbits, marmoset, monkey etc. and should have add on unlimited custom profiles for other species.
2. Should be able to analyze 22 to 28 parameters with minimum requirement of reagents and able to generate histogramand scattergrams for WBC, RBC and PLT and differential WBCs.
3. Should be up to 20 kg in weight, space-saving with large touch-screen LED/TFT display.
4. Should have integrated self-cleaning system with cyanide free reagents.
5. Should be able to do Automatic or manual calibration.
6. Should be able to give accurate reading in minimum 20 µL and maximum 50 µL of sample.
7. Should be validated for peritoneal and synovial fluids from laboratory animals.
8. Should be able to generate accurate and reproducible results comparable to references.
9. Should be able to process minimum 30-50 samples/hour.
10. Should work on standard power 100V-240V with 50Hz/60Hz.
11. Should stores 1000-5,000 records in database with simplicity, flexibility and usability with easy loading of software upgrades or archiving of data.
12. Should have inbuilt thermal printer as well as interface for printer attachment.
13. Should have Serial port, USB facility for interface.
14. Should work in Operating environment Temperature: 15-30°C Relative humidity: max 80% (noncondensing).

22. PCR Machine

System should have:

1. Block format: 1X96 well plates, 96 X 0.2 ml tubes and independently controlled.
2. Flexibility of interchangeable blocks
3. Gradient block with range: 30^0C – 90^0C with maximum gradient of 1^0C and should have at least 12 rows of gradient.
4. Block temperature range: 4^0C – 100^0C, with accuracy +/- 0.20C.
5. Uniformity in temperature: +/- 0.5^0C.
6. Reaction volume range: 10 – 100ul.
7. Gradient calculator.
8. Adjustable heated lid temperature and over temperature cut off.
9. Maximum ramp rate: 6^0C per second.
10. .Auto restart on power failure.
11. User inter face i.e touch screen for easy navigation.
12. Memory of 10.000 protocols at least.
13. Voltage of 50/60 Hz.
14. .Password protected.

23. Automated Cell Counter [3 Nos.]

System should have:

1. Counting of cells in bright field and fluorescence which will include atleast two of the follows: DAPI/GFP/RFP/YFP/CFP/CY5/CY7
2. Cell counting range of minimum 5 um to 60 um
3. Quick counting time of <10 sec per sample
4. CV <10% per count
5. Option to use disposable and reusable cell counting slides
6. User defined gating of size and shape
7. Touch screen interface
8. Zoom and focus options
9. Brightness and fluorescence intensity control options
10. At least 10 different programs parameter setups for different cell types or users
11. Image and data save options
12. USB interface for data sharing
13. Should be able to give absolute counts and percentage of cells

24. Deep Freezer [-20 Degree Celsius] [3 Nos.]

System should have:

1. The temperature range should be -20°C with microprocessor based control system and digital LED display for temperature.
2. Freezer should be upright, 350 to 450 liters capacity with ecofriendly non CFC refrigerants.
3. The shelves and inner chamber should be made of stainless steel and the outer body should be made of mild steel to prevent the loss of temperature, thermal protection and structural strength.
4. Double doors system, inner doors should be compartment specific to avoid exposure of incoming aireven when the outer door is opened. Both the doors should be latched.
5. Main door should have inner FRP Lining and durable magnetic gasket.
6. Air cooled condenser to ensure peak performance even at high ambient conditions.
7. The whole unit should be mounted on castors for free movement of the freezer.
8. The instrument should be designed to work on 230V AC Supply.
9. Freezers should be ideally suited for use in laboratories for long-term preservation & storage of blood, specimens and other reagents.

25. Refrigerated Table Top Centrifuge [5 Nos.]

System should have:

1. The centrifuge should have microprocessor based control with digital display of speed, RCF, time and should also have a brushless motor.
2. The instrument should have a compact footprint.
3. The temperature range should be from 0°C to 40°C with a provision for fast pre-cooling of rotors.
4. The maximum speed should be 14,000 rpm/20,000 x g for 1.5/2 ml fixed angle rotor, 10,000 rpm/15,000 x g for 50/15 ml fixed angle rotor, 3,900 rpm/3,200 x g for swing out rotor.
5. It should have a provision for multiple programmable acceleration and deceleration steps
6. The instrument should be capable of storing 10 or more programs.
7. It should be amenable to quick and easy installation and removal of rotors.
8. It should possess the feature of imbalance detection for enhanced safety.
9. The centrifuge must be supplied with the following rotors
    a. Fixed angle (45 degrees) non-corrosive, metallic rotor with a capacity to hold 30 or more tubes of 1.5/2 ml.
    b. Fixed angle (45 degrees), non-corrosive, metallic rotor with a capacity to hold 6 or more tubes of 50 ml and 15 ml with the required adapters.
    c. Swing out rotor and the necessary buckets/adapters to hold a minimum of
        - 4 x 7 conical tubes of 15 ml and 50 ml
        - 4 x 4 microtiter plates (96 well)
        - 4 x 750 ml bottles
        - 4 x 250 ml bottles
10. The fixed angle rotors as well as the buckets/carriers for the swing out rotors must be provided with aerosol tight, biocontainment lids
11. The instument should be CE certified and IVD compliant
12. Warranty period 3 years plus 2 years AMC.

26. Uninterruptible Power Supply

System should have:

1)Input Specifications: Nominal Input Voltage should be 230V (1P); 400V (3P+Neutral);
Input Frequency should be -40-70 Hz;
Input Voltage should be - 100-285 V (1P) 173-494 V (3P).

2)Output Specifications: Output Power Capacity - 9000 W / 10000 VA;
Nominal Output Voltage - 230 V;
Other Programmable Volt- 220 v / 240 V;
Efficiency at full load - > 94% in Online mode > 98% in green mode;
WaveformSinewave.

3)Bypass Specifications: Bypass Type Internal Static Bypass (automatic & manual), Opt. External Bypass Bypass;
Input Voltage 170 V – 270V;
Max Bypass Current 70 A;
Input ProtectionCircuit Breaker.

4)Battery Charger Specifications: Supported Battery Types SMF / VRLA / Flooded;
Battery Bank Voltage 192 V Max;
Power Current 3000 W / 13 A.

5)Environmental Specifications: Operating Temp 0 – 500^0C;
Storage Temp -15^0C to 600^0C;
Operating Elevation -1000m without derating;
Storage Elevation -15000m;
Humidity 0 to 95% RH, non-condensing.

6)Physical Specifications: Dimensions -13 to 15 cm (W) x 40 to 60 cm (H) x 60 to 80cm (D)
Weight - 25 to 35 kg.

27. Water Purification System [4 Nos.]

System should have:
Two separate water purification systems to produce Type II and Type I water from drinking /Potable feed water. It should have below purification technologies to produce Type II & Type I water quality.

1. Single compact Prefiltration system with 5 micron & 1 micron depth filter with pump to remove particles load.
2. Type II Water Purification System should be able to take care of conductivity < 2000 µS/cm , TOC < 1400 ppb, SDI as 10, Chlorine < 3 ppm & Hardness < 300 ppm.
3. System should have a single pre-treatment pack for removing chlorine, hardness and particles of feed water. This pack must have facility for better monitoring and tracking mechanism.
4. System should have conductivity cell before and after RO membrane to understand feed water conductivity for better monitoring.
5. It should have Polyamide RO membrane for rejection of organics and inorganics.
6. System must have Anode and Cathode based technology for getting consistent Type II water quality.
7. System should have a separate PE tank with capacity of atleast 30 ltr.
8. Type I Unit should have polishingcartridges to get the final ultra pure water quality.
9. Type I should have in built dual wavelength UV lamp to reduce organic contaminants & bacterial load.
10. A 0.22um final filter should be provided with Type I system.
11. Both the systems should have alerts & alarms to indicate changing of Cartridges.
12. Below are required water specification

Type II Water Specifications

Resistivity	: > 5 MΩ.cm @ 25 degree C
TOC	: 30 ppb
Production Rate	: minimum 3 ltr/hr.

