Office of Principal Scientific Adviser
to the Government of India

सत्यमेव जयते

Ref. No. Prn.SA/ADV/IAC/2021

Request for proposal (RFP)

For

Development & Maintenance of

SCIENCE & INNOVATION @ BHARAT PLATFORM

_11th_ **March 2021**

VER 1.0

OFFICE OF THE PRINCIPAL SCIENTIFIC ADVISER TO THE GOVERNMENT OF INDIA

VIGYAN BHAVAN ANNEXE, MAULANA AZAD ROAD,

NEW DELHI - 110011

Disclaimer:

1. The information contained in this Request for Proposal (RFP) document or information provided subsequently to Bidder whether verbally or in documentary form by or on behalf of Office of the Principal Scientific Adviser to the Government of India (O/o PSA to GoI), is provided to the bidder on the terms and conditions set out in this RFP document and all other terms and conditions subject to which such information is provided.

2. O/o PSA to GoI does not make any representation or warranty as to the accuracy, reliability, or completeness of the information in this RFP document and it is not possible for O/o PSA to GoI to consider (particular) needs of each party who reads or uses this document. RFP includes statements which reflect various assumptions and assessments arrived at by O/o PSA to GoI in relation to the statement of work. Such assumptions, assessments and statements do not purport to contain all the information that each bidder may require. Each prospective bidder should conduct its own investigations and analyses and check the accuracy, reliability and completeness of the information provided in this RFP document and obtain independent advice from appropriate sources.

3. O/o PSA to GoI will not have any liability to any prospective bidder/firm/or any other person under any laws (including without limitation the law of contract, tort), the principles of equity, restitution or unjust enrichment or otherwise for any loss, expense or damage which may arise from or be incurred or suffered in connection with anything contained in this RFP document, any matter deemed to form part of this RFP document, the award of the Assignment, the information and any other information supplied by or on behalf of O/o PSA to GoI or their employees, any Consulting Agency or otherwise arising in any way from the selection process for the Assignment. O/o PSA to GoI will also not be liable in any manner whether resulting from negligence or otherwise however caused arising from reliance of any bidder upon any statements in this RFP.

4. O/o PSA to GoI will not be responsible for any delay in receiving the proposals. The issue of this RFP does not imply that O/o PSA to GoI is bound to select Firm/Agency or to appoint the selected firm/agency, as the case may be, for the services and O/o PSA to GoI reserves the right to accept/reject any or all of proposals submitted in response to RFP document at any stage without assigning any reasons whatsoever. O/o PSA to GoI also reserves the right to withhold or withdraw the process at any stage with intimation to all who submitted RFP Application.

5. This RFP document is not an agreement and is not an offer or invitation by O/o PSA to GoI to any parties other than the applicants who are qualified to submit the Bids. The purpose of this RFP document is to provide bidder with information to assist the formulation of their proposals. O/o PSA to GoI may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this RFP document.

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SECTION 1: LETTER OF INVITATION

New Delhi

Date: 11th March 2021

1.1 In November 1999, Cabinet Secretariat established the Office of the Principal Scientific Adviser to the Government of India. The PSA's office aims to provide pragmatic and objective advice to the Prime Minister and the Cabinet on matters related to science, technology, and innovation with a focus on application of science and technology in critical infrastructure, economic and social sectors in partnership with Government departments, institutions, and industry.

1.2 Office of the Principal Scientific Adviser to the Government of India intends to develop a single go-to collaboration and innovation management platform between industry and academia.

1.3 On behalf of Office of the Principal Scientific Adviser to the Government of India, sealed bids are invited for developing the aforesaid web-based platform. The bid shall be submitted in a sealed envelope duly super-scribed - **"Techno-Commercial Proposal for Development & Maintenance of Science & Innovation @ Bharat Platform".**

1.4 The schedule of bids and other related details are indicated below:

S. No.	Description	Bid schedule & Address / details
1	Name of Project	Science & Innovation @ Bharat Platform
2	Reference Number	Prn.SA/ADV/IAC/2021
3	Last date for receiving bidder's Pre-bid clarifications in writing	15 days from the date of issue of RFP
4	Pre-bid meeting	May be done through Virtual meeting, if demanded by the bidders
5	Last date for Bid Submission	21 days from the date of issue of RFP
6	Date of Technical and Financial Bid Opening	22nd day from the date of issue of RFP or the next working day
7	Name and Address for communication	**Sh. Suresh Kumar K,** Scientist 'F' and HoD Office of the Principal Scientific Adviser to the Government of India Email id: sureshkk@gov.in; Address: R. No. 314 2nd Floor, Vigyan Bhavan Annexe, Maulana Azad Road, New Delhi - 110011
8	Bid Related Queries	Name: Ms. Remya Haridasan Email id: remya.hari@gov.in;
9	Platform Related Queries	Name: Dr Sapna Poti Email id: sapnapoti@ia.iitm.ac.in;

1.5 Intending bidders may obtain a copy of the RFP from the website of Office of the Principal Scientific Adviser to the Government of India i.e., www.psa.gov.in.

Yours sincerely,

[Sh. Suresh Kumar K]

Scientist 'F' and HoD

Office of the Principal Scientific Adviser
to the Government of India

SECTION 2: INSTRUCTIONS TO BIDDERS

1. Introduction

O/o PSA to GoI intends to develop a single go-to collaboration and innovation management platform for all Research & Development and Innovations between different stakeholders i.e., Industry, Multilaterals, Foundations, Embassies and Governments of various other countries, Academia and start up ecosystem.

2. Scope of Work

2.1   This document is a Request for Proposal (RFP) for system study, design, development, implementation, maintenance, upgradation, data storage on NIC cloud/or other cloud as per requirement of O/o PSA to GoI of Science & Innovation @ Bharat Platform, collaboration, and innovation management platform between all the stakeholders listed above promoting science and innovations of top class Indian national Institutes & their incubated start-ups through a single window. This platform will be opened up to other institutes in a phased manner. However, the platform should have the ability to scale up.

