

## **Corrigendum for Tender specification for different instruments**

### **Sub: Change of specification after pre-bid meeting**

Pre-bid meeting with the prospective bidder for the aforementioned tenders were held on 10/07/2017 as per schedule. Various firms participated on different tenders.

Few Firms raised their concern on some technical issues on various equipment which were discussed in detail by the committee and committee proposed following amendments in the tender specifications of item as listed below.

### **RCB/ATN/01/17-18/ATPC for “Multi Angle Static Light Scattering Detector”**

This is to intimate that the tender number RCB/ATN/01/17-18/ATPC for “Multi Angle Static Light Scattering Detector” at NCR Biotech Science Cluster, Faridabad; following specifications have been modified

1. Tender specification point – Molecular size range for MALS detector has been removed.
2. Tender specification point – Radius of gyration range for MALS detector should be 10nm-500nm
3. Tender specification point – Molecular mass range – should be between 1000-1 GDa.
4. Tender specification point – Sensitivity of MALS detector should be 0.4ug/ml BSA (defined as limit of detection)
5. Tender specification point – Viscometer measuring volume - should be 40ul or less
6. Tender specification point – Viscometer temperature range - should be ambient-60C
7. Tender specification point – Absolute refractive range should be 1.28-1.75 RIU or better

All other specifications and terms and conditions of the aforementioned tender remain unaltered.

### **RCB/ATN/02/17-18/ATPC for “FPLC system”**

This is to intimate that the tender number RCB/ATN/02/17-18/ATPC for “FPLC system” at NCR Biotech Science Cluster, Faridabad; following specifications have been modified

8. Tender specification point – Autosampler for FPLC has been removed
9. Tender specification point – Input/Output device for connecting the FPLC with MALS/RI/Viscometer detectors (all together at the same time) should be included.

All other specifications and terms and conditions of the aforementioned tender remain unaltered.

## **Corrigendum for Technical specifications for tender number RCB/ATN/03/17-18/ATPC: “Super-Resolution (Structured Illumination and Localization based) Microscope Imaging platform”**

The technical specifications for the above equipment stand modified as enumerated below. These changes have been made after considering the technical points put forth in letters/ emails by the various companies that participated in the pre-bid meeting held on July 10, 2017. The changes are intended to enable maximal participation from eligible vendors while not compromising on the major applications required by the institutes.

- 1) Point A (b) now stands modified to the following:  
Fully motorized beam path selection for widefield, 3D- structured illumination (SIM) or equivalent and TIRF illumination on a single platform through the same software. Single platform should be capable of performing both 3D-SIM/ equivalent and localization microscopy. Fully motorized TIRF; TIRF angle adjustment and switching to widefield and SIM/ /equivalent mode should be possible through the same software to enable switching between modes during time-lapse recording. Motorized TIRF objective for adjustable TIRF angle is required for correcting chromatic aberration as well as imaging into the cell cortex. An autocorrection collar for the 100X objective should be quoted as an optional item if available.
- 2) Point A (g) now stands modified to the following:  
System should be supplied with high resolution plan Apochromat objectives 20x, 40x dry, 60x / 63x Oil (N.A 1.4 or better). A 40 X oil objective should be quoted (Plan Apochromat or Plan Fluor/ Neofluor as per manufacturer’s recommendations). A 100x oil SR objective (N.A 1.46 or higher) optimized for the high-power lasers of the system must be quoted as optimized for localization based super-resolution. 10x dry, 40X (water immersion) and 60/63 X (water immersion) objectives should be quoted as optional items if available.
- 3) Point A (h) now stands modified to the following:  
System should have a minimum of 120w/130w metal halide/ mercury lamp/ lasers with approx. 1800-2000 hours of lamp life OR LED (Full Visible range) for fluorescence observation with automatic shutter having DC (direct current) to provide constant and non-fluctuating light. In case of laser-based illumination for fluorescence, a nosepiece is not required.
- 4) Point A (j) now stands modified to the following:  
System should be equipped with caged incubator with independent inlets for CO<sub>2</sub>, O<sub>2</sub> and humidity control for live cell imaging, which can hold petriplates (& if possible multiwell plates) of standard size and dimension (universal stage holder). The incubator should also support onstage hypoxia experiments. The incubator enclosure should have the following: dark or transparent panels, temperature range from ambient 25 deg C to 45 deg C. The temperature accuracy on the sample should be +/- 0.3 deg C or better. The air-filtering unit for inlet air, sliding doors for easy handling and illumination inside the enclosure with suitable light should be provided. The humidity module should not cause any vibrations that can affect imaging. Bidders quoting transparent panels should provide dark curtains to provide working conditions similar to a dark room.
- 5) Point A (k) now stands modified to the following:

