भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान तिरुपति
INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH TIRUPATI
Transit campus: Sree Rama Engineering College Campus, Rami Reddy Nagar,
Karakambadi Road, Mangalam (B.O), Tirupati - 517 507
Website: http://www.iisertirupati.ac.in

CLARIFICATION ON TENDER NUMBER: IISERT/PUR/0390/21

ITEM DESCRIPTION- SUPPLY, INSTALLATION, AND COMMISSIONING OF FULLY MOTORIZED INVERTED FLUORESCENCE LIVE-CELL IMAGING WORKSTATION WITH IMAGE ANALYSIS SOFTWARE

REFER OUR TENDER NO: IISERT/PUR/0390/21, DATED:25/03/2022 FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF FULLY MOTORIZED INVERTED FLUORESCENCE LIVE-CELL IMAGING WORKSTATION WITH IMAGE ANALYSIS SOFTWARE.

The Pre-Bid meeting was held on Apr 01st, 2022 at 16:30 Via Google Meet, and the minutes of the meeting are as under.

At the outset, the Chairman welcomed all the Members and the representative of the Prospective Bidders briefed in general on the scope of the Project and thereafter requested Deputy Registrar (A&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 a vote of thanks to the Chair

Sd/-
Deputy Registrar (A&P)

08.04.2022

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Annexure-II

PRE-BID CONFERENCE FOR SUPPLY, INSTALLATION, AND COMMISSIONING OF FULLY MOTORIZED INVERTED FLUORESCENCE LIVE CELL IMAGING WORKSTATION WITH IMAGE ANALYSIS SOFTWARE

TECHNICAL QUERIES AND CLARIFICATION

TENDER NUMBER - IISERT/PUR/0390/21 **DATE: 01/04/2022**

Sr. No	Query/Clarification Sought	Clarification / Amendment
1	**Chapter 4, Page no-34** **Objectives: Point #1** Vendor asked clarification whether 40X oil immersion objective NA 1.4 or 40X 0.95 with correction collar is better for live imaging of thick specimen.	**Chapter 4, Page no-34** Yes, we agree with this point the 40X 0.95 with correction collar will be more suitable. The amended specification for the Objectives section, point #1 reads as **Objectives:** High performance, Objectives suitable for Brightfield/Phase Contrast Fluorescence Observation Plan Apochromatic 10X,DIC 20X,DIC & 40X NA 0.95 or better, DIC with correction collar
2	**Chapter 4, Page no-35,** **Fluorescence module:** **1.** The vendor sought clarification about the purpose of the single band clean-up/excitation filter for the quadband filter where the DM and EM are desired as multiband but excitation/clean up filter is desired as single band separate filters for DAPI/FITC/TRITC/Cy5. Quad band is required generally for fast sequential imaging with minimum temporal delay or for simultaneous imaging. In that case,	**Chapter 4, Page no-35** **Fluorescence module:** Clarification: For our applications, the LED needs to be cleaned to narrow band using appropriate narrow band pass filters. We wish to purchase the light source, which comes with slots to insert single band pass excitation filters in front of each LED. Since it comes with the slots, there is no need for an excitation filter wheel in front of the LED light source.