Type I Water Specifications

Resistivity	: 18.2 MΩ.cm @ 25 degree C
Conductivity	: 0.054 µS/cm @ 25-degree C
TOC	: ≤ 5 ppb
Bacteria	: < 0.01 cfu/ml
Flow Rate	: 1-1.5 ltr/min

28. Class II Biosafety Cabinet / Laminar Flow Cabinet [3 Nos.]

System should have:

1. A Biosafety level 2 cabinet with the following features is desired

   Internal working dimensions of roughly 3x2x2.5 ft

2. Tempered Glass Sash Window
3. Stainless steel and antibacterial coated working space with arm rest.
4. Electrical, UV and fluorescent lamp fixtures inside the cabinet.
5. ULPA filtered air inside the cabinet.
6. Microprocessor controller displaying all safety features.

29. Weighing Balance

System should have:

1. The analytical balance should have a Capacity x Readability (g) 220 g x 0.0001, Repeatability (std deviation) ± 0.1 to 0.2 mg and Linearity ± 0.2 -0.5 mg.
2. The Response Time (average) varying from 2.5 -5 seconds.
3. The Selectable Weight Units should be g, mg.
4. Display should be LCD with backlit with an Update in 0.1 - 0.4 seconds.
5. Operating Temperature Range 50° F to 86° F (+10° C to +30° C).\
6. Allowable Ambient Operating Temperature 41° F to 104° F (+5° C to +40° C).\
7. Sensitivity Drift ±2 ppm / °C.
8. Fully-automatic calibration.
9. Touch-key calibration.
10. GLP/GMP/ISO calibration report.
11. Direct connection to the Computer.
12. Sealed Overlay for Protection from Spills.
13. Door Opening Access keys at both sides of display.
14. Warranty period 3 yrs. plus 2 years AMC.

30. ELISA Reader with Fluorescence and Luminescence

System should have:

1. The system should be capable of measuring UV-visible absorbance, fluorescence, luminescence in end-point, kinetic and spectral scanning modes.
2. The system should have quadruple monochromators for wavelength selection, two each for excitation and emission.
3. The system should be capable of reading 6, 12, 24, 48, 96 and 384-well plates with or without lids.
4. The temperature control of the system should be from 4-5°C above ambient up to 42-45°C with temperature uniformity of less than 1°C and accuracy of ± 1°C or less at 37°C.
5. The system should have linear, orbital, double orbital plate shaking modes with programmable speed and duration.
6. Single integrated windows based software for data acquisition, analysis & management with at least 4 user licenses should be supplied with the instrument. The software should be able to analyze the data and perform the calculations.
7. The light source should be a Xenon flash lamp with a life of at least 1 billion flashes.
8. In the absorbance mode, the wavelength range should be at least 230 nm to 999 nm with an increment of 1 nm and a bandwidth between 4 to 12 nm.
9. The dynamic range in absorbance mode should be from 0-4 OD ± 2% or less with a resolution of 0.0001 OD or better.
10. The monochromator wavelength accuracy and repeatability should be ± 2 nm and 0.2 nm respectively.
11. The measurement speed for 96 and 384 well plates should not be more than 15 seconds and 30 seconds respectively.
12. Pathlength correction facility should be available as a standard feature.
13. In the fluorescence mode, the wavelength range should be at least 250 nm to 650 nm with dual grating monochromators (top and bottom) with 1 nm increments.
14. The dynamic range in fluorescence mode should be at least 7 decades with a sensitivity of at least 3 fmol fluorescein for top reading and 5 fmol fluorescein for bottom reading.
15. The system should be capable of performing time resolved fluorescence measurements.
16. In the luminescence mode, the wavelength range should be at least 300 nm to 600 nm with a sensitivity of 20 attomol or lower and a dynamic range of at least 6 decades.
17. The power requirements of the instrument should be as follows: 100-240 VAC 50/60 Hz. 130 Watts max.
18. The instrument should be CE and TUV Safety Agency marked and RoHS compliant
19. The instrument should be supplied with computer having latest Configuration.
20. Warranty period 3 yrs. plus 2 years AMC.

31. Agarose Gel Electrophoresis Apparatus with Power Pack [2 Nos.]

System should have:

- The apparatus should be a standard midigel horizontal electrophoresis system.
- It should be made of acrylic material and should have nonskid rubber feet.
- It should have doubly insulated cables and gold plated electrical connectors, corrosion-free and rated safe up to 1,000 volts.
- The apparatus should have recessed power connectors, integral with the safety lid and 0.2mm diameter platinum electrodes which should be 99.99% pure and user replaceable.
- The cell size should have the dimensions in the range as follows- Length: 15-25 cms, Width: 10-20 cms, Height: 5-10 cms.
- The apparatus should have removable UV transparent gel casting trays of at least two sizes and should be provided with a gel casting chamber and casting gates.
- The apparatus should be provided with analytical and preparative combs of different thickness (0.5, 1,1.5 mm) and capacities (10, 12, 15, 20 wells) such that the sample throughput per run should range from 10-100.
- The buffer chamber should have the buffer capacity ranging from 600-800 ml.
- It should be provided with a gel slicer and gel scoop
- The apparatus should be provided with a power pack having the following features
    - It should have a triple control mode (constant voltage or constant current or constant power) with automatic cross over between modes.
    - It should facilitate automatic shut-off and automatic recovery.
    - The input power should be in the range of 90-120 or 198-264 VAC.
    - The output should be programmable in the range of 10-300 V (fully adjustable in 1 V steps) and 10 mA to at least 2.5A (fully adjustable in 1mA steps) and 1 to at least 300 W (fully adjustable in 1 W steps).
    - The timer should be in the range of 1min-99 hrs 59 mins and fully adjustable.
    - It should have a pause and resume function.
    - It should have Backlit LED display, mode indicator lights, internal timer and multiple output jacks.
    - It should have soft-touch keypad and non-skid rubber feet to provide stability.
    - It should be provided with four sets of recessed connectors, power cables and power output adaptors
    - It should have standard safety features that include no-load and failure notification, arc and ground leak detection, overload detection, overvoltage protection, auto restart and jacks that are set away from controls.
    - There should be a fuse on both hot and neutral end for input protection.
    - The overall dimensions should be in the range of 20-25 cms length, 20-25 cms width and 5-10 cms height and weight should be approximately in the range of 1-3 kgs.
- Warranty period for both apparatus and power pack should be 3 years & 2 years AMC.

32. Optical Microscope with inbuilt Camera and Software

System should have:
The instrument should have the following features

- Colour Corrected Infinity Optical System
- Trinocular Eyepiece tube
- USB HDMI (1080p) camera with minimum 5.0 mega pixel
- 30 deg inclined Siedentopf Type with interpupillary distance 48-75mm
- Eyepiece 10X / 20mm or 22mm with diopter adjustment on eyepieces & rubber eyecups
- Built in transmitted LED illumination
- Reversed Quadruple or Quintuple nosepiece
- Microscope Stand with coaxial fine and coarse focusing mechanism Coarse motion Torque adjustable, upper stage drive stop incorporated
- Rectangular Mechanical Stage –in x & y direction with vernier scale, right hand control
- N.A. 1.25 Abbe Condenser
- Calibration slide with 4 circles(1.5mm,0.6mm, 0.15mm &0.07mm) & 1000 µm stage Micrometer to calibrate microscope with software & Traceability Certificate
- Infinity Plan Objective 4X, 10x, 40x (SL), 100x (Oil, SL)
- Blue filter 45mm & Vinyl Dust Cover
- Upgradeable to E-LED Fluorescence attachment, EPI-Illuminator, Polarising& Phase contrast attachments.
- Tablet with LCD display and imaging software
- The imaging software should have the following features
  - Real Time Images, Image capturing & Storage of Images
  - Video recording &Programmable interval shots
  - Measurement in microns, inches, millimeters Length, Circle, Rectangle, Irregular Shape, Radius, Circumference, Angle Measurements
  - Measurement Table
  - Grid, Scale Bar, Cross scale options for Real time images
  - Date & Time stamp on the Captured Images & Videos
  - Options to adjust brightness, contrast, color corrections, white balance etc.
  - Options to Save, open, print
  - Compatible with OS like Windows, Mac, Linux
- Warranty period 3 yrs plus 2 years AMC

