

**TENDER
FOR
CREATION
OF
DIGITAL CONTENT
FOR
3D HOLOGRAPHIC PROJECTION BASED
SETUP
AT
NATIONAL SCIENCE CENTRE, DELHI**



**NATIONAL SCIENCE CENTRE
(NATIONAL COUNCIL OF SCIENCE MUSEUMS)
NEAR GATE NO. 2, PRAGATI MAIDAN
NEW DELHI - 110 001**

**NATIONAL SCIENCE CENTRE,
NEAR GATE NO. 2, PRAGATI MAIDAN,
BHAIRON MARG, NEW DELHI-110001**

**NOTICE INVITING E-TENDER
TENDER No. NSCD/18011/E-Tender-16 /17-18**

On-line Digitally signed e-tenders are invited in two Bid System for creation of "DIGITAL CONTENT FOR 3D HOLOGRAPHIC PROJECTION BASED SETUP" at National Science Centre, Delhi. The agencies may download the tender documents from the Central Public Procurement Portal (CPPP): <http://eprocure.gov.in/eprocure/app>

Bid Document Published Date	11-08-2017 (As per portal time)
Bid Document Download Start Date	11-08-2017 (As per portal time)
Bid Document Download End Date	25-08-2017 (As per portal time)
Bid Clarification Start Date	16-08-2017 (As per portal time)
Bid Clarification End Date	24-08-2017 (As per portal time)
Bid Submission Start Date	17-08-2017 (As per portal time)
Bid Submission End Date	28-08-2017 at 02:00 p.m.
Technical Bid Opening Date	29-08-2017 at 03:00 p.m.
Technical Presentation at National Science Centre, New Delhi	Exact date and time shall be communicated to the eligible tenderers separately.
Earnest Money Deposit	INR 37,500/- (Rupees Thirty seven thousand five hundred only)
Tender Fee	INR 500/- (Rupees Five hundred only)

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. Off-line tenders shall not be accepted and no request in this regard will be entertained whatsoever. **Online Technical Bid will be opened at the first instance in this office at 03:00 p.m. on 29-08-2017 for technical evaluation as well as selection of technically acceptable offers.** The agencies shall be required to make detailed technical presentation on all available options as detailed in Annexure-F (Scope of work and technical specification). The exact date and time for Technical presentation shall be communicated to the eligible tenderers separately. In the second stage, the Financial Bids of only the selected and techno-commercially acceptable offers / system / equipment will be opened. Decision of the Centre, regarding selection of eligible and qualified vendors / firms for opening the Financial Bid shall be final and binding on the bidders. Bidders may be present during opening of tenders.

NSC Delhi reserves the right to accept or reject any or all tenders in full or part without assigning any reason whatsoever. NSCD shall also not be bound to accept merely the lowest tender but the technical suitability, capability and superiority of the equipment / system as well as after sales service including infrastructure to render such service, etc. shall be of prime consideration for selection of the equipment /system.

CHECK LIST

Check list of Tender No. NSCD/18011/E-Tender-16 /17-18 for creation of “DIGITAL CONTENT FOR 3D HOLOGRAPHIC PROJECTION BASED SETUP” at National Science Centre, Delhi.

Sl. No.	Description	Yes	No
01.	Whether E-Tender uploaded in Two parts (i.e. Technical & Commercial) separately. Please note that one set of original signed bids must be delivered at NSC Delhi before bid submission end.		
02	Whether Tender documents carefully studied & understood.		
03	Whether Tender documents duly signed and stamped on all pages is scanned and uploaded as Part – I of the Tender in central public procurement portal.		
04	Whether Tender Fee of ₹500.00 submitted by online / Demand Draft No..... dated..... and Scanned copy of DD uploaded as Part – I of the Tender. Please note that the original DD should be couriered /hand delivered to NSC Delhi / online payment details shall be sent to NSCD before last date of submission of the tender document.		
05	Whether Earnest Money of ₹37,500/- submitted by online / vide Demand Draft No. dated..... and Scanned copy of DD uploaded as Part – I of the Tender. Please note that the original DD should be couriered /hand delivered to NSC Delhi / online payment details shall be sent to NSCD before last date of submission of the tender document.		
06	Whether Declaration regarding Non-relation, duly signed and stamped, and scanned copy of the same uploaded as Part – I of the Tender in central public procurement portal. Annexure D1		
07	Whether Declaration certifying that there is no extra conditions quoted in the Offer Form duly signed and stamped, and scanned copy of the same uploaded as Part – I of the Tender in central public procurement portal. Annexure D-2		
08	Did you visit the actual site for execution of the work before submitting the Tender		

Date:

Signature of the Tenderer

Place :

Official Seal

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 CPPP website: <https://eprocure.gov.in/eprocure/app> 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. An agent of foreign OEM, for submitting the offer on behalf of OEM, would be required to produce a copy of their legal bid agreement with their principal and a copy of registration / enlistment with DGS&D as an Indian agent failing which their bid would be disqualified.
6. Bid should be submitted along with the **Earnest Money of INR 37,500/- (Rupees thirty seven thousand five hundred only)** by way of crossed Demand Draft / Pay Order on any of the Commercial Banks or payment online by NEFT/RTGS payable in favour of “NATIONAL SCIENCE CENTRE, DELHI”. Earnest Money deposit in the form of Bank Guarantee /Bond or any other instrument shall not be accepted and shall be rejected straightway. Earnest Money deposits in respect of such offers which are not accepted will be returned to the bidders within 30 working days from the date on which the final decision is taken about the source from which the items under tender are to be procured or within 2 (two) months from the date of the opening of the tenders, whichever is earlier. No interest will be paid on the Earnest Money deposited with the Council. Earnest Money deposit in respect of the successful bidders will be retained with the NSCD until entire execution of the order as per terms of the tender. If the successful bidder fails to execute the order strictly as per the NSCD’s drawing & specification in full or part within the stipulated delivery period of the purchase order, the Earnest Money deposit retained with the NSCD shall be forfeited forthwith after cancellation of the concerned order.
7. **Validity of Bids: The Bids should remain valid for 90 days from the date of opening of Financial Bid.**
8. **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.
9. 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.
10. 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.
11. The Financial Bid shall be filled in and signed by the authorized signatory online as per Proforma “Annexure-C” available at Central Public Procurement Portal e-tender system website <http://eprocure.gov.in/eprocure/app>. Off line Financial Bid shall not be accepted.

