

NATIONAL SCIENCE CENTRE
A Unit of NATIONAL COUNCIL OF SCIENCE MUSEUMS
(MINISTRY OF CULTURE, GOVT OF INDIA)
Near Gate No. 1, Pragati Maidan,
Bhairon Marg, New Delhi- 110 001

Tender Document

for

Request for Expression of Interest for providing consultancy services for various works of National Science Centre, Delhi comprising of following:

- Conceptualization, planning, curation, re-curation, content development, introduction of state of the art interactivities encompassing technologies of AR/VR/MR/mechatronics /interactive floors/ large multi-touch kiosk etc. for different galleries of NSCD.
 - Façade lighting and projection mapping for NSCD building.
 - Installation of professional AV system, large active LED screen for stage, and interpretation facility for auditorium, conference room of NSCD.
 - Architectural makeover of reception area, front open precinct of NSCD including its ticketing arena, landscape parking etc, and auditorium complex for providing better public facilities.
- and
- Augmentation of electrical substation, green-generator set, firefighting, fire alarm and air conditioning system for supplementing future requirements of NSCD.

Disclaimer & Disclosures:

National Science Centre, Delhi (NSCD), a Unit of National Council of Science Museums, has prepared this document to give background information on the captioned project to the interested agencies. While NSCD has taken due care in preparation of the information contained herein and believe it to be accurate, neither NSCD nor any of its authorities or agencies nor any of their respective officers, employees, agents or advisors give any warranty or make any representations, express or implied as to the completeness or accuracy of the information contained in this document or any information which may be provided in association with it.

The information is not intended to be exhaustive. Interested agencies/contractors are required to make their own inquiries and respondents will be required to confirm in writing that they have done so and they do not rely only on the information provided by NSCD in submitting the e-Tender. The information is provided on the basis that it is non-binding on NSCD or any of its authorities or agencies or any of their respective officers, employees, agents or advisors.

NSCD reserves the right not to proceed with the Project or to change the configuration of the Project, to alter the time table reflected in this document or to change the process or procedure to be applied. It also reserves the right to decline to discuss the matter further with any party submitting the Tenders.

No contractual obligation on behalf of NSCD, whatsoever, shall arise from this Tender unless & until a formal contract is signed and executed by duly authorized officers of NSCD and the bidder in due course after invitation of tenders. NSCD may modify any / all of the terms of this Tender process giving due notification through the NSCD's website (www.nscd.gov.in).

NSCD will not be liable for any costs incurred by the Bidders in the preparation of the Tender & its presentation. The preparation of Bidder's proposal will be made without obligation by NSCD to acquire any of the items included in the Bidder's product, or to select any Bidder's proposal, or to discuss the reasons why the Bidder's proposal is accepted or rejected.

All information included by the bidders in their proposals will be treated in strict confidence.

This document is the property of National Science Centre, Delhi (A unit of National Council of Science Museums (NCSM). It may not be copied, distributed or recorded on any medium, electronic or otherwise, without NSCD's written permission thereof, except for the purpose of responding to NSCD for the said purpose. The use of the contents of this document, even by the authorized personnel / agencies for any purpose other than the purpose specified herein, is strictly prohibited and shall amount to copyright violation and thus, shall be punishable under the Indian Law.

NATIONAL SCIENCE CENTRE
Bhairon Marg, Near Pragati Maidan
New Delhi 110001

Tender No.

The competent authority of National Science Centre, Delhi (NSCD) invites on-line digitally signed Expression of Interest (hereinafter referred as the 'EOIs') from eligible and qualified agencies/consultants/consortiums (hereinafter referred as the 'Vendors') for shortlisting for the delivery of consultancy services for various works of Upgradation of National Science Centre, Delhi and comprising of following:

- Conceptualization, planning, curation, re-curation, content development, introduction of state of the art interactivities encompassing technologies of AR/VR/MR/mechatronics /interactive floors/ large multi-touch kiosk etc. for different galleries of NSCD.
- Façade lighting and projection mapping for NSCD building.
- Installation of professional AV system, large active LED screen for stage, and interpretation facility for auditorium and conference room of NSCD.
- Architectural makeover of reception area, front open precinct of NSCD including its ticketing arena, landscape, parking etc, and auditorium complex for providing better public facilities.
and
- Augmentation of electrical substation, green-genset, firefighting, fire alarm and air conditioning system for supplementing future requirements of NSCD.

. Interested vendors may download the tender documents from the Central Public Procurement Portal (CPPP): <http://eprocure.gov.in/eprocure/app> or from the Centre's website www.nscd.gov.in as per the following schedule:-

Schedule

1	Bid Document Published Date	19 th July, 2023	03.00 p.m.
2	Bid Document Download Start Date	19 th July, 2023	03.00 p.m.
3	Bid Document Download End Date	9 th August 2023	03.00 p.m.
4	Pre-Bid Clarification Start Date	19 th July, 2023	04.00 p.m.
5	Last date of submission of Pre-Bid Queries or clarifications	28 th July, 2023, 16:00 hrs IST only at the following email id: nscdl01@gmail.com The bidder who will submit the pre-bid clarification through email shall	

		get the intimation from National Science Centre to attend the pre-bid meeting. Bidders interested to attend the meeting online should send their email address.	
6	Pre-Bid meeting Date	28 th July 2023	03:30 p.m.
7	Bid Submission Start Date	19 th July, 2023	06.00 p.m.
8	Bid Submission End Date	8 th August 2023	05.00 p.m.
9	Technical Bid Opening Date	9 th August 2023	11.00 a.m.
10	Date Place of Technical Presentation	10 th August 2023 at National Science Centre, Delhi	11:00 a.m.

Interested vendors may go through details of the required consultancy work at Annexure-A and Annexure A1 through A7, before submitting their offer. The tenderer should provide sufficient and relevant information demonstrating that they meet the specified eligibility criteria as detailed below and have the required qualifications to be shortlisted for providing the Services. This EOI document, details the process of such shortlisting. As part of this procurement process, a Request for Proposals (RFP) shall be subsequently issued only to such shortlisted vendors.

Bidders are advised to visit the National Science Centre premises and ascertain the nature and quantum of work before submitting the EOI. They are advised to attend pre bid meeting to fully understand the scope of work.

This Tender is an e-Tender; bids are to be submitted through CPP Portal (<http://eprocure.gov.in>) only. Bids submitted in physical forms will be summarily rejected. Details of Tender fee, submission of tender, etc. are indicated in the tender document.

This office reserves the right to amend / withdraw any of the terms and conditions in the Tender Documents or to reject any or all tenders without giving any notice or assigning any reason.

Deputy Controller of Stores & Purchase
National Council of Science Museums

1. Brief Information about the project

National Science Centre, Delhi is one of the largest Science Centre in Asia and it is popularly known amongst its visitors as, "A Dream Castle for One and All". The iconic structure of the Centre is an exemplary landmark in the arena of modern architecture which is strategically located in the vicinity of the commercial exhibition hub of India i.e. Pragati Maidan Complex. The Annual footfall to the Centre is more than half a million visitors. Nobel Laureates, Eminent Scientists & Technocrats, Astronauts, Museum Professionals and many more luminaries from various fields are its regular visitors. The primary objective of the Centre is to engage, educate and entertain the visitors through thematic exhibitions, interactive educational activities and outreach programs.

National Science Centre, Delhi, was inaugurated on 9th January 1992 by Shri P V Narsimha Rao, the then Hon'ble Prime Minister of India. Though different new galleries and exhibitions have come up from time to time, major refurbishment in terms of looks and introduction of new technologies in various exhibitions of the centre is long overdue. Accordingly popular facilities/ galleries have been identified which are in need of major upgradation.

The proposed work is for delivery of consultancy services for various works of Upgradation of National Science Centre, Delhi and comprising of following:

- Conceptualization, planning, curation, re-curation, content development, introduction of state of the art interactivities encompassing technologies of AR/VR/MR/mechatronics /interactive floors/ large multi-touch kiosk etc. for different galleries of NSCD.
- Façade lighting and projection mapping for NSCD building.
- Installation of professional AV system, large active LED screen for stage, and interpretation facility for auditorium complex of NSCD.
- Architectural makeover of reception area, front open precinct of NSCD including its ticketing arena, landscape, parking etc, and auditorium complex for providing better public facilities.

and

- Augmentation of electrical substation, green-genset, firefighting, fire alarm and air conditioning system for supplementing future requirements of NSCD..