33. Automatic Sterilizer

System should have:

- Chamber dimension approximately, 310mm dia depth 400mm volume: 50 ltrs or more.
- Chamber should be made of polished stainless steel 316 L.
- Single door Manual Hinged
- Fully automatic with computerized control:
- Should have 5 pre feededprogrammes and 20+ customizable cycles to take care of all sterilization load
- Sterilization Temp. range 105°C (221 F) to 138°C (280°F)
- Built in memory for last 100 cycle with view on screen, USB port for external memory devices for more backups
- Ethernet for Pc connectivity
- Must have keep heat parameter to keep the chamber temp. between 45-80 Degree C after sterilization cycle
- Sterilization time range must be between 1-300 minutes
- A silicone gasket is permanently fixed in the door.
- Chamber is designed to operate for 2.8 Bar(a)/142°C.
- Should have safety devices for pressure safety valve, over temperature limiter, anti-scorch limiter, door interlock, over pressure limiter, current fuse etc
- It should have fault indication with audio visual alarms and giving the cause of failure on display.
- Controller should have Multi-color LCD display to show all cycle proceeding.
- It should have triple safety provision. (i.e. Thermal, mechanical & Electrical)
- An Operation & Maintenance manual is provided, in English. The manual includes electrical and piping diagram
- The chamber is provided with one threaded ¼" or ½" connection for optional vacuum/pressure gauges and test sensors.

Should meet following Standards

- A.S.M.E stamped, DIN 58951-2:2003 Steam Sterilizers for Laboratory use, ISO13485:2003; EN 61010-1:2001, EN 61010-2-041 EN 13060:2004,

Accessories:

- Stainless Steel Basket 3 nos (one small and two small)

34. Real Time PCR

System should have:

- System should be Peltier based and capable of holding 96 x 0.2ml plate or 0.2ml tube strips
- Temperature Range : 3-99 °C and more
- Optical System – Excitation should be by LEDs and detection by Photodiodes/PMT/CCD
- The system should have peak block ramp rate for heating and cooling of 4.5°C or more. Must include major filters like FAM /SYBR / Cy5/Cy3 etc. besides others viz, Alexa488, Alexa546, Alexa633, JOE, HEX, VIC, YakimaYellow, TAMRA, DFO, NED, ROX, Texas Red, Quasar670, LightCycler Red.
- The system should support minimum reaction volume of 10µL
- Range of Excitation/Emission wave lengths : 450-700nm
- Dynamic Range: 10 orders of magnitude
- System should have a inbuilt gradient feature
- System should be factory calibrated for commonly used dyes
- Multiplex Capability – Minimum 5 targets in a single tube

Analysis Software

- Data Analysis Mode: Abs quantification, Real quantification, melt Curve Analysis , Gene expression analysis with multiple reaction efficiencies, allelic discrimination, end point analysis
- Real Time PCR software for analysis should be open and unlimited installations in Computer/Laptop within the institute should be possible.
- Data Export : Copy and paste into Microsoft excel, word or power point file, customized reports containing run settings, data graphs, and spread sheets should be directly printed or saved as PDFs
- Should be compliant to MIQE guidelines
- Should have software that can perform multiple reference genes normalization, global mean normalisation and user defined normalisation for various experimental needs, should offer several types of quality control for evaluating the quality of post qPCR data. Should offer RDML auto -export.
- System should be supplied with starter kit free of cost (min 100 sealers, 50 plates and SYBR Green Super Mix 200microlitre). Additionally a standard computer and 2KVA online UPS with 30mins back up should be supplied along with the system.

35. Workstation

Form Factor:
Rack mountable dual processor tower
Operating System:
Windows 7 Professional 64 (available through downgrade rights from Windows 10 Pro 64) and Software Installer Kit for Linux®
Processors:
Dual Intel® Xeon® E5-2640 v4 (2.4 GHz, 25 MB cache, 10 cores, Intel® vPro™)
Chipset:
Intel® C612 or above
Memory:
8 DIMM (with 1 processor) and 16 DIMM (with 2 processors) maximum upto 1TB
Installed Memory: 16 X 8GB DDR4
Internal Storage:
2 TB (6GB/s 64MB Cache or above) SATA SSHD (Solid State Hybrid) X 4 drive (total 8TB)
Optical Storage
Slim SATA BDXL Blu-ray writer
Graphics:
NVIDIA® Quadro® K6000 (12 GB)
I/O Controller:
2 PCIe 1-port I/O
Audio:
Integrated audio
Communications:
Dual port Gigabyte LAN card on board
Ports and Connectors:
Front: 4 USB 3.0; 1 headset; 1 microphone
Rear: 4 USB 3.0; 2 USB 2.0; 1 serial; 2 PS/2; 2 RJ-45; 1 audio line in; 1 audio line out
Internal: 2 USB 2.0; 1 USB 3.0
Internal USB 2.0 available by the 2x5 header. Internal USB 3.0 available by a shrouded 9-pin connector.
Drive Bays (Internal):
Four 3.5"
Input Devices:
2.4 GHz Wireless Keyboard & Mouse
Software:
Remote Graphics Software (RGS); Cyberlink Media Suite &PowerDVD; FoxitPhantomPDF Express
Security:
Chassis Intrusion Sensor
Power
850 W 88% efficient,
Environmental Specifications

Low halogen

Energy Efficiency Compliance

ENERGY STAR® certified and EPEAT® registered configurations available

Compatible Displays

HDMI and DP

Monitor: 27" FHD IPS display with narrow bezel

Resolution: 2560 x 1440 or above

Input port : 1 MHL 2.0 /HDMI 1.4; 1 DVI-D; 1 DisplayPort 1.2; 1 Mini-DisplayPort 1.2; 1 DisplayPort 1.2 out; HDCP support on all input.

Warranty

3 years parts, 3 years labor, and 3 years onsite service (3/3/3)

Additional 2 year post warranty CMC comprehensive maintenance quote is also required

36. Wireless Network Setup

Scope of Work

The minimum specified Scope of Work that needs to be undertaken by the successful Bidder for installation and maintenance of hardware components and accessories for NIRRH Campus Wi-Fi Networking. The work is to be performed as per the specifications and conditions mentioned in different parts of this document, any further amendments issued in this regard and the Contract to be signed by the Bidder successfully.

1. Supply of all the products and equipment specified in the Bill of Quantities/Material Requirement Summary included in the RFP at their appropriate quantity and capacity at their respective sites, which includes transporting the items safely and installation at NIRRH.
2. The bidder must not bid/supply any equipment that is likely to be declared end of sale within the warranty period.
3. To bring all the installation equipment and tools required for the installation and commissioning of the system without any extra charges.
4. The bid proposal shall be inclusive of a 5 year of Comprehensive on-site replacement Warranty along with Active & Passive component (Spares Parts/Service/Labour without any additional cost) for all the supplied hardware replacement applicable from the date of Commissioning/User Acceptance. The bidder shall obtain the successful installation and commissioning and LAN work report form concerned authority. The bidder shall maintain systems and peripherals supplied and installed under this RFP in accordance with the provisions laid down in the clauses.
5. Vendor supplying the Wi-Fi Access points shall forward the complete set of original manuals and software on CD/Floppy.
6. Vendor should give quarterly preventive maintenance schedule for the systems along with their offers. Maintenance is defined as external cleaning with cleaning solution and internal cleaning. The tenderers must also mention the place from where support for maintenance of Wi-Fi Access points will be available. Comprehensive onsite maintenance has to be provided. The response time for attending to faults during the warranty period will be four hours for all the locations, after complaint is lodged. The machine should be repaired or standby be arranged within 24 hours of lodging the complaint.
7. The training on handling the Wi-Fi Access points to IT personnel of NIRRH and the traffic monitoring of Wi-Fi Access points must be undertaken by the vendor for maintaining the smooth operation of the Wi-Fi Access points after implementation. The training should be of minimum 2 days. The requisite technical and user manual pertaining to the Wi-Fi implementation should be delivered to the NIRRH in hard copy as well as soft copy.