12. DOCUMENTS COMPRISING THE BID:

The bids prepared by the bidder shall comprise of

- (1) The Technical Bid and
- (2) Financial Bid

TECHNICAL BID: -

Tender must be uploaded in two separate sets- namely set-1 (Technical Bid) and set-2 (Financial Bid). The set-1 will comprise of

Set-1

- i) “Technical Bid” (as per **Annexure-B** format) duly filled in and digitally signed with official stamp. Upload scanned copy.
- ii) All relevant documents related to “Technical Bid” as per “**Annexure-B**”. Upload scanned copy.
- iii) The Technical Brochures of each equipment with technical explanation for every feature of the product offered by the bidders. Upload scanned copy.
- iv) **The scanned copy of the Demand Draft for INR 37,500/- (Rupees thirty seven thousand five hundred only) or details of online payment as Earnest Money Deposit.**
- v) **The scanned copy of the Demand Draft for INR 500/- (Rupees Five Hundred only) or details of online payment towards cost of tender document.**
- vi) The scanned copy of “General Terms & Conditions” (**Annexure-E**) duly signed by the Authorized Signatory with official stamp as a token of acceptance of the bidders.
- vii) The scanned copy of “Technical specifications and Scope of Work” (**Annexure-F**) duly signed by the Authorized Signatory with official stamp as a token of acceptance of the bidders.
- viii) “Technical Compliance Tables” (as per **Annexure-G** format) duly filled in and digitally signed with official stamp. Upload scanned copy.
- ix) Scanned copy of Annexure D-1 – non relation certificate and Annexure D-2- No additional condition certificate

Set-2

- i) The “Financial Bid (BOQ)” (as per **Annexure-C** format) i.e. Schedule of Price Bid in the form of attached Proforma duly filled in and digitally signed

N.B. :-

The bidders shall consider the prevailing tax rates while quoting the rates. However, in the event of any changes in the statutory taxes and duties, the rates applicable at the time of payment shall be made by the competent authority of the NSC, Delhi against submission of supporting documentary evidence.

The Cover-1, i.e. Technical Bid shall be opened by the Centre at the first instance and evaluated by the competent authority of the Centre. The agencies shall be required to make

detailed technical presentation on all available options as detailed in Annexure-F (Scope of work and technical specification). The technical presentation shall include at least one recent installation done during last three years. At the second stage, the Set-2 containing Financial Bid of only techno-commercially acceptable offers shall be opened for further evaluation and ranking before awarding the contract. Date of opening of the financial (Price) bid shall be intimated to only such vendors who will be finally qualified at technical stage.

- 13.** Authorities of National Science Centre, Delhi do not bind themselves to accept mere lowest tender and reserves the right to reject or accept any or all tenders wholly or partially without assigning any reason whatsoever.

- 14.** Order shall be placed in favour of a single agency considering the total cost arrived based upon consolidated BOQ as per Annexure-C.

**NATIONAL SCIENCE CENTRE,
NEAR GATE NO. 2, PRAGATI MAIDAN
BHAIRON MARG, NEW DELHI-110001**

TENDER No. NSCD/18011/E-Tender-16/17-18

Instructions for Online Bid Submission

1. The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.
2. More information useful for submitting online bids on the CPP Portal may be obtained at <https://eprocure.gov.in/eprocure/app>

REGISTRATION

1. Bidders are required to enrol on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link “**Online Bidders Enrolment**” on the CPP Portal which is free of charge.
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 CPP 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 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. Bidders may then log-in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

SEARCHING FOR TENDER DOCUMENTS

1. There are various search options built in the CPP Portal to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is 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 CPP Portal.
2. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the

respective „My Tenders“ folder.

This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

3. The bidders 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.

PREPARATION OF BIDS

1. Bidders should take into account any corrigendum published on CPPP in connection with the tender document before submitting their bids.
2. **Please go through the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of sets in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.**
3. Bidders, in advance, should get 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. PAN card copy, annual reports, 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.

SUBMISSION OF BIDS

1. Bidders should log-in to the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidders will be responsible for any delay due to other issues.
2. The bidders have to digitally sign and upload the required bid documents one by one as indicated in the tender document.
3. Bidders have to select the payment option as “offline” to pay the requisite Earnest Money Deposit (EMD) / Tender fee and enter detail of the instrument.
4. **Bidders should submit the EMD & Tender Fee as per the instructions specified in the tender document. The original instrument should be posted/couriered/given in person to the Tender Processing Section at the above address, latest by the last date of bid submission. The detail of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.**
5. A standard Price Schedule format (BOQ) has been provided with the tender document to be filled by all the bidders. 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 BOQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BOQ file, open it and complete the white coloured (unprotected) cells with

their respective financial quotes and other details (such as name of the bidders). No other cells should be changed. **In case no rate value is required to be quoted in any particular cell , that cell may be kept blank , figure „0“ (zero) shall not be entered in such cell(s)** .Once the details have been completed, the bidders should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the bidders, the bid will be rejected.

6. The server time (which is displayed on the bidders“ dashboard) will be considered as the standard time for referring the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
7. 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 128 bit 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 opener’s public keys.
8. The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
9. Upon the successful and timely submission of bids (i.e. after Clicking “Freeze Bid Submission” in the portal), the portal will give a successful bid submission message and a bid summary will be displayed with the bid number and the date & time of submission of the bid with all other relevant details.
10. 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.

ASSISTANCE TO BIDDERS

1. Any enquiries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority or the relevant contact person indicated in the tender.
2. Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal helpdesk. The contact number for the helpdesk is 1800 233 7315.

