IndiaAI–NCG (National Cancer Grid)

Cancer AI & Technology Challenge (CATCH) Grant Program

Call for Proposals to Accelerate AI Innovation in Oncology

1. Introduction & Context

The Government of India, under the aegis of the Ministry of Electronics and Information Technology (MeitY), has launched the IndiaAI Mission to democratize and accelerate the country's AI innovation ecosystem. Anchored in seven pillars of implementation, the Mission seeks to drive the development and deployment of AI solutions that address critical public challenges, foster digital public infrastructure, and promote responsible innovation at scale.

As part of this mission, IndiaAI, under the Digital India Corporation (DIC), is partnering with the National Cancer Grid (NCG) and its Koita Centre for Digital Oncology (KCDO) to launch the **IndiaAI – NCG Cancer AI & Technology Challenge (CATCH)**. This initiative housed within the IndiaAI Application Development pillar is designed to catalyze the validation, piloting, and deployment of AI solutions that can transform cancer care delivery across India.

Cancer remains one of the leading causes of morbidity and mortality globally, with India accounting for a significant share of the burden. Early detection, timely intervention, and precision treatment are critical to improving patient outcomes, yet the healthcare system continues to face systemic challenges, ranging from limited diagnostic infrastructure and variability in clinical workflows to uneven access to quality oncology care across the country. These challenges are especially acute in public health settings, where resource constraints hinder the widespread deployment of innovative technologies.

In recent years, artificial intelligence (AI) and machine learning (ML) have emerged as transformative tools in oncology, offering promising solutions across the cancer care continuum from early screening and diagnostics to treatment planning, monitoring, and system-level optimisation. Despite a surge in AI research and prototype development, the real-world adoption of these technologies has been slow, impeded by the lack of clinical validation, data silos, integration challenges, and limited deployment at scale.

The IndiaAI – NCG CATCH Grant Program aims to bridge the gap between AI research and real-world clinical application by supporting AI innovators and oncology experts to co-develop contextually grounded, clinically relevant, and ethically aligned technologies. Through a structured grant program and access to

the NCG network of hospitals, the Challenge will support impactful solutions in early screening, diagnostics, treatment support, patient engagement, and system-level optimization for cancer care.

To amplify innovation and expand outreach, NCG has partnered with **NASSCOM** (www.nasscom.in), India's leading industry association with a vibrant network of over 3,000 DeepTech and AI startups. NASSCOM will play the role of an outreach partner and help NCG increase participation in the CATCH grant.

2. Objective of the Challenge

The objective of the **IndiaAI – NCG Cancer AI & Technology Challenge (CATCH)** is to accelerate the development, clinical validation, and deployment of AI-based solutions that address high-priority challenges across the cancer care continuum in India.

Through this Challenge, IndiaAI and NCG aim to enable patient-centric innovations that enhance early screening, diagnostic accuracy, treatment decision-making, operational efficiency, and patient engagement, particularly within the public healthcare system. The Challenge is designed to support collaborative projects between clinical institutions and technology developers to ensure that AI innovations are both technically robust and clinically validated.

The CATCH Grant aims to provide milestone-based funding, technical support, and access to clinical settings across the NCG hospital network. In doing so, it will foster solutions that are deployable at scale, tailored to the Indian context, and grounded in principles of responsible AI, thereby improving quality, access, and equity in cancer care.

3. Scope of Work

Selected applicants under the Cancer AI & Technology Challenge (CATCH) will collaborate with IndiaAI and NCG to implement AI-powered solutions addressing specific, high-priority use cases across the cancer care continuum. The scope of work will be tailored to the technological maturity and clinical readiness of each proposal but will broadly include the following components:

- **Solution Implementation & Deployment**

Implement AI solutions aligned to focus areas such as cancer screening, diagnostics, treatment planning, patient engagement, hospital operations,

research, and data curation. This may involve integration with EMRs, imaging systems, or hospital IT infrastructure at IndiaAI and NCG-identified pilot sites.

- **Clinical Validation**

For proposals not yet clinically validated (i.e., evaluated in real-world hospital settings against clinical benchmarks with IEC approval, usability testing, and documented performance outcomes), conduct structured validation studies in collaboration with NCG hospitals, following institutional protocols and obtaining necessary ethics approvals (IEC) to evaluate performance, usability, and impact in real-world environments.

