

**E-TENDER
FOR
DEVELOPMENT & SUPPLY
OF
INTERACTIVE SOFTWARE
FOR
DIGITAL INDIA -
POWER TO EMPOWER GALLERY
AT
NATIONAL SCIENCE CENTRE,
DELHI**



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

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

TENDER No. NSCD/18011/E-Tender – 35/18-19

NOTICE INVITING E-TENDER

On-line Digitally signed E-Tenders are invited in two Bid System from Manufacturers / authorized dealers for **Development & Supply of Interactive Software for ‘Digital India - Power to Empower’ Gallery at National Science Centre, Delhi.** Experienced / eligible software developers / reputed authorised dealers may download the tender documents from the Central Public Procurement Portal (CPPP): <http://eprocure.gov.in/eprocure/app>

Bid Document Published Date	17 th October, 2018 (11:00)
Bid Document Download Start Date	17 th October, 2018 (11:00)
Bid Clarification Start Date	17 th October, 2018 (11:00)
Bid Submission Start Date	17 th October, 2018 (11:00)
Bid Clarification End Date	31 st October, 2018 (16:00)
Bid Submission End Date	1 st November, 2018 (14:00)
Technical Bid Opening Date	2 nd November, 2018 (15:00)
Technical Discussion on the proposed project	Shall be communicated later on
Financial Bid Opening date	Shall be communicated later on
Earnest Money Deposit	₹25,000/- (Rupees Twenty Five Thousand Only)
Estimated Value	₹10.00 Lakh (Rupees Ten Lakh 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 National Science Centre, Delhi at 03:00 p.m. on 2nd November, 2018 for technical evaluation as well as selection of technically acceptable offers.** 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 - 35/18-19** for Development & Supply of Interactive Software for ‘Digital India- Power to Empower’ Gallery at National Science Centre, Delhi”

Sl. No.	Description	Yes	No
01	Whether E-Tender uploaded on Central Public Procurement Portal of Govt. of India (i.e. Technical & Commercial) separately.		
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 Earnest Money of ₹25,000/- 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 the time of opening Technical Bid.		
05	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-C		
06	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-C		
07	Did you visit the actual site for execution of the supply order before submitting the Tender		
08	Authorization Letter issued from OEM enclosed with the Technical Bid.		

Date:

Signature of the Tenderer

Place:

Official Seal

General Information and Instructions

1. The instruction given herein will be strictly binding on the tenderers and deviation, if any will make the tender or tenders liable to be considered invalid. Tenders incorporating additional conditions by the tenderer 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 instruction 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. Bid should be submitted along with the **Earnest Money of ₹25,000/- (Rupees Twenty Five Thousand Only)** through NEFT/RTGS in the account of National Science Centre as per Annexure F or by way of crossed Demand Draft / Pay Order on any nationalized bank of India payable in favour of “**NATIONAL SCIENCE CENTRE, Payable at 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 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. In case of non-receipt of EMD, the Tenders are liable to be rejected.
6. **Validity of Bids:** The Bids should remain valid for 90 days from the date of bid opening.
7. **Rejection of Bids:** Canvassing by the Bidder 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 Instruction will disqualify the Bid.
8. The tenderers 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.
9. The Financial Bid (BOQ) shall be filled in and signed by the authorized signatory online as per Proforma “**Annexure-G**” available at Central Public Procurement Portal e-tender system website <http://eprocure.gov.in/eprocure/app>. Off line Financial Bid shall not be accepted.

10. Tender must be uploaded on-line in two separate sets - namely Set – 1 (Technical on Central Public Procurement Portal. The contents of Cover shall be as follows:-

Set – 1

- i) Technical (Techno-Commercial) BID duly filled-in and signed with official stamp. (as per Annexure-D)
- ii) General Terms & Conditions (as detailed in Annexure-B) duly signed with official stamp as a token of acceptance
- iii) Scanned Copy of the current and valid Dealership Certificate as applicable.
- iv) Scanned Copy of the current and valid Tax Clearance Certificate.
- v) The ‘Declaration’ duly signed with official stamp (as detailed in Annexure-C).
- vi) The ‘Technical Specification’ as detailed in Annexure-E duly signed with official stamp
- vii) Scanned copy of Demand Draft for ₹25,000/- as Earnest Money Deposit. (Original Demand Draft must be sent to the NSC, Delhi before opening of the Technical Bids)

Set - 2

- i) **The Financial Bid (as per Annexure-G) i.e. Schedule of Price Bid in the form of attached BOQ Proforma shall be duly filled in, digitally signed and uploaded online by the bidder.**

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.

