



PUSHPA GUJRAL SCIENCE CITY

**Jalandhar – Kapurthala Road,
Kapurthala, Punjab**

Tender Notice: Tender/PGSC/2022/07/Digital Projection System

NOTICE INVITING e-TENDER (Under Two Bid System)

For

Supply, Installation, Integration, Testing and Commissioning of High Resolution, High Brightness Full dome Digital 4K 2D Immersive Projection System with hardware and software packages, interfaces, tools and / or drivers etc. (including integration of existing audio System and cleaning of existing screen) at Pushpa Gujral Science City, Kapurthala for projection on existing 23 meter 30 degree tilted dome with 3 (three) years On-site Comprehensive Warranty including preventive maintenance and further Comprehensive AMC for next 2 years.

At

Pushpa Gujral Science City,

**Jalandhar - Kapurthala Road
Kapurthala, Punjab, India**

Pushpa Gujral Science City
Jalandhar – Kapurthala Road, Kapurthala

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INTRODUCTION

Pushpa Gujral Science City, Jalandhar-Kapurthala Road, Kapurthala

Pushpa Gujral Science City offers a blend of education, curiosity and fun to ensure longer and repeated visits. The project is aimed at cultivating interest in science through open-ended exploration away from text books and black boards, with a scientific approach to problem solving. The project has something for everyone, regardless of age, education, profession or social strata and is intended to make science accessible to people who are not part of the formal education system. It is a joint project of the Government of India and Government of Punjab.

Its various facilities include Galleries on Evolution, Dinosaur park (with Robotic Dinosaurs), Renewable Energy Park, Climate Change Theatre, Earthquake Simulator and Flight Simulator, Amazing Living Machine, Gallery on Health, Biotechnology & HIV, Outer Space Gallery, Virtual Reality & Cyber Space Gallery and Galleries on Fun Science, Railways, Defence, etc., as well as, Planetarium, Large Format Film Theatre (I-Max), 3D and Laser Shows, Herbal & Cactus Garden, etc. These offer information on cross cutting and inter-curricular issues and help to explain scientific concepts and their relevance to society. An Innovation Hub at Science City motivates students for 'out-of-box' thinking, which could contribute towards societal development. More information about these facilities is available at website www.pgsciencecity.org.

This is a Tender document for Supply, Installation, Integration, Testing and Commissioning of High Resolution, High Brightness Full dome Digital 4K 2D Immersive Projection System (DLP front projectors with PURE RGB LASER light source) for projection on existing 23 meter diameter perforated aluminum dome screen having 30 degree tilt with geometrical correction, auto image stitching and auto blending etc. for seamless projection of high resolution (4K) 2D digital full dome film shows and digital planetarium shows by replacing existing Digital Planetarium system (Digistar D3 with Six DLP projectors) and large format film projection system (Ultra 70 PD of GOTO, Japan make) installed at Dome Theatre and cleaning of the existing screen in the Dome Theatre, PGSC, Kapurthala. The existing Audio System will be integrated with new system.

TENDER NOTICE

PUSHPA GUJRAL SCIENCE CITY

Jalandhar-Kapurthala Road, Kapurthala

Telephone: 01822 501963 / 64

On-line Digitally signed open e-tenders under 2 Bid System are invited in two Bid System from the manufacturers or their authorized registered Indian agents for **Supply, Installation, Integration, Testing and Commissioning of High Resolution, High Brightness Full dome Digital 4K 2D Immersive Projection System with hardware and software packages, interfaces, tools and / or drivers etc. (including integration of existing Audio System and cleaning of existing screen)at Pushpa Gujral Science City, Kapurthala for projection on existing 23 meter 30 degree tilted dome with 3 (three) years On-site Comprehensive Warranty including preventive maintenance and further Comprehensive AMC for next 2 years.**

Interested tenderers can submit online bids through <https://eproc.punjab.gov.in> by **10.08.2022** (1500 Hrs). For further details, please visit website www.pgsciencecity.org

Note:

- Corrigendum and Addendum, if any will be published online at <https://eproc.punjab.gov.in>
- PGSC reserves the right to accept or reject any bid and to annul the process at any time, without any liability and assigning any reason thereof.

PARTICULARS of TENDER

1.	Estimated Cost	INR. -7.5 Cr. (Rs. Seven Crore and Fifty Lakhs only)
2.	Delivery Period	Seven (7) Months from the date of award of work
3.	Tender Fee	INR. 5000/- (Rs. Five Thousand only)
4.	Earnest Money Deposit	INR. 22.50 Lakhs. (Rupees Twenty Two Lakhs and Fifty Thousand Only) In lieu of online EMD payment, Bank Guarantee of equivalent amount of EMD and valid for period of 255 days can be done.
5.	Validity of Tender	6 (Six) Months from Last date of submission of Tender
6.	Bid Document Published Date	20.07.2022
7.	Bid Document Download Start Date	20.07.2022
8.	Bid Document Download End Date	10.08.2022
9.	Pre-Bid Clarification Start Date	20.07.2022
10.	Last date of submission of Pre-Bid Queries or clarifications	28.07.2022 15:00 hrs IST only at the following email id: sciencecity@hotmail.com . The bidder who will submit the pre-bid clarification(s), if any through email shall get the intimation from PGSC to attend the pre-bid online meeting. Bidders interested to attend the meeting online should send their email address.
11.	Pre Bid Clarification End Date	As above
12.	Pre-Bid meeting Date and Place	30.07.2022 at 11:30 AM (will be conducted in Hybrid mode as well as online (link will be shared with the interested parties as mentioned above at Sr. 10.) and physically at PGSC, Kapurthala.
13.	Bid Submission Start Date	02.08.2022
14.	Bid Submission End Date	10.08.2022 at 1500 hours IST
15.	Technical Bid Opening Date	12.08.2022
16.	Date Place of Technical Presentation	<i>To be notified later on the official email id of bidders</i>

17.	Financial Bid Opening Date	<i>To be notified later(within one week after finalizing technical bids)</i>
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Note:

1. Tender Document can only be downloaded from portal site: <https://eproc.punjab.gov.in>
2. Corrigendum and Addendum, if any will be published online at <https://eproc.punjab.gov.in>
3. PGSC will process the tender as per PGSC norms & procedures and PGSC would not be under any obligation to give any clarification to the agencies whose bids are rejected.
4. Tenderers are advised to visit Science City and see the location during office hours on any working day.
5. PGSC reserves the right to accept or reject any application and to annul the process at any time, without any liability and assigning any reason thereof.
6. If any of the above dates is declared holiday, the activity scheduled for that day will take place on the next working day.
7. Omission, neglect or failure on the part of tenderer to obtain requisite reliable and full information or any matter affecting his / her tender, shall not relieve the tenderer, from any liability in respect of the contract.
8. **Visit of the PGSC, Kapurthala:** Bidders are advised to visit the existing Theatre at PGSC, Kapurthala, to ascertain and fully understand the nature and quantum of work before tendering. **In case, the representative of the bidder is unable to attend the pre-bid meeting, the queries may be submitted through <https://eproc.punjab.gov.in> or email at sciencecity@hotmail.com before last date of submission of queries.** However, lack of knowledge of site conditions cannot be considered as an excuse for mistake/misrepresentation in the bid.
9. Details of submission of tender, etc. are indicated in the e-tender document.
10. The online bid, both Technical Bid and Financial bid should be uploaded by the due date and time as per the above schedule. The responsibility to ensure the same lies with the bidders.
11. PGSC reserves the right to amend/withdraw any of the terms and conditions in the tender Documents or to reject any or all tenders without giving any notice or assigning any reason. PGSC also reserves the right to accept or reject any or all tenders in full or part without assigning any reason whatsoever. PGSC shall also not be bound to accept merely the lowest tender but the technical suitability, capability and superiority of the concept / technology interface / system etc. shall be of prime consideration for selection of the appropriate set of concept/ technology interface /system collectively considered as a complete solution.

Place: PGSC, Kapurthala

(Administrative Officer)
PUSHPA GUJRAL SCIENCE CITY

General Information and Instructions

1. The instructions given herein will be strictly binding on the bidders and deviation, if any will make the tender or tenders liable to be considered invalid. Tenders incorporating additional conditions by the bidder are liable for rejection.
2. Bids shall be submitted online only at <https://eproc.punjab.gov.in>
Manual bids shall not be accepted.
3. The instructions given in “**Annexure-A**” for “**Instruction for Online Bid Submission**” should be strictly followed during submission of the Bid.
4. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
5. **Rejection of Bids:** Canvassing by the Bidder(s) in any form, unsolicited letter and post- tender correction may invoke summary rejection. Conditional tenders will be rejected. Non-compliance of applicable General Information and Instructions will disqualify the Bid.
6. The Bidders should have Digital Signature Certificate (DSC) for filling up the Bids. The person signing the tender documents should be authorized for submitting the on line e- tender.
7. The Bidders shall fill up the Prescribed Format for submission of **Technical Bid as per “Annexure-B”** format duly signed by the authorized signatory. The person signing the tender document should be authorised for submitting the online e-tender.
8. The Financial Bid shall be filled in and signed by the authorized signatory online as per Proforma “**Annexure-H**” available at Public Procurement Portal e-tender system website <https://eproc.punjab.gov.in>. Off line Financial Bid shall not be accepted.
9. Tender must be uploaded as **Technical Bid** and **Financial Bid/BOQ**). The contents all be as follows:-

A. Technical Bid

- i. “Technical Bid” (as per **Annexure-B** format) duly filled in and signed & Stamped.
- ii. All relevant documents related to “Technical Bid” as per “**Annexure-B**”
- iii. The scanned copy of “**General Terms & Conditions**” duly signed by the Authorized Signatory with official stamp as a token of acceptance of the bidders.
- iv. The scanned copy of “**Technical specifications and Scope of Work**” duly signed by the Authorized Signatory with official stamp as a token of acceptance of the bidders.
- v. “**Technical Compliance Table**” (as per **Annexure-C** format) duly filled in and digitally signed with official stamp.
- vi. **Past Experience details** as per **Annexure-D** along with documentary proofs (Work Completion Certificates).
- vii. **Annual Turnover** details as per **Annexure-E** along with documentary proofs (CA attested Balance Sheets).
- viii. Prescribed Undertaking by the “**Original System Integrator**” as per “**Annexure-F**”

format, if applicable, duly signed by the Authorized Signatory with office stamp.

- ix. Prescribed **Declarations** by bidder as per “**Annexure-G**” format duly signed by the Authorized Signatory with office stamp.
- x. The **Technical Brochures** of each equipment with technical explanation for every feature of the product offered by the bidders.
- xi. Name, Address, Name of the contact person and his/her mobile number etc.

B. Financial Bid / BoQ

The “**Financial Bid (BOQ)**” (as per **Annexure-H** format).

- 10. The format of Agreement is provided at **Annexure-I**.
- 11. The Technical Bid shall be opened by the PGSC, Kapurthala at the first instance and evaluated by the competent authority of the PGSC, Kapurthala. At the second stage, the Financial Bid of only techno-commercially acceptable offers shall be opened for further evaluation and ranking before awarding the contract.

Instructions for Online Bid Submission

The Bidders are required to submit soft copies of their Bids electronically on the E-Procurement Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the Bidders in registering on the E-Procurement Portal, prepare their Bids in accordance with the requirements and submitting their Bids online on the E-Procurement Portal.

More information useful for submitting online Bids on the E-Procurement Portal may be obtained at website or URL: <https://eproc.punjab.gov.in>

I) REGISTRATION

- 1) Bidders are required to enroll on the e-Procurement module of the E-Procurement Portal (URL: <https://eproc.punjab.gov.in>) by clicking on the link “**Online Bidder Enrolment**” on the E-Procurement Portal.
- 2) As part of the enrolment process, the Bidders will be required to choose a unique **Username and assign a Password** for their accounts.
- 3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the E-Procurement Portal.
- 4) Upon enrolment, the Bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA (Certified Coding Associates) India (e.g. Sify / nCode / eMudhra etc.), with their profile.
- 5) Only one valid DSC should be registered by a Bidder. Please note that the Bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
- 6) Bidder then logs in the site through the secured log-in by entering their user ID / password and the password of the DSC/e-Token.

II) SEARCHING FOR TENDER DOCUMENTS

- 1) There are various search options built in the E-Procurement Portal, to facilitate Bidders to search active Tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There could also an option of advanced search for Tenders, wherein the Bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a Tender published on the E-Procurement Portal.