8. The vendor shall maintain the service level for the hardware and network as per the terms and conditions of this tender.
9. Unscheduled on call corrective and remedial maintenance service to set right the malfunctioning of the system. The parts replaced will be new parts. In the event of Configuration/setting change the complaint should be rectified within 2 hours. In the event of hardware failure/ replacement shall be done within 3 working days.
10. The bidder will undertake preventive maintenance measures as a part of overall responsibility for maintenance of the Supplied Items and LAN in quarterly basis and report should be submitted to concern authority.

Wireless LAN Controller

Quantity :1

Sr.NO.	Specification	Compliance (Yes/No)
Make:		
Model:		
A	**HardwareSpecifications**	
A1	Must becompliantwithIEEECAPWAPorequivalent for controller-basedWLANs.	
A2	Shouldhaveatleast4x10Gigabitinterface.SFP+Single Mode	
A3	Shouldsupportbothcentralizedaswellasdistributedtraffic forwardingarchitecturewithL3 roaming supportfromday 1	
A4	Controller should have hot-swappable redundant power supplies.	
A5	ControllershouldsupportSolidStateDrive(SSD)/Flashbased storage	
A6	Controllershouldbecapableofsupportingboth1Gand10G SPFson same NetworkI/Oports	
A7	Should have IPv6ready.	
A8	Controllershould supportminimum 1,000users per chassis	
A9	WLAN Controllershouldsupportminimumof 100 Access points.IfanyOEM/Biddercan'tprovideWLANcontrollerto support100AP,multiplecontrollersmustbeproposedto meet the requirement. Proposed controller(s) should be in N+N redundancy (N=100). Proposed controller(s) should have active licenses for 30	
A10	Shall support WIPS, and spectral analysis from day 1.	

A11	Should be rack-mountable. Required accessories for rack mounting to be provided.	
A12	WLC should support AVC functionality.	
A13	WLC should support AC and DC powering options	
A14	WLC should support AP License Migration from one WLC to another	
A15	Should support minimum 4000 VLANs	
B	**Wireless Controller Features**	
B1	Must support stateful switchover between active and standby controller in a sub second time frame.	
B2	WLC should support L2 and L3 roaming for IPv4 and IPv6 clients	
B3	WLC should support guest-access functionality for IPv6 clients.	
B4	Should support IEEE 802.1p priority tag.	
B5	Should ensure WLAN reliability by proactively determining and adjusting to changing RF conditions.	
B6	Should provide real-time radio power adjustments based on changing environmental conditions and signal coverage adjustments.	
B7	Should support automatic radio channel adjustments for Intelligent channel switching and real-time interference detection.	
B8	Should support client load balancing to balance the number of clients across multiple Aps to optimize AP and client throughput.	
B9	Should support policy based forwarding to classify data traffic based on ACLs	
B10	WLC should support PMIPv6 and EoGRE tunnels on north bound interface or Equivalent	
B11	Should support flexible DFS to prevent additional 20/40 Mhz channels from going unused	
B12	Should support minimum 50 WLANs	

B13	Should support dynamic VLAN assignment	
B14	Should support Hot Spot 2.0	
B15	To deliver optimal bandwidth usage, reliable multicast must use single session between AP and Wireless Controller.	
B16	Should able to do dynamic channel bonding based on interference detected on particular channel.	
B17	Must support coverage hole detection and correction that can be adjusted on a per WLAN basis.	
B18	Must support RF Management with 40 MHz and 80 Mhz channels with 802.11n & 802.11ac	
B19	Should provide visibility to Network airtime in order to set the airtime policy enforcement	
B20	Must support dynamic Airtime allocation on per WLAN, per AP, Per AP group basis.	
B21	Must be able to restrict the number of logins per user.	
C	**Security**	
C1	Should support web-based authentication to provide a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant.	
C2	Should support port-based and SSID-based IEEE 802.1X authentication.	
C3	Should support MAC authentication to provide simple authentication based on a user's MAC address.	
C4	WLC Should support Rogue AP detection, classification and standard WIPS signatures.	
C5	WLC should be able to exclude clients based on excessive/multiple authentication failure.	
C6	Shall support AES or TKIP encryption to secure the data integrity of wireless traffic	
C7	Shall support the ability to classify different types of interference.	
C8	Shall able to provide an (RF) air quality index for ensuring the better performance	

C9	Shall able to provide real time chart showing interference per access point on per radio and per-channel basis.	
C10	Should support AP location-based user access to control the locations where a wireless user can access the network	
C11	Should support Public Key Infrastructure (PKI) to control access	
C12	Must be able to set a maximum per-user bandwidth limit on a per-SSID basis.	
D	**Management &QoS**	
D1	Should support SNMPv3, SSHv2 and SSL for secure management.	
D2	Should support encrypted mechanism to securely upload/download software image to and from Wireless controller.	
D3	Should provide visibility between a wired and wireless network using IEEE 802.1AB Link Layer Discovery Protocol (LLDP) and sFlow/equivalent.	
D4	Should support AP Plug and Play (PnP) deployment with zero-configuration capability	
D5	Should support AP grouping to enable administrator to easily apply AP-based or radio-based configurations to all the APs in the same group	
D6	Should have a suitable serial console port.	
D7	Should support serial console access.	
D8	Should have Voice and Video Call Admission and Stream prioritization for preferential QOS	
D9	Controller should have Deep Packet Inspection for Layer 4-7 traffic for user for all traffic across the network to analyses information about applications usage and prioritization	
D10	Should able do the application visibility for the application which run behind HTTP proxy.	
D11	Controller should have profiling of devices based on protocols like HTTP, DHCP and more to identify the end devices on the network.	
D12	Should support visibly and control based on the type of applications	

Wireless Access Point (Indoor)

Quantity: 60 (Approx)

Sr. No.	Specification	Compliance (Yes/No)
	Make:	
	Model:	
1.	Access Points proposed must include radios for 2.4 GHz and 5 GHz with 802.11ac with Power over Ethernet, local power(DC Power), and power injectors support.	
2.	Must have a robust design for durability, without visible vents and support mesh capabilities for temporary connectivity in areas with no Ethernet cabling	
3.	Mounting kit should be standard from OEM directly. AP Should be supplied with secure mounting kit with tool locking mechanism or Locks. 4. High-speed spectrum intelligence across 20-, 40-, and 80-MHz-wide channels to combat performance problems due to wireless interference	
4.	Must have 2 x 10/100/1000BASE-T autosensing (RJ-45) ports	
5.	Must have at least 3.5 dBi or More Antenna gain on both radios and have -90 to -100 dB or better Receiver Sensitivity	
6.	Must support 3x3 multiple-input multiple-output (MIMO) with three spatial streams	
7.	Must support simultaneous 802.11n on both the 2.4 GHz and 5 GHz radios. 9. Must support 802.11ac Wave 1 on the integrated 5-GHz radio	
8.	Must support data rates upto 450Mbps 802.11n and 1.3 Gbps on 802.11ac respectively and Must support upto 21dbm or More of transmit power on 5GHz Radio	