ANNEXURE-B

**NATIONAL SCIENCE CENTRE,
NEAR GATE NO. 2, PRAGATI MAIDAN
BHAIRON MARG, NEW DELHI-110001**

**TENDER No. NSCD/18011/E-Tender-16/17-18
TECHNICAL BID**

**Notes: ALL PARTICULARS / INFORMATION SHOULD BE GIVEN IN
THE FOLLOWING FORMAT WITH COMPLETE DETAILS.**

1	Name of the Bidder		
2	Mailing address of the Bidder with PIN/ZIP Code		
3	Contact details		
	Telephone Number(s) Mobile		
	Fax Number		
	E-mail Address		
	Web site		
4	Background details of the Bidder (State whether original system integrator / authorised Dealer).		
5	Name and Address of the Vendor to whom the order will be placed (NSCD prefers to procure the entire system from a single source)		
6(a)	Whether capable of creating "DIGITAL CONTENT FOR 3D HOLOGRAPHIC PROJECTION BASED SETUP" at National Science Centre, Delhi, as per minimum requirement/ and Technical Specification given in annexure-F (Please mention "Yes" or "No")		
6(b)	If it is mentioned "NO" above, submit		

	detailed deviation to be made from enclosed Technical Specification. (Attach extra sheet, if required)		
6(c)	If it is mentioned “YES” above, submit the detail specifications of the offered product including copies of Product brochure.		
7	Whether agreed to offer 1 (ONE) Year On-Site warranty along with the changes to be made for the “DIGITAL CONTENT FOR 3D HOLOGRAPHIC PROJECTION BASED SETUP” at National Science Centre, Delhi,		
8	Single point contact details for all post- installations service related issues with hierarchy levels (if any).		
9	Whether agreed to accept the Delivery Schedule mentioned in Clause No.3 of the GENERAL TERMS & CONDITIONS FOR SUBMISSION OF TENDER. (State YES or NO)		
10	Whether agreeable to accept the payment terms mentioned in the clause no 7 of GENERAL TERMS AND CONDITIONS FOR SUBMISSION OF TENDER. (State YES or NO)		
11	If the answer is NO then mention your payment terms. (No advance payment shall be considered / released by the Centre for any reason whatsoever.		
12	Submit technical brochures indicating the detailed technical specifications of the proposed system		

I / We hereby declare that the above statements are true. I / We also declare that the decision of National Science Centre, Delhi regarding selection of eligible firm(s) / type of equipment or system / digital contents scheme for opening of Financial Bid (Part-II) shall be final and binding on me / us.

Dated
Attorney

Official Seal

Signature of the Bidder/Constituted

Annexure - D1

NATIONAL SCIENCE CENTRE
(National Council of Science Museums)
Bhairon Road, Near Gate No.2, Pragati Maidan,
New Delhi - 110 001.

DECLARATION

This is to certify that I/We have no close relative as an employee of the National Council of Science Museums (close relatives 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.

Address :

Signature of the tenderer

Official seal
with date

Annexure - D2

NATIONAL SCIENCE CENTRE
(National Council of Science Museums)
Bhairon Road, Near Gate No.2, Pragati Maidan,
New Delhi - 110 001.

DECLARATION

We, do hereby accept the General Terms and Conditions as provided by the National Science Centre, Delhi along with tender documents for “DIGITAL CONTENT FOR 3D HOLOGRAPHIC PROJECTION BASED SETUP” at National Science Centre, Delhi, and also undertake to execute the job strictly as per the specifications of NSC, Delhi as provided along with the tender documents. National Science Centre, Delhi shall be at liberty to cancel the order in full or in part and forfeit the Earnest Money Deposit or Security Deposit retained with them in the event of failure of any of the declaration made by us.

Signature of the tenderer / Constituted Attorney.
(With date and Official Seal)

Annexure-E

NATIONAL SCIENCE CENTRE, NEAR GATE NO. 2, PRAGATI MAIDAN BHAIRON MARG, NEW DELHI-110001

GENERAL TERMS AND CONDITIONS FOR SUBMISSION OF TENDER for creation of “DIGITAL CONTENT FOR 3D HOLOGRAPHIC PROJECTION BASED SETUP” at National Science Centre, Delhi, providing onsite operational training, offering onsite support for minor modifications for one year post installation.

Successful agency shall develop a 3D-animated short film of about 15-20 minutes of duration with voice over in 2 languages (English, Hindi) and relevant sound effects on “Human Body” for public screening in Immersive 3D Holographic projection system. The agency shall be responsible for creating 3D digital models, creation of scene, animation, rigging, etc. as per the broad story outlined as per Annexure-F. It is expected that the film will bring about fascinating new dimension to the visitor experience and shall take them to incredible voyage explaining the workings of the human body through state-of-the-art holographic projection technology. The final film has to be an original work of art of very high professional quality control without using any previously developed content. The copyright for this film shall remain with the NSC Delhi.

Tenderers are required to submit along with the tender in Part-I envelope, flow chart of the work, design & execution strategy and a bar chart on how the work shall be completed within the stipulated time as per Clauses of the General terms and conditions.

- 1. Price:** The rates quoted shall include cost of all equipment/graphics platform, application software, graphics designer/artisan hiring, labour supervision

and all working accessories, tools and tackles, reliable standard testing equipment, etc. and including all handling charges for creation of "DIGITAL CONTENT FOR 3D HOLOGRAPHIC PROJECTION BASED SETUP" at National Science Centre, Delhi as per broad outline specified in annexure-F, offering onsite support for minor modifications for one year post installation. **The rates of Excise Duty (if any), GST and other taxes/levies to be imposed on the rate shall have to be clearly and separately mentioned.** Price and rate quoted shall be firm and fixed for the entire period of execution of the work and no escalation of rate on any ground whatsoever shall be allowed.

The rates of Excise Duty, GST and other taxes / levies to be imposed on the quoted rates shall be clearly mentioned in the offer form with proper break-up. No Sales Tax 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.

The bidders shall consider the prevailing tax rates while quoting the rates. However, in the event of any changes in the statutory taxes and duties, the rates applicable at the time of payment shall be made by the competent authority of the NSC Delhi against submission of supporting documentary evidence.

2. The successful tenderer shall submit the following documents within 07 (seven) days from the date of placement of Letter of Intent.
 - i) Duplicate copy of the Purchase order duly signed and stamped as a token of acceptance of the order.
 - ii) Non-judicial stamp paper of appropriate value for preparing the Agreement governing the terms and conditions of the Contract.
 - iii) Security Deposit As detailed in clause No. 06 of General Terms & Conditions

3. **Time of completion :** Time is the essence of the tender. The entire work of creation of digital content shall be completed in time bound manner. The entire work shall be completed within **60 (Sixty) days** from the date of placement of Letter of Intent.