2.2   All development(s) and enhancement(s) shall be done at par with the best of industry standards in minimum span of time. And maintenance of the same shall be done to the satisfaction of O/o PSA to GoI.

2.3   Scope of Work / Business Requirement Document (BRD) is detailed in Section 3 - Terms of Reference of this document.

3. Bid Submission

3.1   The bidder shall submit technical and financial bids in two (02) separate envelopes viz. Envelope A and Envelope B as per formats enclosed in Annexure A and Annexure B, respectively. Envelope A should be marked as 'Technical Bid' and envelope B should be marked as 'Financial Bid' and each of the envelopes should contain name and address of the bidder submitting the bid.

3.2   Both the two envelopes shall then be sealed and put into an outer envelope marked as **'Techno-Commercial Proposal for Development & Maintenance of Science & Innovation @ Bharat Platform'** and addressed to O/o PSA to GoI at the address mentioned in Section 1. The outer envelope shall also contain name and address of the bidder submitting the bid.

3.3   **Period of Validity of Bids:**
   3.3.1   Bids shall remain valid for a period of 180 days after the date of bid opening as mentioned in Section 1 or as may be extended from time to time. O/o PSA to GoI holds the right to reject a bid valid for a period shorter than 180 days as non-responsive, without any correspondence.

   3.3.2   In exceptional circumstances, prior to expiry of the bid validity period, O/o PSA to GoI may seek the consent of bidders to extend the validity period. The request and response shall be made in writing. The consent for extension of validity period by the bidder should be unconditional and irrevocable.

3.4   Signing of Bid: The Bid shall be signed by a person or persons duly authorized, in writing, to sign on behalf of the bidder. All pages of the bid shall be initialed by the person or

persons signing the bid. The bid shall contain no interlineations, erasures, or overwriting, except to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.

3.5   The bids should strictly adhere to the defined formats. Information otherwise provided shall not be evaluated.

4. Bid Opening and Preliminary Examination of Technical Bids:

4.1   The date of receiving and opening technical bid is mentioned in **Section 1: Letter of Invitation**.

4.2   After opening of technical bids, O/o PSA to GoI shall examine the same to determine whether they are in order and are following the requisite formats. Eligibility and compliance to all the technical forms as per Annexure-A would be the first level of evaluation. Only those bids which comply with the eligibility criteria shall be taken up for further technical evaluation.

5. Criteria for Evaluation of Bids:

5.1 The technical bids shall be evaluated by the technical evaluation committee of O/o PSA to GoI. For the evaluation, and technical scoring, the bidder may be asked to make a presentation before a technical committee of the O/o PSA to GoI on the technical proposal submitted by them.

5.2   On basis of information submitted in the technical bid, and the presentation of the bidder technical score/marks shall be awarded as follows: -

S. No.	Description	Max. Marks
I	Experience of the bidder	20
ii.	Understanding of the project	20
iii.	Proposed Development methodology and Solution	30
iv.	Proposed Architecture, Security features and technology stack	20
v.	Proposed Timelines	10

5.3 Bids having a technical score less than minimum qualifier score (60) shall be disqualified and their financial bids shall not be considered.

5.4 For selection of bidder, the proposal with the highest quality and solution-based approach will be recommended, by the committee to the competent authority for approval. In case of comparative solutions of two or more bidders L1 (among technically qualified bidders), will be recommended to the competent authority for the approval.

6. Issue of Work Order:

6.1 O/o PSA to GoI shall issue the work order to the selected bidders, as soon as possible. Clearly stating about applicable payment clauses and para under payment terms clause 7.

6.2 Objection, if any, to the work order must be reported to O/o PSA to GoI by the selected bidder within one week from the date of receipt or date of email whichever is earlier for

modifications; otherwise, it will be assumed that selected bidder has accepted the work order in totality.

6.3 The selected bidder, on acceptance, shall appoint a Project Manager as a Single Point of Contact (SPOC), with whom O/o PSA to GoI shall coordinate, for any activity pertaining to the requirements of this RFP.

6.4 On acceptance of the work order, the selected bidder shall submit an undertaking and Performance Bank Guarantee (PBG) of 5% of project value (development charge + maintenance of portal for two years + security audit charges) to O/o PSA to GoI valid till the completion of the project including initial two (2) years maintenance period and submission of security audit certificate from National Informatics Centre (NIC) approved/accredited security auditing agency.

6.5 If maintenance period is increased further after two years, then a separate PBG equal to 5% of the AMC amount should be submitted by the bidder before start of the AMC. The PBG should be valid for a period of 3 months after expiry of the AMC period.

7. Payment Terms

7.1 Payment shall be released, on acceptance of deliverables and milestones, as per the following schedule: -

Milestone No.	Milestone Details	Deliverable	Payment to be released
	Development of the Project (including 1-year technical support)		
1.	Project Kick start	Project plan	Nil
2.	Requirement gathering and Designing	SRS, HLD, LLD, UT Plan	10%
3.	Development & Testing	1) Development and demonstration of application/website on development server. 2) Source code and related documents. (UT reports, UAT Plan) (refer Point 8 of section 2 for abbreviation)	20%
4.	Software deployment	UAT & Go live on cloud (with security audit)	60% (30% + 30%*) *30% payment to be released after getting security audit clearance certificate from NIC approved/accredited security auditing agency.
5.	Security audit of the Portal	Go live on cloud and completion of security audit. bidder will provide the Security audit clearance certificate from NIC	100% Security audit charges plus 30% of charges for development of project charges payment to be released after Security audit completion and migration on NIC cloud/or

Milestone No.	Milestone Details	Deliverable	Payment to be released
Development of the Project (including 1-year technical support)			
		approved/accredited security auditing agency.	other cloud as per requirement of O/o PSA to GoI, as mentioned in milestone 4 above.
6.	1 Year Technical Support		10% of project development cost will be released after successful completion of one-year technical support.
7.	Maintenance of Portal (Period 2 year)	Bi-annual payments shall be released on completion of rendering satisfactory services.	4 installments (each installment after every six (6) months of start of maintenance date.)