9.	The Wireless AP should have the technology to improve downlink performance to all mobile devices including one-, two-, and three spatial stream devices on 802.11n and 802.11ac. The technology should work without requiring feedback from clients and should work with all existing 802.11 clients.	
10.	Should support detecting and classifying non-Wi-Fi wireless transmissions while simultaneously serving network traffic support 16 WLANs per AP for SSID deployment flexibility	
11.	Should support configuring the access point as network connected sensor to access any network location covered by the access point to get real-time Spectrum analysis data.	
12.	Must support AP enforced load-balance between 2.4Ghz and 5Ghz band.	
13.	Must support Proactive Key Caching and/or other methods for Fast Secure Roaming and distributed encryption/decryption model.	
14.	Access Points must support Hardware-based DTLS encryption on CAPWAP Standard or equivalent	
15.	Must operate at 3x3 or higher with 802.3af PoE is the source of power 40. 802.11e and WMM 41. Must support Reliable Multicast to Unicast conversion to maintain video quality at AP level	
16.	Must support QoS and Video Call Admission Control capabilities. Access Point should 802.11 DFS ce	
17.	Must support Controller-based and standalone(autonomous) deployments and support telnet and/or SSH login to APs directly for troubleshooting flexibility	

Gigabit PoE LAN Switch 24 port

Quantity: 2

S.No.	Specification	Compliance (Yes/No)
	Make:	
	Model	
1.	The switch should have a minimum of 24 nos. 10/100/1000EthernetPorts	
2.	Theswitchshouldhaveaminimumof2 SFP+ Uplinks (Populated)Single Mode	
3.	Theswitchshould supporta totalof26 Ports	
4.	TheSwitchshould supportredundantpower supply.	
5.	TheswitchshouldsupportForwardingbandwidthof108 Gbps	
6.	The switch should support Full-duplex Switching bandwidth of196 Gbps	
7.	Theswitchshouldsupport64-BytePacketForwarding Rateof95.2Mpps	
8.	Theswitchshould support512 MB ofDRAM	
9.	Theswitchshould support4096 VLAN IDs	
10.	The switch should support 16000 Unicast MAC addresses	
11.	TheSwitchshould be 1RU	
12.	TheswitchshouldsupportStackingupto8switches withdedicatedstackingport	
13.	Stackingshouldsupport40 Gbpsofthroughputover dedicatedstackingport	
14.	Theswitchshould supportPoE+(IEEE802.3at)	
15.	The switch should support flexible power allocation across all ports	
16.	Theswitchshould support24 portsup to15.4W	
17.	Theswitchshould support12 portsup to30W	
18.	TheswitchshouldsupportPerportPoEpowersensing tomeasure actualpower being drawn	
19.	TheswitchshouldsupportIEEE802.1DSpanningTree Protocol, IEEE 802.1p, IEEE 802.1Q Trunking, IEEE 802.1s MultipleSpanningTree(MSTP),IEEE802.1w Rapid Spanning Tree(RSTP)	

20.	TheswitchshouldsupportIEEE802.1x,IEEE802.1ab (LLDP), IEEE 802.3ad Link Aggregation Control Protocol(LACP)	
21.	The switch should support Automatic Negotiation of TrunkingProtocol,tohelpminimizetheconfiguration& errors	
22.	The switch should support IEEE 802.1Q VLAN encapsulation	
23.	The switch should support Centralized VLAN Management. VLANs created on the Core Switches should be propagatedautomatically	
24.	TheswitchshouldsupportSpanning-treerootguardto preventotheredge switchesbecoming therootbridge.	
25.	Theswitchshould supportIGMPfiltering	
26.	Theswitchshouldsupportdiscoveryoftheneighboring deviceofthesamevendorgivingthedetailsaboutthe platform,IPAddress,Linkconnectedthroughetc,thus helping introubleshootingconnectivityproblems.	
27.	The switchshouldsupportPer-port broadcaststorm control to prevent faulty end stationsfrom degrading overall systemsperformance	
28.	TheswitchshouldsupportVoiceVLANtosimplifyIP telephony installations by keeping voice traffic on a separateVLAN	
29.	The switch should support Local Proxy Address ResolutionProtocol(ARP) working in conjunction	
30.	Theswitch should supportConfigurable IGMPLeave Timer	
31.	Theswitchshould supportIPv4unicastStaticRouting	
32.	Theswitchshould support16 IPv4Staticroutes	
33.	The switch should support diagnostic commands to debug issues	
34.	Theswitchshouldsupportsystemhealthcheckswithin theswitch	
35.	Theswitchshouldsupport4egressqueuesperportto enable differentiatedmanagement	
36.	The switch should support schedulingtechniques for Qos	
37.	TheswitchshouldsupportWeightedtaildrop(WTD)to provide congestionavoidance	
38.	TheswitchshouldsupportStandard802.1pCoSfield classification	
39.	TheswitchshouldsupportDifferentiatedservicescode point(DSCP) fieldclassification	

40.	TheswitchshouldsupportControl-andData-planeQoS ACLs	
41.	The switch should support Strict priority queuing mechanisms	
42.	The switchshouldsupportRateLimitingfunctionto guaranteebandwidth	
43.	Theswitchshouldsupportratelimitingbasedonsource and destinationIPaddress	
44.	Theswitchshouldsupportratelimitingbasedonsource and destinationMAC address	
45.	TheswitchshouldsupportratelimitingbasedonLayer4 TCPand UDP information	
46.	The switch should support availability of up to 256 aggregateor individual polices per port.	
47.	Switch should support 802.3az for energy efficient Ethernet	
48.	Theswitchshouldsupporttakingofactionbasedon business rules toreduce power consumption	
49.	The switch should support IEEE 802.1x to allow dynamic, port-based security, providing user authentication,withopenmode,learnmodeandsecure mode.	
50.	TheswitchshouldsupportPort-basedACLsforLayer2 interfaces toallowapplicationofsecuritypolicieson individual switchports.	
51.	The switchshouldsupport SSHv2andSNMPv3to providenetwork security byencrypting administrator trafficduring Telnetand SNMP sessions.	
52.	The switchshouldsupportTACACS+ andRADIUSauthentication enablecentralizedcontroloftheswitch andrestrict unauthorizedusersfromalteringthe configuration.	
53.	TheswitchshouldsupportMACaddressnotificationto allowadministratorstobenotifiedofusersaddedtoor removed fromthenetwork.	
54.	TheswitchshouldsupportPortsecuritytosecurethe access toanaccessortrunkportbasedonMAC address.	
55.	TheswitchshouldsupportMultilevelsecurityonconsole accesstopreventunauthorizedusersfromalteringthe switchconfiguration.	
56.	Theswitchshould supportPrivateVLAN	
57.	TheswitchshouldbeontheapprovedlistofIPv6Ready Logo phase II- Host	

58.	Theswitchshould supportIPv6unicastStaticRouting	
59.	Theswitchshould support16 IPv6Staticroutes	
60.	The switchshould supportIPv6MLDv1 &v2 Snooping	
61.	Theswitchshould supportTACACS+over IPv6	
62.	Theswitchshould supportNTPv4over IPv6	

Gigabyte PoE LAN Switch 8 port

Quantity: 2

1	Theswitchshould supportPoE+(IEEE802.3at)	
2	The switch should support flexible power allocation across all ports	
3	Theswitchshould support8 portsup to20W	
4	TheswitchshouldsupportPerportPoEpowersensing tomeasure actualpower being drawn	
5	TheswitchshouldsupportIEEE802.1DSpanningTree Protocol, IEEE 802.1p, IEEE 802.1Q Trunking, IEEE 802.1s MultipleSpanningTree(MSTP),IEEE802.1w Rapid Spanning Tree(RSTP)	
7	TheswitchshouldsupportIEEE802.1x,IEEE802.1ab (LLDP), IEEE 802.3ad Link Aggregation Control Protocol(LACP)	
8	The switch should support Automatic Negotiation of TrunkingProtocol,tohelpminimizetheconfiguration& errors	
	The switch should support IEEE 802.1Q VLAN encapsulation	

