NOTICE INVITING BUDGETORY OFFERS

Name of Work	"**Supply of Baggage Scanners on a Rental Basis for Cruise Terminal**
Date of submission of budgetary quotation	On or Before 30.01.2026
Budgetary Quotation No	CME/XEN (E-HR)/2026/H16/B1
Address for communication:	Executive Engineer (E-HR), 2nd floor, Mechanical Engineering Department, Mormugao Port Authority, Admin. Building, Headland sada Vasco-de-Gama Goa - 403804
Contact Details	Phone : (0832) 2594207, 2594577 Email : mohamed.shaik@mptgoa.gov.in
Website	**www.mptgoa.gov.in**

EXECUTIVE ENGINEER (E-HR)
MORMUGAO PORT AUTHORITY

1. GENERAL

Mormugao Port Authority plans to deploy baggage scanners on a rental basis at the Cruise Terminal Building of MPA for upcoming Cruise season 2026-27.Two scanners will be required for screening passenger luggage during these cruise calls.

2. SCOPE OF SERVICES

2.1 Installation of Baggage Scanners:

- Bidder shall provide **two (2) baggage scanners** suitable for the security screening to facilitate the screening of passenger luggage during cruise calls. Technical specifications of the baggage scanners is as given below.
- Scanner should be delivered and installed at a Cruise Terminal Building.
- The scanners shall meet all relevant security and regulatory standards for the screening of baggage.
- Installation and maintenance of all necessary hardware, software, and networking equipment shall be in scope of bidder to ensure that the scanners are fully operational.

2.2 Maintenance and Support:

- **Routine Maintenance**: The provider will conduct routine preventive maintenance on the scanners at regular intervals, such as monthly or quarterly, to ensure optimal functionality. Report of the same shall be submitted to Engineer in charge
- **Emergency Maintenance**: Provide emergency support and repairs for any malfunction or breakdowns, ensuring minimal disruption to port operations. Repairs should be done immediately.
- **System Updates**: Regularly update scanner software and firmware to ensure the scanners are functioning with the latest features, security updates, and performance improvements.

- **Calibration and Testing**: Ensure that the baggage scanners are calibrated regularly for accuracy and performance.
- **Deployment of Service Engineer (for Cruise calls only):** A qualified technician/service engineer must be made available at the MPA site one day prior to the arrival of each cruise vessel and remain on-site until the vessel departs. This is to ensure the uninterrupted operation of both baggage scanners. The contractor shall arrange transport and accommodation for the service engineer at their own cost.

2.3 Spare Parts and Consumables:

- The bidder shall supply all required spare parts, components, and consumables (e.g., filters, belts, etc.) to ensure continuous operation of the baggage scanners throughout the rental period without any additional financial burden on MPA.
- The Scanner provider should maintain an adequate stock of critical spare parts for both gates to avoid delays in repairs.

2.4. Compliance with Standards:

- The baggage scanners should comply with relevant **national and international security standards**, including those related to baggage screening at ports (e.g., ICAO, ISO 9001, TSA regulations, CE certification).
- The bidder must ensure that all work, including maintenance and upgrades, complies with applicable safety, environmental, and regulatory standards.

2.5 Upgrades and System Enhancements:

- Throughout the rental period, bidder shall provide all necessary **upgrades** or **enhancements** to the scanners to keep them in line with technological advances and evolving security threats.
- These upgrades shall be included in the rental contract and performed with minimal disruption to operations.

2.6 Liabilities and Insurance:

- The bidder shall be solely responsibility for any **damage or malfunctions** of the baggage scanners caused by negligence or failure to perform routine maintenance.
- The bidder must hold adequate **liability insurance** to cover potential damages or issues arising from the scanners' operation, maintenance, or repairs.

3. **Delivery for both baggage scanner**: Both baggage scanners shall be delivered and installed to the site within one week from the date of issuance of the Letter of Acceptance (LOA).

