



**EMBASSY OF INDIA BEIJING**

**INVITES QUOTATIONS**

**PURCHASE AND INSTALLATION OF BAGGAGE SCANNER AT THE GATE IN  
THE EMBASSY OF INDIA**

**TENDER NO. PEK/GEN/885/1/2017**

**LAST DATE FOR SUBMISSION OF BIDS**

**25<sup>th</sup> May 2017 UP TO 1000 HRS (BEIJING TIME)**

**DATE OF OPENING BIDS**

**25<sup>th</sup> May 2017 AT 1600HRS (BEIJING TIME)**

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**EMBASSY OF INDIA BEIJING, NO.5, LIANG MA QIAO BEI JIE, CHAOYANG  
DISTRICT, BEIJING 100600 TEL-00-86-10-8531 2500/2501/2502/2503**

## Invitation for Bids

Embassy of India, Beijing invites Bids/Quotations from reputed agencies based in China with background in dealing with supply, installation and maintenance of Security Gadgets.

**1. Notice Inviting Tender:** Sealed bids are hereby invited for purchase and installation of X-ray Baggage Scanner Machine in the Embassy.

**2. Eligibility criteria for bidders:**

(i) The company should have experience in dealing with the supply, installation and maintenance of security gadgets for a minimum of 5 years

(ii) The company should have valid permit/registration from a competent local authority for supply of security gadgets.

**3. Bid system:-** The two bid system (Technical and Financial) as details below shall be followed for this tender:

(i) The bidder shall submit offer in **two separate seal envelopes**, namely (a) **First envelope** - superscripted as "Technical Bid – Supply of X-ray Baggage Scanner Machine" and (b) **Second envelope** – superscripted "Financial Bid – supply of X-ray Baggage Scanner Machine". Both the sealed envelope shall be kept inside a large sealed envelope i.e. in a Third envelope superscripted as "Tender Quotation for supply of X-ray Baggage Scanner Machine". It should also be superscripted at the bottom left corner with the Full name, Postal address, Fax, E-mail, Telephone number of the bidder;

(ii) The sealed quotations shall be submitted to **The Head of Chancery, Embassy of India Beijing, No.5, Liang Ma Qiao Bei Jie, Chaoyang District, Beijing 100600;**

((iii) The bid may be submitted by Hand in person or by courier. The bids by "Fax / E-mail" shall not be accepted;

(iv) Bids received after the closing date and time as prescribed in the tender notice, shall **NOT** be accepted under any circumstances;

(v) Technical bid shall be opened on the date and time as given in the tender notice at Embassy of India Beijing, No.5, Liang Ma Qiao Bei Jie, Chaoyang District,

Beijing 100600, in the presence of the authorized representatives of the companies, who may wish to attend.

(vi) Financial bid shall be opened on the date and time, to be communicated later, at Embassy of India Beijing, No.5, Liang Ma Qiao Bei Jie, Chaoyang District, Beijing 100600, in the presence of the authorized representatives of the companies, those who qualify in the technical bids and wish to attend.

**4. The specification of X-ray Baggage scanner machine is specified at Annexure I.**

**5. Pre-bid meeting:** All bidders should visit the site of installation as the area has its specific requirements. Based on the area and seating arrangement of the site, an installation plan should also be provide in the technical bid. **The pre-bid meeting will take place on 10<sup>th</sup> May 2017.** During the meeting, all bidders are welcome to clarify all their concern regarding submission of technical and financial bid, if any.

**6. Instructions to Bidders regarding submission of Technical Bid:**

(i) Kindly indicate by a 'YES' or 'NO', if the particular specifications asked in the technical bid is being satisfied. In case of any variance from these parameters, it may kindly be explained.

(ii) The bid has to be submitted as per the format specified at Annexure II

**7. Instructions to Bidders regarding submission of Financial Bid:** The financial bid should contain the costs item-wise in the following heading:

(i) Cost of equipment

(ii) Installation cost including pre-fabrication and testing in the designated area

(iii) Taxes and other charges, if any

**8. Selection Procedure:** Technical bids will be opened by a constituted committee which will screen the bids for eligibility as per Eligibility Criteria enumerated at 2 above.