- **Refinement & Adaptation**

Modify AI models, workflows, or interfaces based on feedback from clinical partners to improve alignment with Indian clinical workflows, data formats, linguistic preferences, or public-sector constraints. This includes contextual adaptation for low-resource or high-volume oncology settings.

- **Collaboration with Clinical and Technical Stakeholders**

Work jointly with clinical leads from the NCG network and technical partners to ensure the solution meets operational, regulatory, and institutional requirements for adoption. This may include training of hospital staff, co-design workshops, and iterative feedback loops.

- **Compliance and Responsible AI Practices**

Ensure all solutions comply with relevant legal and regulatory standards including data protection, ethical AI principles, medical device regulations (where applicable), and cybersecurity norms. Applicants must demonstrate safeguards around patient safety, transparency, and clinical accountability.

- **Knowledge Sharing**

Contribute to the development of case studies and technical playbooks to support knowledge dissemination across the IndiaAI and NCG network. Projects shall contribute anonymized data to AIKosh (India's AI datasets platform) and NCG for broader ecosystem learning.

- **Post-Pilot Lifecycle Support**

Support post-pilot operations such as follow-on deployments, institutionalization plans, and sustainability strategies, including cost modeling, onboarding protocols, and continued technical support where relevant.

4. Eligibility Criteria

Applicants to the IndiaAI-NCG Cancer AI & Technology Challenge (CATCH) must meet the following eligibility conditions:

A. Entity Type

Applicants may include Indian-registered for-profit or not-for-profit organizations, including but not limited to:

- Start-ups, MSMEs, and private limited companies registered under Indian Law
- Academic institutions and research organizations
- Public sector entities and autonomous bodies
- Non-governmental or civil society organizations, including trusts and societies
- Hospitals or medical institutions involved in cancer care or digital health innovation

Unregistered teams or individuals are not eligible to apply. All applicants must have a valid registration under Indian law.

B. Consortium Applications

Joint applications are strongly encouraged. Applicants may apply either:

- As a **Technical Lead** (e.g., AI startup, digital health company, research lab) with a letter of support from a participating cancer hospital (Clinical Partner), or
- As a **Clinical Lead** (e.g., NCG hospital, cancer center) with a committed technology development partner.

If a joint proposal is not submitted at the time of application, selected applicants will be required to identify a suitable partner during the partnership matchmaking window. Applications without a confirmed technical or clinical lead by the end of this window will be disqualified.

D. Exclusions

Applicants shall not be eligible to participate if they or their associates:

- Any entity that has been barred by the Central Government, any State Government, statutory authority, or public sector undertaking from participating in any project, and where such a bar is still in effect at the time of submission, shall not be eligible to participate either individually or through any of its associates.
- An entity or its associate should not have, during the last three years:
    - Failed to perform on any agreement with a public authority, as evidenced by penalties or judicial pronouncements.
    - Been expelled from any project;
    - Had any agreement terminated for breach by a public authority.

E. Resource Commitment

Applicants must commit the necessary technical and managerial resources to deliver the proposed project within the timelines defined in the Challenge. This includes designated personnel to coordinate with IndiaAI and NCG during the onboarding, piloting, and evaluation stages.

5. Selection Process

All applications submitted under the Cancer AI & Technology Challenge (CATCH) will undergo a multi-stage evaluation process coordinated by IndiaAI and NCG, supported by subject matter experts in oncology, artificial intelligence, and digital health innovation.

Step 1: Initial Screening

- Applications will be reviewed by a screening committee for completeness, eligibility, and alignment with the focus areas outlined in Annexure 1.
- Submissions that fail to meet basic eligibility or do not demonstrate sufficient maturity of minimum Technology Readiness Level (TRL) 5 (See Annexure 2 for BIRAC-approved TRL definitions) at the time of application will be disqualified at this stage.

Step 2: Expert Evaluation and Shortlisting

- Eligible proposals will be assessed by the CATCH Evaluation Committee, comprising representatives from NCG hospitals, MeitY, IndiaAI, digital health experts, and oncology specialists.

