महानिदेशालय/ DIRECTORATE GENERAL
केन्द्रीय औद्योगिक सुरक्षा बल/ CENTRAL INDUSTRIAL SECURITY FORCE
(गृह मंत्रालय)/(MINISTRY OF HOME AFFAIRS)

ब्लॉक 13 सी.जी.ओ. काम्प्लेक्स/ BLOCK-13, CGO COMPLEX,
लोधी रोड, नई दिल्ली -03/ LODHI ROAD, NEW DELHI

No.W-42026/CISF/TECH/QR-TD/XBIS SS/2024-112200-(E) Dated : 17-07-2025

X-BIS SIMULATOR SYSTEM (OTS) के संशोधित गुणातमक आवश्यकता/परीक्षण निर्देशों के मसौदे पर विक्रताओं की टिप्पणीयों का आमंत्रण।

आपको सूचित किया जाता है कि **X-BIS SIMULATOR SYSTEM (OTS)** के संशोधित गुणातमक आवश्यकता/परीक्षण निर्देशों (**Revised QRs/TDs**) के मसौदें पर फर्मो/विक्रेताओं की टिप्पणियां आमंत्रित है। सभी फर्मो से निवेदन है कि नीचे दिए गए प्रारूप में वे अपनी टिप्पणियां भरकर OEM certificate सहित भेजें:

Qualitative Requirements (QRs)	Trial Directives (TDs)	Comments of Firms

2. आपसे अनुरोध है कि वेबसाइट पर प्रदर्शित होने की तारीख से 15 दिनों के भीतर अपनी टिप्पणियां निम्नलिखित पते पर भेजें। उप समूह कमेटी की बैठक में उपर्युक्त उपकरण के गुणातमक आवश्यकता/परीक्षण निर्देशों को अंतिम रूप देने पर विचार किया जा रहा है।

सहायक महानिरीक्षक/तकनीकी

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DEPUTY COMMANDANT/TECH,
FHQ NEW DELHI,
17-07-2025

Copy to:-

Revised draft Qualitative Requirements (QRs) and Trial Directives (TDs) of X-BIS Simulator System (OTS)

Sl No.	Revised QRs		Revised TDs
	Parameter		
1.	It should be computer based programme specially designed for the training of security personnel. The programme should be focused on making the security personnel efficient to detect and identify the threat objects at the checkpoints. The system should simulate similar environment as if security personnel are checking the baggage with the help of a X-Ray machine.		Board will check practically.
2.	The system should consist of two parts- Theory and Simulator. It should have a comprehensive and interactive training package for training, testing and recording the performance of the screeners. It should have provision for Basic Training. Recurrent Training, Certification Test, Performance Test and item library of at least 10,000 images of a right mix of pertaining to threat bags, suspicious bags and clear bags. These images should form a part of the package.		Board will check practically.
3.	The system should have the capability to be installed on single standalone workstation, a classroom over a dedicated local area network (LAN), over a wide area network (WAN) and at any remote work station through internet. The system should provide all the users (trainee, trainer and administrator) their own unique and secure logins. The system should be able to support a class of minimum 40 concurrent screeners and one instructor and should be upgradable for up to 400 screeners in future. The up-gradation of up to 400 workstations can be either in the existing location or at remote locations connected through LAN/ WAN/ Internet.		Board will check practically.
4.	The system should be provided with all the hardware components required for the purpose with following broad specifications, Client Node/Workstation:		
a	CPU	Intel Core i7(13 Gen) or latest AMD Ryzen 7 (7000 Series) or latest	Board will check practically & also firm will submit OEM certificate.
b	Graphics & Chip Set	Integrated/Dedicated Graphics card with at least 4 GB RAM on Compatible OEM Mother board.	
c	RAM Memory	16 GB, DDR4/5, 2400 MHz or higher. Expandable up to 64 GB as supported by the latest gen processor.	
d	Hard Disk Drive	Minimum 512 GB SDD or Higher along with 1 TB SATA HDD.	
e	Monitor	22" FHD Antiglare monitor or higher with minimum resolution of 1280x1024 pixels. From same OEM as desktop	
f	Keyboard	104 keys. From same OEM as desktop	
g	Mouse	Optical. From same OEM as desktop	
h	Ports	Minimum 6 USB (2.0 or above) Port (With at least 2 in front), 2 ports for microphone, 01 C-Port, and head phone respectively in front. One or more HDMI port supporting latest version of connectivity.	
i	Head Phones	Covering the ear but not of ear plug type.	
j	Cabinet	Mini Tower	
k	Networking facility	802.11 a/b/g/n/ac Wireless networking capability alongside 10/100/1000 on board integrated network port with remote booting facility, remote system installation, remote wake up.	