11. **Order shall be placed in favour of the bidder whose technical bid is acceptable and offered lowest rate in individual item(s) as per BOQ in Annexure – G.**
12. The authority of National Science Centre, Delhi who does not bind themselves to accept the lowest tender and reserves the right to reject or accept any or all tenders wholly or partially without assigning and reason whatsoever.

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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 enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link
“**Online bidder Enrollment**” 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) Bidder then logs 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 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.

PREPARATION OF BIDS

- 1) Bidder should take into account any corrigendum published on 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. Please note the number of covers 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) Bidder, 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) Bidder should log into 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. Bidder will be responsible for any delay due to other issues.
- 2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 3) Bidders should submit the EMD 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 Demand Draft / 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.
- 4) 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 Light Blue colored (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BOQ file is 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 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 openers public keys.
- 7) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 8) 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 & 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.

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 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 CPP Portal in general may be directed to the 24x7 CPP Portal helpdesk. The contact number for the helpdesk is 1800 233 7315.

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TENDER No. : NSCD/18011/E-Tender- 35/18-19

GENERAL TERMS & CONDITIONS (GTC) FOR SUBMISSION OF TENDER FOR DEVELOPMENT & SUPPLY OF INTERACTIVE SOFTWARE FOR “DIGITAL INDIA - POWER TO EMPOWER” GALLERY AT NATIONAL SCIENCE CENTRE, DELHI

1. Bidders should have necessary infrastructure and facilities so as to take up the supply of the tendered items strictly as per enclosed specifications with required financial capability.
2. Price:
The prices and rates indicated/quoted shall be inclusive of cost of materials, supply and all incidental charges to deliver the **DEVELOPED SOFTWARES** at **NATIONAL SCIENCE CENTRE, NEAR GATE No. - 2, PRAGATI MAIDAN, NEW DELHI - 110001**. GST and any other taxes/levies to be imposed on the rate shall be clearly mentioned. Price and rate quoted shall be firm and fixed for the entire period of execution of the order and no escalation of rate on any ground whatsoever shall be applicable.
3. The successful bidder shall submit the following documents within 3 (Three) days from the date of Placement of the order:-
 - i) Duplicate copy of the order duly signed and stamped as a token of acceptance of the order.
4. **TIME OF COMPLETION:** Time is the essence of this tender. The delivery of the tendered item as per enclosed technical specifications shall be made at **National Science Centre, Delhi** strictly within **Thirty (30) days** from the date of placement of the order. For non-compliance of any of the above terms and non-delivery of the tendered items, complete in all respects within the above stipulated delivery period, the Centre shall have the right either to cancel the order or impose penalty as detailed in Clause No.05. Decision in this regard taken by the NSCD shall be final and binding on the successful bidder.
5. **PENALTY CLAUSE:-**
The time allowed for executing the supply as detailed in Clause No.04 shall be strictly observed by the successful bidder. The supply 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 bidder shall pay to the Centre , an amount equal to 1% of the amount of the contract value for every week that the supply may remain incomplete as per delivery schedule as stipulated in Clause No.04 subject to a maximum compensation of 10% of the contract value after which period, action will be taken by the Centre as will deem fit.
The Centre may extend the time of delivery of the ordered items at their discretion on the application of the successful bidder for such purpose provided that the Centre considers the reasons for such extension as good, sufficient and acceptable.
6. Every effort should be made to complete the supply by the successful bidder within the specified time schedule. In case the firm fails to comply with Clause no. 4 within the specified time schedule as per the finalized and accepted terms & conditions, the Centre shall have the right to either impose penalty clause or cancel the order forthwith and the earnest money deposit retained with the Centre shall be automatically forfeited.

7. PAYMENT TERMS:-

No advance payment shall be made by the Centre on any circumstances. Digital Payment (e-Payment) through RTGS/NEFT/TT/etc. shall be released within **30 (Thirty)** working days from the date of receipt of Tax-Invoice (supplies covered under clause No.04), duly supported by receipted challan subject to satisfactory inspection report of the ordered materials issued by the competent authority of the Centre. Invoice should be submitted indicating the Name of the Banker, IFSC Code, Account number, RTGS and Swift number of the banker, etc. for releasing e-payment to the supplier.