- Evaluation will be based on criteria such as clinical relevance, innovation, data readiness, deployment feasibility, and team capacity (see Section 7).
- Shortlisted applicants will be invited to present their proposal before the Evaluation Committee.
- A maximum of 10 proposals will be selected across all innovation categories for pilot implementation, provided they meet the minimum thresholds across eligibility criteria, evaluation parameters, and readiness to deploy. The final number of awardees will depend on the quality and feasibility of submissions received.
- Based on the actual TRL at the time of application, demonstrated deployment readiness, and the extent of prior clinical validation, the Evaluation Committee reserves the right to route shortlisted proposals to either (a) a pilot deployment phase or (b) direct scale-up implementation whether across the NCG network or via IndiaAI-supported channels. This determination will be guided by the solution's feasibility, maturity, and alignment with public healthcare infrastructure needs.
- Where multiple applicants address the same problem statement, preference will be given to the more robust and deployment-ready solution typically the one with a higher TRL and stronger evidence of clinical, technical, and operational viability.

Step 3: Partnership Finalization

- Shortlisted applicants that have not already partnered will be invited to identify a complementary Clinical or Technical Lead, as required.
- IndiaAI and NCG will facilitate visibility across networks to enable matchmaking.
- Only joint teams with confirmed technical and clinical leads will proceed beyond this stage.

Step 4: Due Diligence and Approval

- The CATCH Evaluation Committee will conduct technical and operational due diligence on the finalized teams.
- Site visits or interviews may be conducted to assess readiness and capacity.
- Teams passing due diligence will be granted conditional approval to proceed.

Step 5: Ethics Clearance

- All approved projects must submit a study protocol to the Institutional Ethics Committee (IEC) of the participating hospital or institution.
- IEC clearance is mandatory prior to the release of funds and project commencement.

Step 6: Final Selection and Onboarding

- Upon receipt of IEC approval, selected teams will receive a formal grant award letter.
- Teams will be onboarded through an orientation process outlining program milestones, reporting requirements, and compliance standards.

6. Rewards & Support

All grant awardees selected under the Cancer AI & Technology Challenge (CATCH) will receive a combination of financial, institutional, and technical support to enable clinical validation and pilot deployment of their AI solutions in cancer care. The support structure has been designed to promote milestone-driven progress, enable real-world adoption, and foster long-term sustainability.

A. Financial Support

Each selected team will be eligible for a grant of **up to ₹50 lakhs**, disbursed in two distinct tranches:

Tranche	**Funding Source**	**Purpose**	**Amount**	**Disbursement Condition**
Part A	IndiaAI & NCG	Solution development, early-stage validation, deployment readiness, pilot deployment, early results reporting	Up to ₹25 lakhs	Upon signing the grant agreement and submission of the required documentation
Part B	IndiaAI & NCG	Clinical validation, continued/expanded pilot deployment, outcomes measurement	Up to ₹25 lakhs	Upon successful completion of Part A milestones

- **Milestones for Part A** must be completed within **6-9 months** of grant disbursement.
- **Milestones for Part B** may extend over a subsequent period of **6-9 months** depending on the complexity of the solution and clinical validation pathway.
- The grant quantum and tranche breakdown will be finalized during onboarding, based on the proposal's maturity and budget justification.

B. Institutional Support

IndiaAI and NCG will jointly provide non-monetary support to facilitate implementation, clinical testing, and adoption:

- **Access to NCG Hospitals**: Shortlisted projects will be matched with willing NCG hospitals for pilot deployments and clinical validation.
- **Mentorship**: Advisory support from experts in oncology, clinical workflows, AI/ML, and regulatory affairs.
- **Program Oversight**: Joint milestone tracking, reporting, and review support from the CATCH Program team.
- **Outreach Support**: Visibility on the IndiaAI, NCG, and KCDO platforms to promote uptake and ecosystem engagement.

C. Post-Pilot Support

- **Knowledge Dissemination**: Awardees will be expected to co-develop case studies and a best-practices playbook documenting validation results, clinical integration strategies, and technical guidance for wider deployment.
- **IP and Commercialization**: Awardees will retain ownership of any IP generated; however, they will be required to offer **preferred pricing** and/or **non-exclusive licensing** to participating clinical partners. Awardees shall contribute anonymized data to AIKosh (India's AI datasets platform) and NCG for broader ecosystem learning.

D. Scale-Up Grant Support by IndiaAI

IndiaAI – NCG will facilitate a national-level scale-up opportunity for selected pilot winners for up to ten innovators, demonstrating robust clinical, technical, and operational success. These solutions may either be:

- Selected for national deployment through IndiaAI-supported initiatives across relevant public health contexts; or
- Scaled across the NCG network of hospitals and affiliated institutions.