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l	Operating system	Latest iteration of Windows/Linux Operating System (OS) or equivalent from other OEMs with all the latest system & security updates. The Microsoft authorization to OEM for genuine Windows in case of Windows Operating System (OS).	Board will check practically & also firm will submit OEM certificate.
m	Power management	Screen Blanking, Hard Disk and system Idle Mode in Power On, set up Password, power supply SMPS surge protected.	
n	Preloaded software	MS Office should be provided as preloaded software along with latest iteration of desktop antivirus with 360 deg protection.	
o	Support	For 7 years for up-gradation of technology	
p	Printer	Laser printer-colour with scanner facility, Paper size-A4, DPI 600x600, speed-20 ppm BW, C-Port, 1 USB Memory 16 MB, Network card 10/100, duplex, Wi-Fi Connectivity	
q	UPS	Online UPS, 2 X 3.0 KVA, Single phase AC Input and single phase AC output with back up time of 120 minutes.	
5.	**Specification of Server:**		
i.	Housing types	Rack/Tower	Board will check practically & also firm will submit OEM certificate.
ii.	Processor type	Intel® Xeon® Silver processor base 2.2 GHz (Scalable type) equivalent or higher from other OEM with RAM minimum 64 GB DDR4 or higher.	
iii.	Chip Set	Intel® C624 equivalent or higher from other OEM	
iv.	Processor Quantity	2 Nos	
v.	Processor core available	10 or more core per processor	
vi.	Processor cache	38.50 MB L3-8.25 MB L3, depending on model SKU	
vii	Processor Speed	3.6 GHz, maximum depending on processor SKU	
viii	Slots	4 PCI/PCI Express	
ix	Memory	1.0 TB DDR4 DIMM	
X	Memory Expendable upto	8 TB	
xi	Memory slot	24 DIMM slots (12 DIMMs pre CPU)	
xii	RAID Controller supported	0/1/5/10	
xiii	SATA Controller	1Xsata Channel for ODD	
xiv	Monitor	22" or higher FHD Antiglare monitor with minimum resolution 1280x1024 pixel	
xv	Drive Bays	4 Bays (Minimum 2 internal)	
xvi	Storage Drive Bays	3.5 inch or 2.5 inch hot-plug SAS/SATA	

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xvii	Accessible drive Bays	1x5.25/0.4-inch for RW/DVD	Board will check practically & also firm will submit OEM certificate.
xviii	Ports	6 USB (2.0 or above) port	
xix	LAN Controller	"4x1Gbit/s Ethernet (Rj45) 2 x 10 Gbit/s SFP+"	
xx	Operating system	Should support Window 2022 or latest; or Linux	
xxi	Power	Hot-plug Dual power.	
xxii	Anti Virus	Latest iteration of Server antivirus with 360 deg protection.	
xxiii	Virtualization	VM Ware or any other equivalent virtualization system/software/facility on board	
xxiv	Support	7 Years for Technical Up-gradation	
xxv	The above mentioned configurations of the server & its client nodes/workstations are minimum standards. These are not exhaustively listed and other configuration details of client node and server system will be standard or higher so as to efficiently support each and every individual nod independently with the client module as host and an independent server module with the X-BIS Simulator system with concurrent service to sharing of resources with minimum of 40 to maximum of 400 client nodes.		
	Training requirement:		
6.	The system should be designed to train the security personnel on all such make/model of X-Ray machines in use worldwide. It shall be machine independent and support forward and backward compatibility. The simulator should include basic training lessons on the fundamentals of evaluating the X-Ray image. It should enable trainees to learn the various objects within the X-Ray image as well as the system should show the actual picture of what are the objects inside the whole bag, including all objects (threats and non-threats).		Firm will submit OEM certificate
7.	The System should have both dual view image and CT-X image systems and their features.		Board will check practically.
8.	The software should provide tailored training programme as applied to TIP (Threat Image projection) in the X-BIS. In this, the software should contain AI-powered tools which automatically detects the weak areas (Detection of prohibited items) of a trainee and enhances the number of such threats automatically so that more practice can be given to a trainee in area of weakness.		Board will check practically.
9.	The system should have the feature of ongoing training i.e. the trainee should be able to resume his class where he was last at.		Board will check practically.
10.	The system should have the ongoing certification process to check the ability level of the screener to identify threat images. It should have multi-level class structure with gradual increase in difficulty and complexity levels i.e. Beginner, Intermediate, Advanced and Expert. The difficulty, complexity levels and the mix of bags shall be as per global standards followed by OEM, however, in case of any change required during the warranty or AMC period, difficulty and complexity of the levels shall be configurable by OEM.		Board will check practically.