DIC attachment motorized for 20x to 100x objectives with analyzer and polarizer attachment, sliders and modules for the respective objectives should be provided.

- 6) Point B (b) now stands modified to the following:  
Resolution (in Z) achievable should be within 60 nm or better.
- 7) Point C (d) stands modified to the following:  
System should be capable to perform simultaneous or fast sequential multicolor SR imaging through a minimum of two high speed, high-resolution sCMOS cameras (each 4 MP or better) or a combination of sCMOS (4MP, peak QE 80% or better) and EMCCD cameras (peak QE greater than 90%). At least one camera should be sCMOS. If more sCMOS cameras can be installed in the system, they should be quoted as optional items for up to 4 color simultaneous/ fast sequential imaging.
- 8) Point C (f) stands modified to the following:  
Temporal Resolution of the system in 2D SIM or 3D SIM mode should be at least 0.07 sec/ frame\* or faster AT 512 x 512 pixels for one colour. The final effective temporal resolution for two colour image in 2D SIM or 3D SIM mode should be 0.07 sec/ frame \* or faster at 512 x 512 pixels (\*frame here means single raw image acquired by the camera). The system should be able to achieve the above speeds with simultaneous/ fast sequential imaging in at least 2 colour SIM with cameras of a minimum peak QE 80% or better. This is necessary for enabling imaging of rapid and dynamic processes of multiple fluorophores within living cells.

Optional: In case of 4-colour imaging, the final effective temporal resolution of 0.07 sec/ frame should be achieved. This is necessary for enabling imaging of rapid and dynamic processes within live cells as well as involving molecular interactions and events at the cell surface. The system should also be capable of imaging processes close to the membrane (within 120 nm) such as cytoskeletal dynamics, endocytic and exocytic processes, focal adhesions, tubular membrane extensions and signaling.

- 9) Point D stands modified to the following:  
The system should be equipped with long life, high power solid state lasers whose output is routed to a single mode fiber. The user should be able to select any combination of laser lines using the software and attenuate their intensity using AOTF/ electronic control. At least these 4 laser lines should be provided: ~405 nm, ~488 nm, ~560 nm, and ~630/640 nm. The following two lasers should be provided as optional items if available: Solid state / Diode ~ 445/458 nm, solid state/ diode ~ 514 nm.

The minimum power requirements for the lasers are 405 nm - 50 mW, 488nm - 100 mW, 560/ 568 nm - 100 mW, and 630/640 nm - 100 mW.

- 10) Point E stands modified to the following:  
**Detection system for Epifluorescence, Super-Resolution Microscope (Should be usable for Super Resolution technique, Localisation OR SIM based)**

For Epifluorescence and Super-Resolution based on Localization & SIM: Camera with a Scientific CMOS sensor having effective no. of pixel 2k x 2k with Pixel Size of 6.5 microns x 6.5 microns (Hamamatsu Orca Flash 4 or equivalent). The camera should have an innate capability of achieving a maximum speed of 100 fps at 512 x 512 full frame. Q.E should be 80% or better. The EMCCD camera if quoted should have a peak QE of 90% or better. The cameras should be supplied with a

camera link cable to enable optimal performance. The camera should be completely operational from and integrate smoothly with the main acquisition software of the microscope system.