Each such team will be eligible for a **Scale-Up Grant of up to ₹1 crore**, contingent upon detailed evaluation, readiness documentation, and performance evidence from the pilot phase. This grant may include further technical, data, and institutional support.

7. Evaluation Criteria

All eligible proposals submitted to the Cancer AI & Technology Challenge (CATCH) will undergo a rigorous, multi-dimensional evaluation by the CATCH Grant Committee. The Committee will include members from NCG, IndiaAI, leading clinicians, AI/ML experts, and public health technologists. Each proposal will be assessed on the following core parameters:

Sr. No.	Parameter	Description	Weightage
1	**Clinical Relevance**	Alignment with real-world challenges in cancer screening, diagnosis, treatment, or hospital operations. Ability to address systemic bottlenecks within NCG hospitals and beyond.	10%
2	**AI Innovation & Technical Rigor**	Quality of AI/ML methodology, appropriateness of model architecture, explainability, and deployment robustness. The use of Indian health data is encouraged.	20%
3	**Data Access and Readiness**	Clarity and feasibility of data access required for training, validation, and deployment.	20%
4	**Deployment Feasibility**	Operational and regulatory feasibility of deploying the solution in hospital environments. Includes integration plan with EMR, PACS, or clinical workflows.	20%
5	**Team Capability**	Expertise and track record of the applicant team in oncology, AI/ML, healthcare IT, and project execution. Demonstrated collaboration between technical and clinical teams preferred.	10%
6	**Impact Potential**	Projected benefit of the solution in terms of improving patient outcomes, clinical decision-making, operational efficiency, or cost-effectiveness.	10%
7	**Ethical and Regulatory Compliance**	Adherence to principles of responsible AI, including safety, fairness, transparency, privacy, and alignment with Indian medical regulatory standards.	10%

Notes:

- Projects must score above a minimum threshold in **each parameter** to be considered for final selection.
- Incomplete, vague, or misaligned proposals will be disqualified during the eligibility screening phase.
- Joint applications involving a Clinical Lead and Technical Lead will be rated more favorably where collaborative validation plans are clearly outlined.
- Preference will be given to proposals with **higher Technology Readiness Level (TRL)** at the time of application.

8. Submission Guidelines

All applications for the Cancer AI & Technology Challenge (CATCH) must be submitted electronically through the official portal designated by NCG and IndiaAI. Applicants are advised to read the eligibility criteria, innovation categories, and evaluation parameters carefully before submitting their proposal.

8.1 General Instructions

- Applications must be submitted **only through the designated online portal**.
- Applicants must complete all required fields and upload necessary documentation in the prescribed format.
- Each proposal must be **self-contained** and comprehensively address the application format provided in Section 11.
- Applicants may submit **more than one proposal**, provided each addresses a distinct innovation category or use case.
- The application must clearly and accurately indicate the **Technology Readiness Level (TRL)** of the solution at the time of application, supported by documentation (e.g., technical architecture, deployment reports, validation data). If TRL is misleading IndiaAI reserves the right to disqualify the applicant

8.2 Proposal Format

Each application must include:

- Completed application form (see Section 11).

- Supporting documents including team bios, product brochures, technical white papers, or pilot reports.
- Budget and milestone plan for both **Part A** and **Part B** phases of the grant, person month rates, etc.

8.3 Submission Last date

All proposals must be submitted by **2nd September 2025, 11:59 PM IST**.

Late submissions will **not** be accepted under any circumstances.

8.4 Queries and Clarifications

All pre-submission queries must be emailed to **fellow1.gpai-india@meity.gov.in** and **ncgkcdoceo@tmc.gov.in** with a **CC to sudheer.reddy@meity.gov.in** using the subject line:

[Query] IndiaAI – NCG CATCH Grant – [Organization Name].

- Last date for submitting queries: **18th August 2025**
- A virtual information session will be conducted on **22nd August 2025** to clarify guidelines and address applicant questions.

8.5 Confidentiality

All submitted applications and documents will be treated as confidential and accessed only by authorized members of the evaluation and coordination teams.

If applicants wish to designate specific documents as proprietary or sensitive, they must be clearly marked as “Confidential.”

9. Terms & Conditions

By submitting an application to the Cancer AI & Technology Challenge (CATCH), all applicants agree to the following terms and conditions:

9.1 Eligibility and Conduct

1. Applicants must meet all eligibility criteria outlined in Section 4 and submit truthful and complete information. Any misrepresentation will lead to disqualification.
2. Entities debarred by any government authority or found non-compliant with statutory regulations will not be considered.