**9. Validity of Bids:** The bids shall have a minimum validity of three months from the date of opening of bids. A bid for a shorter period of validity shall be rejected.

**Specifications of Baggage Scanner**

1. Resolution : 42 SWG or better
2. Tunnel Size : Shall be minimum 600mm X 400mm with 10% variation only on higher side.
3. Penetration :  $\geq 30$  mm Steel.
4. Voltage : 180 – 260 V, 50 Hz single phase.

**5. Conveyer Belt**

- 5.1 Speed should be at least 0.2 meters per second or better.
- 5.2 Maximum load should be 160 Kg.
- 5.3 Conveyor belt height should be at least 750 mm.
- 5.4 Facility of bi-direction scanning be available.
- 5.5 Idle SS rollers to be provided with input/out frames at both ends of the tunnel.

**6. X-Ray Generator**

- 6.1 Cooling – Sealed oil bath.
- 6.2 Anode Voltage  $\geq 160$  KeV
- 6.3 Tube Current  $\leq 1$  mA
- 6.4 Beam divergence – 60 degrees. The x-ray beam divergence should be such that the complete image of maximum size of bag is displayed without corner cuts.

**7. Image Processing**

- 7.1 Sensor – Folded array
- 7.2 Grey Levels  $\geq 4096$
- 7.3 Display – High resolution SVGA, 22” TFT, LED Colour monitors, Flicker-free, minimum 1920 X 1080 pixels full HD display 30 watt and low radiation.
- 7.4 Beam divergence – 60 degrees.

**8. Computer configuration for image Storing and archiving.**

- 8.1 Latest generation compatible with X-Ray machine having the following minimum features or better.
- 8.2 Processor: Core i3 or better available in market.

8.3 Hard Disk: 350 GB or better.

8.4 CD/DVD Drive R/W

8.5 RAM 3 GB or better.

8.6 UPS: Reputed make online UPS like Tata libert, APC, Microtek etc. with minimum 30 minutes backup on full load by using SMF batteries.

8.6.1 Capacity – Commensurate capacity as per load.

8.6.2 Voltage range – 180-260 V, 50 Hz single phase.

8.6.3 Output voltage – 230 VAC  $\pm$  1%

8.6.4 Transfer Time – 0 ms

9. Zoom facility should be available to magnify the chosen area of an image eight times (X8) or more. Image features shall be key board controller.

10. The machine should be film safe.

11. The machine should have features of multi energy X-ray imaging facility (140 KeV approx.) where materials of different atomic number will be displayed in different colours to distinguish between organic and inorganic materials. With this method should be possible to distinguish high density organic materials including explosives. Machines should have variable colour or material striping to facilitate the operator to monitor images of organic materials for closure scrutiny. All suspicious items (explosives, high density material, narcotics) should be displayed in one mode and that should be online.

12. Facility for variable contrast must be incorporated to allow enhancement of lighter and darker portion of the image.

13. If the machine fails to penetrate an item, then an alarm (visual and audio both) should be generated to notify the operator.

14. The **threat image projection (TIP) system** software to be incorporated as per details given below:

14.1 TIP software facility shall be incorporated in the offered x-ray machines to assist supervisors in testing the operator alertness and training X-ray screeners to improve their ability in identifying specific threat object. The system will create a threat object and the same will be superimposed on monitor screen while a bag is being screened.

14.2 **Design of the System**

14.2.1 TIP software should be compatible with other X-ray technologies such as automatic reject unit, dual x-ray screen technologies, automatic threat recognition system etc. All x-ray image functions must be available at the same time along with the TIP.

### **14.3 Image Library**

14.3.1 The TIP facility should have an image library containing at least 100 explosive devices, 100 knives and 100 firearms in various sizes, shapes, locations and orientations. However, the system shall have facility to expand the library to incorporate additional images by user without assistance of the manufacturer.

