

Minutes of Pre-Bid Conference (PBC) held on 20.12.2019 for proposed procurement of Stimulated Emission Depletion (STED) based Super Resolution Microscope System "- 01 No.

As scheduled (PBC) has been conducted on 20.12.2019 for proposed procurement of "**Stimulated Emission Depletion (STED) based Super Resolution Microscope System**".

Chairpersons / Members of the Technical Sub Committee (TSC) present during PBC including domain experts present during PBC -

1. Dr. Sankarnarayan, Chairperson
2. Dr K Thangraj, Member
3. Dr A B Patel, Member
4. Dr P Chandra Shekhar, Member
5. Smt. Asha Ramesh
6. Dr B Raman, Member
7. IO/PL Dr.P Chandra Shekar
8. Domain Expert – Dr. Puran Singh Sijwali
9. Domain Expert – Dr. Nandini Rangarajan
10. Domain Expert – Dr. Sonal Nagarkar Jaiswal
11. Domain Expert – Dr. Pavitra L Chavali
12. Domain Expert – Dr. Jyotsna Dhawan
13. Domain Expert – Mr. Ravindra Chakravarthi

Members of TSC who could not attend

- ~~1. Member - Dr A B Patel~~
1. Domain Expert- Dr. Puran Singh Sijwali
2. Domain Expert- Dr. Jyotsna Dhawan

Representatives of the following two firms attended the PBC :

Sl. No.	Name of the Firm (M/s.)	Name of Representative
1. M/s.	DSS image tech	Mr. Srikanth
2. M/s.	Leica Microsystems	Mr. Sujoy Dey

A. Srikanth
Sujoy (SUJOY DEY)

[Handwritten signatures and initials]

N R Chavali

Markin-k

Komg

Anant Palu

The following points were discussed during the PBC:

Query raised by M/s DSS Image Tech

S. no	Tender Specifications	Amendments requested
2	Lasers for excitation: 405nm, Vis laser: 488nm, 560nm, 594nm, 640nm, 670nm Lasers or Tunable White light laser with 470nm to 670nm.	why 670 laser is required Is there a dye which cannot excite with 640 nm?
4	Gated STEDsetup	for "Pulsed STED: pulsed excitation & pulsed depletion plus gating"
8	Detectors: New generation 2detectors like HyD / GaAsP/APD with spectral detection and gating control for super resolution Imaging and two more PMT's/HyD / GaAsP / APD's.	Abberior has all APD detectors with Spectral detection. Detector quantum efficiency above 65 % at 650 nm.
10	Fully-Motorized Inverted Fluorescence & DIC Microscope for BF/DIC/FL with TFT display for full control of microscope. Motorized XY Scanning stage with universal samples holders for slides, petri-dish, chamber cover glass etc... motorized BF/PH/DIC condenser and motorized FL turret. High - precision z-focus drive with step resolution of 10nm or better. Hardware based focus drift compensation mechanism to maintain specified focus position , Transmitted and reflected light illumination with LED and 120W metal halide with PC control and long lifetime of 2000 hours.	Yes Abberior has Laser autofocus compatible for all STED lasers & confocal.
12	The system should be able to carry out 4or more colors simultaneous imaging with tunable spectral detectors. The point scanning Confocal unit should be completely motorized with 2 highsensitivity spectral detectors (HyD or GaAsPs or APD) and 2 more PMT's/HyD or GaAsPs or APD's. Detection with independent gain controls for all channels . All the FL detectors of the scan head should be in spectral mode with freely selectable emission band width detection capability.	Request to remove Gain Control, which does not exist for APD's
16	Scanner: Filter free detection unit with scan speed of ≥ 7 fps @ 512x512 pixels in spectral mode for at least 4 channels simultaneously. The scan field diagonal should be FOV 18mm or more. Laser intensity adjustment with AOTF control.	Abberior has gradient filters, please remove „filter-free"! Better "spectral detection", Scan Speed: 4 f/ps or better, Scan field of view: at least 11 or better.
17	Remote control setup with dials for adjusting focus, PMT gain , offset etc...	PMT gain". APDs don't have a gain, but they are much more sensitive!
20	20. Control software for Confocal and STED imaging should be capable of controlling all motorized functions of microscope, scan head, lasers, image acquisition & Processing. Image acquisition for 3D, 4D, in-line spectral imaging and unmixing, co-localization. Live cell imaging control for multi-time series, Advanced software for 3D Deconvolution, 3D reconstruction,	Yes, For advanced image analysis Abberior offer SVI software package. Could you please clarify if the CCMB needs SVI Huygens on both workstation PC and image analysis







	3D volume rendering and processing of 3D data having features: measurements like length, areas, angles etc, Transparent, Maximum Intensity and Depth Coding, shadow projection, clipping, Orthogonal Sectioning and Annotation tool to add comments to 3D volume, cell count. Co-localization with histogram analysis, intensity profiles for quantification etc., multi-export formats for data output. Saving of all system parameters with the image for repeatable/reproducible imaging.	PC? Or just on the analysis PC? can offer two licences but this will add up the cost.
21	Offline software licence with full software analysis capabilities as of main system and necessary high end workstation for fast high end image analysis with a 64 GB RAM, 38 inch digital LED monitor etc...	Yes, Please clarify if the CCMB needs SVI Huygens on the OFFLINE analysis PC?