3. All selected awardees must comply with applicable Indian laws, regulations, and ethical standards, including those related to AI deployment in healthcare.

9.2 Use of Grant

4. The CATCH grant shall be used strictly for the purposes and activities outlined in the approved proposal. Any deviation requires prior written consent from the NCG–IndiaAI coordination team.

5. Funds must be utilized as per the milestone-based disbursement structure. Unutilized or misused funds may be subject to clawback.

9.3 - Expectations from CATCH Grant Awardee

6. Case Study: Publish an open-source resource with results and lessons learned based on the experience of building and deploying AI solutions at cancer centers.

7. Playbook: Publish an open-source resource with detailed guidelines and workflows, including technical architecture, data structures, privacy and security, solution validation criteria, and IP considerations to enable cancer centres to engage with organisations providing AI solutions.

8. Capacity Building: Commit to providing a certain number of hours towards training the broader IndiaAI and NCG community related to the design, deployment, and use of AI tools.

9. Preferred Pricing: Long-term contract between the participating Clinical Lead and the Technology Lead with preferential rates, including waiver of licensing fees if applicable (excluding data storage/hosting/compute fees).

10. Anonymized Dataset: Contribute the anonymised dataset collected for the program to IndiaAI and NCG for uploading on AIKosh as an open-source resource for future non commercial use such as promoting research and innovation.

9.4 Intellectual Property and Licensing

11. Applicants will retain full ownership of any intellectual property (IP) developed under the CATCH Grant.

12. Applicants must ensure they have appropriate rights or licenses to use any third-party IP embedded in their proposed solutions. The CATCH program bears no liability for such violations.

9.4 Compliance and Ethics

13. All AI solutions developed or piloted under the CATCH program must comply with the principles of Responsible AI, including safety, fairness, transparency, explainability, and patient privacy.

14. Solutions must comply with the **Digital Personal Data Protection (DPDP) Act**, applicable biomedical ethics guidelines, and relevant cybersecurity standards as required by law.

15. Clinical validation (if applicable) must be conducted under appropriate Institutional Ethics Committee (IEC) approvals.

9.5 Audits, Reporting, and Oversight

16. IndiaAI and NCG reserve the right to conduct technical and financial audits, site inspections, or third-party evaluations of grantee progress.

17. Grantees will be required to submit interim and final reports, including technical documentation, performance metrics, and fund utilization records, as per the program's monitoring framework.

9.6 Duration and Commitment

18. Awarded grantees must commit to the pilot and/or scale-up durations defined in the approved grant agreement.

19. All awardees must ensure the availability of core team members and provide implementation support for the duration of the CATCH program, including post-pilot support if requested.

9.7 Public Communication and Branding

20. Selected grantees must acknowledge support from IndiaAI and NCG in all public communications, demos, and promotional materials related to the solution.

21. Use of IndiaAI or NCG branding must be authorized in writing. All public dissemination of results, including research papers, must be co-branded and credited appropriately.

9.8 Termination and Withdrawal

22. The CATCH Committee reserves the right to terminate any engagement in the case of:

- Breach of terms,

- Failure to meet milestones,
- Legal non-compliance, or
- Reputational risk.

19. Any unused grant funds at the time of termination must be returned within 30 days.

10. Timeline for the IndiaAI–NCG CATCH Grant Program

Milestone	**Indicative Timeline**
Launch of the CATCH Grant Program	2 August 2025
Information Webinar / Virtual Q&A with Applicants	21 August 2025
Application Submission Last Date	2 September 2025
Eligibility Screening & Completeness Check	3 – 13 September 2025
Virtual Presentation to CATCH Expert Panel	16 – 27 September 2025
Clinical–Technical Partner Matchmaking (if applicable)	30 September – 18 October 2025
Due Diligence by IndiaAI–NCG CATCH Committee	21 October – 8 November 2025
Final Approval and Grant Award	10 – 22 November 2025
IEC (Institutional Ethics Committee) Approval	25 November 2025 – 28 February 2026
Grant Disbursement: Tranche 1 (NCG)	February 2026 onwards
Tranche 2 (IndiaAI) & Scale-up Grant Disbursement (based on milestones)	Rolling, based on project outcomes
Final Evaluation & Knowledge Dissemination	As applicable