- 2) Once the Bidders have selected the Tenders they are interested in, they may download the required Tender documents /Tender schedules. The Tender can be moved to the respective 'My Tenders' folder. This would enable the E-Procurement Portal to intimate the Bidders through SMS/e-mail in case there is any Addendum/Corrigendum issued to the Tender document.
- 3) The Bidder should make a note of the unique Tender ID assigned to each Tender in case they want to obtain any clarification / help from the Helpdesk.

III) PREPARATION OF BIDS

- 1) Bidder should take into account any Addendum/Corrigendum published for the Tender document before submitting their Bids.
- 2) Please go through the Tender advertisement and the Tender document carefully to understand the documents required to be submitted as part of the Bid. Any deviations from these may lead to rejection of the Bid.
- 3) Bidder, in advance, should make ready the Bid documents to be submitted as indicated in the Tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- 4) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every Bid, a provision of uploading such standard documents (e.g. Firm's Registration Certificate, Financial Statements, Auditor certificates etc.) has been provided to the Bidders. Bidders can use "My Space" or "Other Important Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a Bid, and need not be uploaded again and again. This will lead to a reduction in the time required for Bid submission process.

IV) SUBMISSION OF BIDS

- 1) Bidder should log into the site well in advance for closing date and time for Bid submission so that they can upload the Bid in time. Procuring Entity will not be responsible for any delay whatsoever.
- 2) The Bidder has to digitally sign and upload the required Bid documents one by one as indicated in the Bidding document.
- 3) Bidder has to select the payment option as "online" to pay the **Bid security** if applicable and enter details of the instrument.
- 4) Bidders are requested to note that they should necessarily submit their financial Bids in the format provided and no other format is acceptable. If the price Bid has been given as a standard format with the Tender document, then the same is to be downloaded and to be filled by all the

Bidders. Once the details have been completed, the Bidder should save it and submit it online, without changing the filename. If the Descriptions in the file are found to be modified by the Bidder, the Bid will be rejected.

- 5) The server time (which is displayed on the Bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the Bids by the Bidders, opening of Bids etc. The Bidders should follow this time during Bid submission.
- 6) All the documents being submitted by the Bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of Bid opening. The confidentiality of the Bids is maintained using the secured Socket Layer 128bit encryption technology. Data storage encryption of sensitive fields is done. Any Bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/Bid opening officials' public keys. Overall, the uploaded Tender documents become readable only after the Tender opening by the authorized Bid opening officials.
- 7) The uploaded Bid documents become readable only after the opening of the Bids by the authorized Bid opening officials.
- 8) Upon the successful and timely submission of Bid (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful Bid submission message & a Bid summary will be displayed with the Bid no. and the date & time of submission of the Bid with all other relevant details.
- 9) The Bid summary has to be printed and kept as an acknowledgement of the submission of the Bid. This acknowledgement may be used as an entry pass for any Bid opening meetings.

V) ASSISTANCE TO BIDDERS

- 1) Any queries relating to the Tender document and the terms and conditions contained therein should be addressed to the Bid Inviting Authority for a Tender or the relevant contact person indicated in the Tender.
- 2) Any queries relating to the process of online Bid submission or queries relating to E-Procurement Portal in general may be directed to the 24x7 E-Procurement Portal Helpdesk (0172-2970263 / 0172-2970284)

TECHNICAL BID

Note: ALL PARTICULARS / INFORMATIONS SHOULD BE GIVEN IN THE FOLLOWING FORMAT WITH COMPLETE DETAILS.

I	Name of the Bidder	:	
li	Mailing address of the Bidder with PIN/ZIP Code	:	
iii.	Contact details	:	
	Telephone numbers(s) Mobile	:	
	Fax number(s)	:	
	E-mail address	:	
	Website	:	
iv.	a. Background details of the Bidder (State whether original manufacturer / authorised Registered Indian Agent of the manufacturer).	:	
	b. In case of authorised Registered Indian Agent, submit certified copy of the Bidder Agreement with the manufacturer.	:	
	c. Name and Address of the Vendor to whom the order will be placed (PGSC would like to procure the entire system from a single source)	:	
v.	Whether capable to supply and install the Fulldome System as per minimum requirement/and Technical Specification given in Annexure-B (Please mention "YES" or "NO" in Annexure- C)	:	
	a) If it is mentioned "NO" above, submit detailed deviation to be made from enclosed Technical Specification.(Attach extra sheet, if required)	:	

	b) submit the detailed specifications of the offered product including copies of Product brochure	:	
vii.	Single point contact details for all post-installations service related issues with hierarchy levels (if any)	:	
viii.	Please provide detailed address and set up link from where support for maintenance during post warranty shall be offered by the firm	:	
ix.	Country of Origin of Imported items		
x.	Currency in which rates quoted of Imported items		
xi.	Shelf-life time of the Digital immersive full dome 2D projection system (i.e. up to which period technical support as well as spare parts including consumables shall be available with the firm).	:	
xii.	Submit technical brochures indicating the detailed technical specifications of the system as given in the table below:-.	:	Detailed Information to be submitted by the Bidders as per following table

S. No	Details of Information Required	Qty
i.	Details of Projector Array with special mountings. This set should contain number of projectors proposed, its make, complete specifications, its weight, dimensions, details about lenses, heat load, noise generated etc.	1 Set
ii.	Edge blending and geometric correction details	1 Set
iii.	Image Generator Server, Interactive planetarium software and playback system details including specifications and product catalogues. Software for conversion of large format shows into fulldome and digital library and software for playback and creation of planetarium shows.	1 set

iv.	Display management ,calibration and alignment system details	1 Set
v.	Show control System details	1 Set
vi.	Networking and data cabling schematic layout	1 Set
vii.	LED cove lighting, with all associated electrical wiring works	1 Set
viii.	Indicative list of documents/manuals/drawings that shall be provided to PGSC while handing over. Suggested training scheme, topics may also be included in this set.	1 Set
ix.	Timeline for execution of the entire work from the date of placement of order indicating therein parallel activities and critical path to establish completion of the entire work within the stipulated time schedule	1 Set
x.	List and quantity of each spare that shall be provided by the bidder initially to fulfill onsite comprehensive warranty of five years. All the tools, tackles, gadgets, devices that shall be required for measuring, operation, maintenance, testing etc shall be included in this list and shall form part of the initial supply.	1 Set
xi.	Information/Details regarding any other items not included above may be submitted in this set.	1 Set

Note: Bidders shall provide detailed Bill of Quantities of each item as mentioned in the above table and proposed for this offer along with schematic system architecture and product catalogues for all hardware items.

I / We hereby declare that the above statements are true. I / We also declare that I / we shall abide by the decision of PUSHPA GUJRAL SCIENCE CITY regarding selection of eligible firm(s).

Dated Official Seal & Signature of the Bidder/Constituted Attorney

GENERAL TERMS AND CONDITIONS

1. DEFINITIONS:

In this Contract, the following terms will be interpreted as indicated:

11. **"The Contract"** means the agreement entered into between the Purchaser and the Supplier, as recorded in the contract Form signed by the Parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
12. **"The Contract Price"** means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations.
13. **"The Materials/Equipment"** means all of the equipment, machinery, and/or other materials which the Supplier is required to supply to the Purchaser under the Contract.
14. **"The Services"** means those services ancillary to the supply of the Materials/equipment, such as transportation and insurance, and any other incidental Services, such as installation, commissioning, provision of technical assistance, training, and other such obligations of the Supplier covered under the Contract.
15. **"GCC"** means the General Terms and Conditions of Contract contained in the section.
16. **"The Purchaser"** means the organization purchasing the Materials/equipment.
17. **"Bidder"** is a supplier who has registered with the purchaser for supply of materials/equipment.
18. **"The Supplier"** means the firm supplying the Materials / equipment and Services under this Contract.
19. **"Day"** means calendar day.

2. APPLICABILITY:

These General Conditions of contract will apply to the extent that they are not superseded by provisions of salient features of the Bid.

21. **STANDARDS:** The Materials/equipment supplied under this Contract will conform to the Standards mentioned in the Technical specifications, and, when no applicable standard is mentioned, the authoritative standards appropriate to the Materials / equipment' i.e., BIS, such standards will be the latest. All material will be of the best class and will be capable of satisfactory operation under tropical conditions without distortion or deterioration.
22. **INTERCHANGEABILITY:** All similar materials and removable/replaceable parts of similar equipment will be interchangeable with each other. A specific confirmation of this should be furnished in the bid.
23. Bidders are required to submit with the tender in Technical Bid, all the documents as per eligibility criterion mentioned in clause 3 along with schematic design, schematic drawings of proposed control room/console, mechanisms with complete technical specifications, procurement strategy, flow chart of the work, fabrication strategy on how the work shall be completed within the stipulated time as per Clause 7 of the General terms and conditions.
24. The successful Bidder shall submit the following within 15 (fifteen) days from the date of placement of the work order:

- 2.4.1. Duplicate copy of the work order duly signed and official stamp on all the pages as a token of acceptance of the order.
- 2.4.2. Non-judicial stamp paper of appropriate value for entering into an agreement as per prescribed format.

3. ELIGIBLE BIDDERS:

The following are the Qualifying Eligibility Criterion for bidder.

31. Limited Company/Corporation/Agency/Consortium/JV etc. are allowed to bid for the work.
32. The Bidder/manufacturer must be an original manufacturer of the Digital Fulldome system software and/or the planetarium shows or authorized agent of the manufacturer. In case the bidder is an authorized agent of the manufacturer then the authority letters should be furnished with all the details.
33. The bidder must have installed at least 1(one) 2D immersive projection system (Multi-Channel 4K resolution in India and at least 1(one) 4K or higher resolution 2D immersive projection system for 18- diameter or higher anywhere in the India / World and should be operational & functional in all aspects for at least one year from date of successful installation.
34. The Bidder/manufacturer must be an original manufacturer of the Digital Planetarium system software. In case the bidder is an authorized agent of the manufacturer and the show producers, then the authority letters should be furnished with all the details.
35. The Bidder/manufacturer must have trained staff in service and maintenance of digital planetarium projectors. The service and support infrastructure for digital planetarium system available with Indian counterpart to be provided. Bidder / manufacturer must attach copy of certificates showing factory trained staff.
36. **Work Experience Eligibility:** The Bidder and or Local agent should have completed similar works (as installation of 2D immersive projection system (Multi-Channel 4K resolution in India and at least 1(one) 4K or higher resolution 2D immersive projection system for 18 m- diameter or higher anywhere in the India / World and should be operational & functional in all aspects for at least one year from date of successful installation.) with similar make during the last 10 (ten) years from the date of the issue of this E-TENDER.
37. **Estimated cost of the project is INR 7.50 Crore.** The bidder should fulfill the following eligibility criteria:
- One similar work of value not less than 80% of the estimated cost of work during the last 10 (ten) years from the date of the issue of this E-TENDER.
- Or
- Two similar works each of value not less than 50% of the estimated cost of work during the last 10 (ten) years from the date of the issue of this E-TENDER.
- Or
- Three similar works each of value not less than 40% of the estimated cost of work

during the last 10 (ten) years from the date of the issue of this E-TENDER.

Notes:

- 3.7.1. Here the **similar works** shall mean concept, design, supply, installation, testing & commissioning of Digital 4K Fulldome 2D immersive planetarium projection system on minimum 18 m dia Screen.
- 3.7.2. In the case of Consortium/JV participating in this E-TENDER, the works of all the individual members of the Consortium/JV done independently will be considered as valid work experience but have not been done in conjunction or partner of any other consortium or JV .
- 3.7.3. If any bidder has executed the similar work as a part of a consortium/JV in the past then the work experience of the bidder shall be considered as valid only if all the consortium/JV partners are participating together in the present E-TENDER also.
- 3.7.4. The details of qualifying works/projects shall be furnished as per the proforma in **Annexure-D** and if required, the bidder shall also facilitate inspection of the above qualifying project(s) by PGSC's officials to ascertain the performance of the system.
- 3.7.5. Documents Required: The bidder should submit a copy/copies of the work order(s) issued in the name of the agency as well as copies of work completion certificate of the same work, clearly indicating the value of the work of similar nature. If the work order contains several works, only the value of the works of a similar nature shall be considered for work experience. If the value of the works of similar nature is not specifically mentioned in the cost breakup, the work experience against that work order will not be considered as valid.
- 3.7.6. PGSC may inspect any of those works at its discretion to verify the credentials of the bidder for the qualifying works/ projects indicated above for which the Bidder shall provide references (including Referee names and contact details) in respect of the projects implemented.
- 3.7.7. The bidder should provide documentary proof to clearly substantiate each eligibility criteria, failing which the bid will be summarily rejected.
38. Equipment manufacturing capability and up to date testing facilities. Bids may not be considered if the past manufacturing experience in the field of digital planetarium is found to be un-satisfactory or is of less than 5 (five) years.
39. Balance sheet and profit and loss account of the bidder duly certified by the Chartered Accountant for the immediately 5 (five) preceding years should be enclosed to assess the financial soundness.
- 3.10. **No bankruptcy letter issued by appropriate Government authority of the respective country**
- 3.11. **Certificate of the existence issued by Department of the commerce/ Government accredited agencies of the respective country.**

- 3.12. **Letter of Good Standing (tax clearance) issued by Tax Commission of the respective authorities/country.**
- 3.13. **Certificate of incorporation / Business License issued by Government authority of the respective state.**
- 3.14. **The Average Annual Turnover of the Bidder/manufacturer (of the lead partner in case of consortium/JV) for the last five financial years (2016-17, 2017-18, 2018-19, 2019-20, and 2020-21) should be minimum 50% of INR 7.50 Crore.**
- 3.15. **Documents Required: Average Annual Turnover of the bidder in crores (in case of consortium/JV at least 50% of lead partner and should be 100% of sum of all partners of Consortium / JV) and the duly certified document from CA clearly indicating the Turnover of the last five financial years (2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22{if available}) as per Annexure – F**
- 3.16. **Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:**
 - 3.16.1. Made misleading or false representation in the forms, statements and attachments submitted in proof of the qualification requirements; and/or Record for poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.