For non-compliance of any of the above terms and non-delivery of the tendered item complete in all respects within the above stipulated period, the Centre shall either cancel the order or impose penalty as detailed in clause 4 below. The Centre reserves the right to cancel the order and no payment will be made under such condition. Decision of the Centre in this regard shall be final and binding on the successful tenderers.

4. **Penalty Clause:** The successful Tenderer shall strictly observe the time allowed for carrying out the job as detailed in clause No. 3. The job shall, throughout the stipulated period of the order be proceeded with all the diligence (time being deemed to be the essence of the order) and the successful Tenderer shall pay to the Centre, an amount equal to 1% of the amount of the order value for every week that the delivery may remain incomplete as per delivery schedule as stipulated in

clause no. 3, subject to a maximum compensation of 10% of the order value and after that period appropriate action will be taken by the Centre, as it will deem fit.

The Centre may extend the time of delivery of the tendered job at its discretion on the application of the successful tenderer for such purpose provided that it considers the reasons for such extension as good, sufficient and acceptable.

5. Scope of work & broad outline of digital content: As per annexure “F”

6. Security Deposit: The successful tenderer shall deposit 10% of the gross value of the work awarded, as refundable security deposit after adjusting the EMD already deposited with this NIT, which is to be paid in the form of Bank Draft / Banker’s cheque by the tenderer drawn in favour of ‘National Science Centre, Delhi’ and payable at Delhi. The Security Deposit of the successful tenderer shall be released after expiry of the Warranty period (**Warranty period shall be 1 (One year) from the date of final completion of the work / job**). In case the total value of order exceeds the assessed value of the work order, security deposit for the excess amount will also be deducted. No interest shall be paid on the security deposit retained with National Science Centre, Delhi.

7. Payment Terms :

a) No advance payment shall be made by the Centre under any circumstances. Final payment shall be released after satisfactory completion of the entire job and within 30 (thirty) days from the date of receipt of Tax Invoice duly supported by receipted challan / Copy of GST Registration Certificate and satisfactory inspection/work completion certificate issued by the competent authority of the Centre. However, interim payment shall be released at the discretion of competent authority of NSCD.

b) Payment shall be released through NEFT/RTGS for which details of bank account shall be mentioned in their Tax Invoice .

8. In case, the successful Tenderer refuses to accept the offer after finalization or does not comply with the Clause No.2 within 03 (three) days from the date of placement of the order as per the finalized and accepted terms and conditions, the order shall be cancelled forthwith without any further reference and the EMD will be forfeited.

9. Defect Liability period / WARRANTY PERIOD: The Warranty/ Defect Liability period shall be one year from the date of certification of the completion of satisfactory creation of Digital Content. The successful tenderer shall be responsible for making good bugs in the content/minor modifications as suggested from time to time, etc. for a period of one year from the date of satisfactory completion of the installation and commissioning of the system. The successful

tenderer, shall at their own cost, make the requisite changes in the content, up to the complete satisfaction of the competent authority of the Centre.

9. Every effort should be made to complete the work by the successful Tenderer within the specified time schedule. In case the successful tenderer fails to comply with Clause No.3 i.e., the specified time schedule as per the finalized and accepted terms and conditions the Centre shall have the rights to either impose Penalty Clause or cancel the order forfeiting the EMD. The decision of the Centre in this regard shall be final and binding on the successful Tenderer.
10. Bad quality workmanship will not be accepted and if carried out is liable to be rejected and should be rectified by the successful Tenderer at his cost as per specifications and directions given by the authorized representatives of the Centre. The decision of the Centre, as to items of bad quality workmanship and proper rectification, will be final and binding on the successful Tenderers.
11. 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 National Science Centre, Delhi for clarification. The successful bidder should obtain written approval from competent authority of NSC Delhi for any deviation from the approved specifications, if required due to site conditions or for betterment and safety of visitors and installations.
12. The successful Tenderer shall submit necessary trade and other licenses as may be required to carry on the tendered job and shall also be responsible for compliance at his/her own cost of all rules and regulations, enforced from time to time by the appropriate authorities.
13. The successful Tenderer shall not under any circumstances whatsoever transfer wholly or partly the contract/agreement/Purchase Order to any other person(s)/firm/company or assign the agreement or benefits of this agreement to any other party for any reason whatsoever. Otherwise the order/ agreement will automatically stand cancelled.
14. The authorities of NSC Delhi do not bind themselves to accept the lowest tender and reserves the right to accept or reject any or all tenders wholly or partially without assigning any reason whatsoever.
15. The authorities of the Centre, reserve the right to amend, alter or modify the terms and conditions mentioned above, if necessary, from time to time.
16. Income Tax and Work Contract Tax shall be deducted at source, if applicable, from each bill/claim of firm as per prevailing Government rules.
17. Incomplete offers, i.e. offers received without prescribed "Offer Form", "General Terms of Conditions", Technical Specifications" shall be rejected straightway

without reference to the tenderer.

- 18.** The agency must have valid TIN/WCT/PAN/GST number and attach documentary proof with the Tender. Bidders are requested to enclose a copy of their valid certificate of PAN No., TAN No, GST Registration No. or any other document as requested by the Institute with their tender.
- 19.** The agency shall take care of all statutory obligations as are required under the Contract Labour Regulation Act, etc.
- 20.** The offer shall be valid for a minimum period of 3 months from the date of opening of the tender.
- 21.** The agencies participating in the tender and bidding, may obtain on specific request, details about the outcome of the tender and other related details, if any.
- 22.** National Science Centre, will 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.
- 23.** All disputes and differences between the successful tenderer and the Centre of any kind, except quality of workmanship and materials, whatever arising out of or in connection with the order on carrying out of the work (whether during the progress of the work or after their completion and whether before or after the determination, abandonment or breach of the terms and conditions of the order) shall be referred to the sole arbitration of a person nominated by the Director General, National Council of Science Museums, whose decision in this regard will be final and binding on both the parties – the successful Tenderer and the Centre.

The provisions of the Arbitration and Conciliation 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's proceedings under this Clause.