11. Application Format

All proposals must be submitted through the designated online application portal for the IndiaAI–NCG CATCH Grant. Each application must include the following sections:

A. Applicant Overview

- Name of Applicant Organization
- Legal Status (Startup / MSME / Academic / Research Institute / Non-profit / Hospital / Other)
- Year of Incorporation / Establishment
- Type of Application:
    - ☐ Individual Applicant
    - ☐ Joint Applicant (Clinical Lead + Technical Lead)
- Authorized Signatory (Name, Designation, Contact Information)
- Primary Point of Contact (Name, Email, Phone)
- Clinical Lead (if applicable): Name, Institution, Role
- Technical Lead (if applicable): Name, Organization, Role

B. Grant Category and Track Selection

- **Innovation Category** (Select one):
    - ☐ Screening
    - ☐ Diagnostics
    - ☐ Clinical Treatment
    - ☐ Patient Engagement
    - ☐ Research
    - ☐ Operational Efficiency
    - ☐ Data Curation
- **Technology Readiness Level (TRL)**: Indicate current TRL (5–9) and provide justification
- **Preferred Track**:
    - ☐ Pilot Implementation (TRL 5–7)
    - ☐ Scale-up Deployment (TRL 8–9)
- Justification for Track Selection (max 300 words)

C. Proposed Solution

- Title of Proposed Solution
- Problem Statement – Demonstrate a clear understanding of the problem being addressed (max 250 words)
- Solution Description – Key features of the solution and how it addresses the problem (max 500 words)
- Core AI Technologies Used e.g., NLP, CV, ML, LLMs, LMMs, SLMs, Federated Learning (max 250 words)
- Innovation and Differentiation: Why is this solution novel? How does it improve outcomes from status quo – should show a clear differentiation from other traditional or AI solutions addressing the same problem (max 300 words)
- Alignment with IndiaAI/NCG objectives

D. Evidence of Readiness

- Past Pilots/Deployments (Locations, Number of users Duration, Outcomes, Links/Documentation)
- Current Partnerships (Hospitals, Technical Collaborators)
- Supporting Documentation (attached where applicable):
    - Technical Architecture – Detailed description and diagrammatic representation of the technical architecture including data pipelines, model architecture, and hardware – if applicable (max 500 words)
    - System Design Document
    - Model Cards / Benchmarks
    - Ethics/IEC Approvals (if available)
    - Product Demo or Video Links

E. Implementation Plan

Please provide a detailed overview of how the proposed solution will be implemented across the lifecycle of the CATCH Grant. The plan should account for both pilot and potential scale-up scenarios.

- **Milestone Plan for Tranche 1**

Deliverables expected within 6-9 months of initial funding (e.g., prototype adaptation, limited clinical validation, data integration, pilot deployment, etc.)

- **Milestone Plan for Tranche 2**

Deliverables to be completed within 6-9 months (e.g., full clinical validation, institutional integration, reporting, etc.)

- **Timeline**

Attach a Gantt chart or milestone-wise activity plan.

- **Pilot Sites and Readiness**

Indicate hospitals identified or confirmed for pilot deployment. Describe their infrastructure readiness, staff training needs, and integration feasibility.

- **Data Collection / Access Plan**

Outline how required datasets will be sourced or generated. Include plans for patient consent, anonymization, and ethical use.

- **Integration Plan**

Describe how the proposed solution will integrate with existing hospital systems (e.g., EMRs, PACS, HIS, etc.).

- **Responsible AI Practices**

Provide details on measures taken to ensure fairness, transparency, explainability, patient safety, and compliance with applicable data protection regulations.

- **Risk Mitigation Plan**

Describe potential risks to implementation (e.g., data availability, clinical non-acceptance, delays) and strategies to manage them.

- **Direct Scale-up Readiness (if applicable)**

If your solution is being considered for direct scale-up based on its TRL level and past deployment success, outline your strategy for national or NCG-wide deployment. Include:

    - State/Institution-level deployments already completed
    - Institutional partnerships or MoUs for future expansion
    - National integration roadmap and dependencies
    - Scale-up team and implementation partners

- Customization/localization strategy for diverse clinical settings

F. Budget and Sustainability Plan

- Total Project Budget (INR)
- Budget Split by Project Stage:
  - Data Collection
  - Model Development
  - Clinical Validation
  - Deployment
  - Other
- Budget Split by Cost Head:
  - Personnel
  - Hardware/Software
  - Travel
  - Miscellaneous (please justify)
- Co-Funding (if applicable): Source, status, and quantum
- Sustainability Plan: What happens after the pilot?
- Person Month Rates