	the quad band should have multi-band EX/DM/EM. The advantage of this complete quad band filter cube (multi-band EX/DM/EM) is that the filter cube can be kept stationary inside microscope and LED can be switched for different wavelength for fast sequential multichannel imaging. The reason is that for pE-4000 the LED switching speed is in microseconds where as filter switching will need time in milliseconds, much slower. For the similar reason, if you want to add the lED switching with external filter wheel fitted with narrow band emission filters the temporal delay will be more for multichannel imaging as the switching of one filter to another in the filter wheel will be in milliseconds whereas LED wavelength switching will be in microseconds. In case you feel there might be a bleed through problem, then only narrow band filters with emission filter wheel will be useful in combination with LED switching but at the cost of speed. But in any case the clean-up/excitation filters will not be required for quad band filter. So, our request is that you amend the specification and remove the clean-up filters and include complete quad band filter with multi-band EX/DM/EM suitable for DAPI/FITC/TRITC/Cy5.	The wavelength switching time in LED Light source entirely depends on the LED switching time. With this set up the filter cube with quad band DM and quad Band Emission filter can still be mounted on an the empty stationary filter cube for multi colour fastest imaging. The quad band pass emission filter is known to produce emission bleed through. To avoid this, we require an emission filter wheel with single bandpass emission filters, which are synchronised with the excitation. Here, we understand that the switching time depends on switching time of emission filters. However, this is required for performing fast Ca Imaging /ratio imaging and FRET (single excitation and dual emission). Taking the point into consideration, we are requesting the emission filter wheel with single bandpass emission filters as optional item. <u>The amended specification</u> under Fluorescence module section should be read as **Fluorescence Module:** 6 to 8 position Motorised turret filter block with narrow bandpass notch filters for i) DAPI, ii) GFP, iii) RFP/DsRed, and iv) Cy5 v) polarizer/analyzer cube for DIC. An additional quad band DM & Emission filter (DAPI/FITC/TRIT/Cy5) with independent single band pass excitation/clean up filter for DAPI, FITC, TRITC and Cy5 should be offered. **<u>Optional item:</u>**

		Quote as optional item, a fast emission filter wheel & narrow band pass emission filters for DAPI, FITC, TRITC and Cy5 to be mounted on the emission filter wheel, for synchronized switching between the chosen excitation light from the LED and fast shutter for fast ratio imaging.
3	**Chapter 4, Page no-35** **Camera:** Vendor asked clarification whether the camera resolution Camera 2304 X 2048 should be with or without ROI.	**Chapter 4, Page no-35** **Camera:** Including the clarification, the amended specification reads as **Camera:** 2304 x 2304 (5.3 Megapixels) High speed : 100 frames/s at 2304 X 2048 with ROI and >85 frames/s with full resolution without ROI. Dynamic range : 21,400:1, Pixel size : 6.5 µm X 6.5 µm Read noise : 0.7 electrons, rmsPeak QE : 80 %, Forced-air cooled: -5 ˚C (Ambient temperature: +25 ˚C) & Water cooled: -5 ˚C to -15 ˚C . The camera should be controlled by the microscope software and support two channel split imaging mode for two channel simultaneous imaging for ratio, FRET imaging. The camera should have good sensitivity at far red (700-800nm) region 60-70%. The camera should be suitable for fast live cell imaging and TIRF and Light Sheet illumination imaging capabilities for future upgradation.
4	**Chapter 4, Page no-36** **Image analysis:** Please amend the graphics card with higher memory like 16GB and mention the model	**Chapter 4, Page no-36** **Image analysis:** The high-end graphic card will be useful in an offline image analysis work station and

	name like Nvidia Quadro RTX4000 or similar. Recent trend is that the software processing for high end analysis, deconvolution and artificial intelligence (AI) based functionality, all are performed through graphics card (GPU processing) and that's why, it requires a high end graphics card.	is not required in the specified system meant for image acquisition. However, in order to allow offline analysis, we *amend the specification* to include the following point under this section. An additional licence similar to the main licence for all the modules of image processing and Image analysis, including 3D deconvolution module, must be supplied for offline analysis.
5	**Chapter 4, Page no-36** **Onstage CO_2 Incubator:** Should the on-stage incubator support imaging using multi-well dishes?	**Chapter 4, Page no-36** **Onstage CO_2 Incubator:** Clarification: Yes, the on stage Incubator should support multi-well imaging

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Annexure: III

PRE-BID CONFERENCE FOR INSTALLATION AND COMMISSIONING OF FULLY MOTORIZED INVERTED FLUORESCENCE LIVE-CELL IMAGING WORKSTATION WITH IMAGE ANALYSIS SOFTWARE

COMMERCIAL QUERIES AND CLARIFICATION

TENDER NUMBER - IISERT/PUR/0390/21 **DATE: 01/04/2022**

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