7.2 **Bill against development of the portal will be directly generated to HNI (High Net-worth Individual) Donor, on the recommendations of a PMU (Project Management Unit) in the O/o PSA to GoI.**

7.3 Selected bidder must raise their bills/Invoices in the name of **HNI Donor**.

7.4 The payment against maintenance and security audit charges to the selected bidder shall be made upon submission of pre-receipted Invoice/bills, to O/o PSA to GoI, in hardcopy along with all the supporting documents, as per the recommendations of the PMU in the O/o PSA to GoI.

7.5 All payments will be made through electronic mode only.

8. Deliverables

8.1 Project Management Documents
i. Project Management Plan
ii. Activity list
iii. Risk register
iv. Issue log

8.2. Requirement and design documents
a) Requirement Analysis Document {System Requirement Specifications (SRS)}
b) Solution Architecture {High Level design (HLD)}
c) Database design
d) Low-Level Design (LLD)
e) Data Backup/Archival Process
f) Requirement Traceability Matrix
g) Test Plans {Unit Test (UT) Plan & User Acceptance Testing (UAT) Plan}

8.3. Development
i. Source Code

ii.   Test Reports
a)   Unit Test (UT) report

8.4   Testing
i.   Test Reports
a)   Integration and System Test reports
b)   User Acceptance Test reports
c)   Bug Fixing Report.

8.5.   Handover-
i.   Acceptance Test report
ii.   Details on the usability of the existing IT infrastructure
iii.   User Manual/SOP
iv.   Technical Manual, Help Manuals

9. Hosting

9.1 All initial development and testing to be done on the bidder servers only.

9.2 The application shall be hosted on bidder's Cloud. Bidder shall deploy and maintain Science & Innovation @ Bharat Platform on their Virtual Machines (VM's). The deployed software on VM's should be monitored by bidder for any addition/reduction of resources. Any configuration in relation with deployment to be done by bidder.

9.3 The application may initially be hosted on private cloud at the time of acceptance testing and subsequent to the security audit shall have to be migrated to NIC cloud/or other cloud as per requirement of O/o PSA to GoI.

10. Training:

Bidder shall provide exhaustive training to project management and user team members in the O/o PSA to GoI, and relevant stakeholders for the delivered solution. The e-learning material in form of small videos, PowerPoint presentation, and training material in PDF form should be made available.

11. General Terms and Conditions:

11.1   Bidder shall support all the Development/Technical activities carried out by O/o PSA to GoI and other stakeholders and shall respond to their queries.

11.2   Bidder shall appoint a full-time project manager as SPOC for communications/discussions with O/o PSA to GoI.

11.3   Bidder shall attend all the meetings regarding project progress review/presentations called by O/o PSA to GoI, even on a short notice period.

11.4 Bidder shall use open-source technologies for development of the portal/solution/software. No licensed software or technology to be used.

11.5 Bidder shall ensure project team members shall not be changed/replaced without consent of PMU team in the O/o PSA to GoI.

11.6 Bidder shall develop the solution in a way so that new modules can be developed independently and integrated in a plugin/plug n play manner. (Modular/Scalable software development model to be used); The software should have API based architecture where the existing API's can be used by other application if required.

11.7 O/o PSA to GoI intends to build this project within 2-3 months' time.

11.8 The selected agency shall also be required to undertake the following tasks:
i. Coordination and collection of required content from O/o PSA to GoI.
ii. Information integration and consolidation of data and information.

11.9 Security Audit of the System
i. Bidder shall be required to get the security audit of the entire software applications done through one of the NIC approved/accredited security auditing agency to ensure that O/o PSA to GoI's system is secure from external threats and hacking possibilities.
ii. Primary objective of the security audit exercise is to identify any vulnerabilities in the software application from external threats. Once the threats are identified and reported by the auditors, necessary actions to rectify the same shall be taken and security loopholes shall be plugged in by script modifications, OS hardening etc.
iii. It shall be included in project planning activities.
iv. The cost of security audit shall be borne by the bidder (exact amount to be specified and included as part of project cost). The bidder shall be responsible for security audit by NIC approved/accredited security auditing agency once after development of the portal.
v. Bidder shall be responsible for getting the security audit cleared.
vi. Any configurations of Linux serves/Cloud platform for demonstration/deployment of the software to be done by bidder.

11.10 Non-Functional Requirements-

i. Performance- Portal will be accessed by its stakeholders, hence proposed application's architecture, hardware, and network requirements should support the application to be reasonably fast and should not cause delay in response based on actual load & when multiple/concurrent users are connected to the platform. (Actual number of concurrent sessions may wary and will grow as number of users increase with time)

ii. Quality Attributes- Following are the important software qualities that will be met by Science & Innovation @ Bharat Platform Portal:
a) Portal needs to be responsive & can be viewed on multi channels/devices i.e., Phone/Tablet/other Displays & should support voluminous user base.
b) Application should be able to handle multiple requests.

c) For ease of use, every GUI/feature should consist of help menu or tool tip with it.

d) Names/Tables/Columns of analysis reports should be self-explanatory.

e) Logging is needed for debugging/checking of various application-level activities.

iii. Technology license & Deployment– Application needs to be deployed on the cloud. It should be designed & developed in a way to let the IPR rights remain vested with O/o PSA to GoI. Application needs to be developed using open-source technologies to avoid any product or periodic license fees etc. O/o PSA to GoI will be the sole owner of all IPR for the software.

iv. Operation & Maintenance– Once deployed, bidder needs to provide warranty, technical support & maintenance on fixing the bugs, minor changes, data collection, data cleaning, data validation, data conversion, integration of the data for the application & monitoring the portal services.

v. Security – Login level security for admin module & secure communications would be needed between client & server (https) and data made available and sought from stakeholders, through API/interface. Captcha to be implemented wherever required for human verification.