Note:

1. Notwithstanding anything stated above the purchaser reserves the right to assess bidder's capability and capacity to perform the contract should circumstances warrant such an assessment in the overall interest of the purchaser.
2. Uploading unnecessary documents may lead to disqualification of bidders.
3. All the documents shall be notarized / self-attested

4. JOINT VENTURES/CONSORTIUM

- 4.1. In the event that the successful bidder is a consortium/joint venture formed, lead partner/prime contractor in whose name the bid was issued, shall be fully and solely responsible for the performance of contract and all works designed and executed under the contract.
- 4.2. Bids submitted by a consortium or joint venture of atleast two firms including lead partner, all partners shall comply with the following requirements:
 - 4.2.1. The consortium as a whole must be a sound entity technically and 100% financially with the lead partner must be a sound entity financially minimum 50%.
 - 4.2.2. The Consortium as a whole must satisfy the qualification criteria set forth herein. The turnover of the lead partner must satisfy the eligibility criteria of the tender. The bid shall contain a statement of the members of the consortium and shall provide all information necessary to satisfy Client/Employer that the Consortium fulfils the qualifying criteria.

- 4.2.3. The Bids shall contain original copy of the Memorandum of Understanding (MOU) on Rs.100/- Non-Judicial Stamp paper (or as applicable) between the consortium members clearly identifying the lead partner, scope and responsibility and financial part of each member in the performance of the contract.
- 4.2.4. The consortium members will obtain approval of the Client for any change in the shareholding structure and scope of work or any other terms of MOU.
- 4.2.5. The lead partner of the consortium shall be nominated as being in-charge to represent the Consortium in all dealings with the Client/Employer and for providing any information or clarification sought from the Consortium.
- 4.2.6. The Bid shall be signed by all the consortium firms by their authorized person. The lead partner shall be authorized to incur liabilities and receive instructions for and on behalf of any and all member(s) of the Consortium and all dealings including billing and payments, shall be done exclusively with the leader of the consortium.
- 4.2.7. Only firms or joint ventures that have been qualified under this procedure will be eligible to bid for this project.
- 4.2.8. All members of the Consortium shall be liable for the execution of the project in accordance with the terms of the MOA and Contract agreement.
- 4.2.9. Any individual bidder or member of a consortium cannot be a member in another consortium and participate in this tender.
- 4.2.10. All correspondence or communications will be done by the Lead partner (or authorized representative of Lead partner) of the consortium.
- 4.2.11. Bidder submitting their bid shall not be under liquidation, court receivership or similar proceeding.

Notes:

The bidder has to upload the compliance letter on its letterhead duly signed by the authorized signature & other supporting documents as asked for in the bid in scanned format. Failing to submit the same or non-compliance/deviation from any bid terms and conditions, eligibility criteria or technical specifications may result in rejection of the bid.

5. EVALUATION / SELECTION CRITERIA

51. Eligibility Criteria Evaluation: Any shortcoming of the documents may lead to rejection of the bid.
52. Technical Presentation Evaluation: The agencies qualifying on the basis of their credentials /evaluation will only be called for Technical Presentations which can be at a very short notice of even three days.
53. Financial Evaluation: Only the bidders/firms securing the minimum qualifying marks based on Eligibility Criteria Evaluation and Technical/Presentation Evaluation as

described in details below will be eligible for their Financial Bid Opening & Financial Evaluation.

54. **Technical Evaluation**

- 5.4.1. The Evaluation Committee appointed by the competent authority shall carry out its evaluation applying the evaluation criteria specified in the bid document. Evaluation of the application would be done as per the documents submitted. Bidders/agencies who are in the trade and are fulfilling the eligibility criteria as per the documents required would only be called for presentation which can be at a very short notice of even three days.
- 5.4.2. Further, during the technical presentation the evaluation would be carried out where the technical evaluation would be given upto 100 marks.
- 5.4.3. Each responsive proposal shall be attributed a technical score. On the basis of the technical assessment, agencies securing minimum 70 marks out of 100 will be shortlisted and the financial bids of only the shortlisted agencies will be opened.
- 5.4.4. The date and time of opening of the financial bids will be intimated to the selected /shortlisted agencies through <https://eproc.punjab.gov.in> and email.

55. **Financial Evaluation Financial Bid:**

- 5.5.1. The Financial Bids of the technically qualified bidders will be opened online through <https://eproc.punjab.gov.in>.
- 5.5.2. The lowest financial bid complete in all respects shall be selected for award of contract.
- 5.5.3. Only fixed price financial bids indicating total price for all the work/services specified in this bid document will be considered.
- 5.5.4. In the event, if the composite bid scores are “tied”, the bidder securing the highest technical score will be declared as the Best Value Bidder for award of the Project.

Note:

Technical Bids will be evaluated on the basis of documents as detailed above & presentations to be made by the eligible agencies before the Constituted Committee. The date and time of the presentations will be conveyed to the eligible agencies.

56. **Technical Evaluation Marking Scheme**

- 5.6.1. The Technical Bids will be evaluated on the basis of the indicated parameters in the table below:
Evaluation of bids found eligible as per eligibility criteria would be undertaken by the Technical Evaluation Committee Constituted by the competent authority as per parameters cited below.

Sl. No.	Parameter	Criteria	Max. Marks 100
1	Experience of applicant/agency in the tendered work (Digital 4K 2D higher on minimum 18 m dia Screen Planetarium System)	5 Years - 10 Marks	15
		More than 5 years upto 10 years - Bonus 2 Marks	
		More than 10 years –Bonus 5 Marks Maximum Marks - 15 marks	
2.	Financial Soundness (average annual turnover during the last five years (2020-21, 2019-20, 2018-19, 2017-18 and 2016-17))	i. For average annual turnover above Rs. 7.50 Crore -10 marks	20
		ii. For average turnover in excess of Rs. 7.50 Crore @ 1 mark per Rs. 1.0 Crore each Maximum Marks – 20 marks	
3.	Similar Work Experience during last 10 years from the date issue of this tender		15
	Criteria: I (MM 15)	a. For one similar completed works having value \geq Rs.6.00 Crore - 10 marks <ul style="list-style-type: none"> For any additional similar completed works each having value \geq Rs.6.00 Crore – Maximum Bonus marks: 5 <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> For every additional work (excluding the work counted at Sr. No.: a above for 10 Marks): 1 Mark will be given for each additional similar work(s) completed for value $>$ Rs. 3.75 Cr. $<$ Rs. 6.00 Cr. – Maximum Bonus Marks: 5 	
		OR	
	Criteria: II (MM 10)	a. For two similar completed works having value \geq Rs 3.75 Cr $<$ 6.00 Cr – 6 marks	

		<ul style="list-style-type: none"> • For any additional similar works each having value \geq Rs.3.75 Cr < Rs. 6.00 Cr – Maximum Bonus Marks: 4 <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> • For every additional work (excluding the two works counted at Sr. No.: a above for 6 Marks): 1 Mark will be given for each additional similar work(s) completed for value \geq Rs. 3.00 Cr. < Rs. 3.75 Cr. – Maximum Bonus Marks:4. 	
		OR	
	Criteria: III (MM 7)	<p>a. For three similar completed works having value \geq Rs 3.00 Cr < 3.75 Cr– 4 marks</p> <ul style="list-style-type: none"> • For any additional similar works each having value \geq Rs.3.00 Cr < Rs. 3.75 Cr – Maximum Bonus Marks: 3 <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> • For every additional work (excluding the three works counted at Sr. No.: a above for 4 Marks): 1 Mark will be given for each additional similar work(s) completed for value \geq Rs. 2.25 Cr. < Rs. 3.00 Cr. – Maximum Bonus Marks: 3. 	

4.	Operation and Maintenance experience for Digital 4k 2D / active 3D Fulldome shows on minimum 18 m dia screen at least for one year	<ul style="list-style-type: none"> ● Minimum 1 project - 3 Marks ● 1 mark for each additional project Maximum Marks - 05 Marks	05
5.	Technical presentation before the Technical Evaluation Committee	<p>a. Design and execution of Fulldome 2D Projection System as per scope of work and technical specifications given in the tender document - 25 Marks</p> <p>b. Integration of existing Audio System - 10 Marks</p> <p>c. Experience in execution of ancillary works such as cleaning of screen. - 10 Marks</p>	45

Note: The marks for the Sr. 1 to 4 will be given on the basis of documentary proofs provided in the Technical Bid.

5.6.2. The bidder will have to enclose a presentation on the proposed solution along with the technical proposal to PGSC. The presentation shall cover the comprehensive details, approach & methodology, Organization structure, Work program, Implementation strategy, offered equipment list, Technical brochures and specification sheet, timeline etc.

6. PRICE:

6.1. The price and rates indicated shall include all incidental charges like packing, forwarding, freight, insurance, and delivery etc. as may be applicable to this tender for Supply, Installation, Integration, Testing and Commissioning of High Resolution, High Brightness Full dome Digital 4K 2D Immersive Projection System with hardware and software packages, interfaces, tools and / or drivers etc. (including integration of existing Audio System and cleaning of existing screen) etc. at Pushpa Gujral Science City, Kapurthala for projection on existing 23 meter 30 degree tilted dome with 3(three) years On-site Comprehensive Warranty and further Comprehensive AMC for next 2 years on turnkey basis. The price should include the cost of all civil work inside the dome, electrical work, civil work, mechanical work etc.,

providing training for the operation of the system to the representatives of PUSHPA GUJRAL SCIENCE CITY.

62. The selected bidder shall be responsible for proper co-ordination with PGSC and continuous supervision of these works at site to ensure the desired quality of workmanship and use of specified materials and the end result.
63. Bidders may submit the rates of imported items in Foreign Currency i.e. USD / Euro / Yen.
64. PGSC has been paying concessional Custom Duty & Taxes as it is registered as Scientific Industrial Research Organization (SIRO) with the Department of Scientific & Industrial Research (DSIR) for purposes of availing customs duty exemption. Accordingly bidders are advised to quote considering the same.
65. However PGSC shall accept offers on Delivery on site basis only. Offer(s) on High Sea Sales or through Bond to Bond transfer shall not be accepted since PGSC desires to acquire Propriety of the goods neither in transit nor in any Bonded Warehouse but after possessing the goods directly in their custody at Airport Terminal from the Airport Authority after due customs clearance. In case of overseas consignment on Delivery on site basis, transport cost from the nearest Airport / Seaport to the site shall be borne by the bidder.
66. The rates quoted for the imported items should be inclusive of CIF and FOR PGSC Kapurthala.
67. The rates of Excise Duty / Custom Duty (if any), Goods and Service Tax (if any) and other taxes / levies (if any) to be imposed on the rates of imported items in India may be borne by PGSC
68. No GST exemption (Form C/E/D) will be issued. Prices and rates quoted shall be firm and fixed for the entire period of execution of the order and no escalation of rates on any ground whatsoever shall be accepted.