Further details of work along with the bidder's scope of work is available at Annexure-A

2. Estimated Cost:

The proposed work is for delivery of consultancy services for various works of Upgradation of National Science Centre, Delhi. The Estimated cost of the entire project for which the consultancy sought is expected to be Approximately Rs. 35.00 Crores

3. Timeline:

The timeline for execution of the entire project work for upgradation of NSC Delhi is to be completed in phased manner. Detailed timeline will be shared at RFP stage, however the entire work is to be completed in two years. Accordingly the consultancy work shall be completed within 3 (three) months from date of issue of Letter of Acceptance (LOA)

4. Eligibility Criteria

Bidders fulfilling the following minimum criteria shall only be considered:

Individual, Limited Company/Corporation, Proprietary Firm, Partnership, Consortium or Joint Venture are allowed to bid for the work. Company/Firm/Consortium/Partnership firm/Individual shall have the experience of academic, technical and financial capabilities on the lines mentioned below:

a) Experience - The bidder should have a **minimum 5 years of** experience in providing consultancy services for Science & Technology/ Heritage/history/polity/ Cultural/ Edutainment related interpretation projects, having handled projects related to Heritage Museums/ Science Centre/ Science Cities etc. at International/ National / State level and must have provided comprehensive consultancy services to at least 3 Science and Technology/ Heritage/history/polity/ Cultural/ Edutainment related interpretation projects. The bidders shall submit copies of work orders and completion certificates to substantiate the claim. Such work should predominantly involve:

- Conceptualization, planning, curation, re-curation, content development, introduction of state of the art interactivities encompassing technologies of AR/VR/MR/mechatronics /interactive floors/ large multi-touch kiosk etc.
- Façade lighting and projection mapping shows on heritage/institutional buildings.
- Installation of professional AV system, large active LED screen for stage, and interpretation facility for reputed auditoriums and conference rooms.
- Architectural design of public spaces, gardens, waterbodies, theatre, amphitheatre or similar works.
- Installation of electrical substation, green-generator set, firefighting & fire alarm system, air conditioning system for large premises.

b) The bidder should have past experience of designing and curating one museum gallery space of at least **75,000 sq feet in the last five years**. Certified copies of completion certificate clearly indicating the area of gallery space curated shall be required to substantiate the claim.

c) Financial soundness - The bidder should have:

- i) PAN/ VAT/GST registration
- ii) Average Turnover of at least Rs. 300.00 lakh in any 3 financial years out of last 5 financial years ending 2022-23 (In case of Consortium, financial turnover of lead partner shall be taken into consideration).

iii) The Bidder should have completed and delivered consultancy of similar works during the last 5 years from the date of the issue of this tender as per the details given below:

One similar work of project value not less than Rs. 28 Crores or

Two similar works each of project value not less than Rs. 16 Crores or

Three similar works each of project value not less than 12 Crores.

Notes:

- Here **similar work** shall mean the work defined above in 4(a) and predominantly include conceptualization, planning, curation, content development, designing of gallery spaces and submission of detailed estimates with technical specifications.
- In the case of Consortium/JV participating in this tender, the works of any of the individual members of the Consortium/JV done independently will be considered as valid work experience.
- If any bidder has executed the similar work as a part of a consortium/JV in the past then the work experience of the bidder shall be considered as valid only if all the consortium/JV partners are participating together in the present tender also.
- The details of qualifying works/projects shall be furnished as per the proforma in **Annexure-H** and if required, the bidder shall also facilitate inspection of the above qualifying project(s) by NCSM's officials to ascertain the performance of the bidder.
- Documents Required: The bidder should submit a copy/copies of the work order(s) issued in the name of the agency as well as copies of work completion certificate of the same work, clearly indicating the value of the work of similar nature. If the work order contains several works, only the value of the works of a similar nature shall be considered for work experience. If the value of the works of similar nature is not specifically mentioned in the cost breakup, the work experience against that work order will not be considered as valid.

d) Technical Expertise- The bidder should have associated/employed panel of expert(s) having following qualifications:

- i) Project team members should have a recognized degree/diploma in Design/Architecture/New Media.
- ii) Expert in the fields of work categories as given in section on 'Details of Work' Annexure–A1 through A7 of this tender document with vast experience in curation of galleries.

- iii) Graphic designer, technology experts (hardware & software) and content writer shall have past experience in doing similar nature of work as defined in section 4(a).
- iv) The bidders shall be advised to present a proof of concept (PoC) on any of the gallery works mentioned in annexures A1 through A4 at the stage of technical bid presentation.

5. Instructions to Bidders

- a) Mode of Tendering: e-Tendering through Central Public Procurement Portal (CPPP)
- b) **Validity of EOI: 3 years** from the date of official communication of having been shortlisted.
- c) **The bidder shall submit a Bid Security Declaration Form as per Annexure – D**
- d) All entries in the tender form should be legible and filled clearly. If the space for furnishing of information is insufficient, a separate sheet may be attached. The cuttings/overwriting, if any, in the Technical Bid Application must be signed by the person authorized to sign the tender bids. Vendor will submit a declaration that all information submitted are true as per format available at Annexure-C
- e) The Technical Bid shall be opened on the scheduled date and time, in the office of National Science Centre, Delhi. The Technical Bids shall be evaluated by a Tender Committee.
- f) The bidder shall submit the **Technical bids** as per the format enclosed at **Annexure – B. Bids not as per above format will be summarily rejected.**
- g) This office shall not be responsible for any damages, losses, claims, financial or other injury to any person deployed by the Agency (successful bidder) during the course of their performing the functions/ duties or for any payment towards any compensation whatsoever.
- h) All communication be made in the name of

Contact Details: Deputy Controller of Stores & Purchase, National Science Centre, Bhairon Marg, New Delhi. Email: nsdl01@gmail.com.

6. Payment Terms:

Sl. No	On Achieving	Maximum Percentage of total Payment admissible
1	Milestone -1	10%
2	Milestone -2	20%
3	Milestone - 3	20%
4	Milestone - 4	20%
5.	Milestone – 5	30%

In case of the work is carried out in phases, total payment admissible will be computed on a pro-rata basis based on the completed floor area of gallery space vis-à-vis total floor area of gallery space under consideration.

7. Terms & Conditions of the Contract:

A General:

1. The bidder shall abide by the details furnished by it to this office, while submitting the tender or at any subsequent stage. In case any of the documents furnished by it is found to be false at any stage, it would be deemed to be a breach of terms of contract, making the bidder liable for legal action besides the termination / cancellation of contract, legal action for damages shall also be taken at the sole discretion of the Director National Science Centre, Delhi.

2. The bidder shall not be allowed to transfer, assign, pledge or sub-contract its rights and liabilities under this contract to any other agency without the prior written consent of this Office.

3. A Request for Proposals (RFP) shall be issued only to those bidders who are declared technically qualified through the EOI. This EOI document, details the process of such shortlisting. As part of this procurement process, a Request for Proposals (RFP) shall be subsequently issued only to such shortlisted vendors.

4. The Office of Director, National Science Centre, Delhi reserves the right to terminate the contract by giving one month's notice.

5. Failure by the bidder to comply with any statutory requirements and/or the terms of the agreement during the period of contract will result in termination of the contract and subsequent disqualification from participation in any future tender of the department.

B. Fraud and Corrupt Practices:

The bidder and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process. Notwithstanding anything to the

contrary contained herein, this Office (NSCD) may reject any application without being liable in any manner whatsoever to the applicant if it determines that the applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the bidding Process.

C. Legal:

1. The bidder shall also be liable for depositing all taxes, levies, cess, etc. on account of service rendered by it to concerned tax collection authorities from the time to time as per extant rules and regulations on the matter.

2. The bidder shall maintain all statutory registers under the applicable laws. The bidder shall produce the same, on demand, to the concerned authority of this Office or any other authority under Law.

3. The Tax Deduction at Source (TDS) shall be deducted, as and when applicable, as per the provisions of Income Tax Act and GST, as amended from time to time and a certificate to this effect shall be provided to the bidder by this Office.

4. In case, the bidder fails to comply with any statutory/ taxation liability under appropriate law and as a result thereof this Office is put to any loss/ obligation, monetary or otherwise, this Office (NSCD) will be entitled to get itself reimbursed out of the outstanding bills or the Performance Security Deposit of the Agency, to the extent of the loss or obligation in monetary terms.

D. Bid Evaluation

The evaluation will involve validating the credentials submitted in the format as prescribed. Credentials without valid proof will be invalid and will not be considered for eligibility. NSCD reserves the right to accept or reject proof of credentials at its sole discretion without having to give reasons to the Bidders thereof. The Bidder’s proposed implementation methodology, project management methodology and on-site construction supervision methodology will also be considered for General cum Technical evaluation. The following weightage criteria will be adopted during technical evaluation:

Sl. No.	Evaluation Criteria/ Parameter	Max. Score
1.	Agency/Firms Background and Experience – The Agency should be operating in the field of Museum/ Interpretation Design and Development Project Consultancy work/jobs or related Projects during the last five Financial Years (2018-19; 2019-20; 2020-21; 2021-22; 2022-23) with an average annual turnover as under: I.Turnover Rs 3.00 crores –Marks :7, >3.00 crores – 1 mark for each additional crore, subject to maximum of 10 marks; A Copy of Balance Sheet/ authenticated audited	10

	document clearly specifying above services of the Agency/Firm is required. CA certified Annexure-F is also required.	
2.	Completion of similar work in last five years of not less than 75,000 sq feet display areas; One work of 75,000 sq.ft – 7 marks; additional works each of 25,000 sq.ft - 1 mark each subject to maximum of 10 marks	10
3.	Experience of agency/firm in the field of execution and development of similar projects: 7 marks if the agency has executed similar projects during the last five years ending 2022-23. Additional 1 marks for every additional year of experience. Maximum marks shall be restricted to 10 marks. <i>Enclose list of projects along with documentary proof of completion for similar projects as per Annexure H.</i>	10
4.	Financial value of projects for which the consultancy has been provided: 9 marks for one project worth Rs. 26.00 Crore or more 4 marks for each project worth Rs. 16.00 Crores or 2.5 marks for each project worth Rs. 12.00 Crores However minimum eligibility criteria as per section 4 must be fulfilled (Maximum marks – 10)	10
5	Team Composition: Bidders are required to submit a one page biodata of each team member comprising project manager, architect, graphic designer, subject experts, technology experts (hardware & software) and content writer. Maximum 10 marks.	10
6	Technical Presentation including Past Experience, Approach, Sample design proof of concept for any of the gallery work at Annexure A1 through A4, Methodology for Content Development. Design Approach (10) Proof of concept Sample Design including Display techniques, Museum Lighting, use of interactive technology, visitors movement plan etc. for one gallery at Annexure A1 through A4 (30)	50

	Methodology for content development with one sample content on any of the listed galleries/works (10)	
	Total Marks	100

The minimum qualifying score will be 70% of total marks as above and also against each individual entry. Only those Bidders who fulfil guidelines of functional & technical requirements and comply with the eligibility criteria will be shortlisted and issued RFP for the work.