4. **Specifications of Baggage scanners**

4.1 Each Baggage scanner shall be equipped with single/dual X-Ray generators.
4.2 All machines should operate on 230V AC 50 Hz power supply and should be able to withstand voltage fluctuations in the range of 170V to 260 V and frequency fluctuations +/-5%.
4.3 All machine shall be provided with UPS of 1.1 KVA or more with minimum 30 mins backup.
4.4 Tunnel size of the machine is -60 cm (width) x 40 cm (Height) .
4.5 Penetration should be of 30 MM thickness of steel or more.
4.6 Resolution: The machine should be able to display single un-insulated tinned copper wire of 40 SWG.
4.7 The system should be able to produce clear images on colour monitor(s) with minimum of 1280 X 1024 pixels (Full High Definition)
4.8 Zoom facility should be available to magnify the chosen area of an image sixteen times (16x) or more. Image features shall be keyboard controllable. The image shall be clear.
4.9 The machine should be film/ food safe. In other words photographic films must not be damaged due to X-ray examination.
4.10 The machine should have features of multi energy X-Ray imaging facility where materials of different atomic number will be displayed in different colours to distinguish between organic/inorganic materials. With this method it should be possible to distinguish high-density organic materials including explosives. Machine should have variable colour or material stripping to facilitate the operator to monitor images of organic materials for closer scrutiny. All suspicious items (Explosives, High density material, narcotics) should be displayed in one mode and that should be on line.
4.11 The radiation level should not exceed accepted health standard (0.1 m R/hr.) at a distance of 5 cm from external housing.
4.12 Lead impregnated safety screens should be available at either ends of the tunnel. Idle rollers to be provided at either ends of the tunnel to facilitate placing of baggage at the input and output points.
4.13 The X-ray beam divergence should be such that the complete image of maximum size of bag is displayed without comer cuts.

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

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

4.16 The threat image projection (TIP) system software to be incorporated in all X-BIS operation as per details given in Annexure - 1.

4.17 Control desk with security housing and locking provision should be available wherever required. The Operator personal identification number can be entered through keyboards.

4.18 Facility of image enhancement should be available.

4.19 Conveyor belt speed should be between 0.18 and 0.3 mtrs per second for X-ray baggage inspection system for hand and registered baggage. The conveyor belt should be of high bed.

4.20 All software features of machine should be activated and password protected.

4.21 In case of defective diode array(s), scanning should be disabled and error message should be displayed on the screen.

4.22 System should work on one software only. All software features should be controlled from key board/mouse/ touch screen of machine only. Control functions should be user friendly. To enable/disable the software features, system should not be rebooted.

4.23 All models should have online recording facility and images can be recorded in USB/Electronic storage devices. The recording should be retained for minimum 14 days.

4.24 All models should have software controlled diagnosis report facility and should include following information

i. XBIS Make/Model/ Sr. No.
ii. Software/Firmware/Algorithm Version Number
iii. Status/Values of major Power Supply Voltages
iv. Generator Voltage (X-Ray ON/X-Ray OFF)
v. Generator Anode Current (X-Ray ON/X-Ray OFF)
vi. Generator Heater Current (X-Ray ON/X-Ray OFF)
vii. Diode Array (Raw/Calibrated) Response (X-Ray ON/X-Ray OFF)
viii. Grand total number of Bags scanned
ix. XBIS fault Log
x. XBIS Photoelectric Light Barrier (Tunnel Entry/Exit) Status
xi. Emergency switches status

4.25 The operating temperature should be 0° C to 40° C and storage temperature - 20°C to 50°C.

4.26 Anti-rodent and dust proof cover must be provided.

4.27 The company manufacturing the equipment should have ISO certification for manufacturing and servicing of X-Ray screening machines.

4.28 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.

4.29 Through put shall be minimum 400 bags per hour for hand and checked baggage and 200 bags per hour for cargo machines.

4.30 **SAFETY:** The machine must comply with requirements of health and safety regulations with regard to mechanical, electrical and radiation hazards. Before

installation of the machine. the supplier / manufacturers should fumish NOC from Atomic Energy Regulatory Board of India regarding radiation safety after every five years.

4.31 Operator manual shall be provided with each machine in both Hard and Soft modes.

4.32 Machine should be capable of recalling 15-20 previous images. A rejected bag image shall be transmitted to an additional monitor erected at the physical check: point to facilitate the screener and also increase through put.

