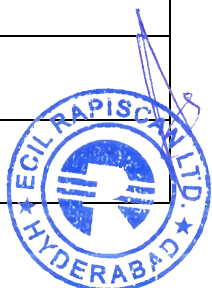


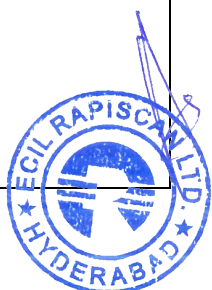
Compliance to Technical Specifications of X-Ray Baggage Inspection Systems

Make: Rapiscan | Model: 620XRve

X-RAY BAGGAGE SPECIFICATION		Compliance Statements
Required Features	Dual mode, dual energy 620 mm by 420 mm tunnel ultra compact X-Ray security screening system.	Comply: Offered model 620XRve
	Designed for automatic detection and alarm for explosives & drugs.	Comply
	Built with advanced computer technologies for carrying out in real-time analysis.	Comply
	Images saved as general image format, e.g. BMP, JPG and PNG and transferred to storage devices.	Comply
	Detection of Explosives and Narcotics Alert: To assist operators in the detection of a range of explosives and narcotics respectively in real time.	Comply
	Required compact scanner for limited space.	Comply
	Ease of Use Providing Highest Throughput: Required over 14 image processing tools, the feature- rich software allows the operator to more easily and accurately search for contraband.	Comply
	Latest image enhancement tool: Required latest image enhancement tool, utilizes the Dual-Mode X-ray imaging Technique to emphasize the detail in specific regions of images by enhancing the visibility of thin metal for increasing operator recognition of potential threats in cluttered images.	Comply
	Bidder to have Centralized 24X7 compliant lodging facility.	Comply
	Bidder must have full-fledged service network in Gujarat or 'within 500 Km of the HPLNG terminal' located at chhara.	Comply
	Company to provide contact details (Mobile No & Company Email Ids) of service engineering employed for X-Ray Baggage Scanner in India.	Comply
	The Bidder will provide all technical documents for the equipment supplied and related manuals at no additional cost.	Comply
	The Bidder on getting contract will impart Complete training to user on functioning of equipment supplied at no additional cost.	Comply
	The XBIS (X-Ray Baggage inspection system) should be mounted on Heavy Duty Castors for ease of movement.	Comply
A.	Minimum Physical Specifications	
Dimensions:	Length: 1,644 mm (64.8 in.) Width: 818 mm (32.2 in.) Height: 1,185 mm (46.7 in.)	Comply
Tunnel Size:	620 mm (W) x 420 mm (H) (24.4 x 16.5 in.)	Comply
Conveyor Speed:	0.28 m/sec (55.11 ft./min)	Comply
Conveyor Load (Max):	165 Kg (364 lbs) evenly distributed	Comply
Conveyor Height (Approx.):	675 mm (26.6 in.)	Comply

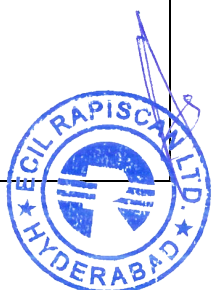


Weight (Approx.):	Net: 373 Kg (822.3 lbs) Gross: 482 Kg (1062.6 lbs)	Comply
System Power:	220 VAC $\pm$ 10% with stabilizer	Comply
B.	X-Ray Generator and Image Performance	
Steel Penetration:	28 mm (Guaranteed) or better	Comply: 35mm
Wire Resolution:	42 SWG standard (The machine should be able to display single un-insulated tinned copper wire of 42 SWG or better)	Comply: 42 SWG
Cooling:	Sealed oil bath with forced air	Comply
Anode Voltage:	160 kV Generator, Operated at 145 kV or higher	Comply
Orientation:	Diagonally Upward	Comply
System Power:	220 VAC $\pm$ 10% with stabilizer	Comply
Article Separation:	a. The machine should have features of multi energy X-Ray imaging facility where materials of different atomic number will be displayed in different colors to distinguish between organic and inorganic materials. With this method it should be possible to distinguish high density organic materials including explosives. Machine should have variable color or material stripping to facilitate the operator to monitor images of organic materials for closer scrutiny. b. The X-Ray beam divergence shall be such that the complete image of maximum size of bag is displayed without corner cuts. c. Facility for variable contrast shall be incorporated to allow enhancement of lighter and darker portion of the image. d. If the machine fails to penetrate an item, then an alarm (visual and audio both) shall be generated to notify the operator. e. Facility of image enhancement shall be available	Comply
C.	Operating Environment	
Storage Temperature:	-20°C to 50°C	Comply
Operating Temperature:	0°C to 50°C	Comply
Relative Humidity:	5 to 95% non-condensing	Comply
Sound Pressure:	<65dB(A)	Comply
Other	Anti-rodent and dust proof cover must be provided. The operator person identification number can be entered through keyboard	Comply
D.	Protection Class	
System:	IP20	Comply
Operator Control Panel:	IP43	Comply
E.	Standard Features:	
	- Full Spectrum Imaging - View Previous/Next Bag - Image Archive - Configurable Image Processing Keys - Baggage Counter	Comply