F. Others

1. All disputes arising out of this contract shall be subject to the jurisdiction of Courts of Delhi. However, no dispute shall be taken by either of the parties to the contract, to any court of law without first referring it to an Arbitrator, who will be appointed by the Director General, National Council of Science Museums, Kolkata.

2. NSC, Delhi reserves the right to withdraw/ relax any of the terms and conditions mentioned above so as to overcome the problem encountered by the contracting parties.

3. NSCD reserves the right to call for any further information from bidder(s).

4. Notwithstanding the above, NSCD reserves the right to reject any or all offer (s) /bid (s) without assigning any reason. No representation in this regard (rejection of offers/bids) will be entertained by NSCD.

5. All communication to bidders shall be through CPP Portal / CPP notifications only.

Detailed Scope of Work

Request for Expression of Interest for providing consultancy services for various works of Upgradation of National Science Centre, Delhi comprising of following:

- Conceptualization, planning, curation, re-curation, content development, introduction of state of the art interactivities encompassing technologies of AR/VR/MR/mechatronics /interactive floors/ large multi-touch kiosk etc. for different galleries of NSCD.
 - Façade lighting and projection mapping for NSCD building.
 - Installation of professional AV system, large active LED screen for stage, and interpretation facility for auditorium complex of NSCD.
 - Architectural makeover of reception area, front open precinct of NSCD, and auditorium complex for providing better public facilities.
- and
- Augmentation of electrical substation, green-generator set, firefighting & fire alarm system and air conditioning system for supplementing future requirements of NSCD.

The work mainly comprises of

1. Improvement of frontage of NSC, Delhi including Façade lighting and projection mapping for NSCD building. (Approx. Budget INR 13.80 Cr) details at **Annexure A1**
2. Reception area renovation (Interior works) and setting up of Digital Installations (Video Wall, Fractal-o-scope) in Reception area (Approx. Budget INR 3.00 Cr) details at **Annexure A2**
3. Immersive show on Modern Space Technology, VR Theatre and Light and sound show on Indus Valley Civilisation (Approx. Budget INR 4.15 Cr) details at **Annexure A3**
4. Renovation of Prehistoric Life gallery with various robotised dinosaur and prehistoric animal species and Immersive Projection.(Approx. Budget INR 4.50 Cr) details at **Annexure A4**
5. Renovation of Auditorium Complex. (Approx. Budget INR 6.25 Cr) details at **Annexure A5**
6. Augmentation of electrical substation, green-generator set, firefighting & fire alarm system and air conditioning system for supplementing future requirements of NSCD. (Approx. Budget INR 4.50 Cr) details at **Annexure A6**

7. Upgradation and re-curation of Nuclear Power gallery of NSC Delhi. (Approx. Budget INR 1.00 Cr) details at **Annexure A7**

Annexure A1

Details of work of Improvement of frontage of NSC, Delhi including Façade lighting and projection mapping for NSCD building.

Budget Estimate INR 13.80 Cr

Impressive facade lighting makes buildings visible in the urban space and enables orientation. This also helps in branding and land marking of the institution building. Makeover of NSCD building is proposed to be achieved through DMX controlled RGB lighting in sync with projection show on building facade. National Science Centre Building is the result of marvellous architectural work of noted Indian architect Achyut Kanvinde. Subtle features of the building façade are proposed to be brought out using special illumination and projection mapping technology. Fine grit plastering texture as applied to NSCD façade, may be highlighted using grazing light wall washing. While proposing any lighting solution care has to be taken to avoid light pollution, good glare control, all weather outdoor usage and precise lighting technology for avoiding unnecessary glare. A theme based projection mapping show will be an eye catcher for the people commuting along Bhairon Marg. Specially during night time the projection show will be star attraction in the subdued surrounding skyline. The idea is to utilize building façade of NSCD for positive publicity using ultra bright Laser Projectors of very high ANSI lumens.

The vendor will come up with a scheme of lighting theme and identify different locations on the façade as well as along the surrounding areas for mounting of all-weather lighting fixtures, Laser projectors, speakers etc. Façade area where the projection is proposed to be shown will be clearly earmarked and suitable projectors identified so as to ensure minimum 500 nits on projection areas. The bidder will submit realistic rendered views of the façade after the proposed illumination/projection mapping intervention for approval from the authority of NSC Delhi. The vendor will also submit detailed BOQ with estimates and technical specifications for all Laser projectors, servers, media controllers, luminaries, DMX controllers, cables, switchgears, other accessories and cables, software Apps for control of the façade lighting and color etc.

The illumination will be theme based like tricolor, festival, celebrations, RGB, CMYK, Rainbow etc. the vendor will submit detailed CAD drawings for location and mounting of projectors, luminaires, cable routes etc. Though the campus is secured area, the design and mounting scheme should be vandal and weather proof and be provided with enough air circulation so as to keep the ambient temperature within operational limit as suggested by OEMs.

For a visitor entering the gate of National Science Centre, Delhi, the ambient should be cozy and helpful. The visitor should be provided with all kind of help at the earliest be it

proper car parking or the requisite ticket purchase at the counter. The place should provide orientation for the visitors about various facilities available in the centre and expected outcome of experiencing the facility. If need be the existing ticket infrastructure be refurbished to accommodate more visitors at a time. The ticket area should be air-conditioned and have facilities like machine operated ticket vending terminals for acquiring tickets without any help. For visitors who need help ticketing windows will provide needful help and the ticket to see the centre and other facilities.

Provision should also be there for automated boom barrier based car parking management. The moment visitor enters the centre, RFID tag based solution will provide the seamless synchronization of hour based parking charges with the ticketing amount charged.

The proposal should compulsorily have following features in the works for improvement of frontage of NSC, Delhi:

1. Façade Lighting
2. Projection mapping show
3. Amphitheatre
4. Automatic ticket vending and checking
5. Boom barrier controlled automated parking
6. Air-conditioned anteroom with Public facilities
7. Capsule lifts
8. All weather network connected large digital displays
9. Enhancing the capacity for parking
10. Consultant is free to add/propose more such facilities/interventions suited to bring about desired results in efficient manner. Such proposals however, will be finalised by the authority of NSC Delhi purely on its merit and financial viability. Decision of the authority of NSC Delhi will be final and binding on the vendor.

Scope of work of the Consultant

The work of “Improvement of frontage of NSC, Delhi including Façade lighting and projection mapping for NSCD building” will comprise of

1. Preparation of detailed list of proposed facilities after taking into consideration the available space, visitors’ requirements and expectation. This proposal be comprehensive and may include items/facilities over and above enlisted above. This is to be submitted in the form of a complete document detailing the technical specification, feasibility report, local availability in India and the detail regarding visitor impact etc., for approval. (Milestone-1)
2. Research work and Collection of authentic data and preparation of blue print/sketches as per approved scheme as per milestone-1 and preparation Gantt chart so as to complete the work in time. The design shall also include formulation of appropriate content, direction sign and the narratives if any(Wall text, Object Label, Group Label, Graphics Panel etc.) supporting all exhibits, visitor flow patterns with preferred unidirectional entry-exit system. (milestone-2)

3. Submission of architectural/structural interventions for implementation of blue print as per milestone-2 and submission of GFC/RFC drawings (civil, structure, landscape, electrical, plumbing etc) and associated BOQ/tender for its execution. (milestone-3)
4. 3D modelling and rendered views of all the features related to the theme with relevant details of each feature (in approximately 50-100 words each) and submission of 60-70 second walkthrough with suitable voiceover to showcase the final expected outcome. Such final design shall also include, if required, provision for deployment of state-of-the-art digital technology for content browsing, interactive - immersive – experiencing, interpretation comprising of large multi-touch screen display, seamless video walls, AR/VR/MR applications, large screen immersive projections, 4K video displays, smart multilingual audio guides through smart phones along with content management system. While preparing such schemes due care should be taken for placement of objects/artefacts, professional illumination with details of luminaires, making provisions for placement and maintenance of digital equipment, interactive kiosks, AV displays etc

Apart from these essential components, the agency or successful bidder is free to add more optional components, if necessary, keeping the main objective in view. However, National Science Centre reserves the right to modify the plan by adding, excluding or changing the content or mode of presentation of the proposed components at the time of implementation. (milestone-4)

