



REQUEST FOR PROPOSALS

BUILDING AI SOLUTIONS IN PUBLIC HEALTH - TELERADIOLOGY

About National Entrepreneurship Network (A program of the AI Unit of NEN).

The National Entrepreneurship Network is an independent non-profit institute developing AI solutions for social good. We are supported by reputed global institutions such as the Bill and Melinda Gates Foundation, Google, and USAID. We work closely with Central and State Governments in India to collaborate on solutions in the domains of healthcare and agriculture.

About the RFP

NEN is looking to develop an AI enabled solution to provide Rapid Radiological Feature Detection services at remote healthcare facilities. An AI model has been trained to detect 14 common radiological features in digital chest X-Rays. The solution is expected to reduce the human effort by radiologists involved in interpreting chest X-rays, capture information available in the X-rays and transmit the information to designated servers. This model has been trained on a publicly available open-source dataset of over 1 lakh annotated chest X-Ray images. To further refine the model, the team will need access to Indian datasets of annotated chest X-rays images to improve its sensitivity and specificity scores and deploy the same in the Indian public health care system on a national scale.

NEN is looking for organizations with access to large datasets of chest X-rays based in India. Working closely with NEN (which will head solution development and guide algorithm development), the partner organization will provide access to relevant anonymised datasets that will be used by NEN to design, develop and improve the computer vision algorithm. The chest x-rays should include some if not all of the following 'Radiological Labels' ((i.e. a list of formations visible in the images).

1. Consolidation
2. Nodule
3. Pneumothorax
4. Fibrosis
5. Cardiomegaly
6. Hernia
7. Pleural Effusion
8. Rib Fractures
9. Supported Devices
10. Emphysema (only if available)
11. Edema (only if available)
12. Atelectasis (only if available)
13. Pleural Thickening (only if available)



Requirements

To further our research, we need high-fidelity digital chest x-ray images with their corresponding reports/"Radiological Labels". The detailed requirements are given below:

Requirement	Details
Number of scans	Preferably close to 25,000
Type of scan	Frontal Chest X-Ray
Format (PA/AP)	PA view
Resolution/File Format	<ul style="list-style-type: none">- Resolution: 1024x1024 or higher- JPG/DICOM
Radiological Features	<ul style="list-style-type: none">- The images must have one or more features from the list of Radiological Labels mentioned above- If any radiological features apart from the features mentioned above are present, please mention them in the output format (CSV + Report)
Reporting Format	<ul style="list-style-type: none">- CSV file (containing labels identified for each image) + detailed PDF report- Sample CSV template is shown in the figure below this table- PDF reports for all scans should be consistently formatted (i.e. be based on the same template)
Things to avoid	<ul style="list-style-type: none">- Markings/free text on the scans- Skewed/tilted scans
Additional requirements	<ul style="list-style-type: none">- Reports should be consistently formatted- All Radiologists/annotators should use the same dictionary of terminologies to avoid confusion (i.e. everyone should use the same abbreviations/nomenclature while labeling data)- The data should be evenly distributed across different classes (i.e. there should be a sufficient number of examples corresponding to each label)- Scans from both sexes should be included (preferably in equal numbers)



Sample CSV - For "Radiological Labels"

Below is a sample CSV template:

Image Index	Finding Labels	Patient Age	Sex	View Position
00000001_000	Cardiomegaly	58	M	PA
00000001_001	Cardiomegaly Emphysema	58	M	PA
00000001_002	Cardiomegaly Effusion	58	M	PA
00000003_000	Hernia	81	F	PA
00000003_001	Hernia	74	F	PA
00000003_002	Hernia	75	F	PA
00000003_003	Hernia Infiltration	76	F	PA
00000003_004	Hernia	77	F	PA
00000003_005	Hernia	78	F	PA
00000003_006	Hernia	79	F	PA

Below is a brief description of the various column heads:

Image Index	Unique identifier for each image
Finding Labels	Vertical Bar () separated list of different radiological features identified in the image (i.e. if "Cardiomegaly" and "Emphysema" are identified in the image then the corresponding Finding Label would be "Cardiomegaly Emphysema")
Patient Age	Age of the patient in years (numeric)
Sex	M/F
View Position	PA/AP

NEN will be responsible for data acquisition and annotations, product design & development.



Proposals to include data set details, financial proposal and partner background.

Evaluation: The proposals will be evaluated based on three criteria - data quality, financial evaluation, and administrative due diligence.

Capabilities to fulfill quantity and timeline requirements

- 25000 x-ray scans to be delivered in batches in April 2022
- Data to be delivered in tranches of 5000 to 10000 images. A sample dataset of 1000 images to be delivered first.
- Image resolution should be minimum 1024*1024. Images should be anonymized with overlaid patient information removed.

Interested agencies are required to mail the bids as separate attachments by 22nd March 2022, 11:59 pm to the following email id:

procurement@wadhwaniai.org.