8. WARRANTY:

Manufacturer's standard onsite warranty for the equipment as per annexures should be offered by the bidder. The bidder shall be responsible for all defects of materials including transportation, etc. for the entire warranty period of the manufacturer effective from the date of final acceptance of the ordered materials

9. The Software to be developed & supplied by the bidder shall conform to the technical specifications given by the Centre.
10. If it is noticed that the goods supplied do not conform to the technical specification of the order, the Centre shall have the right to reject the materials in part or full. The supplier shall be liable to replace the rejected materials within the stipulated time. Till the replacement is done, the rejected materials shall be lying at the risk, cost and responsibility of the supplier.
11. If the supplier do not arrange to replace the rejected materials within the stipulated time, the same may be disposed off at the risk of the supplier and in the manner which the Centre will deem fit. The Centre shall be entitled to retain the proceeds of the disposal either in part or in full towards expenses incurred on storage, handling and disposal of the materials. The Centre shall also be entitled to recover the expenses made by them on account of storage & handling of such rejected goods till the goods are removed from the premises of the Centre.
12. In case the bidder refuse to accept the offer after finalization or does not comply with the Clause No.03 within 03 (Three) days from the date of placement of the order as per the finalized and accepted terms & conditions and the order shall be cancelled forthwith.
13. The authorities of the National Science Centre, Delhi have the right to amend, alter or modify the terms & condition mentioned above, if necessary, from time to time.
14. The authorities of National Science Centre, who does not bind themselves to accept the lowest tender, reserves the right to reject or accept any or all tenders wholly or partially without assigning and reason whatsoever.
15. The quantities specified in the tender may be decreased or increased at the sole discretion of NSCD authorities.
16. The agencies participating in the tenders & bidding may obtain on specific request, details about the outcome of the Tender and other related details, if any.
17. All disputes and differences between the successful bidder 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 the supply (whether during the progress of the work or after their completion and whether before or after the determination, abandonment or breach of the Terms & 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 successful bidder 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.

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TENDER No. : NSCD/18011/E-Tender – 35 / 18-19

DECLARATION-I

We do hereby accept the “General Terms & Conditions” as provided by the National Science Centre along with the Tender documents for Development & Supply of various Interactive Software for ‘Digital India - Power to Empower’ Gallery at NSC, Delhi and also undertake to supply the said materials at National Science Centre, Delhi strictly as per the technical specifications of National Science Centre as provided along with the tender documents, in the event of placement of any order on us. The Centre 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 / Constituted Attorney

DECLARATION-II

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.

Signature of the tenderer

Address:

Official seal with date

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TECHNICAL (Techno-Commercial) BID

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

01. Name & Address of the Firm/Bidder :
02. Telephone Number :
- Office :
- Office at Delhi/NCR :
03. i) Background details of the firm :
(State whether original manufacturer/direct Dealer of the manufacturer).
- ii) In case of direct dealers, submit copy of valid dealership license issued by the manufacturer.
04. State the Name of the Banker including IFSC Code :
and Account Number of the Tenderer for releasing digital mode of payment.
05. i) Whether capable to execute the tendered item strictly as per enclosed technical specification. (Please mention 'YES' or 'NO')
- ii) If it is mentioned 'NO' above, submit detailed deviation to be made from the enclosed technical specification. (Extra sheet may be attached, if required) :
- iii) If it is mentioned 'YES' above submit copies of product brochure (for product categories) as a proof of their statement. :

06. State the Name & Address of the Manufacturer :
whose product has been offered /quoted by the tenderer.
07. Proof of financial status of the company/audited Balance :
Sheet for last 3 years indicating total turnover as well
(submit documentary evidence.)
08. Whether agreed to accept 30 days credit Payment Terms. :
(Please mention 'Yes' or 'NO')
09. Minimum time required to complete the tendered item at :
NSC, Delhi.
10. Mention GST Registration Number and attach :
Current valid Tax Clearance Certificate.
11. Whether agreed to supply tendered items as per enclosed :
Specification (Annexure-E) positively by **30 days** and failing
which ready to absorb heavy penalty, if any order is placed on
the bidder after observing tender procedure.
(Please mention 'YES' or 'NO')

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 firms for opening of Financial Bid (Part-II) shall be final and binding on me/us.

Dated

Official Seal

Signature of the Tenderer/Constituted Attorney

Specifications & Scope Work

AUGMENTED REALITY (AR) JUNGLE BOOK

Section-1. Brief Description about the setup:

This interactivity has been proposed for visitors to introduce them to prehistoric Jurassic period flora and fauna. The Jungle Book, comprising of 10 pages of visual information, specially designed for children and depicting flora & fauna during prehistoric Jurassic period, will be installed in the exhibition and children will interact with the book using technology of augmented reality (AR).

There will be an AR platform comprising of a 10 inch tablet, armor mounted to safeguard the tab from mishandling. The AR platform will be mounted on one side of a suitable display table. Children while going through any of the pages of the Jungle book may use the AR platform for further augmenting the information available in the book. When seen through cameras of the AR platform, dynamic 3D models, relevant to the page, will appear in virtual world on top of the real page and additional interesting information shall be provided contextual to the scene on the page. Some other AR animation like static water starts flowing, fish moving in water, static trees in the book appear moving due to wind etc. may also be introduced.