14.3.2 The image library should contain images of threats at different orientation both plane and end on orientation should be used. Although these will be assigned different file names and reference, it must be possible to cross reference these as the same threat. All threat images protection images must be realistic – representative and non-distinguishable from real threat items.

### **14.4 Time Interval**

14.4.1 Programming facility shall be available to project threat images in different intervals. The time period for threat image as well as image mix in percentage shall be user programmable e.g. software shall select 40% images of explosive devices, 35% of fire arms & 25% of knives or random items etc.

14.4.2 Once the screener has responded to identify the computer generated threat image, it should remain on the screen for a predefined user programmable time for analysis. The image should be highlighted, upon identification and feedback message shall be visible to the screener.

### **14.5 Feedback Report**

14.5.1 The threat image projection should be capable of giving feedback HIT MISS or FALSE Alarm message. No message will be presented if a screener correctly passed as clear bag.

14.5.2 A HIT message to be presented when a screener has correctly identified a threat image projection image. A MISS message shall be presented when screener fails to identify the TIP image. A False alarm message shall be given when screener incorrectly indicate TIP image when in fact no threat image projection is present. The feedback should clearly indicate in a screen that a TIP object has been correctly identified/TIP object has been missed/no TIP object was present. Information should be recorded in the data base.

14.5.3 Different colour coding shall be used for feedback to the screener. It is recommended that colour code RED for MISS, Green for HIT and Yellow to False Alarm or interrupt be used.

14.5.4 The system shall automatically prepare the daily log of events for each shift and for each screener performance. TIP log shall include particulars of Venue, XBIS, Name of Screener, Time and date of threat image, whether threat image was successfully identified or missed etc.

14.5.5 The report on threat image projection system may have date and time (from – to – ) as per requirement, Screener particulars and decision/outcome i.e. MISS, HIT or False Alarm in percentage as well in absolute numbers, number of bags screened, categories such as explosive devices knife or weapon etc.

- 14.5.6 The machine should have the facility of obtaining reports at any given time and period, as per command.
- 14.5.7 The machine should have the capacity to store data on the system for a minimum of two months after it has been downloaded.
15. Control desk with security housing and locking provision should be available. The entry of operator personal identification number should be possible through keyboard.
16. Maintenance reminder should be available.
17. Display: Date and Time and Operator ID.
18. Baggage counter preferred.
19. Inverse video.
20. Black and white image.
21. Facility of image enhancement should be available.
22. Machine should be capable of recalling 15-20 previous images.
23. It should have the capability of archiving 3000-4000 images.
24. In case of defective diode arrays, scanning should be disabled and error message should be displayed on the screen.
25. Copy of all softwares including x-ray software with recovery CD and passwords should be provided.
26. All software features of machine should be online and password protected.
27. System should work on one software only. All software features should be controlled from key board of machine only. Keyboard function should be user friendly. To enable/disable the software features, system should not be rebooted.
28. All models should have online recording facility and images can be recorded in external media like USB drive.
29. All models should have software controlled diagnosis report facility and system should be able to give printout.
30. The machine should be so designed that software enhancement can be easily implemented to take care of new technique in image processing and pattern recognition.
31. The operating temperature should be 0 degree C to 40 degree and storage temperature-20 degree C and 50 degree Celsius.

32. Anti rodent and dust proof cover must be provided.

33. The company manufacturing the equipment should have appropriate certification for manufacturing and servicing of x-ray screening machines.

#### 34. **Safety**

34.1 The machine must comply with requirement of health and safety regulations with regard to mechanical, Electrical and radiation hazards. The supplier/manufacturers should furnish Test Certificate from Atomic Energy Regulatory Board of India regarding radiation safety.

34.2 The radiation level should not exceed accepted health standard (0.1 mR/Hr) at a distance of 5 cms from external housing.

34.3 Lead impregnated safety screens should be available at either ends of the tunnel.

34.4 Dosimeter be provided for radiation checking.

35. Combined Test Piece (CTP): The manufacturer shall provide one set of CTP per machine for checking serviceability of the machine by the operator. The details of CTP are given below.