11.11 The bidder must take a sign off from the user after completion of each milestone and submit report to Project Coordinator O/o PSA to GoI. The final sign off for the project shall be taken after completion i.e. Go-live and complete acceptance of the project.

11.12 There shall be no partial sign-off or acceptance of the project. For all the milestones work must be fully completed with respect to all the modules.

11.13 O/o PSA to GoI will review the progress of the work done by the bidder as and when required.

11.14 The bidder shall provide AMC for the portal for a period of two years after expiry of initial one-year technical support. Depending upon the performance of the bidder, O/o PSA to GoI may further extend the AMC period on yearly basis at the existing terms and conditions.

11.15 A PBG as defined in clause 6.4 should be submitted by the bidder.

11.16 O/o PSA to GoI may seek clarifications, with respect to proposal, from the bidder (s) at any stage.

11.17 The HNI donor and the O/o PSA to GoI shall not bear any additional cost other than the financial bid as quoted by bidder or otherwise specified by O/o PSA to GoI in this RFP document.

11.19 Bidder shall strictly adhere to the timelines in relation to the proposed project plan. All endeavors should be made to complete the project within specified timelines. In case of delay in the deliverables, for the reasons attributable solely to bidder, penalty of .5 % of total

project cost per two months shall be levied. Maximum penalty shall be 20% of the total project cost.

11.20 If O/o PSA to GoI is not satisfied with the quality of deliverables, it shall seek a formal explanation for the same. In case, the reply submitted by bidder is found to be unsatisfactory, O/o PSA to GoI may terminate the services of bidder and shall not be bound to release any further payments/claims.

11.21 **No liability or any other risk due to under performance or non-performance of the chosen vendor and no consequential liability will be on the Individual Donor.**

11.22 Any additional requirements shall be handled through Change Management. If any additional requirements are identified, then they shall be approved by O/o PSA to GoI to be included in current scope of the project. However, O/o PSA to GoI shall bear the additional cost for such requirements.

12. AMC Conditions

After project completion and final delivery, the application shall be maintained and operated smoothly by the bidder, for a period of two (02) years. The project completion date i.e., acceptance of project by O/o PSA to GoI shall be treated as technical support start date. The terms and conditions for technical support services and AMC are detailed as under:

1.   The scope of work under maintenance services includes management & assisted operations, support services, preventive maintenance, and breakdown/curative maintenance. The underlying philosophy of the maintenance services is to maintain the operation of Science & Innovation @ Bharat Platform Portal running under all conditions with timely and prompt attendance to faults to maintain the availability of all modules/software applications in Science & Innovation @ Bharat Platform Portal application/portal.

3.   The support functions shall include the following:

i.   Onsite/Remote Support and Technical assistance including On-line Assistance, etc.
ii.   Support for Operations & Management Activities. Operational Training to new joiners/officers in O/o PSA to GoI.
iii.   Operational Issues & Bug Fixing: This includes handling of all the minor, major (non-critical) and critical problems of the Science & Innovation @ Bharat Platform Application, their repair and restoration. The bidder shall extend all the cooperation to the client in identifying & rectification of the faults in the shortest possible time.
iv.   Maintenance of existing code, Version control & management of the application source code,
v.   Documentation: Submission of Status reports (monthly) to the O/o PSA to GoI
vi.   Periodic Releases: Update of Science & Innovation @ Bharat Platform shall be done on quarterly basis or earlier as per need.
vii.   Application related optimizations shall be done regularly to enhance its performance, as and when necessary as limited to the scope of this agreement.

viii.   Data statistics of previous quarters will be stored periodically in Archive Server in report format for analysis purpose.

ix.   For backup & recovery purposes, database snapshots will be stored periodically on cloud for backup and recovery of database and application the bidder shall have to periodically test the backup data and system restoration from the backup at least once in four months.

x.   Appropriate Measures shall be taken for safeguarding the application software from security threats: Safety of application software as per NIC norms/GIGW norms shall be assured by bidder.

xi.   Patch management of Application software shall be taken care by the bidder.

xii.   Bidder shall do server/Cloud/VM monitoring, which includes monitoring of Resource Utilization, System Software (database, Application/web servers, and containers), Network, Load (requests) & security aspects.

xiii.   If any changes in the settings are warranted in the system for improving the system/network performance, such changes shall be initiated by the bidder upon due intimation and approval of the O/o PSA to GoI.

xiv.   O/o PSA to GoI's designated officials will extend cooperation (where required) to the bidder in maintaining the application with minimum downtime and maximum availability.

3.   Review meetings: Periodic review meetings, on agreed date & time, shall be held during the contract period to review the technical, operational, quality and any other aspects of the services delivered through the contract. The review meetings shall be attended by the senior representative of bidder. The meeting agenda shall inter-alia include but not limited to the following:

i.   Services related issues.

ii.   Issues related to unattended faults/problems

iii.   Upgradation issues.

4.   Whenever any major outage occurs in any part of the network, an emergency meeting may be called, if so desired by the O/o PSA to GoI. Outage related issues in the context of cause, correction and prevention shall be discussed in the meeting.

5.   Change Management: Keeping in view the system requirements, if any major change is required in the software or any additional functionality is to be incorporated, the following Change Management Process shall be implemented -

i. On receipt of change request from O/o PSA to GoI, bidder shall create a formal description of change request.

ii. Also, bidder shall submit Impact Analysis and Timelines and Implementation cost (If major change in requirements)

iii. O/o PSA to GoI may evaluate the proposal and approve.

iv. Additional Purchase order shall be issued to bidder for the change request, implementation and UAT.

v. All technical documents need to be revised in accordance with the change.

vi. Bidder shall maintain versioning of software.

6.   Minor enhancements shall be provided free of cost during Execution & AMC period. The commercials for additional modules or Major enhancements shall be decided mutually by bidder and Client. Both Parties shall decide upon nature of change request(s) being proposed.