5. Drawings & Bill of Quantities: The agency (successful bidder) shall provide detailed ready/good for construction drawings in both Autocad and pdf format along with bill of quantities with estimated cost with clear technical specifications of all materials/equipment including all digital interfaces. All raw materials, fittings, fixtures, equipment, gadgets etc. shall be of acceptable and reputed brands with proper warranty terms for execution through a separate tender. The agency shall also provide ready for print high resolution images of the graphics which are proposed and approved in the design. The bill of quantities shall also include items of work comprising refurbishing, reuse, refabricating and dismantling of unusable existing structures, wherever necessary, shifting and stacking of the dismantled structures, fittings etc. within the National Science Centre campus. Helping NSC Delhi in finalising the vendor through tender process and periodical supervision of execution of the work as per approved outcome of milestone-4, following Govt of India norms as laid down in GFR-2017. The agency shall guide the fabricators of the galleries when the fabrication actually starts. Day-to-day supervision is not expected from the agency but the overall guidance and periodical supervision as and when required shall be required. The bidders are requested to visit National Science Centre, Delhi, inspect the galleries to understand the requirement and assess the site conditions. (milestone-5)

Details of work of

Reception area renovation (Interior works) and setting up of Digital Installations (Video Wall, Fractal-o-scope) in Reception area.

Budget Estimate INR 3.00 Cr

National Science Centre has fairly large reception area of approximately 5000 sq mtr, spread over in two different levels. These levels are separated by flight of stairs and proposed to be utilized to serve dual purpose of a theatre for sitting arrangement as and when required and also as the pathways to reach upper levels of the NSCD building. CAD drawings and reference photographs of the area are shared at **Annexure-I**. Reception area is one of few areas of the centre, where double height is available for large exhibits and this should be exploited in proposed design. The reception area leads to a very important gallery of the centre “Our Science and Technological Heritage”. This gallery is located at level-3 and may be accessed by manoeuvring flite of stares or by using escalator. This escalator was installed 25 years ago and was one of the few escalators installed in Delhi. Visitors during that time were awestruck after seeing these moving stairs. The technology now has become dated and needs to be replaced with some state of the art modern lift/elevator system. This escalator moves through equally dated exhibit called “Energy ball”. This is one of the biggest and popular exhibits of the centre. While riding the escalator, visitors experience this exhibit in an immersive manner. The new proposal may either replace this escalator with a new one or may suggest set of 3-4 capsule lifts with proper feasibility report.

Visitors to the centre land at the vestibule entry leading to the reception area which is at level-1. Vestibule entry at level-1 is approached after maneuvering flight of stairs from open foyer area at ground level.

The successful vendor is expected to suggest key interventions and layout changes in the reception area to make it convenient for the visitors to plan their visit to the centre. The proposal should include ample sitting area with various utilities easily approachable. The reception desk should be clearly visible as one enters the reception area from vestibule. This is also the area where visitors are frisked off into the main building. The proposal should also include the seamless validity of bona-fide visitors through touchless self-checking ticketing system and provision of cloak room, baby feeding room, first aid and other essential services easily approachable.

The reception area in commensuration with the ethos of National Science Centre should present a grandeur and expansive look and feel. It has been observed that the visitors to the centre generally flock the reception area with lots of query. Since this also happens to be the only entry point where all visitors arrive for reaching various other facilities of the centre, the place is generally very crowded. In order to handle this scenario the successful vendor will also come up with the proposal for handling and engaging minimum 500 visitors at a time. The proposal should include automatic direction guidance based upon the dynamic location of the visitor. The solution could be an app based direction finder.

Digital Installations in Reception area:

Main requirement for reception area is that it should be expansive and free from any obstruction. The main challenge while suggesting any digital interactive technology in reception is that it should large and embed itself within the available area and at the same time not occupy substantial floor area thereby leaving most of the floor/space available for visitors. This is warranted as the space is in premium and should be left to the maximum possible extent for the visitor's comfort and use. The proposal should therefore utilise ceiling and wall space for the exhibits and interactivities. Some of the examples are interactive floor projections, ceiling installations and wall projection based stunning interactivities like installation to be developed on the wall which allows the visitors to interact with it by touching the wall. The theme could be "Create Your Own Universe". Digital kaleidoscope could also be added for perpetually engaging visitors.

Another star attraction could be forced perspectives based 3D billboard digital display. Such displays could be installed on overhanging projection protruding surface, separating double height area of the reception from single height. Such billboards employ a trick called "forced perspective" against a curved screen. These displays really only work if you're standing at exactly the right place so the perspectives work right. The reason the images seem to be able to come out of the display is because if you look closely, you'll notice that the working areas are smaller than the screens and they replicate the view behind them (again, this only works if you're in exactly the right place) giving the illusion of empty space. It's a clever trick, a regular 2D image bent around a box to give the illusion of 3D.

Ceiling mount spherical projection based displays could also bring about awe feeling if the projected contents are curated thoughtfully and a proper story line be made matching with the projection. High resolution camera may also be used for capturing different emotions of the visitors and adding digital caricature special effects on top of these. When these funny master pieces are displayed on large projection screen the atmosphere will really become humorous and entertaining.

The main requirement of the reception area will be announcement, and central information server. The central information server will comprise of different displays fitted all through the center and the information will be fed to these displays

dynamically through an app. Any information related to the events/shows that are going to happen soon will be broadcasted through app to all such centrally controlled server. Apart from these important announcements routine information clips will keep on rolling. These information servers could be used for advertisement screens also for generation of extra revenue.

The reception area has one of the oldest exhibits “Energy Ball”. This exhibit is housed in a large vertical tunnel spanning from ground floor to fourth floor. The new proposal should come up with new suggestions for changing this “Energy Ball” exhibit with state of the art exhibit. One suggestion could be an “Indoor Skydiving” experience through simulated wind tunnel. This wind tunnel will be of glass with strong air jets thrusting air from ground floor while the entry logistics to this sky diving arena will be from level-1 reception floor.

The proposal should compulsorily have following features in the works for Reception area renovation (Interior works) and setting up of Digital Installations (Video Wall, Fractal-o-scope) in Reception area.

1. Removal of ‘Water Gallery’, reception area rearrangement and new visitor’s movement.
2. Human intervention free visitors’ screening and ticket authentication
3. Installation of new escalators/capsule lifts
4. Digital direction signs and PA system with recorded message announcement
5. Redesigning/reimagining of stairs taking visitors to cafeteria
6. Double height suited large exhibits say ceiling mount SOS type display, digital Kaleidoscope, fractal-o-scope, forced perspectives based 3D billboard digital displays etc.
7. Energy ball exhibit removal and replacement with suitable alternate say Sky Diving or any other with feasibility report.
8. Provision for new education section
9. forced perspectives based 3D billboard digital display
10. Consultant is free to add/propose more such facilities/interventions suited to bring about desired results in efficient manner. Such proposals however, will be finalised by the authority of NSC Delhi purely on its merit and financial viability. Decision of the authority of NSC Delhi will be final and binding on the vendor.

Scope of work for the Consultant

The work of “Reception area renovation (Interior works) and setting up of Digital Installations (Video Wall, Fractal-o-scope) in Reception area” will comprise of

1. Preparation of detailed list of proposed facilities after taking into consideration the available space, visitors’ requirements and expectation. CAD drawings of the area available at Annexure-I. This proposal be comprehensive and may include items/facilities over and above enlisted above. This is to be submitted in the form of a complete document detailing the technical specification, feasibility report, local availability in India and the detail regarding visitor impact etc., for approval. (Milestone-1)

2. Research work and Collection of authentic data and preparation of blue print/sketches as per approved scheme as per milestone-1 and preparation Gantt chart so as to complete the work in time. The design shall also include formulation of appropriate content, direction sign and the narratives if any(Wall text, Object Label, Group Label, Graphics Panel etc.) supporting all exhibits, visitor flow patterns with preferred unidirectional entry-exit system. (milestone-2)

3. Submission of architectural/structural interventions for implementation of blue print as per milestone-2 and submission of GFC/RFC drawings (civil, structure, landscape, electrical, plumbing etc) and associated BOQ/tender for its execution. (milestone-3)

4. 3D modelling and rendered views of all the features related to the theme with relevant details of each feature (in approximately 50-100 words each) and submission of 60-70 second walkthrough with suitable voiceover to showcase the final expected outcome. Such final design shall also include, if required, provision for deployment of state-of-the-art digital technology for content browsing, interactive - immersive – experiencing, interpretation comprising of large multi-touch screen display, seamless video walls, AR/VR/MR applications, large screen immersive projections, 4K video displays, smart multilingual audio guides through smart phones along with content management system. While preparing such schemes due care should be taken for placement of objects/artefacts, professional illumination with details of luminaires, making provisions for placement and maintenance of digital equipment, interactive kiosks, AV displays etc

Apart from these essential components, the agency or successful bidder is free to add more optional components, if necessary, keeping the main objective in view. However, National Science Centre reserves the right to modify the plan by adding, excluding or changing the content or mode of presentation of the proposed components at the time of implementation. (milestone-4)