**NATIONAL SCIENCE CENTRE,
NEAR GATE NO. 2, PRAGATI MAIDAN
BHAIRON MARG, NEW DELHI-110001**

Technical Specification, Scope of work & Broad outline for creation of Digital Content for 3D Holographic Projection based show on Human Body

Successful agency shall develop 3D-animated short film of about 15-20 minutes of duration with voice over in 2 languages (English, Hindi) and relevant sound effects on “Human Body” for public screening in Immersive 3D Holographic projection system. The agency shall be responsible for creating 3D digital models, creation of scene, animation, rigging, etc. as per the broad story outlined as per details given below. It is expected that the film will bring about fascinating new dimension to the visitor experience and shall take them to incredible voyage explaining the workings of human body through state-of-the-art holographic projection technology. The final film has to be an original work of art of very high professional quality control without using any previously developed content. The copyright for this film shall remain with the NSC Delhi.

The proposal submitted by the vendors should highlight creative treatment for the movie, describing the style and format of the animation and the creative concept.

Scope of work:

1. Development and finalisation of the script in line with the details mentioned below in consultation with office in charge designated for the project from NSC Delhi.
2. Select graphic material (photos, info-graphic illustration)
3. Story board development of the script & conceptual work on how to represent the ideas graphically. Preliminary version including frame by frame with text lines should be presented to the office in charge, NSC Delhi for approval.
4. Once the story board is approved the successful vendor will start the 3D modelling work and come up with 3D models of the surfaces, character, surrounding props etc. The entire work need to be completed in close coordination with office in charge, NSC Delhi. Approval need to be obtained from time to time for the model created for the purpose of the movie.
5. Subject to satisfactory completion of the 3D modelling work, the Design of animation scheme and rigging will be accomplished. This will include creation of all the backgrounds, static graphics and elements that will be later used in the animation.

6. Animation, Rigging and Rendering:

Total duration of the film shall be 15-20 minutes which shall consist of 3-D animation with V-RAY render quality Full HD 1920x1080 resolution. The lighting and rendering ambience shall be finalised keeping in view the suitability of the 3D Holographic requirement. The rendered 3D scenes will be subjected to editing for voice over mixing, labelling, graphics addition, background music etc. Original background music should be used to avoid future encumbrances related to copy right issues. Animation for logos, addition of text and other special effects shall also be in the scope of the successful vendor.

7. Voice over from reputed artists (like Mr. Shammi Narang/ Ms.Rini Khanna/ Sh. Udit Mishra or equivalent as approved by Officer-in-charge, NSC Delhi) need to be recorded in professional studio. The voice over will be in two languages, Hindi and English. All the arrangements related to hiring of artist, studio and other allied services required thereby, shall be in the scope. The vendor will submit two copies of complete movies of desired quality and specs as mentioned above, one with Hindi voice over and other with English voice over, in suitable media.

8. The Copyright of the Digital Content Created for 3D holographic setup will rest with NCSM & cannot be used by the successful bidder anywhere else.

9. The successful tenderer has to submit the content in the suitable media as well as save in the server procured for the purpose.

10. None of the elements used in the content should have copyright violation.

Broad outline of Digital Content:

The human body is termed as the perfect machine. It is a masterpiece of natural engineering that can perform an amazing number of feats - it converts fuel to energy more efficiently than the best engine, processes information many times faster than the best computer and has a formidable army of defenders to protect it. This amazing human body is a complex system of interdependent parts that work together. Each of these systems has its own set of functions. They not only fulfil these, but also work together as a complementary unit to ensure the smooth functioning of the entire body.

The film shall start with introduction of human body based upon 12 main systems namely:

1. Integumentary System
2. Nervous System
3. Muscular System
4. Skeletal System
5. Respiratory System
6. Digestive System
7. Cardiovascular System
8. Endocrine System
9. Immune and Lymphatic System

10. Urinary System
11. Male Reproductive System
12. Female Reproductive System

An animated **3D Digital Human Body (DHB)**, will act as main anchor during the show. DHB will talk to the audience and in the process explain all the important systems and their functioning. Layer by layer DHB's body will be descaled to approach the organs and systems one by one. The underlying system will be explained through animation and voice over.

1. Integumentary System

The integumentary system consists of the skin, hair, nails, and exocrine glands. Skin forms the body's outer covering and forms a barrier to protect the body from chemicals, disease, UV light, and physical damage. Hair and nails extend from the skin to reinforce the skin and protect it from environmental damage. The exocrine glands of the integumentary system produce sweat, oil, and wax to cool, protect, and moisturize the skin's surface.

2. Nervous system and the Senses

The nervous system consists of the brain, spinal cord, sensory organs, and all of the nerves that connect these organs with the rest of the body. Together, these organs are responsible for the control of the body and communication among its parts. The brain and spinal cord form the control center known as the central nervous system (CNS), where information is evaluated and decisions made. The sensory nerves and sense organs of the peripheral nervous system (PNS) monitor conditions inside and outside of the body and send this information to the CNS. Efferent nerves in the PNS carry signals from the control center to the muscles, glands, and organs to regulate their functions.

Working of Neurons: Neurons function through the generation and propagation of electrochemical signals known as action potentials (APs). An AP is created by the movement of sodium and potassium ions through the membrane of neurons.

Functions of the Nervous System: The nervous system has 3 main functions: sensory, integration, and motor.

Sensory: The sensory function of the nervous system involves collecting information from sensory receptors that monitor the body's internal and external conditions. This is done through specialised sense organs for touch, sight, hearing, smell, and taste. These signals are then passed on to the central nervous system (CNS) for further processing by afferent neurons (and nerves).

Integration: The process of integration is the processing of the many sensory signals that are passed into the CNS at any given time. These signals are evaluated, compared, used for decision making, discarded or committed to memory as deemed appropriate.

Motor: Once the networks of interneurons in the CNS evaluate sensory information and decide on an action, they stimulate efferent neurons. Efferent neurons (also called motor neurons) carry signals from the gray matter of the CNS through the nerves of the peripheral nervous system to effector cells. The effector may be smooth, cardiac, or skeletal muscle tissue or glandular tissue. The effector then releases a hormone or moves a part of the body to respond to the stimulus.

3. Muscular system

There are 600 muscles in human body all working together towards one purpose: Movement. Three important groups of muscles: skeletal muscle, smooth muscle, and cardiac muscles are explained thorough animation and zooming into different locations of the body where these muscles are located. Movement of bones when skeletal muscles work in pair will be explained through animation. Functioning of cardiac muscles in heart will also be explained through animation of pumping of heart.