7.   Availability: "Availability" refers to the percentage calculated through the following formula: Formula: {(Scheduled Hours - Actual Down time) X 100}/Scheduled Hours

i.   Scheduled Hours: "Scheduled Hours" means the aggregate number of hours in the given reporting period during which applications must be available for use by the designated users.

ii.   Total Downtime: "Total Downtime" means, out of the Scheduled Hours, the aggregate number of hours in the reporting period during which applications were unavailable (fault severity Critical as mentioned in penalty section) for use by the designated users.

8.   Penalty for System Availability SLA (Service-level Agreement): bidder will ensure 99% uptime of application software provided by them and will take immediate action in case of bugs related to the application with SLA as below:

Fault Severity Level	Resolution Time	Penalty beyond Resolution Time
Critical	Within 24 Hours	Rs. 200 Per Day (limited to maximum 1% of the AMC charges per annum)
Non-Critical	Within 72 Hours	Extension of maintenance services for 7 days at No additional cost to Client (limited to max 30 days extension per annum)

i.   Resolution Time: "Resolution Time" means the time taken to resolve the incident or to provide an acceptable work around for the incident.
ii   Critical – Major functionalities severely impaired due to application software failure. However, any underlying system infrastructure related failures will not be included in it.
iii   Non-Critical –
a)   Severely constrained availability of application.
b)   Any other issues that hampers accessibility of other functionalities (i.e., admin and report module) is not working as per expected behavior.

■■■

SECTION 3: TERMS OF REFERENCE/BRD

This document outlines the broad system scope of work for understanding of requirements. Detailed requirement and process shall be done by the bidder in requirement gathering stage.

3.1. Introduction

1. The Objectives of the Platform include:
    a. To provide a single go-to collaboration and innovation management platform between all related stakeholders as mentioned in point no 1 of section 2.
    b. To promote science and innovations of top class Indian national Institutes & their incubated start-ups.
    c. To serve national & global needs from India through a single window.

2. The Platform should align well with the intention of Science, Technology, and Innovation Policy, 2020 (STIP 2020)
    a. Industry-Academia linkages will be further strengthened through the development of trust-building pathways to pursue collaborative research and translate academic research to real life applications through institutional support and adequate incentives.
    b. Team science collaboration will be facilitated between industry and academia, with shared financial resources, and risks and benefits.
    c. Industry-led R&D programmes in priority sectors will also be encouraged through ADMIRE (Advanced Missions in Innovative Research Ecosystem programme)

3. An indicative process that describes the facilitation process by the O/o PSA to GoI is detailed as below:
    a. To begin with, Industry partners would share the R&D or the new product/technology development/solution-oriented requirement problem statement or request for setting up of Centre of Excellence (CoE) on any emerging technology with the O/o PSA to GoI.
    b. Upon receiving a new R&D/product problem, the Communication team at the O/o PSA to GoI would share the challenge (details of the problem) with all Science and Technologies clusters, Institutes of Eminence, National Incubators, Startup India, AGNI Invest India, Atal Incubators.
    c. The interested academic institution(s) [individually or collectively] and/or MSMEs and startups can then provide a proposal/approach on how they would work to solve the identified problem.
    d. The O/o PSA to GoI would collate the proposals and share the same with the Industry partner. It can also help the Industry in getting an independent market assessment done by experts in the domain, to help the industry make the decision on whether to fund the academic institute for the product/prototype development or whether it is more feasible for in-house execution.
    e. Upon identification of the best route/path to proceed, the selected academic institute and Industry to undertake an MoU and execute the project until the prototype stage. If the optimal path necessitates a requirement of a supply chain

outside of the Industry, the consortium of the Institute and Industry can jointly handpick the MSMEs or start-ups to fulfil the requirements.

    f. Execution of the project under the MoU will be monitored by the O/o PSA to GoI to ensure the production of required outcomes.

4. Upon successful prototyping stage, Industry will further execute the product development activities, leading to introduction and sales of the new product offerings. All the above activities shall be facilitated through an online Innovation Platform supported by the O/o PSA to GoI, eventually leading to successful STI cluster development. The Portal overall has the potential to become an integrated platform for STI led innovation for the country.

5. Business Needs - Platform Functionality Fitment: The business needs may be mapped at the highest level to the functionalities of existing platforms as shown below.
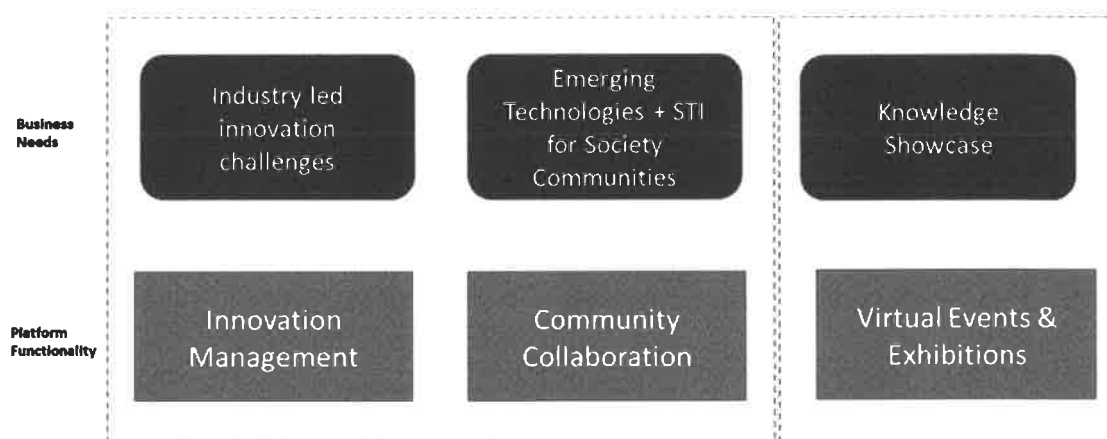
3.2. Scope of Work

1. Functional Requirements

    a. User Category

    The following are the different types of Users of the Innovation Platform.