5. Drawings & Bill of Quantities: The agency (successful bidder) shall provide detailed ready/good for construction drawings in both Autocad and pdf format along with bill of quantities with estimated cost with clear technical specifications of all materials/equipment including all digital interfaces. All raw materials, fittings, fixtures, equipment, gadgets etc. shall be of acceptable and reputed brands with proper warranty terms for execution through a separate tender. The agency shall also provide ready for print high resolution images of the graphics which are proposed and approved in the design. The bill of quantities shall also include items of work comprising refurbishing, reuse, refabricating and dismantling of unusable existing structures, wherever necessary, shifting and stacking of the dismantled structures, fittings etc. within the National Science Centre campus. Helping NSC Delhi in finalising the vendor through tender process and periodical supervision of execution of the work as per approved outcome of milestone-4, following Govt of India norms as laid down in GFR-2017. The agency shall guide the fabricators of the galleries when the fabrication actually starts. Day-to-day supervision is not expected from the agency but the overall guidance and periodical supervision as and when required shall be required. The bidders are requested to visit National Science Centre, Delhi, inspect the galleries to understand the requirement and assess the site conditions. (milestone-5)

Details of work of

Immersive show on Modern Space Technology, VR Theatre and Light and sound show on Indus Valley Civilisation

Budget Estimate INR 4.15 Cr

Spectacular work in the field of space sciences by Indian Scientists has captured the students' imagination by storm. This success of space scientists in successful execution of space projects one after the other in quick succession requires clock precision and determination of steel. Thrifty project cost that is one tenth or even less than the contemporary project cost of similar nature in international market, is something that has provided much needed pie of international space business. This has also caught the imagination of aspiring young generation.

It has also been observed that the space technology is very involved and difficult to comprehend without expert guidance. It is in this background that NSC Delhi, has come up with a project of this nature which will involve state of the art technologies to showcase and explain plethora of technologies involved in the space science.

Proposed Facilities:

The section of Space Sciences will have following main experiences:

1. Indoor Skydiving (already considered in reception area)
2. Space capsule lifts (already considered in reception area)
3. Virtual Experiential International Space Station (VEISS)
4. A unique cafeteria inside VEISS serving space food
5. A virtual show inside VEISS showcasing 'Chandrayaan-3' and 'Mars' missions
6. Virtual show on earth from International Space Station.
7. Any other related experience consultant may like to add in VEISS.

Logistics and visitors' flow:

Once visitors enter reception area, they will be given option of going to VEISS, which will be housed on level-4, the area where Biotechnology gallery exists at present. Visitor will be able to reach VEISS from reception area, on level-1, either through skydiving or through space capsule lift. The space capsule lift will be commissioned in the hoist-way where energy ball exhibit is presently installed. Part of this hoist-way will be used for setting up of the facility of 'Indoor Skydiving'. Space capsule lift will show virtual simulated experience of on board

space rocket by way of wall projection and sound effects. The motion of lift will be in sync with the projection sequence on the space capsule's walls.

After reaching the VEISS visitors will be presented with out-of-the-world experience and visual treat. This will be a guided tour with scenes of stars and galaxies visible all around and mission control seats waiting to be occupied. Once seated, visitors will be taken to a journey of audio-visual spectacle and explained about the nitty-gritty of the space station technology and presented with visuals of earth as seen from space. The mission story related to 'Chandrayaan Mission' and 'Mars Mission' will also be interwoven suitably. Subsequently visitors will have option for tasting food and beverages as served to space scientists on payment basis.

The proposal should compulsorily have following features in the works for Immersive show on Modern Space Technology.

1. Indoor Skydiving (already considered in reception area)
2. Space capsule lifts (already considered in reception area)
3. Virtual Experiential International Space Station (VEISS)
4. A unique cafeteria inside VEISS serving space food
5. A virtual show inside VEISS showcasing 'Chandrayaan-3' and 'Mars' missions
6. Virtual show on earth from International Space Station.
7. Any other related experience consultant may like to add in VEISS.
8. Consultant is free to add/propose more such facilities/interventions suited to bring about desired results in efficient manner. Such proposals however, will be finalised by the authority of NSC Delhi purely on its merit and financial viability. Decision of the authority of NSC Delhi will be final and binding on the vendor.

Scope of work for the Consultant

The work of "Immersive show on Modern Space Technology, VR Theatre and Light and sound show on Indus Valley Civilisation" will comprise of

1. Preparation of detailed list of proposed facilities after taking into consideration the available space, visitors' requirements and expectation. This proposal be comprehensive and may include items/facilities over and above enlisted above. This is to be submitted in the form of a complete document detailing the technical specification, feasibility report, local availability in India and the detail regarding visitor impact etc., for approval. (Milestone-1)
2. Research work and Collection of authentic data and preparation of blue print/sketches as per approved scheme as per milestone-1 and preparation Gantt chart so as to complete the work in time. The design shall also include formulation of appropriate content, direction sign and the narratives if any(Wall text, Object Label, Group Label, Graphics Panel etc.) supporting all exhibits, visitor flow patterns with preferred unidirectional entry-exit system. (milestone-2)
3. Submission of architectural/structural interventions for implementation of blue print as per milestone-2 and submission of GFC/RFC drawings (civil, structure, landscape, electrical, plumbing etc) and associated BOQ/tender for its execution. (milestone-3)

4. 3D modelling and rendered views of all the features related to the theme with relevant details of each feature (in approximately 50-100 words each) and submission of 60-70 second walkthrough with suitable voiceover to showcase the final expected outcome. Such final design shall also include, if required, provision for deployment of state-of-the-art digital technology for content browsing, interactive - immersive – experiencing, interpretation comprising of large multi-touch screen display, seamless video walls, AR/VR/MR applications, large screen immersive projections, 4K video displays, smart multilingual audio guides through smart phones along with content management system. While preparing such schemes due care should be taken for placement of objects/artefacts, professional illumination with details of luminaires, making provisions for placement and maintenance of digital equipment, interactive kiosks, AV displays etc

Apart from these essential components, the agency or successful bidder is free to add more optional components, if necessary, keeping the main objective in view. However, National Science Centre reserves the right to modify the plan by adding, excluding or changing the content or mode of presentation of the proposed components at the time of implementation. (milestone-4)

5. Drawings & Bill of Quantities: The agency (successful bidder) shall provide detailed ready/good for construction drawings in both Autocad and pdf format along with bill of quantities with estimated cost with clear technical specifications of all materials/equipment including all digital interfaces. All raw materials, fittings, fixtures, equipment, gadgets etc. shall be of acceptable and reputed brands with proper warranty terms for execution through a separate tender. The agency shall also provide ready for print high resolution images of the graphics which are proposed and approved in the design. The bill of quantities shall also include items of work comprising refurbishing, reuse, refabricating and dismantling of unusable existing structures, wherever necessary, shifting and stacking of the dismantled structures, fittings etc. within the National Science Centre campus. Helping NSC Delhi in finalising the vendor through tender process and periodical supervision of execution of the work as per approved outcome of milestone-4, following Govt of India norms as laid down in GFR-2017. The agency shall guide the fabricators of the galleries when the fabrication actually starts. Day-to-day supervision is not expected from the agency but the overall guidance and periodical supervision as and when required shall be required. The bidders are requested to visit National Science Centre, Delhi, inspect the galleries to understand the requirement and assess the site conditions. (milestone-5)

Details of work of

Renovation of Prehistoric Life gallery with various robotised dinosaur and prehistoric animal species and Immersive Projection

Budget Estimate INR 4.50 Cr

This gallery at present showcases evolution of life on earth through pneumatically controlled robotised birds and animals. This gallery is very popular especially among kids due to the dinosaur's fame of Jurassic Park blockbuster. The idea is to strengthen this gallery by way of incorporating crucial animal species, in the story of evolution and refurbishing the existing ones by way of changing skin and incorporating natural animations.

Life on earth has existed for more than 4 Billion years. Story of evolution of modern man is very interesting. Mother earth is practically overflowing with life from the darkest depths of our oceans to the tallest mountain peaks there is even life in the middle of boiling hot springs and in frozen glaciers.

The story of life started with the humble sponges around 600 million years ago followed by the Cambrian period (541- 485 MYA) explosion of animal species. This period was particularly good for animal evolution as animals with mouth could consume mineral from sea and gave way for first arthropod with exoskeleton (Trilobite).

The story will pick important link of animal species from each of the periods of the Ordovician (485– 443 MYA) likes of massive sea Scorpions; Silurian period (443 – 419 MYA); Carboniferous period (358 – 298 MYA) say amphibian and reptiles etc.

The story will suitably portray reptiles' dominance over amphibians during Permian period from 298 – 251MYA

Triassic, Jurassic and Cretaceous period will be made more involved, interesting and engaging by way of incorporating various interactivities. One life size skeleton of large Brachiosaurus or Diplodocus may be incorporated. Life size animated models of Dinosaurs may also be included to capture kid's attention.

A virtual jungle safari may also be incorporated by way of simulated fantasy ride, in which 40-50 visitors will embark on and experience virtual thrilling journey through a Jurassic Dino park. This journey may be inspired from the one depicted by Universal Studio.