Other Peripherals

Item	Description	Quantity	Compliance (Yes/No)
UTPCable	CAT6eUTP24AWGSolid:305M	10	
Patch panel	PatchPanelCat 6eUTPKeystoneType-24Port-FullyLoaded	2	
I/OBox	Cat6 singleportI/OBox.	60	
Patchcord	CAT6eUTP24AWGPATCHCORD:2M,Plug	60	
Patchcord	CAT6eUTP24AWGPATCHCORD:1M,Plug	60	
Cable Laying	**Electricalcablelaying&accessoriesforpower**	**As per requirement**	
UTPCable laying	**UTPlayingchargeswithPVCconduit**	**As per requirement**	
Installation	Installation& mountingofthe AccessPoints,Rack, Patchpanelandother.	As per requirement	

37. BOD Incubator:

- Capacity : Approx. 500-700 L
- Insulation : PUF
- Inner chamber : Stainless Steel 304 grade
- Outer chamber : Mild Steel Powder Coated
- Inner Acrylic Door : Inner Full Size See through Acrylic 8 mm thick.
- Air circulation : Fan or Blower
- Cooling : CFC free
- Interior light : Door operated illumination lamp to work on 220/230 VAC
- Temperature Range : +5°C to +80°C
- Temperature Controller : Digital Display Temperature Controller Cum Indicator
- PID Control : Microprocessor based PID Controller.
- Controller Accuracy : +/- 0.5°C
- Temperature Uniformity : +/-1 degree throughout chamber
- Inner Size : L - Approx. 65 - 80cm
  W - Approx. 65 - 80cm
  H - Approx. 100 - 180cm
- No. of shelves : 3-6
- Electric supply : 220/230V AC, 50/60Hz

38. Sonicator

- Sample size : 100µl- 5ml
- Adjustable amplitude : 10-150 %
- Programmable timer : 1 second to 1 hour
- Adjustable pulse : 1 second to 59 seconds
- Power consumption : max 150 W
- Dimensions : 300 X 120 X 200 mm
- Weight : 3-5 kg
- Probe size : 1/4'' to 1/16''

39. Mini SDS-PAGE Equipment with Transblots [3 Nos.]

1. Should be able to run and transfer atleast 2 mini gels.
2. Colour coded cassettes and electrodes for easy identification.
3. Transfer time should be approximately 1 hr. or less.
4. Should be compatible with basic power pack supply system.
5. Should contain atleast 5 combs (10 well/15 well) with varying thickness (0.75mm, 1mm, 1.5mm).
6. Gel running tank, lid with power cords and electrode assembly should be provided.
7. Should be included atleast 2 gel casting stands.
8. Should be provided atleast 25 short and 3 each spacer plates (with spacer thickness 0.75mm, 1mm, 1.5mm).
9. Should be included atleast five gel releasers.
10. Should be able to run and transfer atleast 2 mini gels.

40. Manual Gamma Counter (Single Well Gamma Counter)

1. System should be suitable for RIA, IRMA and Research assays.
2. Nal Detectors: Single well type
3. Background: <45 CPM for I125
4. Efficiency: > 80% for I125
5. 4096 channel analyzer with automatic dead time correction.
6. Energy range: 0-1000KeV
7. Automatic Calibration with Co57 or Cs 137
8. Capable of dual label counting
9. Self diagnosis facility for system parameters
10. Preferable LED or LCD display with alpha numeric keypad including results
11. No moving parts in counter changing the samples manually.
12. System should prevent cross talk for high energy isotopes.
13. System should operate on power supply 220 volts 50 HZ.
14. Compatible with serial & parallel port printer or 80 column thermal printer.
15. Software Specifications:
    - Calculation results of any RIA, IRMA or ratio assay.
    - Preferably database facility consisting of patient name, report results, ID no. etc which can be stored and printed in report format.
    - Data reduction should include straight line, weighted straight line, point to point, cubic spline and four parameter logistic curve fit.
    - Graph format should be Linear – Linear, Semi Log and Logit Log.
    - Storage of Assay results including values as well as curve fitting.

41. Incubator Shaker with Refrigeration

- Incubator Shaker with wide temperature range4°C to 80°C Uniform and precise temperature control ± 0.1°C with uniformity of ± 0.25°C 37°C.
- Microprocessor controls for accurate regulation of shaking speeds 25-400 rpm (± 1 rpm) provides versatility for culturing a wide range of cell types.
- Set point retention – maintains set point during power interruption and restarts when power resumes
- User-friendly, Programmable controller automates parameter changes on timed basis
- Large, easy-to-read display, visible from all angles and in the dark
- Transparent lid provides clear chamber visibility
- Audible and visible alarms
- Automatically programming changes to multiple parameters
- **Specifically it should maintain 37°C for 12 hours with shaking speed 120 RPM and then (after 12 hours) it should go to 4°C and maintain it for 5 hours without shaking. Model should accommodate a mix of Test tube Rack, (22-26mm size) and Erlenmer clamp (125 ml) on a single platform.**
- Certifications – Meets CSA, UL & CE standards

Program modes:

1. Constant speed and temperature
2. Timed shaking, programmable multi-steps with varying temperature range4°C to 80°C.

Accessory with Incubator Shaker

Medium Test Tube Rack, 22-26 mm size
250mL Erlenmeyer clamp with spring retainer
125mL Erlenmeyer clamp with spring retainer

42. Automated Colony Counting and Zone Sizing

System should have:

- Built-in processor, hard disk and DVD withOperating system Windows XP embedded.
- Integral CCD camera and lens
- 17" mounted touch screen LCD Monitor
- 2 sliding doors to prevent excessive ambient light
- >1.4m pixel scientific grade CCD camera
- Should do the resolution for standard 90mm Petri dish
- Can read colonies as small as 40-45 microns
- 3 channel capture for colour images
- Should have unique 3 channel (red, green, blue) LED lighting
- Computer controlled multi-array LED lighting
- Lower lighting with upper reflective lighting for all applications
- Should have >120GB minimum internal hard disk
- Should have External connections like, DVD RW, USB ports for mouse, keyboard, camera USB ports x2 additional, External monitor connection
- Should have fully automatic with manual over-ride detection mode
- Should have Measurement modes for Colony counting, pour plates, SRD zone sizing, inhibition zones and antibacterial susceptibility
- Should have Count Modes for Separation of touching colonies, exclude areas, colour mode, shape mode
- **Data access and sharing by multiple users simultaneously**

System should have

- **Built-in processor, hard disk and DVD**
- **Can read colonies as small as 40-45 microns**
- **The best high contrast lighting - better than fluorescence or halogen types - for reflection free images and improved contrast leading to better detection**
- **Enables rapid data input at the touch of a fingertip chromogenic media**
- 2 sliding doors to prevent excessive ambient light
  Enhanced results and ease of use
  Data access and sharing by multiple users simultaneously
  Greater data security and easier back-up

Chapter 5 : PRICE SCHEDULE

FINANCIAL BID
(To be submitted in a separate sealed cover)

SCHEDULE OF RATE AND QUANTITIES

Name and place of works/supply: **NATIONALINSTITUTE FOR RESEARCH IN REPRODUCTIVE HEALTH, J.M. STREET, PAREL, MUMBAI 400012.**

TENDER NO. NIRRH/ST/2017-2018/01

Sr. No. (Rs.)	Description of Item/Work	Quantity In Figures In Words	Price/Unit In Figures In Words (add the word 'only' at end against each item)	Total
	(NAME OF THE ITEM ----------) Specification as per (Technical Bid) **(A) Price Cost** (1) Basic cost inclusive of Package & Handling charges (2) Duties & Taxes a) Custom duty / b) GST (3) Any other charges not Covered above **Total – FOB, Mumbai** **(B) Service Cost** (a) AMC Charges per year for Five years (beyond 3 years Comprehensive warranty + 2 years comprehensive / non-Comprehensive Warranty) [**Both Comprehensive and and Non-Comprehensive**] (b) Engineer service charges without any spare part			