Query raised by M/s Leica Micro Systems

S. no	Tender specifications	Amendments requested
	The system should include multichannel fluorescence imaging, Z-stack, co-localization, time- lapse imaging etc....	Our request is to incorporate aberration free thick sample imaging using Z stack imaging for sample thickness 80 micron or more with necessary optics.
	The system should include multichannel fluorescence imaging, Z-stack, co-localization, time- lapse imaging etc....	Our request is to incorporate Live Cell incubation set up with Co2, Humidity and temperature control. All parameters to be controlled through Software.
2	Lasers for excitation: 405nm, Vis laser: 488nm, 560nm, 594nm, 640nm, 670nm Lasers or Tunable White light laser with 470nm to 670nm	Our request is to incorporate the missing laser lines 445/ 456nm for CFP and 514/520 nm for YFP.
	Lasers for excitation: 405nm, Vis laser: 488nm, 560nm, 594nm, 640nm, 670nm Lasers or Tunable White light laser with 470nm to	Our request is to mention pulsed lasers for all visible lasers from 470/488 to 670 nm.
4	Gated STED	Our request is to incorporate in Gated STED that the detector gate should be tuneable from 0.5ns or shorter time. In absense of 0.5ns or sharter time alternate technology of reducing the light dosage on sample should be offered.
5	Motorized XY Scanning stage with universal samples holders for slides, petri-dish, chamber cover glass etc..	Our request is to incorporate the Peizo/Galvo stage with high precision Z focusing , in addition to motorized scanning stage, for high precision 3D STED imaging.



 N.R. Chandra Nandini A. Sankar Anand Babu

Points clarified by CCMB Team during PBC –

The above points were discussed in the presence of all the participating bidders and the following clarifications were provided:

1. **In the applications points:** STED based Super resolution system for all types of samples like fixed as well as live cells, virus, tissues, zebra fish, drosophila, plant samples etc... for aberration free Z stack imaging of samples with thickness from 50 to 100 microns.

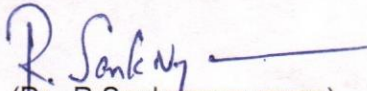
To incorporate **Live Cell incubation set up with Co2, Humidity and temperature control. All parameters to be controlled through Software. Not required.**

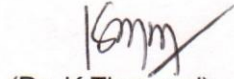
2. Point no:2- TO incorporate the missing **laser lines 445/ 456nm for CFP and 514/520 nm for YFP. Not required.**
3. To remove 670nm laser—Accepted
4. Point no:2- Pulsed lasers for all Visible lasers Accepted
5. Point no:4: With Pulsed excitation and pulsed depletion lasers with gating.
Facility to reduce light dosage on sample to avoid photo bleaching.
6. Point no:10- Motorized XY Scanning stage with **Peizo/Galvo stage for high precision Z focusing and 3D STED imaging with** universal samples holders for slides, petri-dish 35mm & 60mm, chamber cover glass etc..
7. Point no:12—request to remove gain control- Accepted
 1. Point no:16—Request to remove "Filter free", Scan speed ≥ 4 fps @ 512x512 pixels—Accepted. Scan field of view 11 or better((*This change requested by M/s DSS image tech is agreed by CCMB Subject to condition that bidder provides demo and same is accepted by CCMB after satisfactory DEMO.)
 8. Point no:17—To remove Gain and offset. Accepted.
 9. Point no:20—High end image analysis software on both systems (main and offline) is required?—Yes, it is required on Both systems.

Both the participating firms informed that they do not have problem with other points of tendered specifications and requirements. Participating bidders have been informed that points raised by them during PBC will be examined by CCMB's **Technical Sub Committee (TSC)** constituted for the purpose of procurement of said equipment and **post PBC changes** in tendered specifications and requirements to be agreed after due consideration of the same by TSC, if any, will be uploaded in **CPPP** as part of **revised/amended** tendered specifications.




Reply/ changes to the Points discussed during PBC with changes agreed (if any) will be uploaded in due course at **CPPP** for information and reference of prospective bidders on or before **24.12.2019 (17.00 Hrs.)**. All bidders are requested kindly to take a **note of changes** in tendered specifications subsequent to PBC held today i.e. **20.12.2019** before they start submitting their online bids through **CPPP**.


(Dr. R Sankar Narayanan)



(Dr. K Thangraj)


(Dr. A B Patel)


(Smt. Asha Ramesh)



(Dr Chandra Shekhar)

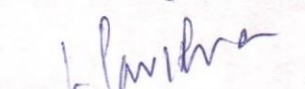

(Dr Raman)


(Dr. Jyotsna Dhawan)


(Dr. Puran Singh Sijwali)



(Dr. Nandini Rangarajan)

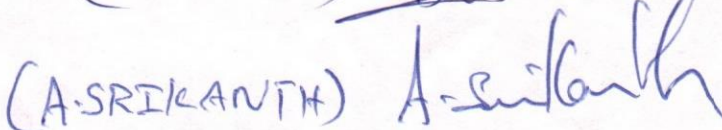

(Dr. Sonal Nagarkar Jaiswal)


(Dr. Pavithra L Chavali)


(Mr. Ravindra Chakravarthi)

Participating Bidders Representatives (Firm Name and Signature of representative participating in the PBC)-

M/s. Leica Microsystems  (SUJOY DEB)

M/s. DSS image tech  (A.SRIKANTH)