4. Skeletal System

After one more round of descaling of DHB, skeletal system is visible. An adult skeleton contains 206 bones while the number is more than 300 when a child is born. Skeleton provide the framework for our body without it we will just be a blob of skin and muscle. Bones need to be strong to support the body and protect important organs. But bones also need to be light so that we can move comfortably.

Internal structure of the bone will be explained as we zoom inside the bone. The outer part called compact is hard compared to inner part which is spongy. The hardest material in the body is teeth's enamel. While compact provide space for blood vessel and nerve the spongy inside of the bone contains bone marrow.

Joints are found wherever bones meet, helping them to move against each other. Joints help skeletal move in different ways. There are variety of joints e.g Hinge Joint, Ball and Socket Joint, Pivot Joints etc. When bones meet and move together at joints, they rub against each other creating friction. Cartilage, a smooth, cushiony substance at the end of bones, helps keep them from wearing down. These will be explained through animation.

5. Respiratory System

The cells of the human body require a constant stream of oxygen to stay alive. The respiratory system provides oxygen to the body's cells while removing carbon dioxide, a waste product that can be lethal if allowed to accumulate.

The system begins at the nose and mouth where oxygen is inhaled. The important parts of the respiratory system include the nasal cavity, which processes the airflow on its way through to the lungs. Connected to the nasal cavity is the pharynx that is actually a part of the respiratory and digestive systems. It allows for the passage of both food and air. It lies behind and to the sides of the larynx, or

voice box, which forms part of a tube in the throat that carries air to and from the lungs and houses the epiglottis. At rest, the epiglottis is upright and allows air to pass through the larynx and into the rest of the respiratory system. During swallowing, it folds back to cover the entrance to the larynx, preventing food and drink from entering the windpipe. The trachea, or windpipe, allows the head and neck to twist and bend during the process of breathing.

6. Digestive system

From the time the food is swallowed to the time it is excreted out of the body, food travels more than 20 feet inside the body passing through mouth, esophagus, stomach, small intestine, large intestine.

The journey starts when teeth tear, cut, chew and grind food into smaller pieces. The salivary glands inside mouth produce saliva to wet food while digestive enzymes break down large molecules of starch into smaller molecules of glucose. Finally the tongue shapes the mashed food into a ball, called bolus, before pushing it along the esophagus. Muscular waves along the esophagus help squeeze the bolus towards the stomach.

Upon reaching the stomach, food is stored and digested by being mixed with acid and digestive enzymes to form a liquid called chyme.

This chyme passes slowly into the duodenum, the first segment of the small intestine located inferior to the stomach. The duodenum is a 25-30 cm long C-shaped, hollow tube. Many chemical secretions from the pancreas, liver and gallbladder mix with the chyme in the duodenum to facilitate chemical digestion.

Liver: Weighing in at around 3 pounds, the liver is the body's second largest organ. The liver performs many essential functions related to digestion, metabolism, immunity, and the storage of nutrients within the body. Fortunately, the liver has an incredible capacity for regeneration of dead or damaged tissues.

Gallbladder: The gallbladder is a small storage organ located inferior and posterior to the liver. The gallbladder holds bile produced in the liver until it is needed for digesting fatty foods in the duodenum of the small intestine.

Pancreas: The pancreas serves as two glands in one- a digestive exocrine gland and a hormone-producing endocrine gland. Functioning as an exocrine gland, the pancreas excretes enzymes to break down the proteins, lipids, carbohydrates, and nucleic acids in food. Functioning as an endocrine gland, the pancreas secretes the hormones insulin and glucagon to control blood sugar levels throughout the day. Both of these diverse functions are vital to the body's survival.

The small intestine is a long, highly convoluted tube in the digestive system that absorbs about 90% of the nutrients from the food we eat. It is given the name "small intestine" because it is only 1 inch in diameter, making it less than half the diameter of the large intestine. The small intestine is, however, about twice the length of the large intestine and usually measures about 10 feet in length.

The large intestine is the final section of the gastrointestinal tract that performs the vital task of absorbing water and vitamins while converting digested food into feces.

7. Cardiovascular system

The cardiovascular system consists of the heart, blood vessels, and the approximately 5 liters of blood that the blood vessels transport. Responsible for transporting oxygen, nutrients, hormones, and cellular waste products throughout the body, the cardiovascular system is powered by the body's hardest-working organ — the heart.

Circulatory Loops: There are 2 primary circulatory loops in the human body: the *pulmonary circulation loop* and the *systemic circulation loop*. Pulmonary circulation transports deoxygenated blood from the right side of the heart to the lungs, where the blood picks up oxygen and returns to the left side of the heart. The pumping chambers of the heart that support the pulmonary circulation loop are the right atrium and right ventricle.

Systemic circulation carries highly oxygenated blood from the left side of the heart to all of the tissues of the body (with the exception of the heart and lungs). Systemic circulation removes wastes from body tissues and returns deoxygenated blood to the right side of the heart. The left atrium and left ventricle of the heart are the pumping chambers for the systemic circulation loop.

Blood Vessels: There are three major types of blood vessels- arteries, capillaries and veins.

Arteries and Arterioles: Arteries are blood vessels that carry blood away from the heart. Blood carried by arteries is usually highly oxygenated, having just left the lungs on its way to the body's tissues. The pulmonary trunk and arteries of the pulmonary circulation loop provide an exception to this rule – these arteries carry deoxygenated blood from the heart to the lungs to be oxygenated.

Capillaries: Capillaries carry blood very close to the cells of the tissues of the body in order to exchange gases, nutrients, and waste products. The walls of capillaries consist of only a thin layer of endothelium so that there is the minimum amount of structure possible between the blood and the tissues. The endothelium acts as a filter to keep blood cells inside of the vessels while allowing liquids, dissolved gases, and other chemicals to diffuse along their concentration gradients into or out of tissues.

Veins and Venules: Veins are the large return vessels of the body and act as the blood return counterparts of arteries. Because the arteries, arterioles, and capillaries absorb most of the force of the heart's contractions, veins and venules are subjected to very low blood pressures. This lack of pressure allows the walls of veins to be much thinner, less elastic, and less muscular than the walls of arteries.

Coronary Circulation: The heart has its own set of blood vessels that provide the myocardium with the oxygen and nutrients necessary to pump blood throughout the body. The left and right coronary arteries branch off from the aorta and provide blood to the left and right sides of the heart. The coronary sinus is a vein on the posterior side of the heart that returns deoxygenated blood from the myocardium to the vena cava.