	• Date / Time Display - Search Indicator • Flat Panel Monitor	
F.	Computer Specifications	
Latest generation compatible with X-Ray machine having the following minimum features or better for 24x7 operation		Comply
Processor:	Intel® Core™ i5 Processor or Better	Comply
Graphic Card:	High resolution X-Ray image processing or better	Comply
Display Monitor:	Single monitor with more screen than Full HD (21:9 wide screen), high resolution monitors suitable for multitasking i.e., with	Comply
	Picture, Picture-In-Picture and Easy Setting Box software lets view & image multiple workspaces.	Comply
Operating System	Windows, 64-bit operating system or better with antivirus and free updates till warranty	Comply
Memory:	4GB RAM minimum	Comply
Hard drive:	500 GB minimum	Comply
USB Port:	4 or 6 port minimum	Comply
Image storage	1 lac or more	Comply
Other Requirement	PCI /PCIe slots	Comply
UPS	UPS for Computer with back-up of	Comply
Approval from AERB Mandatory	Model duly approved by the Atomic Energy Regulatory Board of India subject to production of NOTARIZED documentary proof.	Comply
Power Back Up	UPS: 3 KVA online with back-up time of 1 hour	Comply
Image Generating System:	The threat image projection (TIP) system software to be incorporated in all X-BIS operation.	Comply
	The system should be able to produce clear dual image on colour monitor(s) with minimum of 1920 X 1080 pixels (Full High Definition).	Comply
	Image features shall be keyboard controllable.	Comply
G.	X-Ray Baggage Standard features required	
Minimum keyboard/ Operator console features required	• Detail Enhancement (PV) • Edge Enhancement (EE) • Latest s/w eg -SINERGY • Black & White View (B/W) • Organic / Inorganic Separation (OM/IM) • Pseudo Color (PS) • Inverse View (IN) • High Penetration (HP) • Variable Edge Clarification (+E /-E) • Variable Color Separation (+C /-C) • Variable Contrast Level (+G /-G) • Variable Density Zoom (+D /-D) • 9 Quadrant Zoom / Real Time Image Processing and Zoom (32x to 64X)	Comply

Essential Software Features required	• Minimum 3 Programmable Function Keys should be available on the control panel. • Multi Energy Imaging (4-6 colors) and Bidirectional scanning • Required Software: OS600 64 Bit/ Scan OS 64 Bit • Image Recall - Possible to see all the images scanned in a single day. • Manual Image Archiving / Automatic Image Archiving (min. 1,00,000 or more) • Automatic Belt Stop Feature • Self-Diagnostic feature • Password protected: All software features of X-Ray Baggage Inspection System shall be online and password protected. Complete keyboard offered on the screen makes the operator easy to enter the values. • Monitor capability- The monitor will be able to view color image as well as B/W image. One number of monitors will be provided. • Operator Training Program (OTP) – Simulation based operator training program for repeated training & observation • Copy of all software including X-Ray Software with recovery CD must be provided. • 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. • All the systems should be maintained by the OEMs or entities certified by them. • The system should not be connected or accessed through internet by the OEM for any purpose including remote diagnosis.	Comply
H.	Combined Test Piece (CTP)	
The manufacturer shall provide one set of CTP per machine for checking serviceability of the machine by the operator.		Comply
	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.	Comply
	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.	Comply



Method	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	Comply
Results	a. The results of test should be recorded giving information like date, time, machine number and type, supervisors name and other remarks. b. 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.	Comply
I.	Threat Image Projection (TIP)	
	TIP software facility shall be incorporated in the offered X-ray machines to assist supervisors in testing the operator alertness and training X-ray scanner to improve their ability in identifying specific threat object. The system with 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.	Comply
Design of the System	TIP software should be compatible with other X-ray technologies such as automatic reject unit, Dual X-ray screen technologies,	Comply
	automatic threat recognition system etc. All X-ray image functions must be available at the same time along with the TIP.	Comply
Image Library	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.	Comply
	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.	Comply
Time Interval	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 firearms & 25% knives or random etc.	Comply
	Once the screen 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	Comply

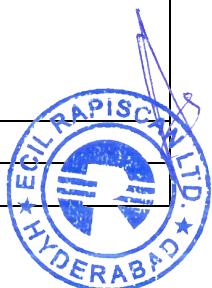


	message shall be visible to the screener.	
System Administration	The threat image projection facility shall have details of user database such as location name, screener name, organization, user ID number.	Comply
	Access to XBIS (X-Ray Baggage Inspection System) shall be restricted only to the authorized individuals. A log-in procedure by means of 'Password' or 'Security Key', enabled for restricted access. 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.	Comply
	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.	Comply
Feed Back Report	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.	Comply
	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 not 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.	Comply
	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.	Comply
	The system shall automatically prepare the daily log of events for each shift and for each Screener performance. TIP log shall include particulars of locations, XBIS, Name of Screener, Time & date of threat image, whether threat image was successfully identified or missed etc.	Comply
	The report on Threat Image Projection system may have date and time (Form-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 device knife or weapon etc.	Comply
	As a standard practice, daily / weekly / monthly report shall be retrieved. Report shall be for any given time and period, as per command.	Comply
	All data should be stored on the system for a minimum period of two months after it has been downloaded. No individual, regardless of access rights to the Threat Image Projection components would delete or amend any of threat Image	Comply