        i. Users#1 – Problem Solvers/Solution Providers ("Supply side") – scientific establishments, researchers, incubators, and their startups. Examples include:

            1. Research Institutes
            2. Incubators & their start-ups

        ii. Users#2 – Problem Providers/Solution Seekers ("Demand side") – Industry, Government, Consortiums/Coalitions, Philanthropists. Examples include:

            1. Industry - Indian & Global Industries, Chambers of Commerce, CII, FICCI
            2. Public Sector Units & Cooperatives
            3. MSME Sector

4. Government - State & Central Line Ministries
5. Philanthropists - Global/Indian Foundations/HNI network/Trusts
6. Multilaterals - GIZ, UNDP, UNEP, USAID etc.
7. Embassies/Other Government – Developed & Developing countries.
8. Coalitions/Consortiums with a Mission – Toilet Board Coalition, Smart Water Waste (Indian Express initiative), Echo Network etc.
9. Entrepreneurial Support Organizations – GAME, TIE etc.

iii. At times, the 'problem solvers' (of type Users#1) could become 'problem seekers' (of type Users#2) on the platform. Thus, all users on the platform should be allowed to post both problems and solutions.

iv. Users#3 – Administrators
1. O/o PSA to GoI
2. Office of Research Clusters
3. Institute Administrators (User#1 Institutes)

b. **Requirements pertaining to registration/management of Users.**

i. Users can either be an individual (person) or an institution.
1. An institution too will be assigned to an individual. For instance, in case of an institution the user will be assigned to its Dean, Administration or nominated official.
2. An institution will have some approvers, who will approve some of its faculty/employees to become members on the Platform.

ii. Every institution (belonging to User#1, User#2, and User#3) will be assigned an information page on the Innovation Platform, where relevant information about the institution may be uploaded.
1. For instance, an educational institution may share information regarding its Centres of Excellence, Market Ready Technologies, key Subject Matter Experts (SMEs).
2. Such information about institutions may be uploaded centrally by User#3 on a periodic basis.

iii. An approval mechanism needs to be present for accepting membership into the Innovation Platform.
1. Initially, the Administrator (O/o PSA to GoI) may approve membership of select institutions and individuals belonging to these institutions.
2. Every Institution is given a certain number of memberships (say 50). The number should be modifiable. For instance, "institution X" will be allowed to bring in 50 faculty members on to the Innovation Platform.

3. The Approval mechanism for membership should be available to the Administrator and the respective institution.
4. Members may be invited via email to become part of the Innovation Platform.
5. Members may apply via the Platform for membership to the Innovation Platform. Future membership rules/rights to approve to be modifiable.

iv. The Users#1 may be of two types – 1) General Users and 2) Users who will be categorized as Subject Matter Experts via tagging by the Administrator (User#3).
1. SMEs can be invited by Industry for Consultations/Jury-panel participation etc.
2. SMEs can apply for/be invited to 'Industry/Society Innovation Challenge'.
3. SMEs can apply for/be invited to R&D Proposals
4. SMEs can be reached out by Email/SMS Triggered from system
5. Users can be searched using Semantic Search.
6. SME may be from demand/supply sides (user 1, 2, 3 Categories)

v. For User category of Startups, there should be a Referral System i.e., any existing member of the Innovation Platform may be allowed to refer a suitable startup to become a member.

vi. The registration process will capture certain information from each user:
1. Individuals will share information like name, designation, institution they belong to, research interests.
2. Registration for Entities and Individuals with Email Verification, OTP based login, acceptance of Terms and Conditions, to be supported.

vii. While Registered entities/users can immediately start using the platform, system will support the ability to cancel the registration at a later stage.

viii. The system is expected to support Role-based User management.

ix. Moderation of all content added by the users is expected to be facilitated in the system.

c. **Requirements pertaining to actions by User#1**
User#1 (typically the research institutes) can do the following actions on the Innovation Platform.
i. R&D Proposals (Technology Readiness Level (TRL) 3 to 9): Faculty can upload peer-reviewed proposals.
1. R&D Proposals should be tagged with TRL, which represents the Technology Readiness Level.

2. Provide a proposal management and submission platform for Academia/Research Organization to reach out to selected Industry/State or Central Government Entities for collaboration or resources or funding/co-funding for implementation of Research.

3. Proposal peer review engine – IISc has developed a platform that could be utilized here to review proposals by Industry and Academia and has offered it to the O/o PSA to GoI for usage in the Innovation Platform. Respondents can utilise this engine or use their own system for proposal peer-reviews.

4. The project will be tracked for completion at every milestone and a project closure update made in the platform.

ii. Pitch for CoE – upload any request for augmentation of existing CoE or new CoE. Pitch should include envisaged deliverables, strength & reason why institute thinks they are eligible for a CoE.

iii. Student/Researcher engagement: Request for Fellowships, Internships, PhD primary research requests, factory visit requisitions.

iv. Knowledge Showcase – request for conducting a webinar, virtual event.

v. Any special, 'out of the box' ask: details can be provided in this section.

d. **Requirements pertaining to actions by User#2**

User#2 (typically the industry) can do the following actions on the Innovation Platform.

i. Conduct Innovation Challenges

1. Provides an engagement platform for Industry/Industry Associations/Government Entities to list their challenges and request select academia/start-ups/researchers to participate in solution delivery, by submitting their proposal to address the challenge.