4.33 **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: -

4.34 **SINGLE WIRE RESOLUTION (TEST NO.1)**

The requirement is to display 40 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 is placed on a Perspex sheet. The wires are laid out in S shaped curves. The wires are placed behind varying thickness of aluminum. Metallic marker should be provided using high-density material, so that SWG numbers in the VDU are clearly visible.

4.35 **USEFUL PENETRATION (TEST NO. 2)**

The test defines what level of details can be seen behind a thickness of known material The CTP has different gauges of wire behind varying thickness of aluminum. The requirement for this test is that the 30 SWG wire is seen under second step wedge (5/16"). Tick on log sheet will indicate what wires are visible

4.36 **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 will check the material discrimination facility. A tick will indicate that the sugar / salt samples are shown in different colour.

4.37 **SIMPLE PENETRATION (TEST No.4)**

The requirement is that the lead be visible beneath 30 mm of steel. This test defines what thickness of steel the machine should be able to penetrate. The steel step wedge on the CTP has steps of 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 will indicate where a lead strip is visible.

4.38 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 has 16 copper gratings at right angles to each other. A tick in the log sheet will indicate that gaps in the gratings are visible.

4.39 THIN METAL IMAGING: (Test No 6).

The requirement is to view image of steel 0.1mm thick. This tests the machine's ability to image thin metal. A number of thin metals strips of various thicknesses are placed in a row.

4.40 METHOD:

4.40.1 The CTP should be certified by a Government Test lab for dimensions and material composition. The CTP is to be used as a quick routine test carried out daily to ensure that equipment is working properly and satisfactory image is obtained. The results of the tests should be recorded.

4.40.2 The CTP should be placed on the belt and passed through the belt at least once in a day before the baggage is screened or after the X-Ray equipment is switched on to ensure that the equipment is working properly. If the image is satisfactory the equipment may be used.

4.40.3 The CTP may be viewed by using image enhancing facility till the operator is satisfied that the machine is working properly. The optimum position of CTP on the belt will depend on X-Ray source and detector arrangements. In case of dual view systems at least one view should pass CTP. This may be ascertained from the service engineer, if need arises.

4.41 RESULTS:

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

4.41.2 Supervisory officer should carry out the tests once in a week and compare the results with daily test sheets. In case the images are not up to the standard, service engineer must be asked to rectify the fault. The machine may not be used when its performance is in doubt or not satisfactory in the opinion of the supervisor.

4.41.3 The record must be kept by the operator for one year after final entry.

Annexure-1

THREAT IMAGE PROJECTION (TIP)

a. 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. To acknowledge that the operator has seen the false object, operator must press the control panel key that will cause the computer generated threat object to disappear from x-rayed bag image on the VDU screen. Each operator's action shall be recorded in the hard disc of the computer for the auditing purpose by the supervisor or other authorized person.

b. Design of the system

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.

c. Image library

   i. The TIP facility should have an image library. The system shall have facility to expand the library to incorporate additional images by user without assistance of the manufacturer as and when required.

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

d. Time Interval

   i. 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% knives or random etc.

   ii. Once the screener has responded to identity of 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.

e. System Administration

   i. The threat image projection facility shall have details of user data-base such as port name, screener name, organization, user ID number.

   ii. Access to start up menu should be restricted only to the authorized individuals. A log - in procedure by means of 'Password' or 'Security Key', couid achieve restricted access to each of the comment. The log in procedure should not take longer than 20 seconds. The system should have facility to by-pass the TIP facility, if programmed so by the system administrator. It is to be ensured that the TIP software shall not be hindrance to normal functioning of X-ray Machines.

   iii. When the operator logs in or logs out, message should be displayed on X-Ray BIS VDU Screen to confirm that he/she has been correctly logged in or logged out.

f. Feed Back Report

i. 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.

ii. 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 TIF 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 database.

iii. 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.

iv. The system shall automatically prepare the daily log of events for each shift and for each Screener performance. TIP log shall include particulars of

v. XBIS, Name of Screener, Time & date of threat image, weather threat image was successfully identified or missed etc.