	Protection data or time i.e. Threat Image Projection data on the actual X-ray machine will be read only file.	
	X-BIS shall have automated online framing of suspicious material (e.g. Explosives, high density material, narcotics etc.) for operator. This feature should be in real time requiring no operator involvement.	Comply
	All the system should be maintained by the OEMs or entities certified by them.	Comply
	The system should not be connected or accessed through internet by the OEM for any purpose including remote diagnosis	Comply
	Service engineers of Indian origin will only be deputed by the OEM or entities authorized by them to maintain the system.	Comply
J.	Required Accessories	
	• Explosives Detection Alert • Narcotics Detection Alert • Universal Printer Support • Foot-mat • Power Conditioner • Roller bed Accessories	Comply 500mm each side rollers shall be provided. Foot-mat and power conditioner are not applicable.
K.	Health & Safety	
Health & Safety Requirement:	a. All X-Ray Baggage Scanner offered should meet all applicable international health and safety regulations (notarized copy of proof to be enclosed with the bid). b. Shall not exceed accepted health standard (0.1m R/hr at a distance of 5 cm from external housing). The machine must comply with requirements of health and safety regulations with regard to mechanical electrical and radiation hazards. c. The supplier/manufacturer should furnish relevant certificate from AERB (Atomic Energy Regulatory Board of India) regarding radiation safety. d. The company manufacturing the equipment should have ISO certification for manufacturing and servicing of X-ray Screening machines Should also be compliant with the following (as applicable in the respective country) in case of manufacture in the foreign country – USFDA Federal Standard 21CFR 1020.40 Health and Safety at Work Act 1974 in case the product is manufactured in USA. e. Film safety: ISO 1600 / 33 DIN f. CE or FCC Compliance or IEC Compatibility. g. The machine should be film/ food safe. In other words, photographic films must not be damaged due to X-ray examination. h. 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 furnish NOC from Atomic Energy Regulatory Board of India regarding radiation safety	Comply

	having validity of five years. The furnished original NOC certificate should submit to respective designated officer of HPLNG. i. Codes & Standards: The X-Ray Baggage Inspection System (Medium Size) shall generally conform to all applicable latest edition/revision of Indian/ International Standard (s).	
L.	Certification	
Certification Requirement	The Company manufacturing the equipment should have ISO 9001 certification for manufacturing and servicing of X-Ray screening machines.	Comply
	The supplier/manufacturer must provide a certificate from AERB confirming the machine's compliance with radiation safety regulations.	Comply
	TYPE approval from Atomic Energy Regulatory Board (AERB) of India regarding radiation safety shall be furnished for imported equipment.	Comply
	Film and food safety certificate from an accredited National/ International agency shall be furnished. AERB issued certificate for Film-Safety Guaranteed safety for high-speed films up to ISO1600 is required.	Comply
	Full compliance with the European Union regulations (EC) No. 300/2008, (EU) No. 2015/1998 and Commissions Decision C-(2015) 8005	Comply
M.	Warranty & Defect Liability Period	
Requirement	i. 03 Year warranty period from the date of successful installation & commissioning. <i>The warranty period shall commence only after the complete system has been integrated, commissioned (after liquidation of punch points).</i> ii. The vendor shall ensure regular preventive maintenance of the system at reasonable intervals to maintain optimal performance and reliability. Maintenance visits should be scheduled in coordination with site operations to minimize disruption, and must include inspection, calibration, cleaning, and necessary software/hardware updates at without extra charges. iii. Agency/Vendor shall try to attend the breakdown maintenance within 4 working days by sending their technician to HPCL LNG Limited, Chhara. iv. Recommends to keep the recommended spares in stock to ensure minimum down time. v. Other spares, in case ordered / required under warranty, shall be normally be readily available with Agency/Vendor within a short notice. In case of rarely used items. vi. Agency/Vendor shall deliver those items within a maximum of 4 weeks from the confirmation / acceptance of the prices.	Comply
N.	Installation, Commissioning and Training	
Requirement	a. 30 days from the date of receipt of advice from HPLNG.	Comply



	b. 15 days Installation and commissioning should be carried out by vendor at our site including travel without any additional cost. c. All expenses pertaining to travel, boarding, lodging, local conveyance etc., vendor scope. d. Required equipment: spare parts and accessories for installation and commissioning are included in vendor scope. Vendor has to arrange all above mentioned at our site without any additional cost. e. Installation should be carried out as per our site requirement / convenience. f. Location of the installation shall be decided by designated officer of HPLNG. g. Demonstration to HPLNG security team by OEM authorized vendor at HPLNG premises.	Delivery and Installation will be 08-10 weeks.
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