G. Supporting Materials

- Certificate of Incorporation / Legal Registration
- Endorsement Letters (from NCG hospital(s) or partners)
- Whitepapers / Technical Documentation / Research Papers/ IPs / Patents
- Ethics / Regulatory Clearance (if secured)
- Any additional documentation to strengthen the proposal

H. Declaration

"I/We declare that all the information provided in this application is true and complete to the best of our knowledge. I/We also confirm that the solution has not received duplicative public funding for the same purpose from another government agency."

ANNEXURE 1: PROBLEM STATEMENTS

A. SCREENING

Need Statement: Early cancer detection remains a cornerstone in improving treatment outcomes and survival rates. However, access to timely screening is still limited across low-resource settings. Public health workers and primary care providers often lack tools that are scalable, non-invasive, and easy to use, especially for high-risk and underserved populations. Moreover, individuals are often unaware or unable to access screening due to geographic, economic, or social barriers. There is a growing need for self-screening tools that empower individuals to detect early warning signs and seek timely medical attention, particularly in rural or remote areas with limited access to healthcare professionals.

Scope of Innovation (key examples):

- AI-powered tools for community-based screening that are deployable by public health workers (e.g., mobile apps, low-cost image capture tools, decision support).
- Non-invasive or minimally invasive AI-enabled screening using voice, images, or behavioral data.
- AI solutions for triage and risk stratification, integrating socio-demographic, lifestyle, and clinical indicators.
- Screening platforms tailored for common cancers (e.g., oral, cervical, breast, lung)
- Offline-capable tools for use in low-connectivity, resource-limited settings.
- Self-screening applications powered by AI that enable individuals to perform guided symptom checks using decision trees or LLMs and upload and analyze images (e.g., oral lesions, skin changes, breast lumps) through AI-powered visual recognition.
- Incorporation of AI chatbots or voice assistants to guide low-literacy users through the screening process, enhancing accessibility and user confidence.

B. DIAGNOSTICS

Need Statement: Pathologists and radiologists face increasing workloads, leading to delays in diagnosis and potential inconsistencies in interpretation. Resource-constrained cancer centers may also lack access to experienced diagnostic specialists.

Scope of Innovation (key examples):

- AI algorithms for histopathology, cytology, and radiology interpretation (e.g., mammograms, CT, MRI, PET).
- Tools for automated image segmentation, tumor classification, and report generation.
- Multi-modal AI models that combine imaging, pathology, and genomic data for better accuracy.
- AI tools that can flag critical findings or recommend differential diagnoses.
- Diagnostic decision support systems that can assist junior or generalist practitioners in cancer diagnosis.

C. CLINICAL TREATMENT

Need Statement: Treating oncologists often face complex decision-making challenges due to the need to tailor therapies based on evolving clinical data, comorbidities, and resource constraints. There is a need for solutions that can support precision treatment while integrating seamlessly into clinical workflows.

Scope of Innovation (key examples):

- AI-driven tools for clinical decision support during tumor board discussions.
- Predictive models for treatment response, toxicity risk, or recurrence likelihood based on EMR/genomic data.
- AI-assisted radiotherapy planning, including tumor contouring and dose calculations.
- AI-assisted drug dosage calculators for clinical decision support
- Personalization engines for drug regimens based on biomarker/genetic profiling.

D. PATIENT ENGAGEMENT

Need Statement: Cancer patients often struggle with complex care pathways, medication adherence, side effect management, lack of patient education information, and psychological stress. There is a pressing need for intelligent digital tools that can engage, educate, and support patients throughout the care journey.

Scope of Innovation (key examples):

- AI-enabled mobile apps or chatbots for symptom tracking, treatment reminders, and mental health support.
- AI-based tools to translate clinical instructions into regional languages.
- Personalised content delivery systems to provide treatment plans, nutrition advice, and self-care education.
- Wearables and smart monitoring solutions with AI-based alerts for vital signs or treatment adherence.
- Feedback loops that connect patient-reported outcomes to treating clinicians in real-time

E. RESEARCH

Need Statement: Advancing cancer treatment requires robust clinical research, yet significant gaps exist in the design, recruitment, monitoring, and data analysis stages of clinical trials, particularly in low-resource settings. Challenges include the underrepresentation of diverse populations, limited access to trial opportunities, high costs, and delays in patient identification and enrollment. Researchers and clinicians also face hurdles in managing and interpreting complex datasets. There is a pressing need for AI-driven solutions that enhance the efficiency, equity, and scalability of clinical research, enabling timely and inclusive participation while ensuring data integrity and regulatory compliance.

