



भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान तिरुपति

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH TIRUPATI

(An Autonomous Institute under Ministry of Education, Govt. of India)

Transit Campus: Sree Rama Engineering College Campus, Karakambadi Road,
Mangalam B.O., Tirupati – 517 507, Andhra Pradesh, India.

Website: <http://www.iisertirupati.ac.in/>

CLARIFICATION ON TENDER NUMBER: IISERT/PUR/0240/21

ITEM DESCRIPTION- SUPPLY, INSTALLATION AND COMMISSIONING OF CONFOCAL LASER SCANNING MICROSCOPE SYSTEM

REFER OUR TENDER NO: IISERT/PUR/0240/21, DATED:17/09/2021 FOR SUPPLY, INSTALLATION AND COMMISSIONING OF CONFOCAL LASER SCANNING MICROSCOPE SYSTEM.

Pre-Bid meeting was held on September 23rd, 2021 at 16:00 Via Google Meet and minutes of meeting is as under.

At the outset, the Chairman welcomed all the Members and the representative of the Prospective Bidders briefed in general the scope of the Project and thereafter requested Assistant Registrar (S&P) to brief the vendors on the salient features of the commercial terms and the indenting Officer to read out the clarification sought by the Prospective Bidders and replied thereto as detailed in **Annexure -II**

The representatives present were satisfied with the replies given and it was informed that the corrections / additions / clarifications given, as discussed during the Pre-Bid Conference would be hosted on the website of IISER Tirupati and all the Prospective Bidders are required to take cognizance of the proceedings of the Pre-Bid Conference before submitting their bids as stipulated in the Bidding Documents.

The other terms & conditions of the notice issued on our IISER website <http://www.iisertirupati.ac.in/> will remain unchanged. No more correspondence in this regard will be entertained

The meeting ended with vote of thanks to the Chair

04/10/2021

Sd/-
Assistant Registrar (S&P)



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Annexure II

PRE-BID CONFERENCE FOR SUPPLY, INSTALLATION AND COMMISSIONING OF CONFOCAL LASER SCANNING MICROSCOPE SYSTEM

TECHNICAL QUERIES AND CLARIFICATION

TENDER NUMBER - IISERT/PUR/0240/21

DATE: 23/09/2021

Sr. No	Query/Clarification Sought	Clarification / Amendment
1	<p>Chapter 4, Page 24, Section I, point number 6</p> <p>Replace 120/130W metal halide or mercury lamp with a bright LED light source.</p>	<p>Chapter 4, Page 24, Section I, point number 6</p> <p>Amendment to include:</p> <p>In place of</p> <p>“120/130W metal halide or mercury lamp for fluorescence observation and imaging applications with 5 additional spare bulbs/burners. The light path should have a built-in motorized attenuator fast shutter for automated multi-channel time lapse in widefield imaging mode.”</p> <p>Please read as</p> <p>“ A bright LED light source with an ability to observe and image DAPI, FITC, TRITC and Cy5 and a lifetime of 20,000 Hrs and complete control by imaging software for attenuation, shutter and synchronized multi-channel widefield image acquisition by confocal software”</p>