Hepatic Portal Circulation: The veins of the stomach and intestines perform a unique function: instead of carrying blood directly back to the heart, they carry blood to the liver through the hepatic portal vein. Blood leaving the digestive organs is rich in nutrients and other chemicals absorbed from food. The liver removes toxins, stores sugars, and processes the products of digestion before they reach the other body tissues. Blood from the liver then returns to the heart through the inferior vena cava.

Blood: The average human body contains about 4 to 5 liters of blood. Blood is made up of red blood cells, white blood cells, platelets, and liquid plasma.

Red Blood Cells: Red blood cells, also known as erythrocytes, are by far the most common type of blood cell and make up about 45% of blood volume. Erythrocytes are produced inside of red bone marrow from stem cells at the astonishing rate of about 2 million cells every second.

White Blood Cells: White blood cells, also known as leukocytes, make up a very small percentage of the total number of cells in the bloodstream, but have important functions in the body's immune system. There are two major classes of white blood cells: granular leukocytes and agranular leukocytes.

Platelets: Also known as thrombocytes, platelets are small cell fragments responsible for the clotting of blood and the formation of scabs. Platelets form in the red bone marrow from large megakaryocyte cells that periodically rupture and release thousands of pieces of membrane that become the platelets.

Plasma: Plasma is the liquid portion of the blood that makes up about 55% of the blood's volume. Plasma is a mixture of water, proteins, and dissolved substances.

8. **Endocrine System**

The endocrine system includes all of the glands of the body and the hormones produced by those glands. The glands are controlled directly by stimulation from the nervous system as well as by chemical receptors in the blood and hormones produced by other glands. By regulating the functions of organs in the body, these glands help to maintain the body's homeostasis. Cellular metabolism, reproduction, sexual development, sugar and mineral homeostasis, heart rate, and digestion are among the many processes regulated by the actions of hormones.

Hypothalamus: The hypothalamus is a part of the brain located superior and anterior to the brain stem and inferior to the thalamus. It serves many different functions in the nervous system, and is also responsible for the direct control of the endocrine system through the pituitary gland.

Pituitary Gland: The pituitary gland, also known as the hypophysis, is a small pea-

sized lump of tissue connected to the inferior portion of the hypothalamus of the brain. The pituitary gland is actually made of 2 completely separate structures- the posterior and anterior pituitary glands. The posterior pituitary gland release Oxytocin, which triggers uterine contractions during childbirth and the release of milk during breastfeeding. The anterior pituitary produces 6 other important hormones.

Pineal Gland: The pineal gland is a small pinecone-shaped mass of glandular tissue found just posterior to the thalamus of the brain. The pineal gland produces the hormone melatonin that helps to regulate the human sleep-wake cycle known as the circadian rhythm. The activity of the pineal gland is inhibited by stimulation from the photoreceptors of the retina.

Thyroid Gland: The thyroid gland is a butterfly-shaped gland located at the base of the neck The thyroid gland produces 3 major hormones:

- Calcitonin
- Triiodothyronine (T3)
- Thyroxine (T4)

Calcitonin is released when calcium ion levels in the blood rise above a certain set point. Calcitonin functions to reduce the concentration of calcium ions in the blood by aiding the absorption of calcium into the matrix of bones. The hormones T3 and T4 work together to regulate the body's metabolic rate. Increased levels of T3 and T4 lead to increased cellular activity and energy usage in the body.

Parathyroid Glands: The parathyroid glands are 4 small masses of glandular tissue found on the posterior side of the thyroid gland. The parathyroid glands produce the hormone parathyroid hormone (PTH), which is involved in calcium ion homeostasis. PTH is released from the parathyroid glands when calcium ion levels in the blood drop below a set point. PTH stimulates the osteoclasts to break down the calcium containing bone matrix to release free calcium ions into the bloodstream. PTH also triggers the kidneys to return calcium ions filtered out of the blood back to the bloodstream so that it is conserved.

Adrenal Glands: The adrenal glands are a pair of roughly triangular glands found immediately superior to the kidneys. The adrenal produces the hormones epinephrine and norepinephrine under stimulation by the sympathetic division of the autonomic nervous system. Both of these hormones help to increase the flow of blood to the brain and muscles to improve the “fight-or-flight” response to stress. These hormones also work to increase heart rate, breathing rate, and blood pressure while decreasing the flow of blood to and function of organs that are not involved in responding to emergencies.

Pancreas: The pancreas is a large gland located in the abdominal cavity just inferior and posterior to the stomach. The pancreas comprises of 2 types of cells—

alpha and beta cells. The alpha cells produce the hormone glucagon, which is responsible for raising blood glucose levels. Glucagon triggers muscle and liver cells to break down the polysaccharide glycogen to release glucose into the bloodstream. The beta cells produce the hormone insulin, which is responsible for lowering blood glucose levels after a meal. Insulin triggers the absorption of glucose from the blood into cells, where it is added to glycogen molecules for storage.

Gonads: The gonads—ovaries in females and testes in males—are responsible for producing the sex hormones of the body. These sex hormones determine the secondary sex characteristics of adult females and adult males.

- **Testes:** The **testes** are a pair of ellipsoid organs found in the scrotum of males that produce the androgen testosterone in males after the start of puberty. Testosterone has effects on many parts of the body, including the muscles, bones, sex organs, and hair follicles. This hormone causes growth and increases in strength of the bones and muscles, including the accelerated growth of long bones during adolescence. During puberty, testosterone controls the growth and development of the sex organs and body hair of males, including pubic, chest, and facial hair. In men who have inherited genes for baldness testosterone triggers the onset of androgenic alopecia, commonly known as male pattern baldness.
- **Ovaries:** The **ovaries** are a pair of almond-shaped glands located in the pelvic body cavity lateral and superior to the uterus in females. The ovaries produce the female sex hormones progesterone and estrogens. Progesterone is most active in females during ovulation and pregnancy where it maintains appropriate conditions in the human body to support a developing fetus. Estrogens are a group of related hormones that function as the primary female sex hormones. The release of estrogen during puberty triggers the development of female secondary sex characteristics such as uterine development, breast development, and the growth of pubic hair. Estrogen also triggers the increased growth of bones during adolescence that lead to adult height and proportions.