Scope of Innovation (key examples):

- AI algorithms for automated patient eligibility screening by analyzing EMRs, pathology reports, and genomic data to match patients with suitable trials.
- NLP-powered tools for rapid literature and protocol review, supporting trial design and hypothesis generation.

- AI-assisted remote monitoring and digital phenotyping for real-time patient reporting, adherence tracking, and adverse event detection.
- AI-assisted alerts for follow-up (patients and clinical trial team)

F. OPERATIONAL EFFICIENCY

Need Statement: Hospitals treating cancer patients, particularly in the public sector, face significant inefficiencies in patient flow, scheduling, documentation, billing, claims management, and resource management. These inefficiencies impact both patient experience and healthcare outcomes.

Scope of Innovation:

- AI-driven scheduling and triage systems to optimize OPD/IPD/chemotherapy/RT slots.
- NLP/LLM tools for automated clinical documentation, coding, and discharge summaries.
- Predictive analytics for inventory, staffing, and bed management.
- AI-supported patient discharge and billing processes
- AI-supported optimization of insurance claims submission and claims processing.
- Administrative dashboards with real-time insights for hospital managers and administrators

G. DATA CURATION

Need statement: Currently, there is a vast amount of disorganized data, which limits analytics. Working on developing technology solutions that enable storing data in a systematic manner across multiple medical systems and then making this easily accessible for future analytics would be important in the AI journey.

Scope of Innovation:

- HL7-compliant systems that allow collation of data across multiple organizations
- DICOM-compliant systems that can link data across multiple healthcare systems

- Systems that can appropriately anonymize this data
- Systems that allow customizable searches of their database with easy access
- Platforms that allow a variety of AI tools to be deployed on them
- Platforms that allow for “Federated learning”

ANNEXURE 2: TECHNOLOGY READINESS LEVEL (TRL)

BIRAC TRLs in the healthcare domain for *Artificial intelligence, Big Data Analysis, IoT, software development & Bioinformatics*

Stage	Technology Readiness Level	Definition
Ideation	TRL-1	• Need to be identified, • Development of basic use, basic properties of software architecture, Mathematical formulations, and general algorithms.
Proof of Principle	TRL-2	• Research ideas developed • Technology concept or application formulated. • To carry out analytics studies and coding starts & comparing competing technologies
Proof of concept demonstrated	TRL-3	• The concept/Pre-alpha script is ready, and a working draft has been created.
Proof of concept established	TRL-4	• Development of limited functionality environments to validate critical properties and analytical predictions using nonintegrated software components and partially representative data • Laboratory results show validation of critical properties.
Early stage validation	TRL-5	• Developed Software technologies to integrate with different aspects of the existing system • Developed Software technologies implementations conform to target environment/interfaces. Experiments with realistic problems • Rigorous alpha testing
	TRL-6	• The feasibility of the software technology is demonstrated on full-scale, realistic problems • Technology validation in a relevant end-to-end environment. • Rigorous Beta testing
Late stage Validation	TRL-7	• Rigorous testing & validation by third parties
Pre-commercialization	TRL-8	• ISO/IEC 9126 software quality as per the international standards • Data Privacy & Protection as per international standards (maybe complied as per HIPAA Norms) • Launch of the software

Stage	Technology Readiness Level	Definition
Ideation	TRL-1	• Need to be identified, • Development of basic use, basic properties of software architecture, Mathematical formulations, and general algorithms.
Proof of Principle	TRL-2	• Research ideas developed • Technology concept or application formulated. • To carry out analytics studies and coding starts & comparing competing technologies
Proof of concept demonstrated	TRL-3	• The concept/Pre-alpha script is ready, and a working draft has been created.
Proof of concept established	TRL-4	• Development of limited functionality environments to validate critical properties and analytical predictions using nonintegrated software components and partially representative data • Laboratory results show validation of critical properties.
Commercialization and post market studies	TRL-9	• Continuous improvement (New versions) as per user demand and feedback. • Continuous incorporation of new features as per user demand and feedback.