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2	<p>Chapter 4, Page 24, Section I, point number 8</p> <p>a) One vendor request to include 2x objective</p> <p>b) The vendor also requested to include 40X 1.3 oil fluorite in place of High resolution Plan ApoChromat 40X 1.4 oil</p> <p>c) Another vendor requested NA of Plan Apo 1.3 instead of 1.4 in High resolution Plan ApoChromat 40X 1.4 oil objective</p> <p>d) All vendors suggested removal of 20X/0.7NA or better as it is redundant with 20X/0.8 NA</p> <p>e) One vendor asked to mention the chromatic correction of the objectives</p>	<p>Chapter 4, Page 24, Section I, point number 8</p> <p>a) Accepted to include 2x objective</p> <p>b) Rejected to include 40X 1.3 oil fluorite.</p> <p>Reason: Chromatic correction in fluorite objective is poor and fluorite objectives are not recommended for high resolution confocal imaging especially when using with far red color fluorochromes like Cy5, Cy7 or Alexa 646 or similar dyes for colocalization studies.</p> <p>c) Accepted to include Plan Apochromat NA 1.3 instead of 1.4 in High resolution Plan ApoChromat 40X 1.4 oil objective</p> <p>d) To be moved to optional. Correction made: Long working distance 20X 0.7 NA or better with correction collar for thick tissue imaging in plastic bottom dishes and 96 well plates.</p> <p>e) Accepted</p> <p>Amended Point# 8 will read as follows:</p> <p>High resolution Plan Apochromat confocal grade objectives 1x/1.25x/2x/2.5x, 10x/0.40, 20x/0.8 & 40x/1.30 oil or better; and Apochromatic objective 60/63x/1.40 oil immersion and Plan Apochromatic 100X 1.40 or better with Oil with complete DIC accessories for all objectives. A 25/30X/40X Long working distance (WD>0.8mm) Plan Apo chromatic multi-immersion/silicone immersion objective with correction collar for imaging thick tissues such as tissue section, multilayer cell cultures, Spheroids, organoids/embryos of drosophila/zebrafish/mouse.</p> <p>All the objectives should be chromatically corrected & capable of imaging from UV-NIR</p>
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		<p>imaging dyes. Include 500cc of fluorescence microscopy grade immersion oil (Non auto fluorescent)</p> <p>Optional item to quote: Long working distance 20X 0.7 NA or better with correction collar for thick tissue imaging in plastic bottom dishes and 96 well plates.</p>
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3	<p>Chapter 4, Page 24, Section I, point number 9</p> <p>One vendor asked to mention the wavelength range otherwise people may use red/640 nm laser for auto focus.</p>	<p>Chapter 4, Page 24, Section I, point number 9</p> <p>Accepted.</p> <p>Amended #9 will read as:</p> <p>Automated IR Laser or LED (>790nm) based dedicated focus drift control device to maintain the focus for long-term time lapse imaging & stitching experiments, suitable for both plastic and glass bottom dishes for multi-point and multi well imaging.</p>
4	<p>Chapter 4, Page 25, Section I, point number 10</p> <p>One vendor requested to mention as with M6 holes to firmly clamp the microscope on to the antivibration table</p>	<p>Chapter 4, Page 25, Section I, point number 10</p> <p>Please read #10 as:</p> <p>An active anti-vibration table with air damping through automatic air compressor & M6 holes for the complete microscope system.</p>



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5	<p>Chapter 4, Page 25, Section II title and point 1</p> <p>a) Two vendors requested to remove 'separate detector'</p> <p>b) One Vendor requested to include option for separate detector</p>	<p>Chapter 4, Page 25, Section II title and point 1</p> <p>a) Accepted</p> <p>b) Rejected</p> <p>Reason: It is a scientifically known phenomenon that light intensity/power is lost when passed through the optical fiber. Though the excitation lasers power is also lost when passed through the fiber, the laser source power can be increased through the AOTF to compensate for the loss (due to fiber). However, preserving the emission signal coming from the sample is crucial, especially during low light live cell imaging applications to avoid photo toxicity and photo bleaching. Hence the request is rejected keeping in mind the sensitivity requirement.</p> <p>Amended Section II Title: <u>Spectral Confocal Laser Scan head with built-in detectors</u></p> <p>No amendment to point #1</p>
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6	<p>Chapter 4, Page 25, Section II, point # 3</p> <p>a) A vendor requested to make it 3/4 high sensitive GaAsP/hyD detectors instead of 2 high sensitivity and 2 standard PMT detectors</p>	<p>Chapter 4, Page 25, Section II, point # 3</p> <p>a) Rejected</p> <p>Reason: With two High Sensitive SPECTRALLY TUNABLE GaAsP detectors, one can easily perform 2 colour simultaneous imaging of any desired color combinations and more than 4 colour of any combination sequentially. Hence there is no need for a third/fourth GaAsP/HyD detector.</p> <p>However, noting the suggestion, a following point will be appended to point#3.</p> <p>All the spectral detectors should essentially be tunable to any spectral bandwidth/colour (5nm-100nm) and capable of imaging any color in any selected order sequentially. Appropriate beams splitters for simultaneous imaging with 405/488/561 lasers (BFP/GFP/RFP) & 405/488/594 lasers (BFP/GFP/mCherry) should be offered.</p>
7	<p>Chapter 4, Page 25, Section II, point # 6</p> <p>A vendor requested to specify spectral range for detectors.</p>	<p>Chapter 4, Page 25, Section II, point # 6</p> <p>Accepted.</p> <p>The following sentence is appended to Section II, point # 6</p> <p>All the detectors should have spectral range from 400-750 nm</p>



