भारतीय विज्ञान शिक्षा और अनुसंधान संस्थान पुणे
INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH PUNE

निविदा संख्या पर प्रीबिड स्पष्टीकरण- आईआईएसईआर/ पी यू आर/2176/22
PREBID CLARIFICATION ON TENDER NUMBER – IISER/PUR/2176/22

वस्तु विवरण- फोटॉन काउंटिंग डिटेक्टरों और समय-सहसंबद्ध सिंगल फोटॉन काउंटिंग मॉड्यूल की खरीद

Item Description- Procurement of Photon Counting Detectors & Time-Correlated Single Photon Counting module

फोटॉन काउंटिंग डिटेक्टरों और समय-सहसंबद्ध सिंगल फोटॉन काउंटिंग मॉड्यूल की खरीद के लिए 15/02/2023 को संस्थान की वेबसाइट www.iiserpune.ac.in और सीपीपी पोर्टल पर प्रकाशित खुली निविदा देखें।

Refer an open tender published on Institute website www.iiserpune.ac.in and on CPP Portal on **15/02/2023** for procurement of Photon Counting Detectors & Time-Correlated Single Photon Counting module.

प्री-बिड मीटिंग 22/02/2023 को अपराह्न 3.00 बजे आयोजित की गई और बैठक का कार्यवृत्त निम्नानुसार है:

Pre-Bid meeting was held on **22/02/2023** at **3.00 PM** and minutes of meeting is as under:

प्रारंभ में, समिति ने सभी सदस्यों और संभावित बोलीदाताओं के प्रतिनिधियों का स्वागत किया और सामान्य तौर पर निविदा के दायरे की जानकारी दी और उसके बाद सहायक कुलसचिव (भांडार अवं क्रय) से बोली लगाने वालों को निविदा की मुख्य विशेषताओं के बारे में जानकारी देने का अनुरोध किया।

At the outset, the committee welcomed all the Members and the representative of the Prospective Bidders and briefed in general the scope of the tender and thereafter requested Assistant Registrar (S&P) to brief the bidders on the salient features of the tender.

उपस्थित प्रतिनिधि दिए गए उत्तरों से संतुष्ट थे और यह सूचित किया गया था कि प्रीबिड कॉन्फ्रेंस के दौरान की गई चर्चा के अनुसार दिए - स्पष्टीकरण को / परिवर्धन / गए सुधारIISER पुणे की वेबसाइट पर होस्ट किया जाएगा और सभी संभावित बोलीदाताओं को बोली दस्तावेजों में निर्धारित अनुसार अपनी बोली जमा करने से पहले प्री-बिड सम्मेलन की कार्यवाही का संज्ञान लेना आवश्यक है।

The representatives present were satisfied with the replies given and it was informed that the corrections / additons / clarifications given, as discussed during the Pre-Bid Conference would be hosted on the website of IISER Pune 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.

हमारी आईआईएसईआर वेबसाइट www.iiserpune.ac.in पर जारी नोटिस के अन्य नियम और शर्तें अपरिवर्तित रहेंगी। इस संबंध में और कोई पत्राचार नहीं किया जाएगा।

The other terms & conditions of the notice issued on our IISER website www.iiserpune.ac.in will remain unchanged. No more correspondence in this regard will be entertained.

बैठक अध्यक्ष के धन्यवाद प्रस्ताव के साथ समाप्त हुई।

The meeting ended with vote of thanks to the Chair.

Sd/-

22/02/2023 सहायक कुलसचिव (भांडार अवं क्रय)

22/02/2023 Assistant Registrar (S&P)

IISER PUNE

ANNEXURE -II

TECHNICAL AND COMMERCIAL QUERIES AND CLARIFICATION

PRE-BID CONFERENCE FOR PROCUREMENT OF PHOTON COUNTING DETECTORS & TIME-CORRELATED SINGLE PHOTON COUNTING MODULE

<table>
<tr><th>S.No.</th><th>Query/Clarification Sought</th><th>Clarification / Amendment</th></tr>
<tr><td>1</td><td>For single photon detector you have mentioned in the tender document, Timing resolution both 50 ps and 250 ps.