The capsule bus will be projected on all sides with digital 3D contents and will show virtual 3D scenes of Jurassic jungle in sync with physical actuation of the movement of bus. The idea is to provide the visitors a virtual experiential simulated ride through a Jurassic jungle.

Area showcasing the Cretaceous period (145-65MYA) will show animated models of large Dinosaurs like T Rex, velociraptors and triceratops. Here some more interesting AR based digital experiences may be added to supplement the information related to the topic

of human evolution. For example KT mass extinction may be shown using VR/MR technology. Using large screens and CAVE (cave automatic virtual environment) projection technology a KT extinction scene may be created.

KT extinction stands for Cretaceous-Tertiary Extinction. This is a global extinction event that witnessed the elimination of about 70% of the species living on the earth within a very short time 65 million years ago. This scene may be presented and depicted digitally so as to make visitors participate in the catastrophe virtually.

In the section on Neogene period (23-2.6 MYA) primates will be shown in dioramic presentation.

The proposal should compulsorily have following features in the works for Prehistoric Life Gallery.

1. Minimum 15 nos. of animated birds and animals of different evolutionary periods.
2. Minimum 15 static birds and animals for weaving the story of evolution.
3. Refurbishment of existing animal species
4. Life size skeleton structure of Brachiosaurus, to be placed in double height area of the gallery.
5. 40-50 seater virtual reality simulated-Dino Jungle safari bus.
6. Virtual experiential based KT extinction scenario.
7. 10-15 innovative selfie points, matching with the topic and context of Prehistoric Life Gallery.
8. Battery operated ride through the evolution gallery with audio guide.
9. Any other related experience consultant may like to add in the Dino-gallery.
10. Consultant is free to add/propose more such facilities/interventions suited to bring about desired results in efficient manner. Such proposals however, will be finalised by the authority of NSC Delhi purely on its merit and financial viability. Decision of the authority of NSC Delhi will be final and binding on the vendor.

Scope of work for the Consultant

The work of “Renovation of Prehistoric Life gallery with various robotised dinosaur and prehistoric animal species and Immersive Projection” will comprise of

1. Preparation of detailed story line based on a single holistic theme after taking into consideration the available space, removal of old Biotechnology gallery, number & types of objects/artefacts/interactivities/visitors’ experiences proposed to be displayed/already on display. This is to be submitted in form of a complete document detailing the content, story line, narratives etc., for approval. (Milestone-1)
2. Research work and Collection of authentic data and preparation of blue print/sketches as per approved storyline along with preparation Gantt chart so as to complete the work in two years. The design shall also include formulation of appropriate content and the narratives (Wall text, Object Label, Group Label, Graphics Panel etc.) supporting all exhibits, visitor flow patterns with preferred unidirectional entry-exit system. (milestone-2)
3. Submission of architectural interventions for implementation of blue print as per milestone-2 and submission of GFC drawings (civil, electrical, plumbing etc) and associated BOQ/tender for its execution. (milestone-3)

4. 3D modelling and rendered views of all the features related to the theme with relevant details of each feature (in approximately 50-100 words each) and submission of 60-70 second walkthrough with suitable voiceover to showcase the final expected outcome. Such final design shall also include provision for deployment of state-of-the-art digital technology for content browsing, interactive - immersive – experiencing, interpretation comprising of large multi-touch screen display, seamless video walls, AR/VR/MR applications, large screen immersive projections, 4K video displays, smart multilingual audio guides through smart phones along with content management system. While preparing such schemes due care should be taken for placement of objects/artefacts, professional illumination with details of luminaires, making provisions for placement and maintenance of digital equipment, interactive kiosks, AV displays etc

Curatorial walk & Audio Guide App: The Agency (successful bidder) shall submit a plan for curatorial walk of about 30 minutes for guided visit of the gallery space. The agency shall also develop the entire content for a Mobile Audio Guide App covering around 10 selected spots of the centre.

Apart from these essential components, the agency or successful bidder is free to add more optional components, if necessary, keeping the main objective in view. However, National Science Centre reserves the right to modify the plan by adding, excluding or changing the content or mode of presentation of the proposed components at the time of implementation. (Milestone-4)

5. Drawings & Bill of Quantities: The agency (successful bidder) shall provide detailed ready for construction drawings in both Autocad and pdf format along with bill of quantities with estimated cost with clear technical specifications of all materials/equipment including all digital interfaces. All raw materials, fittings, fixtures, equipment, gadgets etc. shall be of acceptable and reputed brands with proper warranty terms for execution through a separate tender. The agency shall also provide ready for print high resolution images of the graphics which are proposed and approved in the design. The bill of quantities shall also include items of work comprising refurbishing, reuse, refabrication and dismantling of unusable existing structures, wherever necessary, shifting and stacking of the dismantled structures, fittings etc. within the National Science Centre campus. Helping NSC Delhi in finalising the vendor through tender process and supervision of execution of the work as per approved outcome of milestone-4, following Govt of India norms as laid down in GFR-2017. The agency shall guide the fabricators of the galleries when the fabrication actually starts. Day-to-day supervision is not expected from the agency but the overall guidance shall be required. The bidders are requested to visit National Science Centre, Delhi, inspect the galleries to understand the requirement and assess the site conditions. (milestone-5)

Annexure A5

Details of work of **Renovation of Auditorium Complex.** Budget Estimate INR 6.25 Cr

The proposal should compulsorily have following features in the works for Renovation of Auditorium.

1. Dismantling the existing auditorium, toilets, stage, control room, green room, VIP toilet and conference room. Making the space available for new facilities.
2. Fresh layout for auditorium to accommodate 400-500 people, conference room for 50 people, foyer, green room, control room, interpreter rooms, dining area, kitchen, other required facilities etc.
3. Good quality acoustic work for auditorium and conference room etc.
4. Fresh stage layout for new auditorium along with other ancillary gadgets and equipment like mic, podium, speakers, amp, mixer etc.
5. Large background screen for the stage, LED/projector
6. Professional stage lighting with DMX controlled dimmer, for hosting cultural programs.
7. Audio visual equipment for interpreter rooms. Provision of minimum of three such rooms.
8. Arrangement for entering stage from both sides and provision for movement behind the stage.
9. 50 seater conference room should have modern and innovative seating arrangement, with each seat provided with mic, screen and USB/charger dock for uploading content.
10. Provision for organising professional online meetings, VC equipment with professional projector.
11. Consultant is free to add/propose more such facilities/interventions suited to bring about desired results in efficient manner. Such proposals however, will be finalised by the authority of NSC Delhi purely on its merit and financial viability. Decision of the authority of NSC Delhi will be final and binding on the vendor.

Scope of work for the Consultant

The work of “Renovation of Auditorium Complex” will comprise of

1. Preparation of detailed list of facilities planned to be housed in Auditorium complex as per the details above in annexure A5. Fresh layout for these facilities in the area so as to house auditorium to accommodate 400-500 people, conference room for 50 people, public facilities, foyer, green room, control room, interpreter rooms, dining area, kitchen, other required facilities etc. The layout should take into consideration the available space; removal of old facilities like stage, green rooms, old conference room; new stage layout, active LED screen position, proposed A/V system location, DMX controlled lighting system, acoustic solution and other necessary elements required for setting up of new auditorium complex. This is to be submitted in form of a complete document detailing each feature of the proposed setup, for approval. (Milestone-1)

2. Market survey and Collection of authentic financial data for procurement purpose and preparation of blue print/sketches as per approved proposal of milestone-1 along with preparation of Gantt chart so as to complete the work in stipulated time period. The design shall also include A/V simulation for acoustic simulation, wave based modelling or geometric acoustics, direction signs, visitor flow patterns with preferred unidirectional entry-exit system, provision of fire exits, emergency evacuation plan, vetting of this plan from certifying agencies like fire department etc. (milestone-2)

3. Submission of architectural interventions for implementation of blue print as per milestone-2 and submission of GFC drawings (civil, electrical, plumbing etc) and associated BOQ/tender for its execution. (milestone-3)

4. 3D modelling and rendered views of all the features related to the proposed auditorium complex with relevant details of each feature/equipment (in approximately 50-100 words each) and submission of 60-70 second walkthrough with suitable voiceover to showcase the final expected outcome. Such final design shall also include provision for deployment of state-of-the-art digital technology, A/V system, large led screens, projectors, video-conferencing system etc, as proposed and approved in milestone-1. While preparing such schemes due care should be taken for placement of proposed equipment, professional illumination with details of luminaires, making provisions for placement and maintenance of these equipment, controlling kiosks, AV displays etc

Apart from these essential components, the agency or successful bidder is free to add more optional components, if necessary, keeping the main objective in view. However, National Science Centre reserves the right to modify the plan by adding, excluding or changing the content or mode of presentation of the proposed components at the time of implementation. (Milestone-4)

5. Drawings & Bill of Quantities: The agency (successful bidder) shall provide detailed ready for construction drawings in both Autocad and pdf format along with bill of quantities with estimated cost with clear technical specifications of all materials/equipment including all digital interfaces. All raw materials, fittings, fixtures, equipment, gadgets etc. shall be of acceptable and reputed brands with proper warranty terms for execution through

a separate tender. The agency shall also provide ready for print high resolution images of the graphics which are proposed and approved in the design. The bill of quantities shall also include items of work comprising refurbishing, reuse, refabricating and dismantling of unusable existing structures, wherever necessary, shifting and stacking of the dismantled structures, fittings etc. within the National Science Centre campus. Helping NSC Delhi in finalising the vendor through tender process and supervision of execution of the work as per approved outcome of milestone-4, following Govt of India norms as laid down in GFR-2017. The agency shall guide the fabricators of the galleries when the fabrication actually starts. Day-to-day supervision is not expected from the agency but the overall guidance shall be required as and when required. The bidders are requested to visit National Science Centre, Delhi, inspect the galleries to understand the requirement and assess the site conditions. (milestone-5)

Details of work of

Augmentation of electrical substation, green- generator, firefighting & fire alarm system, and air conditioning system for supplementing future requirements of NSCD.
Budget Estimate INR 3.50 Cr

The proposal should compulsorily have following features in the works for Renovation of Auditorium.