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8	<p>Chapter 4, Page 25, Section II, point # 7</p> <p>A vendor requested to specify spectral unmixing</p>	<p>Chapter 4, Page 25, Section II, point # 7</p> <p>Accepted</p> <p>Please read #7 as:</p> <p>System should be capable of ONLINE separation and display of over-lapping emission signals through emission finger printing/Spectral unmixing technique.</p>
9	<p>Chapter 4, Page 25, Section II, point # 9</p> <p>A vendor requested to remove 'real' from real ROI</p>	<p>Chapter 4, Page 25, Section II, point # 9</p> <p>Accepted.</p> <p>Amended #9 reads as:</p> <p>The laser scanner should have dual scan capability of ROI scan for bleaching/photo-activation & normal scan for Imaging, to conduct experiments like FRAP, FLIP, photo activation, photo-conversion and photo-bleaching.</p>
10	<p>Chapter 4, Page 25, Section II, point # 12</p> <p>A vendor requested to clearly mention real speed or false speed.</p>	<p>Chapter 4, Page 25, Section II, point # 12</p> <p>Rejected as desired speed and FOV already mentioned. No changes required</p>



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11	<p>Chapter 4, Page 25, Section II, point # 14</p> <p>a) A vendor requested to typo correction from 'equipped to be upgradable' to 'to be upgradable'</p> <p>b) Two vendors suggested to specify that 'up gradation should be on site'</p>	<p>Chapter 4, Page 25, Section II, point # 14</p> <p>a) Accepted</p> <p>b) It is not crucial and therefore, rejected.</p> <p>Amended point # 14 reads as:</p> <p>Hardware should be upgradable to FLIM & Polarization anisotropy module (for future upgradation).</p>
	<p>Chapter 4, Page 26, Section III</p> <p>a) Two vendors asked to remove 594 nm laser and include 561 nm laser instead.</p> <p>b) Third vendor asked to remove 514 instead of 594 nm as suggested above</p> <p>c) 4th vendor asked to move 445nm laser from the optional item to main specification</p> <p>d) One vendor says no AOTF available for 405 nm laser with them and hence, this specification should be removed. Instead, an option to quote DMOD could be specified.</p>	<p>Chapter 4, Page 26, Section III</p> <p>a), b) and c) suggestions all are rejected.</p> <p>The choice of lasers has been based on our requirements and no need to make any changes.</p> <p>d)Rejected.</p> <p>The AOTF control is essential for all the lasers for precise blanking of lasers during ROI bleaching and photo conversion and photo manipulation experiments. DMOD is Direct modulation, an electronic modulation of lasers. The data available from the specification sheet of the vendor in question shows that the Single channel AOTF control for 405 is available. Hence the request is rejected.</p>