7. TIME OF COMPLETION:

71. Time is the essence of the work. The entire work comprising dismantling and removal of existing projection equipment, other existing installations etc. and Supply, Installation, Integration, Testing and Commissioning of High Resolution, High Brightness Full dome Digital 4K 2D Immersive Projection system with hardware and software packages, interfaces, tools and / or drivers etc. (including integration of existing Audio System and cleaning of existing screen) at Pushpa Gujral Science City, Kapurthala shall be completed within 7 (SEVEN) months from the date of placement of confirmed order or opening of Letter of Credit.
72. Every effort should be made to complete the entire work by the successful bidder within the specified time. In case the successful bidder fails to comply with the specified time schedule as per the approved bar chart and accepted terms and conditions, and where the progress of work is not found satisfactory, and commensurate with the expected progress as per the bar chart, PUSHPA GUJRAL

SCIENCE CITY reserves the right to cancel the order. The decision of PGSC in this regard shall be final and binding on the successful bidder. The successful bidder cannot claim any compensation for such cancellation or determination of contract.

8. INSPECTION:

- 8.1. The successful bidder shall also mandatorily arrange for inspection of the equipment including its accessories at the site on completion of supply, during installation period by the authorized officials of Pushpa Gujral Science City. Any /all defect(s) pointed out to the successful bidder by the competent representative of PUSHPA GUJRAL SCIENCE CITY during such inspection shall be promptly rectified at the cost (including material cost) of the successful bidder to meet the desired quality, and specification as per requirement of PUSHPA GUJRAL SCIENCE CITY failing which penal action shall be taken as deemed fit by PUSHPA GUJRAL SCIENCE CITY. The decision of PUSHPA GUJRAL SCIENCE CITY in this regard shall be final and binding on the successful bidder.

9. GENERAL TERMS OF PAYMENT

- 9.1. An irrevocable and confirmed Letter of Credit shall be opened for 100% value of the imported items quoted in foreign currency immediately upon receipt of the order confirmation. The mode of payment shall be as follows: -
- 9.1.1. **60% (Sixty percent)** of the total sum of the imported items on shipment of the entire materials/consignment and presentation of the dispatch documents.
- 9.1.2. **40% (Forty percent)** of the total sum of the imported items after successful installation, testing and commissioning of the fully integrated high resolution immersive Full dome digital 2D projection system at site and successful running of Full dome 2D large format film shows and planetarium shows”.
- 9.2. **For items quoted in INR, the payment terms shall be as follows:**
- 9.2.1. **60% (Sixty percent)** of the total sum of the items quoted in INR on delivery of the entire materials/consignment and submission of bill of quantities.
- 9.2.2. **30% (Thirty percent)** of the total sum of the items quoted in INR after successful installation and commissioning of the fully integrated high resolution immersive Fulldome digital 2D projection system at site.
- 9.2.3. **Balance 10% (Ten percent)** of the total sum of the items quoted in INR on successful operational training and handing over the equipment to the authorized representative of PGSC, Kapurthala and satisfactory running of the entire Fulldome digital 2D immersive projection system for a minimum period of 10(ten) consecutive days and on submission of a certificate issued by PUSHPA GUJRAL SCIENCE CITY stating that installation of the ordered system has been done satisfactorily and also on submission of warranty certificate.
- 9.2.4. **Prior to release of balance 10% (ten percent)** payment of the total value of the items quoted the successful bidder shall arrange for an irrevocable Bank

Guarantee acceptable to PGSC equal to **Five %** of Gross Quoted Value will be deducted and retained as Retention Money / Performance Bank Guarantee for Defect Liability Period as security for fulfilment of warranty/ defect liability obligations. Training of PGSC, Kapurthala personnel in operation and maintenance of the entire ordered system shall be organized by the successful bidder at every stage of installation and also after satisfactory commissioning of the equipment at site and before the final 10 % (ten percent) payment is released as per terms stated above.

93. For annual maintenance contract for two years(beyond the warranty period of three years), the payment shall be made half-yearly on satisfactory completion of the work and this payment schedule shall continue for the entire duration of the contract. Annual Maintenance Contract will be awarded to the Indian associate of the foreign bidder.
94. Taxes and Levies as applicable time to time will be deducted from payments by PGSC.

10. SECURITY DEPOSIT:

101. The Security Deposit shall be 5% as applicable of the gross value of work ordered (as per clause 9.2) and shall be submitted by the successful tenderer in the form of Bank Guarantee before release of final 10% balance payment. In case, the gross value of the work executed is more than the ordered value, the successful tenderer shall submit additional Bank Guarantee for the differential amount before the release of final payment.
102. The security deposit shall be released after expiry of the defect liability period of 3 years from the date of satisfactory completion of the installation and commissioning of the system. In case of cancellation of the contract, the Security Deposit submitted by the tenderer in the form of Bank Guarantee shall be revoked and the amount necessary to make up this amount shall be recovered from any money due to the successful bidder under this or any other contract with PGSC.
103. In lieu of online EMD payment, Bank Guarantee of equivalent amount of EMD and valid for period of 255 days would be acceptable. While bidding on e-procurement portal, Bidder has to click allow Bank Guarantee option on the Fee page and upload scanned copy of Bank Guarantee issued by Bank in pdf format.
104. Earnest Money Deposit (EMD) of successful bidder will be adjusted in the Security Deposit.
105. In case of death of successful bidder, Security Deposit shall be returned /refunded to the legal heir of the successful bidder after adjustment of dues, if any, post the actual completion of the work & upon expiry of the specified guarantee/defects liability period.

11. PENALTY CLAUSE

111. In case of non-completion of the entire work within the stipulated time, and the delay

is not attributable to site requirements, Liquidated Damage (L.D.) @ 0.5% of the tendered value per week shall be recovered from the bill of the successful bidder subject to a maximum of 10% of the tendered value.

12. DELAYS

121. Within one fortnight of the occurrence of any of the following, which the contractor might regard as impediments in the progress of work, the contractor shall apply in writing to the Director General, PGSC for extension of time, setting out the reasons for delays sought to be condoned
- 12.1.1. Addition, alteration or substitution ordered in the work, which could have a significant time impact and issued to the contractor under an official change order only.
- 12.1.2. Act of God or Force Majeure, i.e. a situation arising out of any occurrence totally beyond the control of the contractor such as war, hostilities, revolution, riots, civil commotions, strikes, lockouts, epidemic, explosion, flood, earthquake or because of any law and other proclamation, regulations or ordinance of any government or sub-division thereof or because of any act of God or any other cause beyond the control of the concerned party which could not have been foreseen or avoided by the exercise of due diligence and so it becomes impossible to perform,
- 12.1.3. Forced closure of the works by a general political strike and unrest not related to contractor's labour or personnel.
122. The contractor's application for extension of time in any of the above circumstances shall be considered by Director General, PGSC and his decision shall be final and binding.
123. The granting of any extension of time shall not entitle the contractor to claim any additional remuneration or consideration whatever for costs incurred as a result of such delays or due to cost escalation.

13. WARRANTY AND AMC:

131. Warranty: The successful bidder shall provide Single Window Onsite Comprehensive Warranty inclusive of preventive maintenance on all the items supplied under the purchase order as has been enumerated in details below. The Warranty period for the entire installation is for three years for all the components of the system from the date of issue of acceptance certificate by PGSC.
132. AMC: The comprehensive annual maintenance contract will be for a period of two years, after expiry of the warranty period of three years.
133. Bidders shall quote for comprehensive annual maintenance charges along with applicable taxes for two years, after expiry of warranty period of three years from the date of commissioning and handing over to PGSC on year to year basis. The tax break-up for all such rates shall be clearly spelt out as on the date of submission of the tender.

134. During defect liability period of three years and subsequent comprehensive maintenance contract, comprising of two years, the following terms shall be applicable:
 - 13.4.1. Preventive Maintenance for all the equipment and peripherals supplied by the bidder. The bidders shall submit a schedule for such preventive maintenance and shall form part of the agreement.
 - 13.4.2. Repair of faulty / defective parts and peripherals.
 - 13.4.3. Replacement of faulty parts and peripherals. All replaced parts shall remain as property of PGSC, Kapurthala. All faulty parts shall be taken back by the bidder.
 - 13.4.4. All the parts including networking cables, connectors, etc. that may be required to maintain the system shall be supplied by the bidder at their own cost.
 - 13.4.5. Any break-down, failure or malfunctioning of the system shall be attended to and put back in service within 48 hours. However, all round efforts must be made to set right the system in shortest possible time. Service shall be available for at all times for 364 days in a year.
135. The selected bidder will maintain the minimum essential spares at their own stores and the required tools / test equipment / software so as to reduce the break-down time.
136. Spare parts manufactured by Original Equipment Manufacturer (OEM) will be preferred. However in unavoidable situations spares manufactured by equivalent manufacturers may be used with prior approval of PGSC stating appropriate reason and justification.
137. In case of any requirement for replacement of any supplied spares by the bidder, PGSC shall not be responsible for re-export of the damaged components and that will be replaced by the successful bidder.

14. DEFECT LIABILITY PERIOD:

141. The Defect Liability period shall be three years from the date of certification of the completion of satisfactory installation and commissioning of the system. The successful bidder shall be responsible for all defects of the installed equipment, manufacturing or other defects of components, playback and associated software etc. for a period of five years from the date of satisfactory completion of the installation and commissioning of the system. The successful bidder, shall at their own cost, rectify the defects and / or replace the defective parts/equipment, up to the complete satisfaction of the competent authority of the PUSHPA GUJRAL SCIENCE CITY/PGSC, Kapurthala within reasonable time. The successful bidder shall maintain an inventory of all necessary components to reduce downtime.
142. Specifications of the items under tender are enclosed for guidance. However, if any ambiguity in the specification is detected, it shall be promptly brought to the notice of the PUSHPA GUJRAL SCIENCE CITY for clarification. The successful bidder should obtain written approval of PUSHPA GUJRAL SCIENCE CITY for any deviation from the approved

specifications, if required due to site conditions or for betterment and safety of visitors and installations.

143. The authorities of the PUSHPA GUJRAL SCIENCE CITY reserve the right to amend, alter or modify the terms and conditions, specifications of the items if necessary for betterment and safety of visitors. No additional cost shall be borne by PUSHPA GUJRAL SCIENCE CITY for such amendments.
144. In case the successful bidder refuse to accept the offer after finalization or does not compile with clauses of General Terms & Conditions within 07 (seven) days from the date of placement of the order as per the finalized and accepted terms & conditions, earnest money deposit would be automatically forfeited and the order shall be cancelled forthwith.
145. The authorities of PUSHPA GUJRAL SCIENCE CITY do not bind themselves to accept the lowest tender and reserve the right to accept or reject any or all tenders wholly or partially without assigning any reason whatsoever.
146. The successful bidder shall obtain necessary trade and other licenses/permissions as may be required to carry out the tendered job at PGSC, Kapurthala and shall also be responsible for Compliance of all statutory rules and regulations which may be in force time to time from the appropriate authorities at their own cost.
147. PUSHPA GUJRAL SCIENCE CITY shall not be liable for any injury or death of an employee who is deployed by the successful bidder within/outside the work site during the time of execution of the work order.

15. PATENT RIGHTS AND ROYALTIES

151. The tenderer shall indemnify the PGSC against all third party claims of infringement of patent, copyrights, royalties, trademarks or industrial design rights arising from use of the goods, drawing or any part thereof.
152. The Contractor/ Agency will declare and guarantees that all copyrights and author's rights etc. of all third parties shall be duly purchased and obtained and the royalties paid and by this agreement these rights of third parties, unencumbered in any respect, shall be transferred to PGSC. No such right would be only for one time use specifically for this job. If, however, any dispute of claim preferred by the third parties arises, Agency shall indemnify the PGSC against any such claim whatsoever.
153. The Contractor/ Agency hereby agrees that no claim whatsoever shall be made against the PGSC in respect of any proprietary rights on the part of any other party relating to the plans, designs, models, drawings, photographs, scripts or any other such items, which they have used in the display of the work. The Agency shall indemnify the PGSC of all costs and expenses, which may have called upon to do so against such claims.

16. INSURANCE IN RESPECT OF DAMAGE TO PERSONS AND PROPERTY

161. The contractor shall be responsible for all injury to persons, animals or things, and for all structural and decorative damage to property which may arise from the operation or neglect of himself or of any nominated sub-contractor's employees, whether such injury or damage arises from carelessness, accident or any other cause whatever in any way connected with the carrying out of his contract. This clause shall be held to include inter-alia any damage to buildings, electrical work, whether immediately adjacent or otherwise, and any damage to roads, street, footpaths, bridges or ways as well as all damages caused to the buildings and works forming the subject of this contract by inclement weather.
162. The contractor shall indemnify the PGSC and hold it harmless in respect of all and any expenses arising from any such injury or damage to person or property as aforesaid and also in respect of any claim made in respect of injury or damage under any Act of Government or otherwise and also in respect of any award of compensation or damages consequent upon such claim.
163. The contractor shall reinstate all damages so as to deliver the whole of the contract work complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damage to the property of third parties.
164. The contractor shall indemnify the PGSC against all claims which may be made against the PGSC by any member of the public or other third party or any employee of the contractor or subcontractor in respect of anything which may arise in respect of the work or in consequence thereof and shall at his own expense arrange to effect and maintain, until the completion of the contract, a Policy of Insurance against such risks may be purchased by Contractor for this contract.
165. The PGSC shall be at liberty and is hereby empowered to deduct the cost of any damage, compensation, costs, charges and expenses arising or accruing from or in respect of any such claim or damage from any sum or sums due to or become due to the contractor.