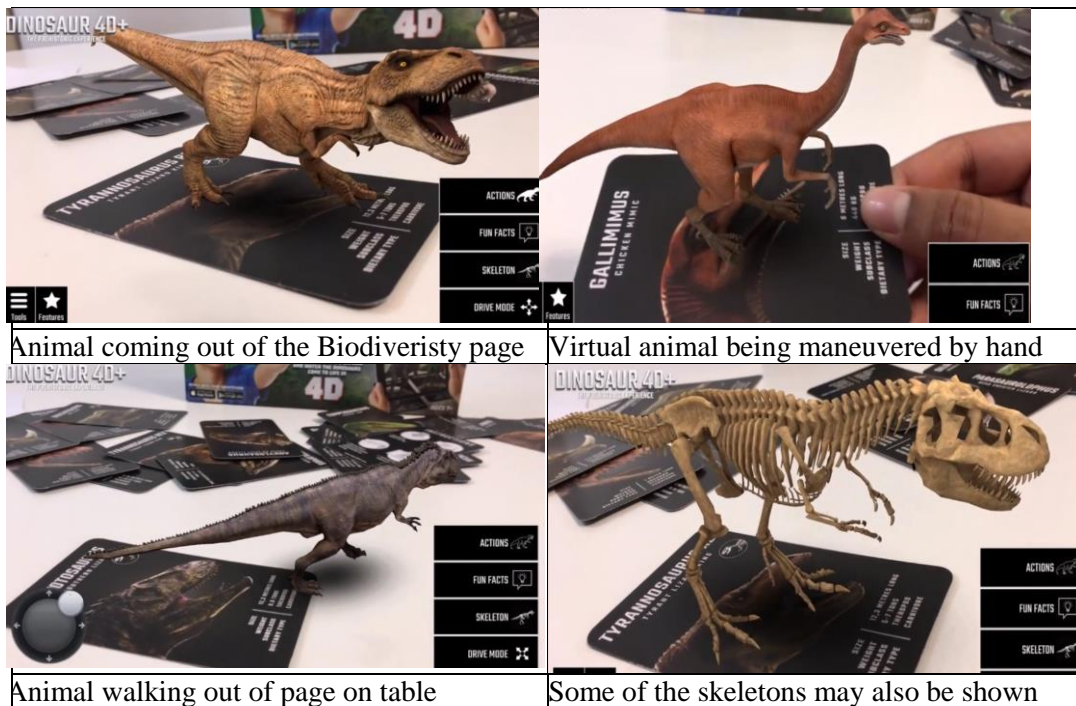
There will be two modes in the app; teach mode and active mode. In the teach mode shape of the objects or photos are identified and it acts as AR marker. The marker figures so learnt by the system are mapped with the corresponding animation 2D/3D. After completing the teach mode the app in active mode promptly identifies the mapped object, learnt during teach mode, without appreciable delay.

In the active mode, if any of the marker embedded page of the Jungle book, is placed in front of the camera of the tab, mapped information and 3D virtual models/animation will be shown in virtual world. 3D models may walk or animate suitably to enhance the overall learning experience. The tab/ipad output shall be cast on large LED displays of size 42” so that other visitors may also enjoy the Augmented Information. Some other AR animation like flowing water, fish moving in water, static trees in the book appear moving due to wind etc. may also be introduced.

National Science Centre, Delhi will provide the Jungle book and suggest the 3D models and animations required for each page. The successful vendor will arrange to develop the 3D/2D model and animation 10 dinosaurs from among listed below. The animation will include walking/running and roaring. Dragonfly, dimetrodon, cynognathus, brachiosaurus, stegosaurus, archaeopteryx, psittacosaurus, ankylosaurus, pteranodon, corythosaurus, tyrannosaurus, velociraptor, anatosaurus, Apatosaurus, uintatherium, moeritherium, deinotherium, diatryma, smilodon, woolly mammoth, megatherium, glyptodon, lemur etc.

Section-2. Expected Outcome:

Kids will go through the Jungle book. In order to get additional information relevant to each of the pages, the page will be placed in front of the camera of AR platform tab. As soon as the page is detected, 3D animals pop out of the page and start moving here and there. Some other AR animation like flowing water, fish moving in water, static trees in the book appear moving due to wind etc. may also be introduced. The animals will try to interact in funny ways to grab the attention. On top of this some more additional information may be given.