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<p>Chapter 4, Page 26, Section IV</p> <p>a) A vendor asked to mention 4GB DDR RAM NVIDIA QUADRO</p> <p>b) Another vendor asked that 128GB RAM be specified as Branded RAM and the computer should be factory supplied.</p>	<p>Chapter 4, Page 26, Section IV</p> <p>a) This is considered.</p> <p>b) This is considered.</p> <p>Amended Section IV Reads as:</p> <p>Latest control computer with latest Intel Xeon processor with latest Windows operating system. MS Windows 7 x64 / Windows 10 x64 bit, RAM: 128 GB Branded RAM from the computer manufacturer/reputed manufacturer. The computer should be branded, factory tested model & recommended configuration for seamless image acquisition, 3D volume rendering and 3D deconvolution.</p> <p>3.4 GHz CPUs (Intel) total 8 core</p> <p>Latest DDR RAM, HDD: 2TB hard drive ATI FireGL V5600 4GB, Gigabit Ethernet, USB 3.0 ports and DVD RW drive Large 32" LED monitor 512 GB SSD for direct hard drive writing. Dedicated graphics card with 4GB DDR RAM NVIDIA QUADRO or tested and compatible with imaging software, for seamless 3D time lapse video display and navigation.</p>
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<p>Chapter 4, Page 26, Section V, Prefacing Statement above point#1</p> <p>A vendor requested to specify that “All the motorized part of the microscope, confocal and camera should be controlled by the confocal software for both confocal and widefield imaging.”</p>	<p>Chapter 4, Page 26, Section V, Prefacing Statement above point #1</p> <p>Accepted</p> <p>Following sentence is appended to the prefacing statement:</p> <p>Both confocal and camera based module should be completely controlled by the imaging software and capable of multi-dimensional image acquisition including XYZ multi-channel and multi point /multi well imaging with IR laser based autofocus module</p>
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<p>Chapter 4, Page 27, Section V, point #6</p> <p>A vendor asked to Specify XY and Z colocalization</p>	<p>Chapter 4, Page 27, Section V, point #6</p> <p>Accepted.</p> <p>Amended #6 reads as:</p> <p>Co-localization (XY and Z/each stack in real time) and histogram analysis with individual parameters, FRET (ratio, Ca ion & Physiology Imaging, acceptor photobleaching & sensitized emission) FRAP (real time ratio image and line profile) acquisition and analysis Online spectral deconvolution. Colocalization analysis, kymograph, high dynamic range imaging, Basic Measurements, 2D analysis 3rd party SCMOS camera control, experiment designer or sequence manager or equivalent to build flexible image acquisition settings. The output data of the analysis should be exportable in EXCEL format for further analysis and graphical representation by the users.</p>
<p>Chapter 4, Page 27, Section V, point #9</p> <p>A vendor asked to Specify as online or make it uniform</p>	<p>Chapter 4, Page 27, Section V, point #9</p> <p>Rejected as some companies have online while others have offline</p>
<p>Chapter 4, Page 27, Section VI, Accessories</p> <p>A vendor suggested to change Peak QE : 80% to 95%</p>	<p>Chapter 4, Page 26, Section VI, Accessories</p> <p>Rejected as the cost of 95% QE may go beyond the allocated budget and is not required for the current application</p>



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		which is mainly meant for confocal imaging.
Chapter 4, Page 27, Section VI, Accessories A vendor suggested to change resolution from >5MP to >4MP	Chapter 4, Page 27, Section VI, Accessories Rejected. The required camera is of resolution >5MP	
Chapter 4, Page 27, Optional #1 A vendor suggested that camera should be controlled by Confocal software	Chapter 4, Page 27, Optional #1 Accepted: Following sentence is appended to Optional #1 The camera should be controlled by confocal software as well as open source software like micro manager to be used by any motorized microscope.	



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Annexure: III

PRE-BID CONFERENCE FOR SUPPLY, INSTALLATION AND COMMISSIONING OF CONFOCAL LASER SCANNING MICROSCOPE SYSTEM

COMMERCIAL QUERIES AND CLARIFICATION

TENDER NUMBER - IISERT/PUR/0240/21

DATE: 23/09/2021

Sr. No	Query/Clarification Sought	Clarification / Amendment
	NIL	NIL