



Invitation for Expression of Interest (EOI)

Title	Procurement of chest X-ray hardware, X-ray image storage solutions, AI algorithm software for mass screening for tuberculosis.		
Ref #	IRDG/EOI/2209-01	Contact details (EOI related queries)	procurement@ird.global
Issuance Date	Sep 30, 2022	Submission Deadline	Nov 1, 2022

Background:

IRD is a global health delivery and research network working in over 15 countries. IRD Global is the headquarters organization based in Singapore and has country affiliate offices in Bangladesh, Indonesia, Nigeria, Pakistan, Philippines, South Africa, United Arab Emirates, Vietnam, and Zimbabwe. For more information, visit www.ird.global.

IRD Global is seeking expressions of interest from potential suppliers of digital chest X-ray equipment, X-ray image storage solutions, and AI algorithm-based software solutions for mass screening for TB in Low and Middle-Income Countries (LMIC) settings. This EOI is the first stage of the procurement process to identify a potential list of suppliers, their range of solutions, and prices for the required equipment. We will not be making any procurement decisions as a result of this EOI. A formal Request for Proposal (RFP) with complete terms and conditions may be circulated at a later stage to a selected group of potential suppliers shortlisted based on their responses to this EOI.

Interested suppliers should respond to this EOI as outlined in the specifications document. Any products and/or services under this EOI have a tentative delivery date in Q2 2023.

Scope of Work

EOIs are invited for one or more of the following products and/or services:

1. Hardware for 55 digital chest X-ray mass screening units delivered to a site in Karachi, Pakistan. Each unit must be capable of conducting a minimum of 300 X-rays in continuous use per day. The price quoted should be on CNF as well as a DDP basis.
2. Hardware for 15 digital chest X-ray mass screening units shipped to ports in Asia and Africa. Each unit must be capable of conducting a minimum of 300 X-rays in continuous

use per day. The price quoted should be on a FOB basis using the supplier's choice of port of loading.

3. DICOM image storage for up to 4 million chest X-rays (local and/or online) over two years.
4. Artificial Intelligence (AI) software for reading up to 4 million chest X-rays to screen for TB over 2 years.

Requirements, Terms and Conditions, and Submission Details:

The detailed description and specifications of products and/or services, warranty and maintenance, terms and conditions, conditions of participation in the EOI, and information on how to submit your queries and responses are available in the detailed EOI document accessible through this link: [EOI- Procurement of Chest X-ray hardware & image storage solutions](#)

Specifications and Terms of EOI

1. Hardware equipment for mass chest X-ray screening

a. Requirement:

i. **Digital x-ray units:** The complete X-ray unit should be capable of being housed and fully operationalized in custom-built cabins of size: 3 '5" by 8' (3 feet, 5 inches wide by 8 feet long) on mobile platforms. For desired specifications, please refer to subsection c below.

ii. **Quantity:** 70 X-ray units

iii. Port of Delivery:

- 55 X-ray units delivered to the site in Karachi, Pakistan. The price quoted should be on CNF as well as DDP basis.
- 15 X-ray units shipped to ports in Asia and Africa. The price quoted should be on a FOB basis using the supplier's choice of port of loading.

b. Purpose: Chest X-ray for Tuberculosis (TB) Screening

c. Desired Specifications and other key requirements:

DIGITAL RADIOGRAPHIC SYSTEM 300MA

1. X-RA GENERATOR: High Frequency Inverter Generator	
Nominal Electrical Power	Power ranging from 25-30kW would meet our requirements of CXR
Radiographic Tube	
Voltage Setting Range	40kV to 150kv, 1kV Steps or better
Current Setting Range	10, 20, 50, 100, 160, 200, 250, 300mA or more
Radiographic Time	1ms or better
2. X-RAY TUBE	
Focal Spot	1.0mm / 2.0mm or better
Anode Heat Capacity	140 kHU minimum
Rating	20kW / 45kW approximately

3. TUBE STAND: Preferably Floor-to-Ceiling Type X-Ray Tube support with Electromagnetic Brakes.	
Longitudinal Movement	175 cm or more
Lateral Movement	30 cm or more
Vertical Movement	156 cm or more
X-Ray Tube Rotation of vertical axis	+180 degrees or better
4. VERTICAL BUCKY CHEST STAND	
Radiographic unit movement	110 cm or more
Distance between radiographic unit and FPD Sensor	35 mm or better
Balancing & Lock	Counterweight balance and Electromagnetic Lock (off-lock type)
Compatible Cassette Size	18 cm x 24 cm to 35 cm x 43 cm
Focusing Distance	150 cm or more
Grid Ratio	8:1 or better
Grid Movement Mechanism	Oscillating Type
FLAT PANEL DETECTOR	
Size	14 x 17
Pixel size	125 μ m or less
Resolution	4.0 lp/mm or more
Gray scale A/D	16 bit or better
Image matrix size	2800 x 3408 pixels or better
Preview Image Time	1 sec or less
Cycle Time	7 sec or less
Safety Requirement	Dust & Waterproof IP55