## **RCB/ATN/04/17-18/ATPC for “Confocal based high content Imaging facility”**

This is to intimate that the tender number RCB/ATN/04/17-18/ATPC for “Confocal based high content Imaging facility” at NCR Biotech Science Cluster, Faridabad; following specifications have been modified.

2. **Imager** – The system should be hardware based Confocal & Wide field Imager. The system should have option for true hardware based phase contrast/Digital Phase contrast imaging at high speed. The system should be flexible with several configurable options having modular design enabling configuration at time of purchase or it can be upgraded in the field.
3. **Pinhole Geometry** - The system should have hardware based Dual Spinning Disk confocal geometry for High-throughput and High-resolution modes for quality imaging with appropriate pinhole.
4. **Objectives** - The system should have magnification range with objectives supported from 1X to 60/63 X (1X, 2X, 4X, 10X, 20X, 40X, 60X/63X options). All objectives should be user changeable. The system should have Large Field of View 1.96mm<sup>2</sup> @ 10X objective or better. The system should have both options for air / oil / water objectives. The system should be quoted with 10X, 20X, 40X, 60X air/water objectives by default and 100X air/water /oil objective should be quoted as optional if available. Also all other objectives air or water or oil whichever is available should be quoted in optional.

**High Content Imaging, Liquid Handling, Stacker & Incubator should be integrated with an external Robot & also should be controlled with a common or master software for the streamline workflow.**

**Required branded server to run the complete facility should be provided along with the facility.**

All other specifications and terms and conditions of the aforementioned tender remain unaltered.

## **RCB/ATN/05/17-18/ATPC for “ESI MS/MS”**

### **I. 2D Nano LC**

2D Nano LC with Compatible Autosampler, Pump, column oven and Column should be included in the main offer. Nano LC source should also be included in the offer along with consumables kit.

The Nano LC should be split less with flow rate from 100nl/min to 2000nl/min and maximum operating pressure should be 10000 psi.

System should come with four nano UPLC column C18 (250mm) and 10 pre-column/trap column (C 18) for immediate run.

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## II. Fast and High Resolution LC system

**Auto sampler:** Sample Carryover < 0.004%

## III. Mass spectrometer

The quoted system should have advanced technologies for optimized Ion transmission for enhancing the performance of the system.

## IV. Workstations and software

Spectronaut™ Pulsar/Mascot single user license should be quoted as additional software bundle.

All other specifications and terms and conditions of the aforementioned tender remain unaltered.

## **RCB/ATN/06/17-18/ATPC for “DNA sequencer and accessories”**

Manpower to run the instrument for 2 years should be provided along with the instrument.

Consumable for 1000 sequencing reactions should be provided along with the instrument.

## **RCB/ATN/07/17-18/ATPC for “Installation of liquid Nitrogen storage tank 6KL and supply of Liquid Nitrogen on rate contract basis”**

FORMAT FOR PRICE BID ONLY

**(to be submitted in separate seal cover not to be quoted in the Technical Bid)**

### LIQUID NITROGEN STORAGE TANK (ON RENT)

S.No.	System	Unit Rate	Unit Rate Including all Levies (Nett) (Rs.)		Total (Rs.)
1)	(2)	(3)	(4)	(5)	(6)= (5)x(3)

A	LIQUID NITROGEN STORAGE TANK (FILLED) (Detailed Specification as per our Technical Bid) ~6 KL Capacity	36 months  ***	Rent/month  (Rs.)		
B	Turnkey site preparation , installation and commissioning charges to make the facility operation including statutory licensing	Lumpsum *			
C	Liquid Nitrogen Charges per Litre fixed for three years based on average annual consumption of 1,20,000 Liters per annum approx.	3,60,000 liters Capacity  **	Rate/Ltr.  (Rs.)		
Grand Total (A+B+C)					

Date:

Signature:

Address:

Name:

Designation:

On behalf of:

- \* Detailed breakup of the turnkey site preparation charges should be quoted in a separate sheet and must be attached along with the price bid. It is the responsibility of the vendors to get the statutory licensing and all necessary approvals from the Competent Authority for installation and commissioning of the vessel and statutory charges, if any, shall be reimbursed to the vendors on production of supporting documents. The Institute will sign all the necessary documents required for the statutory licensing and approvals.
- \* The quantity indicated is approximately estimated consumption to arrive at BOQ for calculation of L1 purposes. However, the actual quantity may increase or decrease to any extent depending upon the actual requirement. The lowest vendor will be reckoned on the Grand Total of all the 3 components (A+B+C) above.
- \* The prices fixed for the initial 3 years periods and no fluctuation shall be allowed during the period. The period of contract is extendable for further 2 years and price fluctuation (increase or decrease as the case may be) shall be allowed annually at 10% of the average increase or decrease of the cost of Diesel + Electricity during the past one year.

All other specifications and terms and conditions of the aforementioned tender remain unaltered.

**RCB/ATN/08/17-18 for Automated Upright Research microscope for bright field,  
Phase contrast and Fluorescence**

Sr.No.	Specification for Automated Upright Research microscope for Brightfield, Phase contrast & Fluorescence	Amendments
3	<b>Observation Tube:</b> Trinocular with Light Path selection 100:0 / 50:50 / 0:100 having minimum 25mm field of view or more.	<b>Trinocular (with or without tilting feature and 3-way light path selection)</b> with Light Path selection 100:0 / 50:50 or <b>80:20</b> / 0:100 having <b>25mm</b> field of view or more
5	<b>Nosepiece:</b> Motorized 7 position revolving objective nosepiece with Option for Motorized 3 or more positions DIC slider / turret.	<b>Nosepiece:</b> Motorized <b>6- 7</b> position revolving objective nosepiece with Option for Motorized 3 or more positions DIC slider / turret.
8	<b>Focus Drive:</b> Motorized Focus function drive with min. 5nm (five nm) step size.	<b>Focus Drive:</b> Motorized Focus function drive with min. <b>5nm – 10nm</b> step size.
11	<b>Fluorescence:</b> Motorized 5 or more positions based turret. 120W / 130W Metal Halide / Mercury fibre guided light source with inbuilt 5ms or faster shutter. The light source should have half life time of 1500hrs.	Fluorescence: Motorized <b>5-6</b> or more positions based turret. 120W / 130W Metal Halide / Mercury fibre guided light source with inbuilt <b>5ms</b> or faster shutter. The light source should have half life time of 1500hrs  <b>We need faster shutter speed for calcium imaging.</b>
13	<b>Camera:</b> High sensitive Cooled CCD camera with above 70% QE, 50fps at full resolution or faster, 2.8MP or better resolution in both Color and Monochrome, USB-3 connectivity. Along with 0.5x~0.7x C-Mount adapter.	<b>Camera:</b> High sensitive Cooled CCD camera or <b>S-CMOS</b> with above 70% QE, 50fps at full resolution or faster, 2.8MP or better resolution in both Color and Monochrome, USB-3 connectivity. Along with 0.5x~0.7x C-Mount adapter.

16	All Microscope components, Fast filter wheel, Camera, XY Stage, fluorescence filters and Software should be from single manufacturer.	All Microscope components, Fast filter wheel, Camera, XY Stage and Software except fluorescence filters should be supplied from single supplier. Or if required Fast filter wheel and S-CMOS camera to be supplied for better integration and controlled by system software.
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All other specifications and terms and conditions of the aforementioned tender remain unaltered.

**F. No. RCB/ATN/09/17-18 : 200 KV CRYO-TEM with detector and other important accessories**

For the Electron Microscopy Facility of the Advanced Technology Platform Centre, bids are invited for Transmission Electron Microscopy platforms for conventional TEM, Single Particle Analysis and 3D Tomography at ambient and cryogenic temperatures. The same vendor can quote different configurations and more than one microscope, if required, to achieve the required workflows.