2. The project will be tracked for completion at every milestone and a project closure update made in the platform.

3. User#2 can decide who can view their challenges and RFPs (open access, restricted access).

ii. Post RFPs for R&D/CoEs – Industry can post or upload their RFPs and call for R&D proposals. The system should provide an RFP template – Problem statement, Requirements, an estimate of potential commercial value as perceived by the User2 etc.

iii. Post RFPs new product/PoC – brief and non-confidential details of research support required for new product/PoC with point of contact. User#2 can decide who can view their challenges and RFPs (open

access, restricted access).

    iv. Make Student/researcher engagement offers – offers of Fellowships, Internships, PhD primary research requests, factory visit requisitions.

    v. Make Funding/Infrastructure/Industry facilities offer – Showcase resources such as facility of manufacturing, lab, cloud computing space for start-ups, any benefit or facility offer to Students.

    vi. Knowledge Showcase – request for conducting a webinar, virtual event.

    vii. Any special, 'out of the box' offer

e. **Requirements pertaining to actions by User#3**
User#3 (typically the Administrators) can do the following actions on the Innovation Platform.
    i. Activity Dashboard/Analytics

    ii. Success Stories

    iii. Data Collection & upload

    iv. Scientific information/initiative updates

    v. Reporting should be made available for all phases of the project as appropriate.
       1. Repository Based Reports
       2. Operational Reports on current activities of the platform
       3. Public Infographics for showcase of platform growth.
       4. Role specific reports for registered entities/individuals
       5. Provide a showcase portal space for Vigyan Prasar Case studies built as an outcome for every successful engagement in the platform.
          a. A workflow and template should be made available in the Innovation Platform for getting success stories.

    vi. Some of the success metrics that will be tracked in the Innovation Platform include:
       1. # of innovation challenges posted and solved
       2. % of innovation challenges solved
       3. Average time taken to solve an innovation challenge.
       4. # of R&D proposals posted and addressed
       5. # of Resource Requests posted and addressed
       6. # of Experts on the platform
       7. # of Scientific Institutions on the platform

2. Non-Functional Requirements

a. Indicate how you will manage the non-functional requirements (security, performance management, privacy management, audit trail etc.) of the Innovation Platform.

b. The system must have appropriate levels of data security. Security assessments will be performed prior to releasing solutions into production. For security purposes, the vendor will comply with OWASP security guidelines inclusive of using a strong one-way hash for password, preventing SQL injections, avoiding XSS by having both client and server validations etc.

c. The vendor should ensure that all the regulations of Information Technology Act 2010 as amended from time to time, are being adhered to.

d. The vendor should provide the parameters to audit the tools by 3rd party auditors (for security) and any vulnerability observed shall be rectified by the bidder without any additional cost to the O/o PSA to GoI.

    i. The entire process should be secure and end-to-end encrypted.

    ii. Important fields of the customer data should be redacted and stored and masked values to be displayed wherever necessary.

    iii. The solution must undergo software and security audit (OWASP threats, code audit by NIC approved/accredited security auditing agency, VAPT audit in the back end, etc.) as per stipulations and all remarks / observations in the audit reports to be rectified / incorporated.

e. An indicative number of users of the Innovation Platform is provided below.

    i. This is an optimistic estimate of users per year. In Year 1, 50 users each from 50,000 institutions are expected to register onto the platform. The actual numbers may be more conservative.

	Year 1	Year 2	Year 3	Year 4	Year 5
Users	25,00,000	35,00,000	37,00,000	39,00,000	41,00,000

f. Design the system in such a way that it can be easily scaled out depending on number of users registering onto the Platform. It is important to note that if horizontal scaling is employed, we should do so keeping in mind the current traffic and concurrency and not the peak traffic.

g. A high-performance, is required. A Disaster recovery (DR) plan and failover capability should be documented and presented. The solution should be complete from Network, Application & Web Server, and the databases where applicable.

h. The data from the Innovation Platform has to be stored in India.

i. Solutions will support protection of Personally Identifiable Information data –

for instance, while there should be an ability to contact another user in the system, their personal details including email id / phone numbers should not be made visible on the system.

j. Data shared in the Innovation Platform will be typically of confidential nature, which have associated limits on access, distribution, and handling. Hosting requirement is to keep the information confidential in accordance with high levels of security/compliance requirements.

k. As part of hosting, vendor will access data only for the purpose of providing the services, in accordance with the scope of services. The vendor will not change, alter, or modify data without approval from O/o PSA to GoI.

l. Integrity of the data-in-transit will be protected through the use of strong encryption protocols. Vault or a similar system should be used to store secrets (keys, passwords etc.)

m. Data stored on file systems (data at rest) will be encrypted.

n. Audit trail mechanisms need to be provided for transaction logs in the system. Intrusion Detection system should be in place.

o. Servers will enable log file settings for auditing critical events. The up-time metrics should be shared and should meet the standards as set by the committee.

p. The user-design of the Innovation Platform should be in such a way that it makes it easy for users to engage and interact on the platform, it brings out the data richness of the number of industry-academia collaborations happening etc.

q. Modern and Responsive UI design interface is required. Access via tablets, mobiles and all common browsers should be available.

r. 'Mobile first' mindset and design for the entire system. Think of it as an App as well as a Portal, interoperable across all platforms.

s. A role-based authorization is required for accessing various resources inside the system – a robust role management and access rights management.

t. When using multiple systems / platforms (say an innovation management system and an event management system) for providing overall functionality in the solution, vendors will use Single Sign On (SSO) components for authentication and authorization.

u. For storage, the system should be capable of archiving, purging, and aggregating as suggested.

ANNEXURE-A: TECHNICAL BID

1.1 Experience of bidder

Kindly elaborate experience of your firm. Strengths of organization. Elaborate suitability of your firm and experience of handling similar assignments. Substantiate with supportive document.

1.2 Understanding of project:

Brief of O/o PSA to GoI requirements, analysis, interpretations, etc.

1.3 Proposed Development methodology and Solution proposed

- Study and analysis of existing/Similar portal and include best practices in design.
- Bidder can provide wireframes/working model. The purpose is to visualize the various forms/screens/process flow and integration in system.
- Process improvement/improvisation to effectively reduce turnaround time.
- Development Methodology Systems development life cycle (SDLC)

1.4 Proposed Architecture, Security Features and Technology Stack

VM requirements, Data flow, advanced security enhancements protocols/standards, Tools, Database etc.

1.5 Proposed Timelines.

Detailed activity plan, deliverables, etc.