<p>Complete with LCD/LED and console software</p>	<ul style="list-style-type: none"> ● Real-time viewing of high-quality images ● Large high-resolution monitor for comfortable viewing ● Optimized workflow with minimal operational steps ● Supports various workflows to match local requirements ● Single and Prepacked Protocols ● Emergency study capability ● Suspend Exam ● Reject Analysis ● Automatic forwarding of rejected images to a designated analysis workstation
<p>Warranty and Maintenance:</p> <ul style="list-style-type: none"> ● Hardware solutions must be designed for a minimum 10 years of working life, excluding light tubes and must be covered by a comprehensive warranty for at least 3 years. ● Uptime of equipment must be at least 98%. ● At least one factory-trained engineer should be available locally to provide technical support. ● The response time to any breakdown should not be more than 24 hours. ● The supplier must have an inventory of spares available locally in a reasonable quantity. ● The offered solutions should be compliant with prevalent requirements of relevant regulatory organizations. 	
<p>Note:</p> <ul style="list-style-type: none"> ● The X-ray system should have a tube, chest stand, and Flat Panel Detector along with all components, ● A digital printer for X-ray images. ● Country of Origin & Manufacturer: Any country meeting internationally accepted quality standards ● Complete details of post-warranty maintenance contract. 	

2. Software for X-ray based TB Diagnosis

a. Software for X-Ray TB screening using Artificial Intelligence algorithms

- Automated chest X-ray (CXR) screening software that detects X-ray abnormalities consistent with pulmonary, hilar, and pleural tuberculosis using AI algorithm.
- Compatibility with X-rays of varying quality and exposure, make and model.
- Certified for use with adults and older children.
- Image and data export capability.
- DICOM compatible.

- b. Real-time electronic X-ray management system for collection and reporting of patient level data
 - In-country cloud-based management system to capture patient information data (e.g., demographic and location) linked with the X-ray image.
 - Offline mode available with local storage for batch uploading.
 - Provide real-time data and reports that are accessible from any location.
 - Customization options available.

- c. In-country cloud-based solutions to store and archive digital chest X-ray DICOM images
 - In-country cloud-based DICOM archive that provides effective and secure storage of clinical DICOM information CXR images in high quality.
 - Software should be able to work offline in the absence of internet connectivity with information stored on site for uploading onto the cloud when connectivity is available.

3. Terms and Conditions

a. Conditions of Participation

- i. **This EOI is not an offer and should not be considered a commitment.**
- ii. Participating suppliers themselves shall bear all the costs associated with the preparation and submission of the EOI, and IRD will, in no case, be responsible or liable for any of these costs, regardless of the outcome of the process.
- iii. Participating suppliers are required to examine all instructions, terms, and conditions in this document. Failure to furnish the information, as required, and consequent rejection of the submission on that basis will, in every respect, be at the individual supplier's risk and cost.
- iv. EOI submission letters will be evaluated based on price, conformance to the equipment requirements, equipment features, specifications, performance, reliability, supplier experience, warranty terms, service capabilities, user training, and support services, financial cost, and overall responsiveness to this EOI.
- v. The supplier should be OEM or its authorized agent and must be well established in the area where the deliveries/services are required.
- vi. The supplier should have complete OEM authorization for maintenance, warranty, and spare parts if it is an authorized agent of the OEM.
- vii. Shortlisted suppliers may be issued a formal tender inquiry/Request For Proposal (RFP), inviting their technical and commercial proposals at a later stage.

- viii. The EOI, as well as any correspondence, must be submitted in English.
- ix. IRD reserves the right to accept or reject any or all EOI submission letters and to annul the procurement process without assigning any reason or having to owe any explanation whatsoever at any time before the award of Contract, thereby incurring no liability to the affected supplier or any obligation to inform the affected supplier.

b. EOI Submission Documents:

The suppliers must provide the following information/documents in their submissions:

- i. Supplier's profile with the number of years in the business
- ii. Geographical reach
- iii. Reference letters and completion certifications from previous/existing clients.
- iv. Evidence of supplying and providing satisfactory after-sales services in LMICs
- v. Full technical details of the products & services offered
- vi. Pricing in United States Dollars (USD), with detailed breakdown
- vii. Details of Professionals and Local Partners
- viii. Overview of Quality and Data Management System
- ix. Overview of compliance with ICH-GCP, and the track record
- x. Overview of experience and track record with regulatory and ethics submissions and processes in the countries in which suppliers have worked
- xi. Participating suppliers are expected to exercise their best professional independent judgment requirements of this EOI to ascertain whether additional clarification is necessary or desirable before responding.

4. Submission Details:

- a. Interested suppliers should email their submissions only to the designated email address: **procurement@ird.global**. Submissions must include the complete details indicated above, clearly stating which one or more required products or services their response includes. The subject of the email should indicate the EOI reference number IRDG/EOI/2209-01.
- b. The submission deadline is **11 pm Singapore Standard Time on Thursday, Nov 1, 2022**.
- c. Interested suppliers must send their queries via email to **procurement@ird.global** by October 15, 2022. IRD Global will process and respond to queries within 3 working days.

- d. IRD Global will review all submissions and may request further clarifications or additional information from suppliers. A formal Request for Proposal (RFP) may be circulated at IRD's discretion at a later stage to a selected group of suppliers shortlisted based on the assessment of submissions received under this EOI.