Animal coming out of the Biodiveristy page

Virtual animal being maneuvered by hand

Animal walking out of page on table

Some of the skeletons may also be shown

Section 3. Technical Specification and Scope of Work:

The successful vendor will arrange to provide the following to National Science Centre, Delhi

1. Providing binaries and project files for the code written to perform the tasks as mentioned above in section-1 and section-2, **shall be in the scope of work.** All the licenses for the third party modules/SDKs used, if any, shall be purchased in the name of National Science Centre, Delhi. Such purchase agreement shall be on the basis of one time purchase and not on subscription basis. If however there is no alternate but to go for subscription, such subscription shall be for minimum of five years. The binary file for the project shall run in local environment and no internet shall be used for any purpose whatsoever for running of the binaries.
2. **Providing four number of 10 inch** tab/ipad with suitable memories, cameras and the fixing of the same over suitably designed core structure **shall be in the scope of the work.** The design for tab mounting shall be finalized in consultation with the authorities of the National Science Centre, Delhi. The mounting of the tab and the cabling work will not spoil the aesthetics and overall look of the exhibit.
3. The mounting of the tab shall ensure ease of operation by kids. Adequate armor protection has to be given to safeguard the tab from being mishandled. The armor design shall be finalized in consultation with the authorities of National Science Centre, Delhi. The complete AR setup will be fixed smartly with due concern and care for the aesthetics of the exhibit. Successful vendor shall share the mounting details/drawing with National Science Centre, Delhi, and ensure that the tab is fitted properly to bring about desired AR effect. **National Science Centre, Delhi will provide the structure for mounting of tab/ipad, as per the input received from the vendor.**
4. The software supplied shall be able to detect automatically the marker embedded pages from the Jungle book provided on the table without appreciable delay. A suitable message shall pop up if something else is shown in front of the camera.
5. The output of the AR platform (tablet) will be cast on large LED display (42"). Vendor will share the technical specification of such displays; however the displays will be supplied by National Science Centre, Delhi **and will not be in the scope of work.** The suggested LED displays may be from among following brands: Samsung, LG, Panasonic, Lenovo, Hitachi, Philips, apple or any other approved make with prior approval from National Science Centre, Delhi.

6. Providing requisite computing platform if any, along with licensed operating system and application software, latest version, **shall also be in the scope of work**. Any special arrangement required for the cooling of the computing platform and other hardware supplied by the vendor shall also be in the scope of the work.

7. The successful vendor will enlist all hardware software to be used for the project along with detailed technical specification and brand name. The same will be submitted during technical presentation, prior to the opening of financial bid. The successful bidder will provide onsite warranty for three years for all the software and hardware supplied.

8. The software providing above AR based special effects related to Jungle Book, will be the copy write of National Science Centre, Delhi and the successful vendor shall not be able to use the same for whatsoever reasons, without permission from National Science Centre, Delhi.

9. All the computing hardware, displays, projectors etc shall be controlled from network A/V control system such as Crestron, Savant, Control4 etc. Vendor shall only supply hardware which are compatible with protocol being followed for above make of A/V control systems. The supply of such A/V control system **shall not be in the scope**. However, integrating the supplied hardware with the already installed A/V control system at National Science Centre, Delhi, shall be in the scope.