1.5 Detailed Project Report.

You are expected to provide detailed proposal which contains the following:

1. Proposal for development and implementation of the Innovation Platform – and addressing the functional, non-functional, and hosting requirements.

    a. Provide a Phased approach including an iterative model of delivery, if applicable, to the development & implementation of the Innovation Platform.

    b. We encourage you to develop the solution on top of existing platforms / frameworks rather than developing entirely from scratch.

    c. Suggest how to improve the usage of the system for every stakeholder.

    d. Include a risk management plan at high level, with the top risks expected and the planned mitigations.

    e. Demonstrate your ability to handle substantial changes in scope.

2. Proposal for maintenance of the Innovation Platform for a period of 3 years (1-year Technical Support+2years AMC).

    a. Specify where the Innovation Platform will be hosted – provide details of the hosting environment.

    b. Include all assumptions made for arriving at computing infrastructure requirements (servers, storage etc.).

c. Provide details of your maintenance plan.

d. Specify if you are willing to execute the project if the maintenance of the Innovation Platform is managed by another agency. We expect a Research Institute / Research Cluster to take up the maintenance of the Innovation Platform at a later date. Vendors should do an appropriate Knowledge Transfer at that point of time.

3. Your proposal should be inclusive of all costs involved in the project.

4. Your commercials may be in the form of a fixed price or on a pay-as-you-go / subscription model. If subscription model, say based on number of users, provide a capped cost such that maximum budget outlay is visible.

1.6 Features List of the Innovation Platform

- A list of features of the Innovation Platform is provided below.
- In your proposal, specify the availability of the following requirements for the Innovation Platform in your solution.
  - A - Feature is available in the core solution.
  - D - Feature is currently under development/customization (and will be available in a future phase).
  - N - Feature is not available.

Features of the Innovation Platform	Availability (A, D, N)
INNOVATION MANAGEMENT	
Ideas / Challenge / RnD Proposal management	
• Express challenges, broadcast ideas and solve problems using preconfigured or custom templates.	
• Idea / challenge / RnD Proposal tagging	
• Proposal peer-review feature	
• Project tracking	
• Access control	
Idea Evaluation & Expert Reviews	
• Provide stages for ideas / challenges / proposals.	
• Provision for subject matter experts to rate ideas / challenges / proposals	
User Technical Areas, Skills & Interests	
• Enable users to add their technical areas, skills, and interests to their profiles for effective personalization of challenges	
Community Collaboration	
• User notifications feed	
• Expressing opinions with discussions and themes	
• Posting and reading news, attaching files	
• Sharing ideas and documents with group members	
• Group Announcements	
• Voting	
• Content moderation	
Customizable Workflow Management	
• Workflow automation	

Features of the Innovation Platform	Availability (A, D, N)
• Preconfigured templates • Customizable templates (Request for RnD Proposal, CoE Proposal, Fellowships, Internships, PhD primary research requests, factory visit requisitions, Make Funding / Infrastructure / Industry facilities offer, Request Success Story, etc.)	
Executive Dashboards, Reporting & Analytics • Customizable dashboards • Analytics, drill-down feature • Repository Based Reports • Operational Reports on current activities of the platform • Public Infographics for showcase of platform growth. • Role specific reports for registered entities /individuals	
Search • Contextual search with keywords and tags • Usage of machine learning for idea consolidation	
Social Media Feed and Integration • Ability to share posts on social media like Twitter, Facebook etc.	
Integration with third-party Applications / Platforms • Needs to have APIs that are exposed to others in the innovation ecosystem to use and integrate with their platforms.	
Gamification • Leaderboards • Assigning points for activities	
Data Upload and Extraction • Bulk upload capability • Meta data directory crawler that can be used to seek and extract data from websites	
User management • Registration (OTP and Email Verification) • User approval • Startup referral feature • Role-based administration • User actions like applying for membership, jury-panel participation, becoming an SME for a proposal etc.	
VIRTUAL EVENT MANAGEMENT	
Customizable Space (event halls, Lobby, Exhibit Hall, Auditorium, Meeting Room, Networking Lounge)	
Virtual booths, information page	
Communication & Engagement Features • Real time interactions • Live polls • Messaging • Q&A	
Live Webinars / Broadcast • Video conferencing	

1.7 Plan to achieve following deliverables.

1. Project Management Documents
    i. Project Management Plan
    ii. Activity list
    iii. Risk register
    iv. Issue log

2. Requirement and design documents
    i. Requirement Analysis Document {System Requirement Specifications (SRS)}
    ii. Solution Architecture {High Level design (HLD)}
    iii. Database design
    iv. Low-Level Design (LLD)
    v. Data Backup/Archival Process
    vi. Requirement Traceability Matrix
    vii. Test Plans {Unit Test (UT) Plan & User Acceptance Testing (UAT) Plan}

3. Development
    i. Source Code
    ii. Test Reports
        a) Unit Test (UT) report

7 Testing
    i. Test Reports
        a) Integration and System Test reports
        b) User Acceptance Test reports
        c) Bug Fixing Report.

4. Handover-
    i. Acceptance Test report
    ii. Details on the usability of the existing IT infrastructure
    iii. User Manual/SOP
    iv. Technical Manual, Help Manuals

ANNEXURE-B: FINANCIAL BID

1. The bidders are required to quote the total financial cost to be charged.
2. No other charges over and above will be paid as specified in the form below.

Resource Allocation& Efforts Estimation							
A. Design and Development Charges (including 1-year technical support)							
S. No.	Resource Role	Resource Nos	Duration (in Months)	Rate (Rs.)	Amount (Rs.)	GST (%)	Total Amount (Rs.)
1							
2							
3							
A. Total Development Charges							
B. AMC Charges (for 2 years)							
C. Security Audit Charges							
Total Project Cost (A+B+C)							

*Price quoted are inclusive of taxes as prevailing at the time of opening the tender for consideration. However, payment of taxes will be as per extant laws.

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