17. SUSPENSION OF WORK

- 17.1. The PGSC reserves the right to suspend and reinstate execution of the whole or any part of the works without invalidating the provisions of the contract. The PGSC Administration will issue orders for suspension or reinstatement of the work to the Contractor in writing. The time for completion of the works will be extended for a period equal to duration of the suspension.
- 17.2. Any necessary and demonstrable costs incurred by the contractor as a result of such suspension of the works will be paid by the PGSC provided such costs are sustained to the satisfaction of the PGSC. The PGSC shall not be responsible for any liabilities if suspension or delay is due to some default on the part of the Contractor or his sub-contractor.

18. TERMINATION FOR INSOLVENCY

PGSC may at any time terminate the contract by giving written notice to the contractor without compensation to the contractor, if it becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will occur thereafter to the PGSC.

19. TERMINATION FOR CONVENIENCE

In the event both the parties want to abandon the above said work at any stage due to reason beyond the control of either party with mutual consent. In such case of termination no further payments, except the payment or payments which has or have been already made or which may be payable for work already done plus balance Concept and design fees in accordance with provisions as per this contract, prior to the date of such abandonment or suspension, as the case may be, shall be made by the PGSC to Contractor/ Agency. The Contractor/ Agency will be, liable to transfer to PGSC all works at such stage of completion, inclusive of all materials procured for the purpose of the project at the time of such termination.

20. The successful bidder shall not transfer wholly or partially the order of supply, installation, testing and commissioning of the equipment to any other person(s) / firm / company for any reason whatsoever and in which case the order shall automatically stand cancelled.

21. ARBITRATION

21.1 All questions and disputes of any kind whatsoever between PGSC and the contractor **arising out of this agreement** entered into or in relation thereto or regarding the interpretation of any clause, terms and conditions thereof shall be referred to the Director General, Pushpa Gujral Science City acting as such at the time of reference or any other person as may be nominated by the Director General, PGSC who will be the sole arbitrator and his/her decision will be final and binding. In case the nominated Arbitrator is unable to commence or continue with the Arbitral proceedings for any reason whatsoever, the DG shall nominate / appoint another officer of PGSC who shall commence the proceedings and decide the reference. The provision of Arbitration and Conciliation Act 1996 shall apply.

21.2 The place for arbitration will be Kapurthala, Punjab, India.

22. LEGAL JURISDICTION

District Courts at Kapurthala, Punjab, India.

23. SET OFF

Any sum of money due and payable to the Bidder/Supplier/Contractor (including security deposit refundable to him) under this contract may be appropriated by the Buyer (PGSC) to set off the same against any claim of the Buyer (PGSC) for payment of a sum of money arising out of this contract made by the Bidder/Supplier/Contractor with Buyer (PGSC)

SCOPE OF WORK

Technical Specifications and Scope of work

Section I

This is a two part bid (Part: 1 - Technical bid without Price and Part: 2 - Price bid).

This is a Tender document for Supply, Installation, Integration, Testing and Commissioning of High Resolution, High Brightness Full dome Digital 4K 2D Immersive Projection System (DLP front projectors with PURE RGB LASER light source) for projection on existing 23 meter diameter perforated aluminum dome screen having 30 degree tilt with geometrical correction, auto image stitching and auto blending etc. for seamless projection of high resolution 2D digital full dome film shows and digital planetarium shows by replacing existing Digital Planetarium system (Digistar D3 with Six DLP projectors) and large format film projection system (Ultra 70 PD of GOTO, Japan make) installed at Dome Theatre and cleaning of the existing screen in the Dome Theatre, PGSC, Kapurthala. The existing Audio System (PD-80 sound system, 8 Channel of Otari, Japan make) will be integrated with new system.

The scope of work includes:

- A) Supply, installation, integration, training, and commissioning along with onsite comprehensive warranty support of three years & post warranty comprehensive maintenance for further two years of following sub systems. All of these provisions will be considered for evaluation of comparative statements of bids:
1. 3 Chip DLP projectors with individual intensity of minimum 40,000 ANSI lumens, minimum contrast ratio of 5000:1 and minimum individual native resolution of 4096 pixel x 2160 pixel with signal processing at 60 Hz, shall be used for full dome projection system with effective screen resolution of minimum 11 Million Pixel after seamless blending on the dome screen . Optimized blending technology should be adapted for laser light source.
 2. Each 3 chip DLP projector shall be pure RGB Laser with 25,000 hours life to 50% brightness.
 3. Auto Edge blending and Auto geometric correction software and hardware for seamless display and accurate mapping to screen geometry shall have to be executed.
 4. System should be integrated with high performance multi-channel media creation, image generator and playback system for playing of digitally converted 2D full dome shows, 2D large format films and 2D digital planetarium shows. It should provide a user friendly Graphical User Interface to control system and configuration.
 5. Display management system shall control the display configuration like tiling, positioning, alignment etc. Video transmission should be through QFSP+ module and multimode OM3- OM4 fibre optics.
 6. Data cabling to carry lossless video signals from sources viz. Media Servers and playback system, projectors and/or video players and high speed data path network

- (if any) among computing and storage elements through fibre optic cables.
7. Properly dressed power and data cabling for all systems and devices so as not to cause interference with video signals and data networks.
 8. Supply of Full dome large format 4k shows (At least six) and Astronomy Sky Shows (At least four) in English and Hindi Language along with the system free of cost.
 9. Network Attached Storage (NAS) device of 30-40 TB capacity to store the shows.
 10. LED cove lighting of the full dome theatre and its integration with show control system. It is mandatory to have brightness of minimum 1600 Lumens per unit and sufficient number of fixtures to avoid any dark zone in the Dome. Separate additional white LED light is required to be installed for theatre maintenance purpose, controllable from single switch.
 11. Cleaning of existing Perforated Aluminium Dome screen from inside to make it completely clean and dust free.
 12. Sound proofing and acoustic treatment of the Full dome theatre wherever necessary including Acoustic/insulation jacket for Dome Screen, shall be under the scope of the bidder, if required.
 13. The bidder shall submit detailed layout design, capacity, load calculation, requirement of cooling of projectors etc. for Full dome Theatre including area of placement of projectors, Image Generators, etc. This work will be taken up by the bidder after approval of PGSC.
 14. The bidder shall provide site plan document with plan, elevation and mounting details for placement of Projectors and Rack Mounted assemblies for Image Generators and Playback system and Display Management System. This can be in the form of site preparation guide.
 15. Both Touch panel and IPAD based control systems shall be provided for general illumination, dome lighting control, audio, projectors, device control units, colour correction, colour matching, etc.
 16. Touch panel based show control system shall be located in the control room/viewer platform inside the dome with wireless iPad/Tablet for operation of the show.
 17. The system should be designed keeping in view that it must be manageable from a single control unit. All accessories needed for easy accessibility of devices for maintenance must be considered under the scope of the work.
 18. The bidder shall provide the requirement of fire extinguishers (type and quantity) in addition to existing fire extinguishers installed to be placed in different areas of full dome theatre. PGSC shall install it after obtaining the approval from fire department.
 19. Site Supervision, Content Production, Special or General Programming, Set Up, Testing and Commissioning, Training, Planned Maintenance Services, Operational Services, Audio Visual System Management, Illumination Management etc. shall all be under the scope of the work of the bidder.
 20. Special mountings for the projectors and all required alignments for final adjustments etc. shall remain within the scope of the selected bidder. The selected bidder must

consider cost effective non rusting materials and anti-corrosive treatment for all metallic structures of projectors. All safety measures shall be considered while designing for safety of people and equipment. The selected bidder shall remain responsible for closely monitoring the work at site to ensure that desired quality of work is executed.

21. The system is to be designed with very high up-time commitment (99% over 364 days a year or 365 days in case of a leap year). The selected bidder shall maintain inventory of spares for the designated up-time commitment for on-site warranty.
22. Preventative maintenance shall be carried out by the bidder at regular intervals during the Warranty period of three years and post warranty period of two years and a logbook to this effect shall be maintained at site. Suggested schedule for preventive maintenance shall be clearly defined and submitted in Technical Bid.
23. If any disparity in terms of projector intensity, colour, alignment or otherwise is noticed and reported during the warranty period, immediate redressal of the issue through repair or replacement shall be within the scope of the successful bidder.
24. Integration of all subsystems as indicated above to configure the “Full dome 4K digital 2D immersive projection system” shall be the responsibility of the bidder.
25. For Technical bid evaluation, the bidders shall provide detailed bill of quantities (without cost) of each item proposed for their offer along with schematic system architecture and product catalogues for all hardware/software items.
26. Buyback of Existing Digistar 3 Planetarium system (Hardware) installed at PGSC, Kapurthala in as is where condition without hard disks.

Note:

All civil, mechanical and electrical works relating to the installation of the system/show, fabrication /installation / mounting of projectors array are to be taken up by the selected bidder, and all necessary materials, machines and any other machine tools required for the fabrication and installation are to be arranged by the selected bidder at their own cost. The selected bidder will provide design, drawings, details and complete specifications for installation of projectors array as described earlier.

All safety precautions and compliance of statutory obligations shall be taken care of by the selected bidder during execution of the entire project at site.

Client’s responsibilities:

1. PGSC, KAPURTHALA shall provide electrical power for execution of the work.
2. PGSC, KAPURTHALA shall provide UPS for the system.
3. PGSC, KAPURTHALA shall provide lockable space for storage of materials by the selected vendor.

Section II

TECHNICAL SPECIFICATIONS OF INTEGRATED HIGH-RESOLUTION FULL DOME DIGITAL 2D IMMERSIVE PROJECTION SYSTEM FOR A 23-METER DIAMETER PERFORATED ALUMINIUM DOME SCREEN 30 DEGREE TILTED WITH AUTO GEOMETRICAL CORRECTION, IMAGE STITCHING AND BLENDING ETC. FOR SEAMLESS PROJECTION OF HIGH-RESOLUTION (4K) 2D DIGITAL FULL DOME FILM SHOWS AND DIGITAL PLANETARIUM SHOWS.

1. Fully High-Resolution Full dome digital 2D immersive projection system

11. The integrated High Resolution(4K) Full dome Digital 2D Projection System consists of Projectors array, Auto Blending & Geometric Correction units, Image Generator Servers & GUI server for playback, show control, Server for dome slicing and content creation for full dome planetarium shows, Display Management, Alignment & Calibration System, , LED Cove lighting etc. This system is a multi-channel display system with combined resolution of **17 Million Pixels or higher without blending.**

12. Immersive Projection System: An array of projectors and allied systems with the requisite overlap and edge blending is to be provided along with suitable geometry correction for the dome screen as specified, to provide a seamless display of at least **11 MP arranged in a front projection configuration (after blending)** with the specifications as per table 1.1.2. The projectors are to be mounted on a suitable structure. Selected bidder will fabricate and install the projector mounting structure at site as per the design, details, drawings and specifications provided by the bidder. The bidder must visit the site before submission of tender and identify the most suitable place in the building for keeping the Image Generator Server, projectors, Audio racks and other necessary units and routing of the cables needed to connect all constituent components of the system.

13. Table: 1.3

Specifications	Detailed description
Number of Projectors	Minimum 2 number of Projectors. NB: All Projectors must be of same specifications and from OEM and shall directly project contents on the dome screen.
Type of projector	3-Chip DLP Projectors with RGB Pure Laser Light Source Lumens of 40,000 or more and contrast ratio of 5000:1 or better with high frame rate of 60hz
Projector array comprising multiple projectors	To cover 23-meter dome screen having 30 degree tilt

Total Resolution before and after blending	17 MP or higher (before blending) and 11 MP or higher (after blending)
Mounting	Projectors are to be mounted on the specially designed structure around the dome periphery. Each mount/cradle shall provide full optical alignment and calibration support along each of the X, Y and Z axes as well as rotation about the horizontal axis.