The Criteria for evaluation of the technical bid/performance of contractors for pre-eligibility are as follows

No	Attributes	Marks & Evaluation
1.	<p>Electron Microscope</p> <p>a. Electron Source: Field Emission Gun with Schottky field emitter</p> <p>b. Voltage: Acceleration voltage should be 80 KV- 200 KV (variable either in steps or continuously)</p> <p>c. Resolution: The information limit should be 0.27 nm or better.</p> <p>d. Specimen chamber: Eucentric Goniometer fully motorized stage with all 4 axis (XYZ<math>\alpha</math>) with accurate specimen position recall and retrieve facility. Specimen tilt angle at least <math>\pm 70</math> deg. X-Y movement: <math>\geq \pm 1</math> mm, motor driven (manual or computer controlled with specimen position recall facility) and Z movement <math>\geq \pm 0.3</math> mm, motor driven for specimen height adjustment. Specimen stage area should have long-term cryo stability.</p> <p>e. Lens System: Highest Magnification possible should be 450000X or higher. Four stage lens system is preferred and all apertures must be motorized. The lens system should provide distortion and rotation free images and the spherical aberration of objective lens should be 2.7 mm or lower. Cryo Pole piece</p>	30



	<p>should be provided and the pole piece gap should be 7 mm or larger</p> <p>f. In column or post-column Energy filter should be provided to enable recording of energy-filtered images.</p> <p>g. Multiple Specimen Holder should be available. Automatic system that enables loading of multiple samples with minimal breaks in vacuum is preferable. Single-tilt, Cryo-transfer and Tomography Holders should be provided with the system, as required. All accessories for operation in cryo- as well as ambient temperature should be provided and switching between the two temperature conditions of operation should be simple and fast.</p> <p>h. Imaging &amp; Operation: The TEM should operate in the following modes- bright field, dark field, atomic resolution imaging and low dose/minimum dose.</p> <p>i. Vacuum System: Fully automatic differential oil free pumping system preferentially with turbo molecular and ion pumps. Clean ultrahigh dry differential pumping system. The system should have sufficient number of Oil-free Ion Getter Pumps/Sputter Ion Pumps for Column, Gun and Specimen chamber. Suitable vacuum pump for Camera Section should be provided. Fully automatic sequential control for operation of vacuum pumps. Built-in automatic control of bake-out system. FEG gun area vacuum should have pressure <math>\leq 10^{-6}</math> Pa and TEM column area vacuum should be <math>\leq 10^{-4}</math> Pa. Pumping time from start to ultimate vacuum should be less than 60 minutes. Vacuum recovery time after specimen exchange should be less than 10 minutes.</p> <p>j. The system should preferably be in an enclosure and protected from interference by an outer shell and remote operation of the microscope should be possible.</p> <p>k. The system should preferably be equipped with a phase plate.</p>	
2.	<p>Detector</p> <p>High Resolution retractable CMOS camera of minimum 4k x 4k pixel (16M pixel) full frame CCD with near 100 % fill factor. Camera Length for Diffraction should be at least <math>\leq 80</math> mm to <math>\geq 2000</math> mm. High Speed Camera Link Digital Interface for camera data transfer and control. Camera should be usable at 20-200kv. Should have CMOS sensor with built-in shutter. Sensor active area should be <math>\geq 3500</math> mm<sup>2</sup>, and pixel size at least 12 <math>\mu</math>m. It should be possible to do in-line data processing with real time drift correction at 25 fps. Real-time FFT with spatial and temporal filtering. User-friendly software integrated with TEM system software along with measurement and diffraction analysis package as standard feature.</p> <p>OR</p> <p>Direct detection camera having the following minimum specs with DQE of 0.25 at 1/2 Nyquist or higher, Physical pixel size of 14<math>\mu</math>m or lower and Radiation hardened back-thinned sensor with sensor lifetime of at least 500million e/pix. Complete software for all camera</p>	25