1. Upgradation of existing substation of 750KVA capacity to required capacity keeping in view the requirement of load after addition of the new facilities and keeping in view future requirements.
2. Upgradation of existing 350 KVA diesel generator set to green generator of required capacity keeping in view the requirement of load after addition of the new facilities and keeping in view future requirements.
3. Central air-conditioning of the entire NSC Delhi building as per requirement and utilising already installed air-conditioning units.
4. Upgradation of APFC panel from existing setup to required capacity keeping in view the requirement of inductive/capacitive load after addition of the new facilities and keeping in view future requirements.
5. Provision for Solar power plant of suitable capacity based upon the rooftop area available and integrating the same with the power grid.
6. Augmenting and refurbishment of electrical panels with new changeover switch and switchgears.
7. Augmenting the electrical cables as per the enhanced load after upgradation of the centre.
8. Augmenting the firefighting and fire alarm system and integration of the same with the existing system.
9. Any other related gadget consultant may like to add for better management of the substation and for saving the electricity.
10. Consultant is free to add/propose more such facilities/interventions suited to bring about desired results in efficient manner. Such proposals however, will be finalised by the authority of NSC Delhi purely on its merit and financial viability. Decision of the authority of NSC Delhi will be final and binding on the vendor.

Scope of work for the Consultant

The work of “Augmentation of electrical substation, green- generator and air conditioning system for supplementing future requirements of NSCD” will comprise of

1. Preparation of detailed list of items of works that need to be executed for “Augmentation of electrical substation, green- generator, firefighting & fire alarm system and air conditioning system for supplementing future requirements of NSCD” as per the details above in annexure A6. Submission of fresh layout showing all the proposed facilities along with existing ones with SLD schematic. The bidder will submit detailed data and report used as basis to arrive at such suggestion for finalising the enhanced capacity of the substation, generator set, firefighting system, rooftop solar power plant, APFC panel, air-conditioning system etc. with feasibility report and other relevant data. This is to be submitted in the form of a complete document detailing each feature of the proposed setup, for approval. (Milestone-1)

2. Market survey and Collection of authentic financial data for procurement purpose and preparation of blue print/sketches as per approved proposal of milestone-1 along with preparation of Gantt chart so as to complete the work in stipulated time period. The proposed design shall be corroborated/vetted from certifying agencies. (milestone-2)

3. Submission of architectural interventions for implementation of blue print as per milestone-2 and submission of GFC drawings (civil, electrical, plumbing etc) and associated BOQ/tender for its execution. (milestone-3)

4. 3D modelling and rendered views of all the features related to the proposed “Augmentation of electrical substation, green- generator, firefighting & fire alarm system and air conditioning system for supplementing future requirements of NSCD” . Such final design shall also include provision for deployment of substation, generator set, firefighting system, rooftop solar power plant, APFC panel, air-conditioning system etc. While preparing such schemes due care should be taken for placement of proposed equipment, professional illumination with details of luminaires, making provisions for placement and maintenance of these equipment.

Apart from these essential components, the agency or successful bidder is free to add more optional components, if necessary, keeping the main objective in view. However, National Science Centre reserves the right to modify the plan by adding, excluding or changing the content or mode of presentation of the proposed components at the time of implementation. (Milestone-4)

5. Drawings & Bill of Quantities: The agency (successful bidder) shall provide detailed ready for construction drawings in both Autocad and pdf format along with bill of quantities with estimated cost with clear technical specifications of all materials/equipment including all digital interfaces. All raw materials, fittings, fixtures, equipment, gadgets etc. shall be of acceptable and reputed brands with proper warranty terms for execution through a separate tender. The agency shall also provide detailed BOQ for SITC of substation, generator set, firefighting system, rooftop solar power plant, APFC panel, air-conditioning system etc. The bill of quantities shall also include items of work comprising refurbishing, reuse, refabricating and dismantling of existing infrastructure, wherever necessary, shifting and stacking of the dismantled structures, fittings etc. within the National Science Centre

campus. Helping NSC Delhi in finalising the vendor through tender process and supervision of execution of the work as per approved outcome of milestone-4, following Govt of India norms as laid down in GFR-2017. The agency shall guide the fabricators of the galleries when the fabrication actually starts. Day-to-day supervision is not expected from the agency but the overall guidance shall be required as and when required. The bidders are requested to visit National Science Centre, Delhi, inspect the galleries to understand the requirement and assess the site conditions. (milestone-5)

Annexure A7

Details of work of

Upgradation and re-curation of Nuclear Power gallery of NSC Delhi.

Budget Estimate INR 1.00 Cr

The proposal should compulsorily have following features in the works for Upgradation and re-curation of Nuclear Power gallery of NSC Delhi

1. Identification of the exhibits out of 45 existing one that will require major upgradation.
2. Finalisation of the upgraded data/content for the identified exhibits.
3. Finalisation of new interactivity for the exhibits.
4. Redesign and fabrication of following altogether new exhibits
5. Control the nuclear reactor
6. Walkthrough a nuclear power plant
7. Nuclear radiation

8. Submission of 3D rendered walkthrough of the upgraded Nuclear Power gallery.
9. Preparation of upgraded content/ graphics/ movie / etc for the gallery.
10. Any other technology or interface the consultant may like to add for Upgradation and re-curation of Nuclear Power gallery

Scope of work for the Consultant

The work of “Upgradation and re-curation of Nuclear Power gallery of NSC Delhi” will comprise of:

1. Preparation of detailed story line based on a single holistic theme after taking into consideration the available space, number & types of objects/artefacts/interactivities/visitors’ experiences proposed to be displayed/already on display. This is to be submitted in form of a complete document detailing the content, story line, narratives etc., for approval. (Milestone-1)
2. Research work and Collection of authentic data and preparation of blue print/sketches as per approved storyline along with preparation Gantt chart so as to complete

the work in two years. The design shall also include formulation of appropriate content and the narratives (Wall text, Object Label, Group Label, Graphics Panel etc.) supporting all exhibits, visitor flow patterns with preferred unidirectional entry-exit system. (milestone-2)

3. Submission of architectural interventions for implementation of blue print as per milestone-2 and submission of GFC drawings (civil, electrical, plumbing etc) and associated BOQ/tender for its execution. (milestone-3) 10%

4. 3D modelling and rendered views of all the features related to the theme with relevant details of each feature (in approximately 50-100 words each) and submission of 60-70 second walkthrough with suitable voiceover to showcase the final expected outcome. Such final design shall also include provision for deployment of state-of-the-art digital technology for content browsing, interactive - immersive – experiencing, interpretation comprising of large multi-touch screen display, seamless video walls, AR/VR/MR applications, large screen immersive projections, 4K video displays, smart multilingual audio guides through smart phones along with content management system. While preparing such schemes due care should be taken for placement of objects/artefacts, professional illumination with details of luminaires, making provisions for placement and maintenance of digital equipment, interactive kiosks, AV displays etc

Curatorial walk & Audio Guide App: The Agency (successful bidder) shall submit a plan for curatorial walk of about 90 minutes for guided visit of the gallery space. The agency shall also develop the entire content for a Mobile Audio Guide App covering around 100 selected spots of the centre.