INTERACTIVE WATER JET

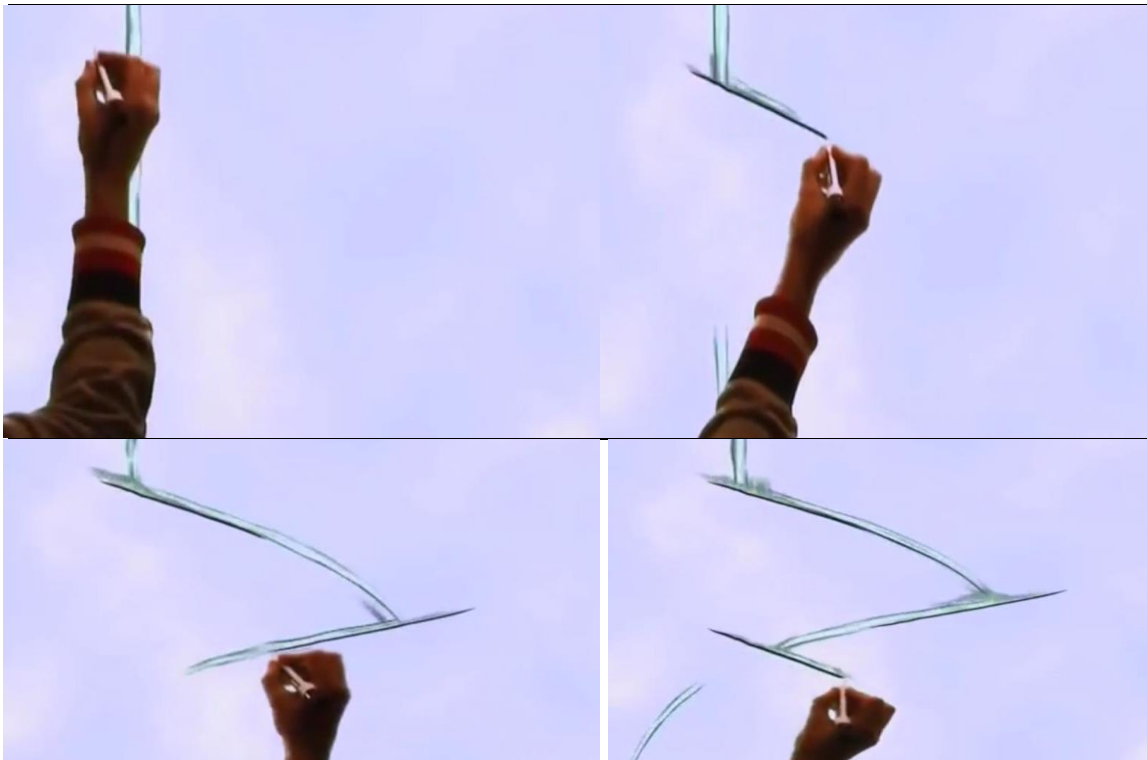
Section-1. Brief Description about the setup:

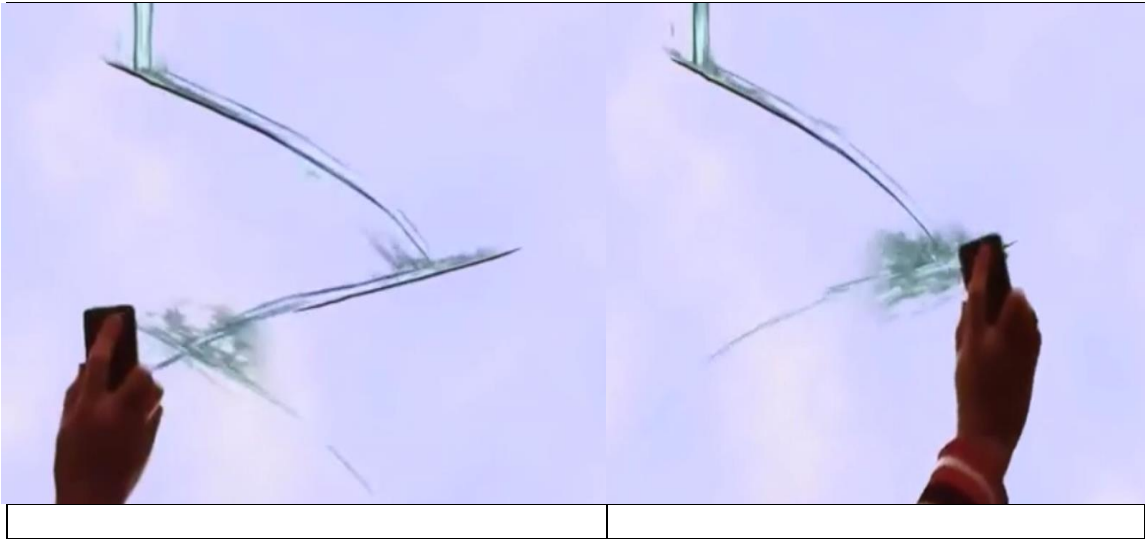
The set up will comprise of IR based multi-touch LED display or interactive LASER projector with suitable projection surface of dimensions approximately 85-100 inches. The projection surface shall be made touch responsive using suitable sensors/cameras/IR LEDs.

To start with, the display will show two/three jets of water flowing down the screen uninterrupted. As soon as someone draws a line (with the help of bare finger or a special stylus) in the path of the water jet, the jet gets deflected intelligently in the display area immediately. The deflection will be as per the inclination of the line drawn.

The interactivity will have other variations also e.g if the line drawn is in the shape of a cavity/container, the water jet will fill up the container and once the container is filled, water over flows from top of the container. Similarly other special effects may also be created in which even the body parts like cavities formed by joining two hands shall be filled with water jet.

There will be provision for use of erasers. If the marked lines are erased with specific eraser, the water jet flows in normal direction as it was before the line was drawn.