14. Projector: The specifications of individual projector are provided at table 1.4.2: The projector model quoted by the bidder must be capable of running continuously for at least 12 hours a day and 365 days a year. All projectors must be of same specifications and manufactured by the same OEM in their own factory.

1.4.1. Acceptable OEMs: BARCO/Christie/NEC /Sony

1.4.2. Table: 1.4.2

Specifications	Detailed description
Display Technology	Three chip DLP
	Source : RGB Pure Laser
Minimum native Resolution	4096 pixel x 2160, 60 Hz, at minimum 5000: 1 contrast ratio.
Internal Input / Output ports	HDMI/Display port/QSFP+
Input / Output control and networking	RS232, TCP/IP.
Lens Options	Standard Zoom to Wide Angle Zoom to cover the entire screen area as specified (please specify further technical details along with type and OEM of lenses to be used).
Calibration	Support for controlling individual colour and intensity on each colour channel.
Source Life	Minimum 25,000 hrs to 50% brightness
Operating Hours	The System shall be capable of being used for twelve hours per day 364 days in a year.
Monitoring Parameters	Source life, Fan status, Temperature status, etc.
Noise	< 55 db at 25°C per projector

Accessories	All standard accessories including IR remote, Line cord etc.
Warranty	Manufacturer's standard warranty of not less than five years on projectors.

2. **Auto Blending and Geometry Correction (BG) unit:** The system must be equipped with software and hardware to provide multi projector auto geometric alignment, edge & colour blending and brightness matching to ensure that the projection looks as seamless as possible. The specifications and functionalities of this unit are as below:

2.1 Table

Specifications	Detailed description
Image Operations	Auto Geometry Correction
	Auto Edge Blending
	Auto Colour Correction and Matching
	Auto brightness Correction and Matching
	Software for geometric correction shall be incorporated in the system.
	Gama Matching of Projectors
Software Presets	Software Presets should be available for Switching Brightness of Projectors for 2D Projection Modes.
	The system must have software and hardware to adjust and calibrate the geometric auto alignment and auto edge blending of the digital projection system automatically and must be integrated into the show manager software.

2.2 Image Generator Server and Playback System with full dome and planetarium show software

2.2.1. Digital Projection System must have Professional quality servers / Image generators/ graphic computers/cluster (Computer System) mounted on rack capable of handling planetarium shows and high resolution (4K) full dome video shows. This Computer System with minimum **quantity (2+1) total 3** i.e. minimum one (1) servers for each projectors and 01 server as host cum audio, must be with the full dome and planetarium show simulation and play back software.

2.2.2. A suitable solution shall be ensured to drive the required projector array with the specifications given below. Image GUI server shall drive projector array with minimum one node for each projector for Fulldome films and planetarium shows to be displayed in real time onto digital immersive dome projection screen. The Image GUI server shall provide synchronization between images

projected onto the dome through various image generator servers for a seamless image without any tearing. The server shall also provide synchronization of multilingual audio tracks with the projected filmshows.

2.2.3. Acceptable OEMs: Dell, HP

2.2.4. Table

Specifications	Detailed description
Image Generators*	<p>Industrial grade computers with latest graphic cards, Intel based processors, solid state hard drives, backup hard drives, all necessary hardware and software suitable for planetarium systems of International Standards having following minimum specifications:</p> <ul style="list-style-type: none"> • 8 Core Intel Xeon or Higher processor per computer • Working memory 4GB X2 RAM or more • Dual Port ATI/NVidia or equivalent graphic card. The graphic card must have the video frame buffers that must store and synchronize the video frames so that the same frames are always output at the same time. • Two number of swappable 1TB SSD • Two 1TB hard disk drives - Graphic Computers • Keyboard and mouse (at the rack) • Network Ports: Minimum Four (4) Network Ports • Operating system: Microsoft Windows 10 Professional or newer or Linux OS with GUI.
Pre-process Data transfer Rate*	<ul style="list-style-type: none"> • No jerks, flicker or image tearing should appear onscreen. • Frame rates up to 60fps per eye.

**Additional SSD and RAMs may be configured to meet the overall specifications, if necessary.*

2.2.5. Network Attachable Storage (NAS) of minimum 30-40 TB capacity should be integrated with the system.

3. **Content creation Server/Player:** The host server must be loaded with the software to create as well as play high resolution(4K) 2D astronomy shows using inbuilt Digital library.

3.1. Astronomy Simulation & Playback Software:

- 3.1.1.** Latest version of OEM astronomy and playback software with perpetual license for playback of full dome shows and planetarium shows should be installed.
- 3.1.2.** The software should have facility for development of in-house planetarium shows using inbuilt Digital library/Cloud access of the planetarium datasets.
- 3.1.3.** The user interface (UI) of the software should be customizable in a variety of

ways to meet our needs. It should have features like an interactive dome view, drag and- drop capability, Show Builder, and custom control panel pages to expand the interface functionality.

- 3.1.4.** The software should have Dome casting features to receive live dome presentations or present to other theatres.
- 3.1.5.** The software should have the feature of Presentations and Playlists to build live shows one clip at a time and advance through them using a mouse like PowerPoint presentations or to play automated sequences, one item after the other using playlists.
- 3.1.6.** The Astronomy Simulation & Playback Software must have built in Back Up feature to take backup of all hard drives.
- 3.1.7.** The installable copy of the software needs to be provided.
- 3.1.8.** It is desirable that software should include Science On a Sphere data with data sets on Astronomy, Atmosphere, Land, Ocean & Real time simulation

32 The detailed features of the Astronomy Simulation & Playback Software will be as under (More features are preferable)

3.2.1. Interactive Planetarium Software: The interactive Planetarium software should consist of following standard & special features :

- 3.2.1.1.** Earth & Moon System Features: High Resolution Earth & Moon Map, moons of Planets as per selected options.
- 3.2.1.2.** Shadow to represent eclipses, Earth orbiting Satellites for Navigation and mapping etc.
- 3.2.1.3.** Solar System: 3D Models of Sun, Planets including their Moons, Minor Orbital Objects including Asteroids, Outer Solar System Objects, comets etc., with possibility of incorporating new 3D modules.
- 3.2.1.4.** Space Missions: Cassini, Voyager & Voyager2, latest Mars missions, Pioneer, International Space Stations, are also to be added.
- 3.2.1.5.** Milky way Galaxy: Hipparchus Star Catalog, Extra solar Planets, Open Star Clusters, Globular Star Clusters, Pulsars, Quasars, Planetary Nebulae, H II Regions, Supernova Remnants etc.
- 3.2.1.6.** Extragalactic Space: Tully Galaxies (NGC, IC, 30,000 objects), 110 Messier Objects, Abell Galaxy Cluster, Deep Field Survey Objects, Sloan Digital Sky Survey (SDSS).
- 3.2.1.7.** Provision for viewing the Earth, Solar system & Milky way galaxy from far away points.
- 3.2.1.8.** More such features like simulations of the Milky Way, the cosmic web... etc., as seen from different locations in space.

Desirable Features

- 3.2.1.9.** Constellations & Grids : 88 constellations, Stick figures, possibility to add arbitrary art overlays, IAU boundaries for J2000, Co-ordinate

spheres for celestial, ecliptic and galactic systems, Meridian, Equator, Cardinal Points.

- 3.2.2. The supplier has to furnish the list of software systems that will be supplied.
- 3.2.3. Digital planetarium system software should be owned, developed and fully maintained by the digital planetarium system supplier.

33. Provision of multiple usages of show

- 3.3.1. The show manager should be capable of using full dome 2D digital shows by different developers around the world both in 4K.
- 3.3.2. The system should be compatible (video & audio) for the full dome shows either converted from large format films into digital or the digitally created with live shoots (not animation). All details in this regard are to be provided.

34. All System Navigation System

- 3.4.1. Supported navigation devices: Mouse/Ipad, Wireless Xbox, Keyboard with the following or more features:
 - 3.4.1.1. Scale Graph
 - 3.4.1.2. Light Assist for smooth acceleration & inertia
 - 3.4.1.3. HALO Surface Feature
 - 3.4.1.4. Volumetric Software
 - 3.4.1.5. Show Modules
 - 3.4.1.6. Resource material to teach basic Astronomy
 - 3.4.1.7. Point Cloud Renderer
 - 3.4.1.8. Mesh Renderer
 - 3.4.1.9. Implemented Object Positions
 - 3.4.1.10. Laser pointer and more features

35. Show Builder for developing Full Dome astronomy shows in 4K

The system software should have following minimum show elements required for creating in house full dome shows in 4K.

- 3.5.1. The System must be able to display a volumetric Milky Way Galaxy in real-time.
- 3.5.2. Full dome videos
- 3.5.3. Full dome Clips
- 3.5.4. Audio clips
- 3.5.5. Sun, Moon & Planets
- 3.5.6. Self-defined lines, grids, scales Stars and sky motions
- 3.5.7. The system must allow the user to view the sky at any date/time from the surface of any solar system body, with correct local diurnal motion, where data is available.
- 3.5.8. Astronomy Picture of the Day by NASA should be capable of full integration

into the system through one single click download during the live shows.

- 3.5.9.** Library of images, clippings, visuals, animation on space and astronomy related objects and events. Images of ancient astronomers and their works and contributions.
- 3.5.10.** System software should include the American Museum of Natural History Digital Universe or an equivalent database fully validated strictly by a reputed international organization working in the field of astronomy/ astrophysics. There should be provision for on line updation of the show elements.
- 3.5.11.** The text editor to create show elements should be capable of handling English and Hindi.
- 3.5.12.** Still images (regular images, panoramas, all-skies)
- 3.5.13.** System must manage and display high resolution online sky surveys, such as the Digital Sky Survey (DSS2) and hundreds of other surveys.

Desirable Features

- 3.5.14.** Real movie strips
- 3.5.15.** Text Labels and Text Boxes which can be added in live shows in both English and Hindi.
- 3.5.16.** System must show the sun in a variety of layers and textures in the Solar Dynamics Observatories (SDO) control panel window. Users can display various textures, images, and videos in several different wavelengths directly to the 3D model of the Sun. The control panel can be connected to the Internet for real-time, dynamic updates.

3.6. Show Manager

- 3.6.1.** Should be capable of integrating user created artwork, videos, photos, sounds etc. With the aid of a time line, any number of levels, tracks, layers. Chapters and animation parameters, still images, the system should be compatible of rendering images on the full dome. All elements should be loaded from the centralized data server into the resources window and previewed without any heavy rendering process, stitching, slicing etc. All required software with license are to be supplied. Provision for projecting 4K shows in 2D.
- 3.6.2.** Show Manager must include a live real-time view of the dome on the computer monitor.
- 3.6.3.** The show manager software should ideally be able to control audio, lights etc inside the theater to create special effects for custom shows and live shows.
- 3.6.4.** The pre-rendered video and real-time graphics inputs must be playable simultaneously and not mutually exclusive.
- 3.6.5.** They must be played through the same astronomy software.
- 3.6.6.** The System must be capable of using the drag and drop facility to include images, 3D models, videos or audio files into the Show Manager, without need to write any programming scripts. Dome View should immediately display these actions.

3.6.7. The show Manager must provide the ability to obtain content from an Internet library that is available to other sites.

37. Show Player

3.7.1. The tool for reproduction and control of shows, image distribution to the various channels, distortion correction, brightness and gamma adaptation as well as diaphragm calculations should be effective in real time, without prior slicing of raw images/customized ones in the software.

3.7.2. Interference with a running show through the familiar control commands (Play, Pause, stop etc) should be available in the User Interface, Jump to predefined bookmarks chapters or layers should be made available in the Player or Show Editor. By means of a time pointer, moving to any point of time within a show and enable projection.

3.7.3. Player must support general commands, such as controlling the dome illumination cove lights and configuring the projector.

3.7.4. All the Player functions should be loaded onto a PDA/IPAD or other new technology devices, which can then be used to wireless remote control pre compiled shows as an alternative to the computer control.

38. Broadcasting of shows

The system software should have Dome casting feature to receive live dome presentations or present to other theatres online. The dome cast function should support features:

3.8.1. Live audio and video stream of the presenter can be placed on the dome.

3.8.2. Built-in scheduling: create new and review available dome casts

3.8.3. Presentations can be operated using the console, a Bluetooth presenter's remote, or an Xbox controller for flexible presentation style

3.8.4. Presenter's custom content is automatically packaged and shared

39. Flexibility to accept different shows made in different software.

3.9.1. The system should be capable of playing all types of shows full dome video shows including large format film digitally converted shows and 2D astronomy movies in the dome.