Earlier Specifications for ‘Single Photon Avalanche Photo-Diodes’:
<table>
<tr><th>Parameter</th><th>Specification</th><th>Marks</th></tr>
<tr><td>Timing resolution</td><td>< 50 ps (FWHM)</td><td>15</td></tr>
<tr><td>Photon detection efficiency</td><td>> at 550 nm 50%</td><td>10</td></tr>
<tr><td>Connector</td><td>FC connector</td><td>10</td></tr>
<tr><td>Dark counts (typical)</td><td>< 250 with 100 µm SPAD diameter</td><td>15</td></tr>
<tr><td>Single photon timing resolution Counting output</td><td>Counting output TTL signal (FWHM) 250 ps</td><td>10</td></tr>
<tr><td>Dead time</td><td>< 80 ns (typical)</td><td>10</td></tr>
<tr><td>Output signal TTL for counting output, NIM for timing output</td><td></td><td>10</td></tr>
<tr><td>Output pulse rise and fall times</td><td>< 5 ns on 10 pF load 5</td><td>5</td></tr>
<tr><td>Output pulse duration</td><td>< 30 ns (typical) 5</td><td>5</td></tr>
<tr><td>Gating input</td><td>TTL control</td><td>5</td></tr>
<tr><td>Supply input connector</td><td>standard 3.5 mm supply socket 5</td><td>5</td></tr>
</table></td><td>Amended Specifications for ‘Single Photon Avalanche Photo-Diodes’:
<table>
<tr><th>Parameter</th><th>Specification</th><th>Marks</th></tr>
<tr><td>Photon detection efficiency</td><td>> 50% at 550 nm</td><td>15</td></tr>
<tr><td>Connector type for input light</td><td>FC connector</td><td>10</td></tr>
<tr><td>Dark counts (typical)</td><td>< 250 with 100 µm SPAD diameter</td><td>20</td></tr>
<tr><td>Single photon timing resolution Counting output</td><td>Counting output TTL signal (FWHM) 300 -- 500 ps</td><td>15</td></tr>
<tr><td>Dead time</td><td>< 80 ns (typical)</td><td>10</td></tr>
<tr><td>Output signal</td><td>TTL for counting output, NIM/TTL for timing output</td><td>10</td></tr>
<tr><td>Output pulse rise and fall times</td><td>< 5 ns on 10 pF load 5</td><td>5</td></tr>
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</table></td></tr>
</table>

SCHEDULE OF REQUIREMENTS, SPECIFICATIONS & ALLIED TECHNICAL DETAILS

Photon Counting Detectors & Time-Correlated Single Photon counting module specifications

Module should be with the following capabilities-

1) Single Photon Avalanche Diodes (QTY: 2):

Parameter	Specification	Marks
Photon detection efficiency	**> 50% at 550 nm**	**15**
Connector type for input light	**FC connector**	**10**
Dark counts (typical)	**< 250 with 100 µm SPAD diameter**	**20**
Single photon timing resolution Counting output	**Counting output TTL signal (FWHM) 300 -- 500 ps**	**15**
Dead time	**< 80 ns (typical)**	**10**
Output signal	**TTL for counting output, NIM/TTL for timing output**	**10**
Output pulse rise and fall times	**< 5 ns on 10 pF load 5**	**5**
Output pulse duration	**< 30 ns (typical) 5**	**5**
Gating input	**TTL control**	**5**
Supply input connector	**standard 3.5 mm supply socket 5**	**5**

2) TCSPC System (QTY:1):

Specifications:

Input channels and sync	constant level trigger on all inputs, software adjustable	3
Number of detector channels (in addition to sync)	4	5
Input voltage operating range (pulse peak into 50 Ohms)	-1200 mV to 1200 mV	2
Input voltage max. range (damage level)	±2500 mV	2
Trigger edge	falling or rising edge, software adjustable	5
Trigger pulse width	> 0.4 ns	2
Trigger pulse required rise/fall time	< 20 ns	3
Minimum time bin width	< 80 ps	3
Timing precision	< 85 ps rms	3
Timing precision (FWHM)	< 60 ps rms	2
Dead time	< 650 ps	2
Maximum sync rate (periodic pulse train)	1.2 GHz	3

Adjustable programmable time offset for each input channel	±100 ns, resolution 80 ps	5
Differential non-linearity	< 10 % peak, < 1 % rms (over full measurement range)	3
Count depth	32 bit (4 294 967 295 counts)	3
Maximum number of time bins	> 65 536	5
Full scale time range	1 µs to 60 s	3
Acquisition time	1 ms to 100 hours	5
Peak count rate per input channel	>10^9 counts/sec for burst durations up to 2 Âµs	3
Total sustained count rate, sum over all input channels	>10^7 counts/sec	3
T2 mode resolution	80 ps	5
T3 mode resolution	80 ps	5
FiFo buffer depth (records)	>134 217 728 events	3
Trigger Output Period	0.1 µs to 1678 s	3
Trigger Output Pulse width	10 ns typ.	2
Trigger Output Baseline level	0 V typ.	3
Trigger Output Active level (pulse peak)	-0.7 V typ. (50 Ohm)	2
External Synchronization Ref. IN	10 MHz, 50 Ohm, AC coupled	5
External Synchronization Ref. OUT	10 MHz	2
PC interface	USB 3.0	5

Note: Minimum marks for qualification 85 and above