vi. 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.

vii. As a standard practice, daily/weekly/monthly report shall be retrieved. Report shall be for any given time and period, as per command.

viii. All data should be stored on the system for a minimum of two months after it has been down loaded. No individual, regardless of access rights to the Threat Image Projection components would delete or amend any of threat Image Projection data or time i.e. Threat Image Projection data on the actual X-ray machine will be read only file.

ix. Automatic tray retrieval system with reject lane and recheck station with multiple divestment stations may be installed to increase throughput, wherever required.

x. X-BIS shall have automated online framing of suspicious material (eg. Explosives, high density material, narcotics etc.) for operator. This feature should be in real time requiring no operate involvement.

xi. The system should not be connected or accessed through internet by the OEM for any purpose including remote diagnosis.

xii. A non-disclosure agreement (NDA) is to be signed by the Port operators (Buyer) with OEM (Supplier) to affect the confidentiality of the information pertaining to the system.

xiii. Service engineers of Indian origin will only be deputed by the OE or entities authorized by them to maintain the system. Non-Indian engineers may be deputed for major breakdowns under supervision.

5 Damage charges for Non-Compliance

The **UP TIME** of baggage scanners shall be **100%**. In event of failure to maintain up-time of 100% for individual baggage scanner the following 'Damage charges for non-compliances' shall be applicable.

a. Up to 4 hrs - NIL.
b. Beyond 4 hours - deduction of one day's charges for the baggage scanner, plus ₹2000/- per day.
c. In case of absenteeism of Service Engineer at MPA site during cruise call than Rs.4000/- per day will be deducted .

Note: Bidder can replace the baggage scanner with similar specifications in consultation with Engineer-in –charge.

6 Payment Terms:

Payment will be made on monthly basis along with applicable GST, subject to recoveries, if any within 15 days from the date of receipt of undisputed and with all other supporting documents. GST number shall be invariably indicated on all the invoices. Applicable GST shall be paid to the concerned authority by the Contractor and documentary evidence of the same shall be produced to MPA.

7 Exit clause:

MPA reserves the right to early terminate/pre-close the contract by giving an advance notice of one month (30 days). The contractor shall not be entitled for any compensation by reason of such termination.

8 SPECIAL TERMS AND CONDITIONS

i. The Contractor shall commence and complete the work as per the BOQ and technical specifications.
ii. The Contractor shall complete the work in all respect to the satisfaction of the Engineer-In-Charge or his representative.

9 OTHER TERMS AND CONDITIONS

i. The firm should engage skilled service personnel with the relevant required tools and instruments for commissioning the subject work.

ii. The Contractor personnel engaged in the work shall follow all safety, security and General Rules enforced by Mormugao Port Authority (MPA) and the firm only shall be responsible for the same.

iii. MPA will not be responsible for any loss or damage of the men / materials / tools / plants engaged by the firm during the work at site / transportation.

iv. Necessary entry passes shall be obtained by the firm at their own cost with the approval of Port Officials.

v. Necessary electrical power supply required for operation will be provided by MPA at free of cost at nearest possible point.

vi. Contractor may be terminated any time with one month prior notice.

PRICE SCHEDULE (BILL OF QUANTITIES)

Provision of 2 baggage scanners on a rental basis, with a tunnel size of 60 cm (width) x 40 cm (Height), for use at the Cruise Terminal Building during cruise ship operations.

Sr No	Description	Unit	Unit Rate in (Rs.)		GST %	Amount in (Rs.)
			In fig.	In words		
1.	Supply and installation of 2 nos Baggage Scanners of tunnel size of 60 cm (width) x 40 cm (Height) on a Rental basis as specified above	Per/ Month				
2	Deployment of service Engineer at MPA during Cruise calls	Per day				

(In Words Rupees_____

_____only)

Note: a) The offered rates shall be inclusive of all taxes and duties except GST which will paid as extra as applicable. However, any new tax will be imposed by State/Central Govt. and same will be reimbursed on producing documentary proof.

b) The offer shall be inclusive of transportation (To & Fro of machine), installation, packing charges.