Section-2. Expected Outcome:

Jets of water, in digital world, will appear to flow from top of the display and travel full span of the screen. Visitors will interact with the screen using finger or special stylus. A line drawn in the path of jet by visitors, will behave as if some physical object has been placed in the way. The jet accordingly, following laws of fluid dynamics, changes course. Similar special effects depicting fluid behavior, like storage of fluid in cavity etc will be shown. At least five such effects will be implemented with the approval of National Science Centre, Delhi.

Section-3. Technical Specification and Scope of Work:

The successful vendor will arrange to provide the following to National Science Centre, Delhi

1. Providing binaries and project files for the code written to perform the tasks as mentioned above in section-1 and section-2, **shall be in the scope of work**. All the licenses for the third party modules/SDKs used, if any, shall be purchased in the name of National Science Centre, Delhi. Such purchase agreement shall be on the basis of one time purchase and not on subscription basis. If however there is no alternate but to go for subscription, such subscription shall be for minimum of five years. The binary file for the project shall run in local environment and no internet shall be used for any purpose whatsoever for running of the binaries. However, for sharing the final outcome on social media, internet may be used.
2. Critical part of the project is interactivity with the digital world in real time. This may be through regular marker pen or special stylus or IR multi touch or involving any other similar technology. Vendor will suggest hardware required for such interactivity with detailed technical specification. The same will be procured by National Science Centre, Delhi **and will not be in the scope of work**.
3. The software supplied shall be able to detect and identify lines/shapes drawn by pen/stylus/fingers as mentioned above on the screen and based upon the shape and inclination of the drawn objects, water jet will accordingly change the course. Provision has to be made for use of eraser, in case the drawn lines are not up to the full satisfaction of the user. The eraser will also be required once the new user starts interacting with the screen. **Providing software solution for such interactivity shall be in the scope**.
4. The vendor shall provide detailed technical specification of required hardware including projector/LED display/ Multitouch frame etc. to be used for bringing about the requisite interactivity. The same will be procured by National Science Centre, Delhi **and will not be in the scope of work**. Setting up and integration of all the hardware, accessories, cables etc **shall however be in the scope**. The vendor will ensure that the specifications of hardware suggested are generic and not proprietary, so that the procurement for the same may be accomplished without any difficulty. Vendor shall select

the hardware from among the following brands: LG, Panasonic, Samsung, Philips, Hitachi, Dell HP, Lenovo or any other approved make with prior approval from National Science Centre, Delhi.

5. Vendor shall suggest requisite computing platform along with licensed operating system and detailed technical specification. The same shall be procured and made available by National Science Centre, Delhi. **The supply of such computing platform shall not be in the scope of work.** The computing platform may be from among the following brands: HP, Dell, HCL, Lenovo or any other approved make with prior approval from National Science Centre, Delhi.

6. The successful vendor will enlist all hardware software to be used for the project along with detailed technical specification and brand name. The same will be submitted during technical presentation, prior to the opening of financial bid. The successful bidder will provide onsite warranty for three years for all the software and hardware supplied.

7. The software providing above special effects related to Interactive water jet, will be the copy write of National Science Centre, Delhi and the successful vendor shall not be able to use the same for any purpose whatsoever, without permission from National Science Centre, Delhi

8. All the computer hardware, displays, projectors etc shall be controlled from network A/V control system such as Crestron, Savant, Control4 etc. Vendor shall only supply hardware which is compatible with above make of A/V control systems. **The supply of such A/V control system shall not be in the scope,** however integrating the supplied hardware with the already installed control system at National Science Centre, **Delhi shall be in the scope.**

VIRTUAL DANCE

Section-1. Brief Description about the setup:

The interactivity will comprise of set of 10-12 cameras of HD resolution so as to provide photorealistic images of the visitor/subject from all angles. These cameras will be connected to a suitable computing hardware/set of hardware, with arrangement of LED light as and when the image is captured. The cameras will be mounted around a circular platform of diameter approximately 3 mtr at suitable height and spaced at equal angle around the platform.

Whenever someone stands at the center of the circular platform, the presence is automatically detected, the LED light will switch ON and the images will be captured by all the cameras from respective location simultaneously. Instructions will be displayed for visitors to stand still during image capturing process. Once digital images are captured, from all the critical angles required to form a spatial 3D mesh, a third party software; like Photo Scan from Agisoft or any other equivalent; may now be used to perform photogrammetry processing of digital images to generate 3D spatial data. If the scanning is successfully done the same may be indicated visually to the visitor or else the process may repeat one more time.