3.9.2. The system software must support generic real-time volume rendering and include astronomical and non- astronomical volume sample data.

310. Library of Images/ Full dome Clips.

3.10.1. A library of Full dome Clips and images in 4K, mainly related to major astronomical events and objects along with their resolution, future up gradation option should be provided. Details of the Library have to be provided with offer for evaluation.

3.11. Library for Audio Clippings

3.11.1. A list of audio clippings runnable on existing Audio System, with duration. The above clippings are required for adding background music when in house shows are produced.

4. Shows

4.1.1. *Supply of Full dome large format 4k shows in the field of science, technology, astronomy, nature or related field. (At least (6)) and Astronomy Sky Shows (At least (4) four) in English and Hindi Language free of cost along with the system.*

Large Format Shows

Bidders will provide a list of minimum 15 number of 4k Full Dome large Format Shows with duration of 35 minutes to 45 minutes (compatible with offered system) in the technical bid. The shows must be produced from year 2010 & onwards.

The content of the offered shows should be combination of live shoot, computer graphics based and mixture of live shoot and computer graphics based shows. The language of the shows should be English & Hindi.

PGSC will select 6 shows which will be provided and installed at PGSC theatre with license / subscription period of 1 years for each show. These show will be screened in staggered way i.e. each show license period will commence from the date of screening.

The selected shows (6 number) will be provided along with the system free of cost.

Astronomy Shows

Bidder will provide Astronomy Sky Shows (At least (4) four) with minimum 5 years subscription license of 25-45 minutes duration in English and Hindi Language. The supplier will provide list minimum 15 latest astronomy shows along the technical bid from which PGSC shall select four shows. These shows will be provided along with the system free of cost.

All necessary scripts (Hindi & English) and original sound tracks of the shows must be supplied .There should be provision for auto extension if theatre remains closed due to Force Majeure (eg. Theatre is closed due to Pandemic situations).

The bidder will convert existing seven astronomy shows (presently being run

using Digistar 3 Planetarium) compatible to run with the new projection system (without any kind of change/reduction in original show contents & quality). The software program files of these shows in sft format along with video files will be shared with the successful bidder.

5. Show Control System

- 5.1 The display environment should include an integrated Show Control System, capable of controlling all hardware, other equipment, including the display system, audio, media and cove lighting system excluding Emergency Exit Signage. The Show Control System should provide following features:
 - 5.1.1. Table top control panel and IPAD with Communication protocols: RS 232, TCP/IP.
 - 5.1.2. On/Off Control: Projectors, Illumination, Audio and Dimmer control for COVE lighting
 - 5.1.3. Interactive touch screen for controlling DIGITAL IMMERSIVE FULLDOME PROJECTION SYSTEM
 - 5.1.4. The screen should have following: Display size: 32 inch (diagonal), Display Resolution: Upto 1920X1080 or better

6. Calibration and Alignment

- 6.1 For Fulldome Projection System with multiple projectors, manual adjustments for calibration and alignment are not feasible and hence automatic features are required to maintain calibration and alignment as per table:

6.1.1. Table

Specifications	Detailed Description
Auto alignment and calibration	Software, hardware and multi-camera based mechanisms to be included in order to ensure error free edge blending / geometric correction on screen as well as to maintain uniform colour, and contrast on projectors and dome screen.
	Auto alignment, auto edge blending and correction system shall be available in the system through GUI.
	Software Preset to manage optimum brightness levels of Projectors in 2D modes.

6.1.2. Table

Specifications	Detailed description
Tools for Verification of calibration and Alignment	Set of Instruments and software for verification of calibration and alignment parameters at site as per table.

7. Integrated Audio System

- 71** The projection system is to be integrated with the existing 8 channel audio system model PD-80, of Otari, Japan make presently being used with Large Format Film Projection System of GOTO, Japan make installed in the Dome Theater.
- 72** The System should be able to provide a 6 channel (5.1 format) analogue and digital audio stream from its audio computer to the theatre sound amplification system.
- 73** The audio stream should be synchronized with visual system.
- 74** The audio computer of the system should be able to generate sounds positioned in 3 dimensions according to the programming of the show
- 75** It is compulsory for all the bidders to visit the site before the pre bid meeting however, those bidders who have already visited the site are exempted.

8. Integration with U.P.S system with parallel redundancy

- 81** PGSC has 100 KVA UPS system dedicatedly installed for the Digital Planetarium system. The supply from the same will be available in the dome control room.

9. LED Cove light

- 91** Cove lighting to be integrated with show control system.

92 Table

Specification	Detailed description
Cove Light	Beam Angle 120° x 120° Lumens 1600 LED Channels Red / Green / Blue Mixing Distance 2 in (51 mm) to uniform light Lumen Maintenance† 50,000 hours L50 @ 50° C (full output)

Design	360° Layout in Aluminium Cove Trough in aesthetical indirect lighting arrangement. Continuous lighting to be provided to avoid dark zones. Provision for software programmability of different modes and colour effects along with programmable hardware presets and Smartphone or Tablet operation with Wi-Fi connectivity.
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10. Cleaning of existing Perforated Aluminum Dome screen from inside to make it completely dust free

101. Cleaning of existing Perforated Aluminum Dome screen from inside thorough vacuum cleaning and then cleaning with ph neutral solution from inside to make it completely dust free. The cloth used for cleaning should be very soft, free from fur/tomentum. Cleaning work should be carried out with utmost care and safety. Bidders are advised to visit PGSC for physical inspection of the dome screen in order to assess the condition of dome surface and accordingly give cost of cleaning, in the financial bid. Tools, tackles, ladders, scaffolding, labour personnel and consumables shall be in the scope of bidder for this work. PGSC shall provide electrical connection, lighting and water supply for belongings of the cleaning personnel. Any damage to the dome screen during cleaning due to negligence of the cleaning personnel shall be recovered from the bidder/supplier providing the services.

11. Spares

- 111. Pure RGB Laser Projector (without lens) Quantity: 1 Number
- 112. Graphic Processor (Spare Computer System) Quantity: 1 Number
- 113. Video graphic card (preinstalled in the spare graphics processor) Quantity: 1 Number
- 114. Spare Video Card Quantity: 1 Number

12. Brochures and complete specifications

- 121. Bidders shall provide printed brochures and detailed specifications for various OEM products. The brochures, documents and engineering drawings as per Table 11.3 have to be provided along with the technical bid including compliance as per Annexure: C. The bidders have to respond within stipulated time for additional information/clarifications sought afterwards, if any.
- 122. Bidders may be required to make technical presentations explaining their offered scheme after opening of Technical Bids, if decided by PGSC. The decision of the PGSC in respect of technical evaluation of the tender and selection of qualified and eligible vendors for opening of Financial Bid shall be final and binding on the bidders.

123. Table: Information to be submitted by the bidders in Technical Bid:

Detailed description
1. Brochures and specifications for Projectors, Lenses, Mounts, Blending and Geometric Correction Units, Display Management System, etc.
2. Brochures and specifications for Image generator servers, Interactive planetarium software and Fulldome configurator & playback system and projection systems.
3. Brochures and specifications for Show Control System.
4. Brochures and specifications for Calibration and related instruments and software.
5. Brochures and specifications for Software Elements along with licensing details.
6. Engineering drawing (plan, elevation and sectional views wherever necessary for viewer's gallery and image servers room in pdf and AutoCAD file format), complete solution diagram, connectivity diagram, system deployment and foot print detail, electrical power requirement and location marked diagram/drawings, system cooling requirement (in BTU) with proper layout drawings.
7. Detailed write-up and specific system solution document explaining the integrated working of offered solution with the hardware and software describing various technical, interface and performance aspects, wiring / network diagram of the proposed solution. This has to explain how the proposed design or solution meets the specifications and overall requirements as mentioned in the tender document.
8. Schematic diagram and broad material specifications of the structure for mounting the projector array showing suggested location of the projectors including arrangement for accessibility to the projectors for maintenance.
9. Details and product catalogues of LED Cove light, exit signage and emergency exit signage lighting and ramp lighting scheme.

13. Write Ups Related to Design

131. Document on design techniques highlighting how Fulldome Digital 2D immersive projection system will be met by the offered solution using the proposed sub-systems. Detailed write-up of functional role of each subsystem in integrated solution shall be described.

14. User Training and Documentation

141. Two levels of training are to be arranged – Basic training of two days for 5 executives and 5 days of technical training for 5 participants is required to be organized at **PGSC, Kapurthala. Training material and complete installation manual in both hard and soft copies is to be provided (two sets of each).** The faculty providing training should be

certified from parent company (OEM) or technical and experienced persons from system integrator.

142. Table: Training Topics on FULLDOME PROJECTION SYSTEM

Sl. No.	Detailed Description
1.	Architecture of FULLDOME PROJECTION SYSTEM
2.	Hardware components of FULLDOME PROJECTION SYSTEM (Projectors, screen, controller, image servers, network elements, storage etc)
3.	FULLDOME PROJECTION SYSTEM Administration: Hardware and Software Installation, Configuration, Trouble-shooting and Maintenance procedure including preventative maintenance
4.	Alignment and Calibration with usage of instrument and tools
5.	Field replaceable components and applicable procedures for field replacement
6.	Special features of the show control software
7.	FAQs

15. Delivery Schedule: With 7 months from the award of work or opening of LC whichever is later.

16. Warranty AND AMC:

161. Warranty: The successful bidder shall provide Single Window Onsite Comprehensive Warranty with preventive maintenance on all the items supplied under the purchase order as has been enumerated in details below. The Warranty period for the entire installation is for five years for all the components from the date of issue of acceptance certificate by PGSC.

162. AMC: The comprehensive annual maintenance contract will be for a period of two years, after expiry of the warranty period of three years.

163. Bidders shall quote for comprehensive annual maintenance charges along with applicable taxes for two years, after expiry of warranty period of three years from the date of commissioning and handing over to PGSC on year to year basis. The tax break-up for all such rates shall be clearly spelt out as on the date of submission of the tender.

164. During Warranty Period of three years and subsequent comprehensive maintenance contract, comprising of two years, the following terms shall be applicable:

16.4.1. Preventive Maintenance for all the equipment and peripherals supplied by the bidder. The bidders shall submit a schedule for such preventive maintenance and shall form part of the agreement.

16.4.2. Repair of faulty / defective parts and peripherals.

16.4.3. All replaced parts shall remain as property of PGSC, Kapurthala, may be removed. Faulty parts shall be the property of Vendor.

16.4.4. All the parts including networking cables, connectors, etc. that may be required

to maintain the system shall be supplied by the bidder at their own cost.

16.4.5. Any break-down, failure or malfunctioning of the system shall be attended to and put back in service within 48 hours. However, all round efforts must be made to set right the system in shortest possible time. Service shall be available for at all times for 364 days in a year.

16.4.6. The selected bidder will maintain the minimum essential spares at their own stores and the required tools / test equipment / software so as to reduce the break-down time.

16.4.7. Spare parts manufactured by Original Equipment Manufacturer (OEM) will be preferred. However in unavoidable situations spares manufactured by equivalent manufacturers may be used with prior approval of PGSC.

16.4.8. In case of any requirement for replacement of any supplied spares by the bidder, PGSC shall not be responsible for re-export of the damaged components and that will be replaced by the successful bidder.

17. Buy Back of Digistar 3 Hardware

171. The scope of work includes buyback of the existing Digistar 3 Digital Planetarium system in as is where in condition without hard disk. The details of the existing hardware is mentioned below:

S.No	Item	Specification	Qty	Remarks
1	Christie DS 650+ projector	6500 Lumens, Contrast ratio:2000:1, Resolution: 1400X1051, DLP, Dual Lamp	7	Six Projectors with lens and Masks, One projector (spare) without lens and mask
2	Computer System	Window XP Professional, Intel (TM) core 2, 2.67 GHZ, 2 GB RAM, Nvidia 512 MB graphic Card	9	Eight complete set of Computer systems and one spare computer system without hard disk
3	Operator Console	Joystick, Monitor and related accessories.		
4	Computer Rack	Consisting of all computer systems, networking switches, wifi router, cables and related accessories		
5	Any other Discount	<i>May be mentioned in the Financial Bid (Part C)</i>		<i>May be mentioned in the Financial Bid (Part C)</i>

172. Computer systems will be handed over to successful bidder without any software i.e. without hard disks so there are not any legal or ethical issues.