(C) Terms & conditions for Payment of charges including service tax

a) ----------
b) ----------
c) ----------

1, Prices given above are firm with all duties and taxes as shown above separately.
2. Delivery within --------- days earlier or otherwise specify period.
3. We are bound by Tender Form Conditions and General Terms & Condition, stated in the accompanied form.
4. **Above prices are inclusive of 3 years on site comprehensive warranty & 2 years comprehensive / non comprehensive services for equipment free of cost for all above items**

Signature of Tenderer
(seal)

Chapter 6 : TENDER FORM

1.निविदासंख्या/**Tender Notice No.** :**NIRRH/ST/2017-2018/01**

2. प्रकाशनदिनांक/**Publication Date** : _____

3. पंजीकरण व्यय/**Registration Cost** :**Nil**

4. भुगतानरसीदसंख्याध **Demand Draft No.** : दिनांक/Date :

5. निविदाप्राप्तकरनेवालीफर्म/कम्पनी/संस्था/व्यक्तीकानाम एवं पता**Name of the Firm / Company / Institution / Person to whom tender form issued (status disclosure form Page No. 2)**

_____

6.वस्तु–मद/**Item Services** :_____

7.जारीनिविदाकीतिथि

Date of issued Tender :_____

8. पूर्णनिविदाजमाकरने की तिथी एवं समय

Last date & time of receipt of complete tender : **22nd September, 2017 at 12.30 hrs.**

9.तकनिकीनिविदा खोलनेकादिनांक एवं समय

Date & Time for opening of Tender : **22nd September, 2017 at 15.00 hrs.**

10. निविदा की वैधता अवधी/तिथी

Validity period of tender upto date : **19th February, 2018**

11.जांचसूची**/ Check List** : _____

12. निविदाआवेदनपत्र/**Tender Application** : _____

13.प्रतिभागी के लियेअनुदेश**Instructions to bidders** : _____

14.सामान्यनियम और शर्तें/**General Terms & Conditionsof Contract** : Annexure from Page _____ to _____

15.अपेक्षितअनुसूची/**Schedule of Requirement** : Annexure from Page _____ to _____

16.वस्तु–मद/सेवाकातकनिकीविवरण

Specification & allied technical details : Annexure from Page _____ to _____

17. मुल्य अनुसूचीजिसकोनिविदादाता द्वाराभजाजाएगा/

Price schedule to be filled up by the bidder for quoting prices : _____

Signature of issuing authority
for Director, NIRRH

CHECK LIST

(To be compulsorily filled by the Tenderers)

Tenderers should enclose the necessary documents as given in the Check List.

Sr. No.	**Description**	Vendors should put appropriate remarks against each item i.e. **Yes/No/Agreed/Not Agreed/Enclosed /Not Enclosed etc.**
1	Acceptance of General conditions contract.	
2	Terms of payment as per enclosed sheet.	
3	List of Engineers & Staff available with the agency.	
4	Completion time (8 weeks)	
5	Rates are excluding of all taxes & duties i.e., GST etc. (Rates including these taxes are not acceptable)	
6	Rates are firm throughout the Contract Period.	
7	**Warranty of 5 Years (3 Years comprehensive & 2 years comprehensive / non comprehensive) commencing from the date of completion of the work, installation and testing of the equipment / instrument / system.**	
8	State whether Inspection / Final inspection & Testing at works Before Dispatch of the Materials agreed	
9	Inspection & Testing at Site agreed	
10	The entire supply / work will be carried out as per Technical Specifications given in Tender Notice.	
12	Whether the following documents are submitted along with tender? a) List of Engineers to be placed at site for Installation / Testing b) Authorization letter from Manufacturer c) Layout Drawings d) Bank Solvency Certificate e) Tender book along with quotation. f) Specification Compliance Statement. g) Details of service setups at Mumbai. h) List of similar works carried out during last three years. i) Catalogues and technical details of offered Equipments. j) EMD vide Demand draft No. ---------- dated ---------- payable at ---------- Bank Mumbai for Rs.---------- k) List of users of model quoted with complete address. l) Acceptance of penalty clause, risk purchase clause in case of default m) Duly attested copy of the registration certificate with DGS&D	

Signature & Name with Designation
of Tenderer with Rubber Stamp

STATUS OF THE BIDDER/TENDERER

1. Name of the Bidder/Tenderer(in full) :

2. Whether a proprietary firm/ partnership firm/Pvt. Company ltd. /Public company ltd./Trust or others :

3. Registration No. :
IT PAN No. _____

4. Authorities with whom registered :

5. Name & Address of the Proprietor/ Partners/Directors/Authorised Attorneys with full Address, Telephone No. and E-mail I.D. :

6. Working experience of the organization: (In Brief)

7. Resourcefulness /financial status :

8. Name of the Bankers & Address with telephone nos. :

9. Infrastructure Facility available with the Tenderer :

10. Notice of time required to attend the call/complaint to remove the defects :

Signature & Name with Designation of Tenderer with Rubber Stamp

TENDER APPLICATION FORM

Date : _____

To,
The Director,
National Institute for Research in Reproductive Health (ICMR),
Genetic Research Centre,
National Centre for Primate Breeding & Research
J.M. Street, Parel, Mumbai 400012

Subject: Offer for supply, installation and testing of the tendered item No. and training thereof - reg.
Name of the Equipment / Instrument / System _____
_____

Dear Sir,

I _____ for and on behalf of M/s. _____ beg to offer the Technical as well as Financial Bid for participation in the Tender invited by the Institute for the designing, supplying, installation and testing of the above said item and state as under:

1. It is certified that offered item is technically sound and satisfies the prescribed specifications of the item. The literature containing designing of the system with other details to satisfy the requirements of the item are attached herewith for perusal and ready reference for the purpose of evaluation.

2. It is certified that all the terms and conditions (General & Special) are acceptable to us and agreed to abide by all the said terms and conditions.

3. It is certified that we agree to keep this offer valid for a period up to **19th February 2018 and will provide further extension of validity, if required.**

4. It is certified that the amount of Earnest Money Deposit (EMD) is remitted by Demand Draft bearing No. _____ dated _____ drawn in favour of **Director, NIRRH** Payable at **Mumbai** is attached herewith.

5. It is certified that the Technical Bid and Financial Bid have been sealed separately and submitted with the offer for consideration, evaluation and competition.

6. It is certified that the necessary agreement will be executed within 10 days on the non-judicial paper in token of acceptance and execution of the Contract on the accepted terms and conditions of this Tender.

7. It is certified that the Bank Guarantee for the amount equivalent to 10% of the total cost of the item shall be submitted in case 100% payment is claimed against the supply and installation/testing etc. on successful completion of the Contract.

8. It is certified that a copy of the Warranty Card to cover the comprehensive risks has been attached in the Technical Bid.

9. It is further certified that the offered item will be kept under the Comprehensive warranty for 3 years and 2 years non-comprehensive warranty from the date of successful installation and testing for all comprehensive risks and preventive maintenance thereof.

10. It is also further certified that the item will be kept under Annual Maintenance Contract at least for a period of 5 years after the expiry of the Warranty Period and the necessary consumable and non consumable parts shall be made available for carrying out preventive maintenance and remove the defects. The reasonable Annual Maintenance Service Charges (**both Comprehensive and Non-Comprehensive**) have been indicated correctly in the Commercial Offer-Price Bid, attached separately.

Encl.: As above.

Date: **Signature**

Place: **Name**

Stamp

Chapter 7 : OTHER STANDARD FORMS

A) Agreement

This agreement regarding the supply, installation and maintenance of ____

_____ made this day the _____ between the Director, National Institute for Research in Reproductive Health (I.C.M.R.), J.M. Street, Parel, Mumbai – 400 012, hereinafter referred to as the First Party and M/s_____ and their agent M/s _____ _____ hereinafter referred to as the Second Party respectively, which expression shall unless specifically excluded by or repugnant to the context include their heirs, Executors, Administrators, Legal Representatives and Assignees. The Second Party may nominate their agent if they so desire and inform the first party in writing about such appointment. It is further stipulated that notwithstanding any thing else in the agreement the second party, shall inform the first party in writing about the change of such agency. Further, the new agency shall remain bound by the present agreement irrespective of any agreement written or otherwise between the second party and its agents to which the first has not been a party in writing. It is further agreed that this agreement will be binding on both the parties.

b) This agreement concern the supply and installation of _____

_____ equipment to be supplied by the Second Party according to the Order No. _____ issued by the First Party a copy of which is appended. Further, the equipment is to be installed by the Second Party according to the schedule agreed upon as stated below:

c) The Second Party agrees to supply the entire equipment within the agreed period after the execution of Contract Agreements. Further, the equipment will be supplied installed and handed over to the First Party in complete working order within a total period of one month after receiving the order.