Please mention the following in the subject line in a covering mail: Application for Request for Proposal (RFP) for Teleradiology in India. Please note:

- Only email bids will be accepted
- Only those short-listed will receive an acknowledgment via mail and be called for a technical evaluation via Hangout for further discussion.

Instructions on Financial Proposal

- The bidder must propose costs that it believes are realistic and reasonable for the work in accordance with the Bidder's technical approach.
- The Bidder shall provide a complete budget by the cost elements to the best of their understanding as per SOW outlined above.
- Costs shall be presented in INR currency including applicable taxes.

Conditions for Submission of Proposal

- NEN is committed to selecting the most competitive offer based on overall quality, value for money, and time.
- NEN reserves the right to award a contract to a firm that may not necessarily be the lowest bidder based upon cost comparisons. Therefore, the proposals should be clear, concise, and complete with regard to both qualifications and technical content.
- NEN reserves the right to reject all bids received and is not committed to paying any cost incurred in preparing and submitting a proposal.
- Proposals received will become part of the official files on this Request for Proposal.
- All submissions in response to this request must meet the following conditions to be considered.



- Proposals that address only part of the requirements contained in this Request for Proposal will not be considered.
- An oral (telephone) interview by phone may be required. Notification of successful applicants will be provided in writing upon completion of the evaluation process.

Confidential Information

- Participating firms acknowledge that while executing the performance of the engagement(s), including task orders, all the information, verbal or written, shall be treated as confidential for the contract.
- The firm agrees to hold the confidential information in strict confidence and shall use it only for the specific purpose necessary to perform services as required. The firm shall not release, divulge, publish, transfer, sell, disclose, or otherwise make the confidential information known to any other entity or person.
- The firm agrees to implement physical, electronic, or managerial safeguards to prevent unauthorized access to confidential information.
- The firm agrees to promptly indemnify and hold harmless from, against and in respect of, and pay or reimburse for, any claims, demands, liabilities, losses, damages, costs, and expenses, NEN or its agents and employees, arising from a breach by the firm of its obligation under this clause. Under this clause, the obligation to the firm shall survive completing, canceling, or terminating the contract or agreement.

Conclusion

This RFP is not an offer to agree with any party but rather a request to receive proposals from persons or firms interested in providing the described services. Such proposals shall be considered and treated by NEN as offers to enter into an agreement. The sponsor and any of its representatives shall not be obligated to pay any sums whatsoever to any recipient of this RFP until and unless a written contract between the parties is executed. NEN will not compensate for consultation time spent in preparing a proposal to respond to this solicitation.



RFP Terms & Conditions

- NEN will not be liable for any costs incurred by the respondent during the preparation, submission, and presentation of a proposal
- The issuance of this RFP or receipt of the proposal does not commit NEN to award a contract to the respondent. Selection will result from a mutually signed and executed contract.
- NEN reserves the right to accept or reject any or all responses to this RFP.
- NEN reserves the right to enter negotiations with one or more qualified suppliers at concurrent periods.
- NEN requires that pricing responses to this RFP reflect the most competitive offer available.
- NEN reserves the right to negotiate final terms, conditions, and pricing beyond what is presented in the RFP response.
- NEN reserves the right to modify the RFP scope, strategy, and timeframe and commits to providing fair and equal notification to support response to desired changes.
- Prices and terms are to be guaranteed for (45) days during the evaluation process.
- The contract will be for the term defined in the agreement, with a date determined after the contract award.
- The pricing proposed in the contract will remain consistent over the contract term length.
- At any time, NEN may cancel any portion of an order that constitutes part of the Agreement, or the entire Agreement, without cause, without penalty or liability, except that NEN shall be obligated to pay for Services accepted prior to cancellation at a price outlined in the Agreement.
- Responses to this Request for Proposals are required to be submitted on or before the last date mentioned.
- Delay submitted proposal shall be rejected only Procurement committee will have the right to consider in specific situation.

**General Information –To be filled by Agency.**

Sl. No.	Item	Agency Details
1	Name and address of the agency/company, telephone number, fax, mobile number, email address.	
2	Type of organization (Whether Proprietorship, partnership, private proprietor/partners).	
3	Name, address, contact no, and email id of the Directors/Proprietor/Partners.	
4	GST Registration No. (Please attach copy).	
5	Year of formation of the agency/company (Please attach copy)	
6	Since when have you been working in this field.	
7	Please provide your Clientele List (Contact No/address/email).	
8	Audited financial reports for last 3 years (Please attach copy).	

Undertaking

I have read the terms and conditions of SOW and understand that if any of the statements furnished by the undersigned is found to be false OR if any / all the terms and conditions are not complied with, the submitted bid/s is liable to be cancelled by NEN. I agree that the decision of the NEN in this regard would be final and binding on the SOW.

I also certify that I have understood all the terms and conditions indicated in the SOW document and hereby accept the same ultimately.

Date:

Place:

Signature of the authorized signatory of the agency
with official seal/ stamp