173. Buy back item need to be lifted by the vendor within the currency of the contract.

TECHNICAL COMPLIANCE TABLES

Sr. No.	Specifications	Descriptions as per Clause of Section II of technical Specifications	Information to be provided by Bidder		
			Compliance (Yes/No)	Description of the item supplied or attach brochures (please mention page Number)	Reasons for deviation, if any, with complete justification
1	Projection System Please specify the total number of projectors and their make proposed to be used in the projector array.	1.1, 1.2 & 1.3			
2	Projectors	1.4			
3	Auto Blending and Geometry Correction (BG) unit	2 (2.1)			
4	Image Generator Server and Playback System with full dome and planetarium show software.	2.2			
5	Content creation Server/Player	3			
6	Astronomy Simulation & Playback Software	3.1 & 3.2			
7	Provision of multiple usages of show	3.3			

8	All System Navigation System	3.4			
9	Show Builder for developing Full Dome astronomy shows in 4K	3.5			
10	Show Manager	3.6			
11	Show Player	3.7			
12	Broadcasting of Shows (Dome Casting)	3.8			
13	Flexibility to accept different shows made in different software	3.9			
14	Library of Images/ Full dome Clips	3.10			
15	Library for Audio Clippings	3.11			
16	Supply of Full dome large format 4k shows (At least six) and Astronomy Sky Shows (At least four) in English and Hindi Language along with the system.	4			
17	Show Control System	5			
18	Calibration and Alignment	6			
19	Integrated Audio System	7			
20	Integration with U.P.S system with parallel redundancy	8			

21	LED Cove light	9			
22	Cleaning of existing Perforated Aluminum Dome screen	10			
23	Spares	11			
24	Brochures and complete specifications	12			
25	Write Ups Related to Design	13			
26	User Training and Documentation	14			
27	Delivery Schedule	15			
28	Warranty & AMC	16			
29	Buy Back of Digistar 3 Hardware	17			

Annexure-D

Past Experience in supply, installation, testing and commissioning for an integrated functional full dome digital 2D immersive projection system.

Agency Experience (Limited Company/Corporation/Agency/Consortium/JV Projects)

S. No	Name of the project	Cost of the Order awarded in INR (*)	Name of the Client	Phone of Contact Person of Client	Starting Date of Project	Completion Date of Project	Details/ Scope of work

Note: In case order is awarded in foreign currency then conversion rate on the date of placement of order may be taken for converting in INR value.

FORMAT FOR ANNUAL TURNOVER AS PER THE AUDITED ACCOUNTS

TOWARDS THE QUALIFYING EXPERIENCE

S. No.	Financial Year	Turnover in Indian Rupees(INR)
1.	2016-17	
2.	2017-18	
3.	2018-19	
4.	2019-20	
5.	2020-21	

Note:

In case of Consortium / JV, if the Turnover of lead partner matches 100% of the requirement then mention the turnover of lead partner else Average Annual Turnover of the bidder in crores at least 50% of lead partner and should be 100% of sum of all partners of Consortium / JV)

(Signature of Authorised Signatory)

This is to certify that the above information has been examined by us on the basis of relevant documents; books of accounts & other relevant information and the information submitted above is as per record and as per details annexed.

Signature, Address, Seal & Membership No of Chartered Accountant.

PROFORMA FOR ISSUING “UNDERTAKING BY ORIGINAL SYSTEM INTEGRATOR” (To be submitted in OEM’s Letterhead)

Dated:

**To
The Director
PUSHPA GUJRAL SCIENCE CITY,
Jalandhar – Kapurthala Road, Kapurthala**

Dear Sir,

We,___hereby state that the product offered vide this tender by our authorized agent, M/s._____and to be supplied if found suitable and selected shall be our original equipment and is to be deemed as if the supply has been made by us directly.

Accordingly, we stand by all the terms, conditions and stipulations as defined in tender of PUSHPA GUJRAL SCIENCE CITY.

We also undertake to directly make good of any shortcomings either in product quality and/or in services which my/our authorized agent may fail to fulfill as a part of his obligations under the terms & conditions of this tender.

Thanking you,

Yours faithfully,

(Authorised Signatory with Seal).

DECLARATIONS

Declaration – I

In strict accordance with specifications, schedules of quantities and upon the terms set out in the annexed form of Contract, instructions to tenderers, tender document and its enclosures at the rates entered in the attached Schedule of Quantities and rates.

- i. I/We undertake to complete the whole work within stipulated time period is given to us by the Pushpa Gujral Science City.
- ii. In the event of my/our tender being accepted, we also agree to enter into a contract in the form annexed hereto with such alterations or additions thereto, which may be necessary to give effect to the acceptance of this tender and such contract shall contain and give full effect to instructions to tenderers, the Specification, schedule of quantities and rates schedule of materials to be supplied by the Pushpa Gujral Science City and drawings attached to the tender.
- iii. The PGSC shall be at liberty to cancel the order in full or in part the event of failure of any of the above declaration made by us.

Signature of the Bidder

Declaration – II

This is to certify that I/We have no close relative as an employee of Pushpa Gujral Science City (PGSC), Kapurthala (close relative means: Father, Mother, Brother, Sister, Son, Daughter and Spouse) nor any such close relatives are associated with us as proprietor / partner / share holder / director and like.

Signature of the Bidder

Declaration – III

This is to certify that our Firm has not been blacklisted by any Govt., Semi-Govt. Deptt. or any other organization.

Signature of the Bidder

Format for Financial Bid to be submitted online only

PART A (IMPORTED ITEMS):

Currency: USD / Euro / Yen / INR

S. No.	Description	Total Amount Inclusive of taxes
1.	Supply, installation, testing and commissioning (SITC) of Projector Array with geometric correction and image blending for seamless projection. <i>As per Clause:1 of Section II of technical Specifications</i>	
2.	SITC of Image Generator Server networked with Image generator Work stations. <i>As per Clause:2 of Section II of technical Specifications</i>	
3.	SITC of Interactive planetarium and Full dome configurator and playback software. <i>As per Clause:3 of Section II of technical Specifications</i>	
4.	SITC of Show control system <i>As per Clause:5 of Section II of technical Specifications</i>	
5.	SITC of Automatic Calibration and alignment system <i>As per Clause:6 of Section II of technical Specifications</i>	
6.	Integration with existing Audio and Sound System <i>As per Clause:7 of Section II of technical Specifications</i>	
7.	Integration with existing U.P.S System <i>As per Clause:8 of Section II of technical Specifications</i>	
8.	SITC of LED Cove light, <i>As per Clause:9 of Section II of technical Specifications</i>	
9.	Cleaning of Screen <i>As per Clause:10 of Section II of technical Specifications</i>	
10.	Supply of Spares (As per Clause: 11 of Section II of technical Specifications): 2.1 Pure RGB Laser Projector (without lens) Quantity: 1 Number 2.2 Graphic Processor (Spare Computer System) Quantity: 1 Number 2.3 Video card (preinstalled in the spare graphics processor) Quantity: 1 Number	

	2.4 Spare Video Card Quantity: 1 Number	
11.	Training on FULLDOME PROJECTION SYSTEM As per Clause:14 of Section II of technical Specifications	
12.	Any other items of work/equipment etc. not covered above, under Sl. No. 1 to 11 but required as per scope of work provided.	
	Sub Total (Part A)	

**PART B: Two years Comprehensive Maintenance Charges after Warranty Period of 3 Years
Currency: Indian Rupees (INR)**

Sl No.	Particulars	Year	Total Amount including Tax
1	Comprehensive Maintenance Charges after Warranty Period of 3 years. As per Clause:16 of Section II of technical Specifications	1st Year	
		2nd Year	
	Sub Total (Part C)		

PART C:Buy Back of existing Digistar3 Hardware

Currency: Indian Rupees (INR)

Sl No.	Particulars				Total Amount
1	Buy Back offer for existing Digistar3 Hardware without hard disk as per clause: 17 of Section II of Technical Specifications				
S.No	Item	Specification	Qty	Remarks	-----
1.1	Christie DS 650+ projector	6500 Lumens, Contrast ration:2000:1, Resolution: 1400X1051, DLP, Dual Lamp	7	Six Projectors with lens and Masks, One projector (spare) without lens and mask	
1.2	Computer System	Window XP Professional, Intel (TM) core 2, 2.67 GHZ, 2 GB	9	Eight complete set of Computer	

		RAM, Nvidia 512 MB graphic Card		systems and one spare computer system without hard disk	
1.3	Operator Console	Joystick, Monitor and related accessories.			
1.4	Computer Rack	Consisting of all computer systems, networking switches, wifi router, cables and related accessories			
1.5	Any Other Discount				
	TOTAL (Part C)	<i>(This amount will be subtracted from the sum of amount quoted in Part A &Part B)</i>			

NET QUOTE:

<p>NET QUOTE:</p> <p>[(Part A + Part B) – Part C]</p> <p><i>(Rates will considered after to converting to INR @ Exchange Rate on the opening date of Financial Bid)</i></p> <p><i>(This amount will be considered for evaluation of Financial Bid)</i></p>	<p>INR</p>
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FORMAT FOR CONTRACT AGREEMENT

ARTICLES OF AGREEMENT made at (Place)..... this
..... day of(Date)(Month & Year)..... between the
PUSHPA GUJRAL SCIENCE CITY, a Society registered under the Societies Registration Act of Punjab,
hereinafter referred to as PGSC which expression shall include its successors and assigns on the one part
and

.....(Name of the successful e-
tenderer).....

.....(complete address of the successful e-tenderer).....
hereinafter referred to as the successful e-tenderer which expression shall include his/their respective
heirs, executors, administrators and assigns on the other part.

WHEREAS the PGSC is desirous of getting the work of **Supply, Installation, Integration, Testing and Commissioning of High Resolution, High Brightness Full dome Digital 4K 2D Immersive Projection System with hardware and software packages, interfaces, tools and / or drivers etc. (including integration of existing Audio System and cleaning of existing screen)at Pushpa Gujral Science City, Kapurthala for projection on existing 23 meter 30 degree tilted dome with 3 (Three) years On-site Comprehensive Warranty and further Comprehensive AMC for next 2 years.**

Notice Inviting E-tender (Including appendix), drawings, schedule of quantities and specifications describing the work and conditions of contract.

AND WHEREAS the said NIT (including appendix), specifications and the priced schedule of quantities and conditions of contract have been signed by or on behalf of the parties hereto. AND whereas the Successful e-tenderer has deposited in Bank Draft/Pay Order/ NEFT/RTGS

..... (Exact amount in
words).....

NOW IT IS HEREBY AGREED AND DECLARED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:

1. In consideration of the payments to be made to him as hereinafter provided the successful e- tenderer shall upon and subject to the conditions herein contained execute and complete the

work within months from the date of issue of letter of intent / Work Order / opening of LC (as defined in the NIT) and described in the said specifications and the said priced schedule of quantities along with the progress of the work.

2. The PGSC shall pay to the successful e-tenderer such sum as shall become payable hereunder at the time and in the manner specified in the said conditions.
3. Time is the essence of this agreement and the successful e-tenderer shall proceed with the work, throughout the stipulated period of this contract, strictly according to the Terms & Conditions of NIT. At any stage during execution, if any work lags behind the for reasons directly attributable to the successful e-tenderer, he shall pay or allow the PGSC to deduct the same from the Security Depositor from any money due to him liquidated damages as mentioned in NIT
4. This agreement comprises the work above and all subsidiary works connected therewith, even though such works may not be shown on the drawings, or described in the said specifications or the priced Schedule of Quantities.
5. The PGSC through the Engineer / Scientist In-charge reserves to itself the right of altering the specifications and of adding to or omitting any item of work or of having portions of the same carried out departmentally or otherwise and such alterations or variations shall not vitiate this agreement.
6. After successful completion of works in all respect, successful e-tenderer will hand over all the materials including equipment and machineries, brochures, drawings etc. to the end-user PGSC, Kapurthala in presence of PGSC representative and shall also render all services such as maintenance of the systems, provide warranty of the equipment, machineries etc. at the finalized rates, terms & conditions of the tender documents.
7. All disputes and differences of any kind whatever, arising out of or in connection with the contract on the carrying out of works (Whether during the progress of the work or after their completion and whether before or after the determination, abandonment or breach of the contract) shall be referred to arbitration as per Clause mentioned in NIT. In case of any legal dispute, other than the arbitration, the court of jurisdiction shall be at the place written in the first line of this agreement.
8. The provisions of the Arbitration & Reconciliation Act 1996 or any statutory modification or re-enactment thereof and of the rules made there under for the time being in force shall apply to arbitration proceedings under this clause.

In witness whereof the parties have set their respective hands the day and the year and the place hereinabove written.

Signed by for and on behalf of the PGSC

In the presence of

Seal

1.

2.

Signed by the said Successful e-tenderer

In the presence of

Seal

1.

2.