Apart from these essential components, the agency or successful bidder is free to add more optional components, if necessary, keeping the main objective in view. However, National Science Centre reserves the right to modify the plan by adding, excluding or changing the content or mode of presentation of the proposed components at the time of implementation. (milestone-4)

5. Drawings & Bill of Quantities: The agency (successful bidder) shall provide detailed ready for construction drawings in both Autocad and pdf format along with bill of quantities with estimated cost with clear technical specifications of all materials/equipment including all digital interfaces. All raw materials, fittings, fixtures, equipment, gadgets etc. shall be of acceptable and reputed brands with proper warranty terms for execution through a separate tender. The agency shall also provide ready for print high resolution images of the graphics which are proposed and approved in the design. The bill of quantities shall also include items of work comprising refurbishing, reuse, refabricating and dismantling of unusable existing structures, wherever necessary, shifting and stacking of the dismantled structures, fittings etc. within the National Science Centre campus. Helping NSC Delhi in finalising the vendor through tender process and supervision of execution of the work as per approved outcome of milestone-4, following Govt of India norms as laid down in GFR-2017. The agency shall guide the fabricators of the galleries when the fabrication actually starts. Day-to-day supervision is not expected from the agency but the overall guidance shall be required as and when required. The bidders are requested to visit National Science Centre, Delhi, inspect the galleries to understand the requirement and assess the site conditions. (milestone-5)

Annexure – B

**Request for Expression of Interest for providing consultancy services for Major
Upgradation of National Science Centre, Delhi**

Technical Bid

Sl. No.	Details	Details	Page Nos. (if any)
General Information (to be filled by the bidders)			
1	Name and Full Address of the bidder with Tel. No, E-mail & Fax Number (s) and Contact person		
2	Status of the bidder: - Company / Partnership Firm/ Proprietorship /Consortium etc. – Please specify		
3	In case of Company – please enclose Memorandum and Articles of Association along with certificates of incorporation, if company is a public limited then the certificate for commencement of business also to be enclosed.	Submitted/ Not Submitted	
4	In case of Partnership Firm – please enclose Certificate of Registration under the Partnership Act, 1932, along with valid partnership deed.	Submitted/ Not Submitted	
5	In case of Proprietorship or Individual – please enclose a declaration on the letterhead	Submitted/ Not Submitted	
6	Compliance of statutory laws i) Copy of PAN card ii) Copy of Registration Certificate under GST	Submitted/ Not Submitted	
7	i) Copy of ESI registration certificate, if applicable ii) Copy of EPF registration certificate, if applicable In case of non-applicability of EPF and / or ESI, the applicant shall submit a declaration to this effect. In case self-declaration is found to be false at any stage then the contract will be terminated and the firm will be debarred from future tenders for three years.	Submitted/ Not Submitted	

8.	In case of consortium – please enclose agreement deed establishing formation of the consortium.	Submitted/ Not Submitted	
Technical Eligibility Criteria			
9	The bidder should have a minimum of 5 years' experience in executing Science and Technology/ Heritage/history/polity/ Culture/ Edutainment related interpretation projects, having handled projects related to Heritage Museums/ Science Centre/ Science Cities etc. at International/ National / State level and must have accomplished at least 3 Science and Technology/ Heritage/history/polity/ Culture/ Edutainment related interpretation projects. The bidders shall submit copies of work orders and completion certificates to substantiate the claim.	Submitted/ Not Submitted	
10	The bidder should have past experience of designing and curating one museum gallery space of at least 75,000 sq feet in the last five years. Certified copies of completion certificate clearly indicating the area of gallery space curated shall be required to substantiate the claim. Annexure-H	Submitted/ Not Submitted	
11	Average Turnover of at least Rs. 300.00 lakh in any 3 financial years out of last 5 financial years ending 2022-23 (In case of Consortium, financial turnover of lead partner shall be taken into consideration.	Submitted/ Not Submitted	
12	The Bidder should have completed consultancy of similar works during the last 5 years from the date of the issue of this tender as per the details given below. One similar work of project value not less than Rs. 26 Crores or Two similar works each of project value not less than Rs. 16 Crores or Three similar works each of project value not less than 12 Crores.	Submitted/ Not Submitted	
13	Team Composition: Bidders are required to submit a one page biodata of each team member comprising project manager, architect, graphic designer, subject experts, technology experts (hardware & software) and content writer. Refer Annexure E & G.	Submitted/ Not Submitted	

14	Documentary evidence like Work Order, Completion Certificate, Income Tax Return, Audited Report, and Financial Statement etc. to support. SI no-9 to 13 above.	Submitted/ Not Submitted	
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Note: -

- 1) The EOI received shall be evaluated on the basis of eligibility criteria.
- 2) Non submission of any of the documents listed in 'Eligibility Criteria', mentioned above, shall lead to summarily rejection of the offer. No further correspondence in this regard will be made. However, clarification may be asked on the 'General Information' mentioned above.

DECLARATION

1. I/We, ----- Son / Daughter / Wife of Shri-----
----- Proprietor /Director/Authorized signatory of
the Bidder, mentioned above, is competent to sign this declaration and execute this tender document;
2. I/We have carefully read and understood all the terms and conditions of the tender and undertake to abide to them;
3. The information/ documents furnished along with the above application are true and authentic to the best of my knowledge and belief. I / we, am/ are well aware of the fact that furnishing any false information/ fabricated document would lead to rejection of my tender at any stage besides liabilities towards prosecution under appropriate law.
4. I/ We _____ do hereby declare that the entries made in the above are true to the best of my / our knowledge and also that we shall be found by the acts of my /our duly constituted attorney.
5. I/ we hereby understand that the submission of offers / bids does not guarantee awarding the work. I/ We further understand that in case of any information submitted by me / us being found to be incorrect either before or even after the award of work, National Science Centre, Delhi will have the right to summarily reject the bid, cancel the License or revoke the same with forfeiture of EMD / Security Deposit and license fee including debarment for a period of 3 years at any time without assigning any reason whatsoever.

(Signature of Applicant (s))

Name _____
Seal

Date:
Address:

BID SECURITY DECLARATION FORM

Date: _____
Tender No. _____

To
The Director
National Science Centre
Bhairon Marg
New Delhi-110001

I/We. The undersigned, declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Security Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you for a period of three years from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

- a) have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or
- b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity
 - (i) fail or refuse to execute the contract, if required, or
 - (ii) fail or refuse to furnish the Performance Security, in accordance with the EOI's terms.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Date:

Signature of Authorized Person with Company Seal

Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid.

FORMAT FOR AVAILABILITY OF TECHNICAL TEAM.

The bidder needs to provide the details of key team members as proposed by him for deployment on site for successful completion of the project [Refer to Clause 6 (d) of Eligibility Criteria]

S.No	Key personnel / support staff on Roll of the bidder	Name and short bio, relevant experience of the project team to be given by the bidder
(a)	Project Manager	
(b)	Architect	
(c)	Art and Graphics/Interior Designer	
(d)	Subject Expert/Curator for Curation of galleries	
(d)	Technology experts (hardware & software) for Interactive Designing/ Software Development / Multimedia development /AR-VR development /2D and 3D Film production etc.	
(f)	Content writer	
(g)	Other Supporting Manpower	

The bidder may co-opt experts in any other field if deemed to be necessary.

(Signature of Authorised Signatory)

Annexure - F

**FORMAT FOR ANNUAL TURNOVER & PROFIT AS PER THE AUDITED ACCOUNTS
TOWARDS THE QUALIFYING EXPERIENCE**

S. No.	Financial Year	Turnover in Indian Rupees(INR)
1.	2020-21	
2.	2021-22	
3.	2022-23	

S. No.	Financial Year	Profit After Tax in Indian Rupees(INR)
1.	2020-21	
2.	2021-22	
3.	2022-23	

(In case of Consortium, the Turnover and Profit of only lead partner needs to be mentioned)

(Signature of Authorized Signatory)

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

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

FORMAT FOR THE CONSENT LETTER FROM TECHNICAL / SUBJECT EXPERT

I _____, voluntarily agree to participate in the project if
(name of the bidder) is awarded the work of consultancy services for Major
Upgradation of National Science Centre, Delhi comprising of following:

- Conceptualization, planning, curation, re-curation, content development, introduction of state of the art interactivities encompassing technologies of AR/VR/MR/mechatronics /interactive floors/ large multi-touch kiosk etc. for different galleries of NSCD.
- Façade lighting and projection mapping for NSCD building.
- Installation of professional AV system, large active LED screen for stage, and interpretation facility for auditorium, conference room and reception area of NSCD.
- Architectural makeover of reception area, front open precinct of NSCD, and auditorium area for providing better public facilities.

and

- Augmentation of electrical substation, green-generator set, and air conditioning system for supplementing future requirements of NSCD.

I understand that if I agree to participate now, I cannot withdraw from the project or refuse to work without any consequences of any kind, except under exceptional circumstances.

I understand that I can withdraw from the project, under the justifiable exceptional circumstances, with a minimum of two weeks' notice, only with the approval of the authority of National Science Centre, Delhi.

I understand that my participation involves [outline briefly in simple terms what will be your specific work for this project]

I understand that no financial or other benefit, directly or indirectly, will be given to me by NSC Delhi for participating in this project.

I understand that in any report on the results of this project my identity will remain anonymous and no credit for this project will be directly attributed to me.

I understand that I will have no claim on the content that I will provide for this project as an expert.

I understand that I am free to contact any of the people involved in the project to seek further clarification and information.

Signature
(Name and Designation of Expert)

Signature & Seal of the Bidder

Annexure - H

Experience in the work of

- Conceptualization, planning, curation, re-curation, content development, introduction of state of the art interactivities encompassing technologies of AR/VR/MR/mechatronics /interactive floors/ large multi-touch kiosk etc. for different galleries.
- Façade lighting and projection mapping shows on heritage/institutional buildings.
- Installation of professional AV system, large active LED screen for stage, and interpretation facility for reputed auditoriums and conference rooms.
- Architectural design of public spaces, gardens, waterbodies, theatre or similar works.
- Installation of electrical substation, green-generator set, air conditioning system for large premises.

Sl No.	Name of the project	Cost of the Order awarded in INR	Total Area of the gallery space (sq.ft.)	Name of the Client	Phone No. of Contact Person of Client	Starting Date of Project	Completion Date of Project	Details/ Scope of work

(Signature of Authorized Signatory)

You can download CAD drawings of various galleries from this link