Thymus: The thymus is a soft, triangular-shaped organ found in the chest posterior to the sternum. The thymus produces hormones called thymosins that help to train and develop T-lymphocytes during fetal development and childhood. The T-lymphocytes produced in the thymus go on to protect the body from pathogens throughout a person's entire life. The thymus becomes inactive during puberty and is slowly replaced by adipose tissue throughout a person's life.

9. Immune and Lymphatic System:

The immune and lymphatic systems are two closely related organ systems that share several organs and physiological functions. The immune system is our body's defense system against infectious pathogenic viruses, bacteria, and fungi as well as parasitic animals and protists. The immune system works to keep these harmful agents out of the body and attacks those that manage to enter.

The lymphatic system is a system of capillaries, vessels, nodes and other organs that transport a fluid called lymph from the tissues as it returns to the bloodstream. The lymphatic tissue of these organs filters and cleans the lymph of any debris, abnormal cells, or pathogens. The lymphatic system also transports fatty acids from the intestines to the circulatory system.

10. **Urinary System:**

The urinary system consists of the kidneys, ureters, urinary bladder, and urethra. The kidneys filter the blood to remove wastes and produce urine. The ureters, urinary bladder, and urethra together form the urinary tract, which acts as a plumbing system to drain urine from the kidneys, store it, and then release it during urination. Besides filtering and eliminating wastes from the body, the urinary system also maintains the homeostasis of water, ions, pH, blood pressure, calcium and red blood cells.

11. **Male Reproductive system:**

The male reproductive system includes the scrotum, testes, spermatic ducts, sex glands, and penis. These organs work together to produce sperm, the male gamete, and the other components of semen. These organs also work together to deliver semen out of the body and into the vagina where it can fertilize egg cells to produce offspring.

12. **Female Reproductive system:**

The female reproductive system includes the ovaries, fallopian tubes, uterus, vagina, vulva, mammary glands and breasts. These organs are involved in the production and transportation of gametes and the production of sex hormones. The female reproductive system also facilitates the fertilization of ova by sperm and supports the development of offspring during pregnancy and infancy.

TECHNICAL COMPLIANCE TABLES

Table 1 : Delivery Schedule

Time schedule	Compliance (yes/No)	Reason for deviation
Time is the essence of the tender the entire work of Creation of “DIGITAL CONTENT FOR 3D HOLOGRAPHIC PROJECTION BASED SETUP” at National Science Centre, Delhi, shall be completed in time bound manner. The entire work shall be completed within 60 days from the date of placement of Letter of Intent.		

Table 2: Warranty/ defect liability period

Description	Compliance (Yes/No)	Reasons for deviation, if any
The work of creation of “DIGITAL CONTENT FOR 3D HOLOGRAPHIC PROJECTION BASED SETUP” at National Science Centre, Delhi, need to be carried out in professional manner as per Technical Specification, Scope of work & Broad outline for Content as mentioned in Annexure 'F'.		

FORMAT FOR ARTICLES OF AGREEMENT
INSTRUCTIONS (not to be typed in Agreement)

(Articles of Agreement have to be typed on non-judicial stamp paper. The value of the stamp paper varies from state to state and is to be known from the particular place. The stamp paper will be purchased by the successful tenderer and the agreement may be typed by the Museum/Centre according to the format.)

ARTICLES OF AGREEMENT made at

.....
(Place)

this..... day of

(Date) (Month & Year)

between the

.....
(Name of the parent Museum/Centre)

(under the National Council of Science Museums, a Society registered under the Societies Registration Act of West Bengal, 1961), hereinafter referred to as the Museum/Centre which expression shall include its successors and assigns on the one part and..... (name of the successful tenderer)

trading in the name and style of

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

WHEREAS the Museum/Centre is desirous of getting the work of

.....
therein done and has caused

(Name of the work)

Notice Inviting Tender (Including appendix), drawings, schedule of quantities and specifications describing the work and conditions of contract to be prepared by.....

.....
(Name and address of the Architect).

AND WHEREAS the said NIT (including appendix) drawings as per list attached, 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 tenderer has deposited in Cash or Bank Draft/Bank Guarantee a sum of Rupees

(exact amount in words)

the amount being 2.5% of the estimated value of the tender rounded off to the nearest hundred) with the Museum Centre as Initial Security for the due performance of this Agreement as provided in the said conditions.

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 tenderer shall upon and subject to the conditions herein contained execute and complete the work within --- **Weeks (---days)** from the date of issue of letter of intent (as defined under NIT clauses 5 and ___) and as per the said drawings and such further detailed drawings as may be furnished to him from time to time and described in the said specifications and the said priced schedule of quantities along with the progress of the work.

2 The Museum/Centre shall pay to the successful 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 tenderer shall proceed with the work, throughout the stipulated period of this contract, strictly according to the CPM/PERT/BAR CHART attached herewith and forming a part of this agreement. At any stage during execution, if any work lags behind the target as indicated in the CPM/PERT/BAR CHART for reasons directly attributable to the successful tenderer, he shall pay or allow the Museum/Centre to deduct from any money due to him a liquidated damage as per Clause 07 of the conditions of contract.

4 The Notice Inviting Tenders (including Appendix) Conditions of Contract, Schedule of Quantities, Drawings & Specifications shall form the basis of this tender and the decision of the Museum / Centre in reference to all matters or disputes as of material and workmanship shall be final and binding on the Contractor.

5 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.

6 The Museum/Centre through the Engineer (As defined under clause 15 of General conditions of contract) reserves to itself the right of altering the drawings 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.

7 All disputes and differences of any kind, except quality of workmanship and materials used in work 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 24 of the said conditions of contract. 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.

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 Museum/Centre

.....
(Administrative Officer)

In the presence of

(1) Seal (Finance & Accounts Officer)

(2) (Project Co-coordinator/Engineer)

he said Successful tenderer In the presence of

(1).....

Seal (2).....

BANK DETAILS OF NATIONAL SCIENCE CENTRE, DELHI

Name of the Account Holder	NATIONAL SCIENCE CENTRE, DELHI
Account No.	2417101004100
Bank Name	CANARA BANK
Bank Address	6, Bhagwan Das Road, New Delhi
IFSC Code	CNRB0002417
MICR Code	110015045
Type of Account	Saving Account
Branch Code	2417