While the First Party shall ensure that the needed infrastructure is ready before the arrival of equipment, the Second Party in the event of their failure to complete installation and set the instrument in working order in the

stipulated time will pay interest at the rate of 15% on the sum equivalent to the value of the order. The Second Party will inform the First Party in writing intimating the reasons for delay in supplying and for installing the equipment. The First Party at its sole discretion may consider waiver to the penalty for a period to be stipulated in writing.

d) Thorough inspection of the instrument will be carried out by the First Party only on completion of the entire job of installation and commissioning of the equipment.

e) Packing should be conforming to National/International standard and strong enough to avoid damage, pilferage, protection from rain water/moistures and other terms of deterioration during transit. Packing proposed to be employed should be clearly stated details of the charges for alternative packing.

f) Guarantee/Warranty:

i) The Second Party Guarantees the entire equipment against defects of manufacture, workmanship and quality and components and undertake to take care of the latent defects.

ii) The Guarantee/Warranty shall be of comprehensive and on-site for a period of **Five Years (3 Years Comprehensive Warranty and 2 years comprehensive / non-comprehensive)** starting from the date of satisfactory installation and handing over the equipment in full working order to the First Party. During this Guarantee/Warranty period, the replacement of any part(s) of the equipment of rectification of defects will be carried out free of cost of the part(s) and labour etc.

iii) The Second Party guarantees that the number of occasion the equipment will be down will not be more than the twelve times per year or thirty six days per whole year (365 days), whichever is less. Further, the Second Party will ensure that the downtime on any one occasion will not be more than three days (excluding holidays).

iv) The Second Party will submit a bank guarantee/Bank's Deposit Receipt for 10% towards the execution of the agreement and the warranty valid till the expiry of the warranty period of the **Five Years (3 Years Comprehensive Warranty and 2 years comprehensive / non-comprehensive)** after receipt of the said bank guarantee the First Party will return the EMD Deposit for Rs. _____ already submitted by the Second Party along with tender. On expiry of the warranty period the bank guarantee Deposit Receipt of the said bank guarantee the First Party will return the EMD Deposit for Rs. _____ already submitted by the Second Party along with tender. On expiry of the warranty period the

bank guarantee Deposit Receipt for 10% will be returned by the First Party the First Party to the Second Party duly discharged.

v) The Second Party declares that the equipment being supplied is the latest model and version.

g) Training:

The Second Party will provide literature of detailed applications and technical training regarding the working of the equipment to the nominees of the First Party at site, free of cost and charges thereof.

The bidders must provide complete circuit diagrams, wiring diagrams, component layout diagrams, Service/Maintenance manuals and component identification catalogue along with equipment free of charge in case order is placed to them. Also supplier to provide Technical Maintenance/Service training at manufacturing unit or principal company to our Technical Officer Instrumentation. All Expenses for travel, Accommodation etc. to be borne by the supplier or company to whom order is placed

Certified that I have read above terms and conditions carefully and taken note of them for compliances and I hereby accept all these terms and conditions laid down from Sl. No. 1 to ____ including special conditions of the Tender.

Signature and Named Designation of Tenderer with Rubber Stamp

B) (STAMP PAPER SHOULD BE PURCHASED IN THE NAME OF ISSUING BANK)

Bank Guarantee No. _____

Ref: _____

Dated: _____

To

The Director,

National Institute for Research in Reproductive Health (ICMR),

J.M. Street, Parel, Mumbai – 400 012

Dear Sir,

In consideration of National Institute for Research In Reproductive Health (ICMR) (Hereinafter referred to as N.I.R.R.H. (ICMR) which expression shall unless repugnant to the context or meaning thereof, includes all its successors, administrators executors and assignees) having entered in to Contact/Order No. _____ dated _____ (hereinafter called 'the Contract' which expression shall include amendments thereto) with M/s. _____ having its head/registered office at _____ hereinafter referred to as 'the Contractor' which expression unless repugnant to the context or meaning thereof, include all its successor, administrators, executors and assignees) and NIRRH having agreed that the Contractor shall furnish to NIRRH, for _____ (scope of work) _____ the faithfully performance of the entire contract.

a) We _____ (Name of the Bank) _____ registered under law of _____ having head/registered office at _____ (hereinafter referred to as 'the Bank" which expression shall unless repugnant to the context or meaning thereof, include all its successors, administrators, executors and permitted assignees) do hereby any/all monies to the extend of Indian Rs. _____ (in figures) _____ (Indian Rs. _____ (in words) _____ without any demur, reservation, recourse, contest or protest and/or without any reference to the Contractor. Any such demand by NIRRH (ICMR) on the Bank by serving a written notice shall be conclusive and binding without any proof on the

bank as regards the amount due and payable notwithstanding any dispute(s) pending before any Court, Tribunal, Arbitrator, or any other authority and/or any other matter or thing whatsoever as liability under these presents being absolute and unequivocal.

b) We agree that the Guarantee herein shall be irrevocable and shall continue to be enforceable until it is discharged by NIRRH (ICMR) in writing. This guarantee shall not be determined discharged or affected by the liquidation, winding up, dissolution or insolvency of the Contractor and shall remain valid binding and operative against the bank.

c) The Bank also agree to that NIRRH at its option shall be entitled to enforce this guarantee against the Bank as a principal debtor, in the first instance, without proceeding against the contractor and notwithstanding any security or other guarantee that Institute may have in relation to the Contractor's liabilities.

d) The Bank further agree that NIRRH shall have the fullest liberty without our consent and without affecting in any manner our obligations hereinunder to vary any of the terms and conditions of the said contract or to extend time of performance by the said Contractor(s) from time to time to postpone for any time or from time to time exercise of any of the powers vested in NIRRH against the said Contract(s) and to forebear or in force any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

e) The Bank further agrees that the guarantee herein contained shall remain in full force during the period that is taken for the performance of the Contract and all the dues of NIRRH under or by virtue of the contract have been fully paid and its claim satisfied or discharged or till NIRRH discharge this guarantee in writing, whichever is earlier.

f) This guarantee shall not be discharged by any change in our constitution, in the constitution of NIRRH or that of the Contractor.

g) The Bank confirms that this guarantee has been issued with observance of appropriate laws of the country of issue.

h) The Bank also agree that this guarantee shall be governed and construed in accordance with Indian laws and subject to the exclusive jurisdiction of Indian Court of the place from where tender have been invited.

i) Notwithstanding anything contained hereinabove, our liability under this guarantee is limited to Indian Rs. _____ (in figures) _____ (in words) and our guarantee shall remain in force until _____ (indicate the date of expiry).

Any claim under this Guarantee must be received by us before the expiry of this Guarantee. If no such claim has been received by us by the said date, the rights of NIRRH under this Guarantee will cease. However, if such claim has been received by us within the said date, all the rights of NIRRH under this Guarantee shall be valid and shall not cease until and we have satisfied that claim.

In witness thereof, the bank through its authorised officer has set its hand and stamp on this _____ day _____ of 201__ at _____.

Witness No. 1

(Signature)

Full Name and Official

Address (in legible letters)

(Signature)

Full Name, Designation

Official Address (in legible letters)

with bank stamp

Attorney as per power of

Attorney No. _____

Dated:

Witness No. 2

(Signature)

Full Name and Official

Address (in legible letters)