35.1 Combined Test Piece Requirements.

35.2 **Single wire Resolution (Test No.1):** The requirement is to display 42 SWG wire not covered by step wedge. A tick will indicate the visibility of appropriate wire. A set of un-insulated tinned copper wire of size 26, 30, 35, 38, 40 and 42 SWG should be placed on a Perspex sheet. The wires to be laid out in S Shaped curves. The wires should be placed behind varying thickness of aluminum. Metallic marker should be provided using high density material, so that SWG numbers in the Video Display Unit (VDU) are clearly visible.

35.3 **Useful Penetration (Test No.2):** The test defines what level of details can be seen behind a thickness of known material. The CTP should have different gauges of wire behind varying thickness of aluminum. The requirement of this test is that the 26 SWG wire is seen under second step wedge (5/16"). Tick on log sheet will indicate what wires are visible.

35.4 **Material discrimination (Test No.3):** The requirement is that different colours be allocated to the sample of organic and inorganic substances. With multi energy X-Ray it should be possible to distinguish between materials of different average atomic number. This means that organic and inorganic substances can be differentiated. The use of sugar and salt samples encapsulated on the test piece and various materials used in the construction of CTP should check the material discrimination facility. A tick should indicate that the sugar/salt samples are shown in different colour.

35.5 **Sample Penetration (Test No.4):** The requirement is that the lead be visible beneath 26 mm of steel. This test defines what thickness of steel the machine should be able to penetrate. The steel step wedge on the CTP should have steps of at least 2 mm from 16 mm to 30 mm with a lead strip to check that the machine is above or below the requirement. A tick in log sheet should indicate where a lead



strip is visible.

**35.6 Spatial Resolution (Test No.5):** The requirement is that vertical and horizontal grating to be seen. This test defines the ability of the system to distinguish and display objects, which are close together. The CTP should have at least 16 copper gratings at right angles to each other. A tick in the log sheet should indicate the gaps in the gratings are visible.

**35.7 Thin Metal Imaging (Test No.6):** This tests the machine's ability to image thin metal. A number of thin metal strips of various thicknesses should be placed in row.

### **35.9 Results**

35.9.1 The best results taking both colour and black and white images into account should be recorded for a particular machine.

35.9.2 The results of test should be recorded giving information like date, time, machine number and type, supervisors name and other remarks.

**36. Warranty & Maintenance** – A Warranty of 3 years and Annual Maintenance for 07 years may be provided by the seller. The seller should offer a preventive maintenance schedule for better maintenance of the machine.

37. Miscellaneous: The firm should be able to provide the following along with the equipment:

(i) One Test Sample (CTP) for each machine for testing during commissioning and during maintenance.

(ii) Suitable voltage stabilizer with isolation transformer.

(iii) Training tools – charts, slides, training brochure, training work model, blow up diagram, video films on demonstrations and use etc. The seller should provide training to the Indian Security staff for operating and maintenance of the equipment. The training for CTP should also be given as listed in clause 35.

(iv) Technical manual giving full description of the item. Practical training at least 4 times in a year and during the first year.

(v) User's handbook and literature on preservation/maintenance as applicable.

(vi) Procedure for packing, handling, transportation and storage.

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**Annexure- II**

**PROFORMA TO BE FILLED UP AND SUBMITTED IN THE BID**

1.	Name of the Bidder Agency/Company.	
2.	Address of the Bidder Agency/Company.	
3.	Contact details of the Bidding Agency/Company.	
4.	Registration and incorporation particulars of the Agency/Company.	
5.	Period of Bid validity.	
6.	Experience in dealing with security gadgets (No. of years).	
7.	Any other information	

**Declaration**

I hereby certify that the information furnished above is full and correct to the best of my knowledge. The self-attested copies of required documents as mentioned in para 5 of the Tender Notice have been submitted. We understand that in case of non-submission of required documents, the bid shall stand rejected.

**(Signature of the authorized signatory)**

Dated \_\_\_\_\_

Name and address of the Agency/Company \_\_\_\_\_

**Seal of the firm**