The 3D mesh so obtained will be entwined with available MOCAP data for popular dance sequences from Bollywood songs. This will bring about magical effect of dance moves, out of a spatial digital data of a simply standing person, the person who hasn't moved an inch. Visitors will be given option to choose from 2-3 available dance moves. The dance sequence thus obtained will be rendered and made available for further special effects. Special effects may be 1. Dancing sequence on someone's palm 2. Dancing sequence on top of a tall building 3. Dancing sequence on a leaf etc.

Once the virtual dance sequence with special effect is ready, there will be a provision for sharing the same on social media with the appropriate branding of National Science Centre, Delhi. Final dance moves will continue to run on two numbers of 55 inch LED displays mounted back to back at suitable locations.

Section-2. Expected Outcome:

Visitor simply stands on an earmarked platform of approximately 3mtr diameter. Visitor's presence will be detected automatically and the images will be clicked by all the cameras simultaneously. In order to ensure good photorealistic images, LED light may be used as and when images are clicked. The images so clicked will be photogrammetrically processed to obtain 3D spatial mesh. The technology of MOCAP will be entwined to bring about stunning 3D dance moves and other special effects. The final rendered media will be shared on social media along with branding of National Science Centre, Delhi.





Section-3. Technical Specification and Scope of Work:

The successful vendor will arrange to provide the following to National Science Centre, Delhi

1. Providing binaries and project files for the code written to perform the tasks as mentioned above in section-1 and section-2, **shall be in the scope of work**. All the licenses for the third party modules/SDKs used, if any, shall be purchased in the name of National Science Centre, Delhi. Such purchase agreement shall be on the basis of one time purchase and not on subscription basis. If however there is no alternate but to go for subscription, such subscription shall be for minimum of five years. The binary file for the project shall run in local environment and no internet shall be used for any purpose whatsoever for running of the binaries. However, for sharing the final outcome on social media, internet may be used.
2. Successful vendor will provide detailed technical specification of the cameras required for the project. Subject to the approval from National Science Centre, Delhi, the same shall be supplied by the vendor. **Supply of cameras and integrating the same with the computing platform and App shall be in the scope of work**. While suggesting cameras, the vendor will ensure that the shelf life of same be minimum 5 years as per the OEMs. The vendor shall also provide detailed drawing for the fixing of the cameras over suitably designed structure. **National Science Centre, Delhi will arrange to fabricate such structure and arrange to mount cameras as per the drawing given by the vendor**.
3. In order to ensure the photorealistic quality of the captured digital images, provision need to be made for LED illumination of the visitors. The LED light will be fixed smartly in close proximity of the camera with due concern and care for the aesthetics of the exhibit. The vendor will provide technical specification for required LED luminaries and share the drawing for mounting the same. **National Science Centre, Delhi will arrange to mount fixtures as per the drawing given by the vendor**. Integration and control of such LED lights through software, **shall however be in the scope of the work**
4. The software supplied shall be able to detect automatically the presence of visitor and will display the requisite instruction visually over two numbers of 55 inch LED displays. Suitable voice over may also be added. The system will be able to come back to the start position once the cycle is completed. If someone leaves mid-way, the system will come back to initial position after waiting for some time. When no one is interacting with the exhibit, the display will show dancing special effects from the library.
5. The output will be visible on two 42" LED displays fitted back to back. Successful vendor will provide detailed technical specification of the LED displays required for the project. The same shall be procured and **made available by National Science Centre, Delhi and shall not be in the scope of work**. The display suggested may be from among following brands: Samsung, LG, Panasonic, Hitachi, Philips or any other approved make with prior approval from National Science Centre, Delhi. Minimum native resolution of the displays will be 1920x1080.
6. Vendor shall suggest requisite computing platform along with licensed operating system and detailed technical specification. **The same shall be procured and made available by National**

Science Centre, Delhi. The supply of such computing platform **shall not be in the scope of work.** The computing platform may be from among the following brands: HP, Dell, HCL, Lenovo or any other approved make with prior approval from National Science Centre, Delhi.

7. The successful vendor will enlist all hardware software to be used for the project along with detailed technical specification and brand name. The same will be submitted during technical presentation, prior to the opening of financial bid.

8. The software providing above special effects related to Virtual Dance, will be the copy write of National Science Centre, Delhi and the successful vendor shall not be able to use the same for any purpose whatsoever, without permission from National Science Centre, Delhi.

9. All the computer hardware, displays, projectors etc shall be controlled from network A/V control system such as Crestron, Savant, Control4 etc. Vendor shall only supply/suggest hardware which are compatible with protocol used in above A/V control systems. Supply of such A/V control system **shall not be in the scope**, however integrating the supplied hardware with the already installed control system at National Science Centre, Delhi **shall be in the scope.**

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
GST No.	07AAAAN2541C1Z5