	<p>functions, low dose readout and low dose automated data acquisition. The magnification relative to film 1.3-1.5X. Automated magnification calibration and adequate safety measures for camera should be available.</p> <p>OR</p> <p>Both (1) &amp; (2) with automatic capacity to exchange the cameras.</p>	
3.	<p><b>Computational Infrastructure for recording, storage and analysis:</b>  Adequate computational infrastructure for data recording and storage along with all required accessories should be provided with the system. Software to operate the system, record data, store data and for analysis should be provided. Separate computer should be provided for offline data analysis. High Speed storage appliance with capacity of more than 600 TB is preferred. Overall, the computational infrastructure provided should allow smooth operation of the system and analysis of the recorded data. Appropriate Software for automated and manual operation, automated and manual data collection and downstream data analysis for all applications (including single particle and tomography reconstruction) should be provided.</p>	5
3.	<p><b>Vitrification Device</b>  Vitrification system capable of blotting followed by rapid cooling of aqueous samples. The blotting should occur on both sides of the grid at the same time to allow even spreading/drying of the sample. Operational parameters should be reproducible and device should allow vitrification with high throughput with an easy and straightforward control of the vitrification process. It should be possible to control different parameters associated with the environment of the chamber and the blotting &amp; plunging process.</p>	10
4.	<p><b>Cryo Ultra microtome with accessories</b></p> <p>Built in Anti vibration system, Stereomicroscope with at least 50X magnification, at least three different controllable LED light sources should be provided to enable different types of illumination, Motorized and controlled knife stage. Cutting window, cutting speed should be controllable. Dual knife holder with capacity to hold glass and diamond knives should be present. The system should be ergonomic and enable comfortable operation with adequate safety features. Touch screen or PC-based controller should be provided for operation of the Ultramicrotome and cryo chamber. It should be possible to recall stored settings from memory for user operation.</p> <p>Cryo attachment should enable operation at both ambient and cryogenic temperature and rapid cooling and warming should be possible. Efficient LN2 delivery system with indicator and low-level warning should be provided with the system.</p>	5

	<p>Glass knife maker should be provided with the system and should be able to cut best quality glass knives. Diamond knife and trimmer should be provided.</p> <p>All Accessories should be provided with the system, Adequate consumables for sectioning and knife maker should be provided.</p> <p>The vendor should provide proper installation and demonstration. Intensive training should be provided to enable independent and precise operation by users to generate sections of biological samples with desired thickness at ambient and cryogenic temperature.</p>	
4.	<p><b>Glow Discharge Unit</b> The Glow Discharge Unit should allow hydrophobic/hydrophilic conversion and hydrophilic /hydrophobic conversions of grids. The design of the unit should allow safe operation with appropriate safety interlocks along with easy-to-use user interface. A glow discharge unit combined with coater (for carbon as well as heavy metal coating) is preferred.</p>	5
5.	<p><b>Accessories</b> 1. Chiller, Compressor, UPS of adequate capacity to ensure smooth and noiseless operation of all components should be provided. 2. Adequate Consumables, spares and tools should be provided. 3. Plasma cleaner for cleaning cryo-holders, cryo transfer station, cold stage controller, dry pumping stations and all cryo-tools etc. for holders should be provided.</p>	5
6.	<p><b>Miscellaneous</b> 1. User Experience in terms of research publications using quoted or identical configurations 2. Number of installations of similar configuration in India or abroad.</p>	5
7.	<p><b>Warranty, AMC &amp; Post-Installation Support.</b> Should include one FEG source to be provided as and when required within the warranty period and provision for adequate spare parts such as apertures etc.</p>	10

### Evaluation

(i) Technical Bid evaluations: A Minimum of 80% out of total of 100 marks required in the technical bid to qualify for price bid. The weightage for technical part of tender will be 75 % and price bid will be given a weightage of 25%. (ii) Financial bid evaluation: - The bidder quoting lowest rate will be awarded full points out of 25. Others will be awarded pro-rata.

All other specifications and terms and conditions of the aforementioned tender remain unaltered.