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11.	The system should be able to educate the screener from 0% level to an approved level within 40 teaching hours. It should also have the flexibility for meeting the training requirement of various categories of screeners based on their competence level i.e. from novice to expert.	Board will check practically.
12.	It should have various tests designed to test the level of trainees at the start and end of the course. It should also have progress charts right from the beginning to the end for evaluation of the expertise achieved by the trainee during the course.	Board will check practically.
13.	If the trainee fails to identify/ interpret a threat object image in a bag in a particular class level he/she shall not be auto promoted to the next level. He/She shall be subjected to interpretation of that type of images multiple times and until and unless he successfully interprets image in his/her all subsequent attempts he/she shall remain in that class or level.	Board will check practically.
14.	The appearance of image in tutorials/practicals should be random and not sequential. Images of the defined difficulty shall appear in the random manner for evaluation or interpretation. If a screener fails to identify or interpret a particular random image of threat object it should reappear for interpretation in the midst of subsequently appearing images. The screener should also not get the same images if he practices/appears for the tests on the software for certain number of times.	Board will check practically.
15.	The tutorial and test design in the system should also contain a module on work related questionnaire. There should be provision of both Hindi and English language for MCQs. The test system should have an option of objective type of question- answer pattern and should be fully computer based. It should also contain test module on the theoretical knowledge part of the training.	Board will check practically.
16.	The system should support image analysis on dual view basis and 3D i.e. image gallery must have images captured in at least two view points from the screener point of view and 3D images of CT-X.	Board will check practically.
17.	The system should evaluate the student according to the correct location of the position of threat objects, type of object, correct naming and total time taken for identification.	Board will check practically.
18.	The system should have provision to programme the time limit by the administrator for detection of threat objects.	Board will check practically.
19.	The system (both theory and simulator) should have multilingual contents i.e. in Hindi & English.	Board will check practically.
20.	The system should have the training module enabling data collection and analysis of student results to make decision on the following points:- a) Requirement of further training in various categories of threat objects, establishing norms, per bag. b) X-Ray BIS image interpretation skills. c) Processing time and operational speed. d) Establishing performance standards.	Board will check practically.
21.	The system should have the feature of projection of theory and simulator sessions through a LCD/Multimedia projector in a class room.	Board will check practically.
22.	Instructor should be able to insert and withdraw images from the image library as and when desired (including during conducting test).	Board will check practically.
23.	The systems should have provision to alter the classification of any item in the database and to choose the expected action required by the student.	Board will check practically.

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24.	The system should allow the trainer to build the lessons in a progressively difficult manner.	Board will check practically.
25.	System should not allow any unauthorized tampering by incorporating access level restrictions. The system should have a user management module that allows the trainer to easily perform certain tasks related to adding and modifying the groups and trainees within the user database.	Board will check practically.
26.	The system should automatically conduct the training and assessment and keep a separate record of each student. These records should be retrievable.	Board will check practically.
27.	The system should be able to generate reports (PDF and Excel formats) in various analytical forms, course wise, session wise, bag wise, group wise, and threat recognition wise etc.	Board will check practically.
	IMAGE GALLERY:	
28.	The system should provide images of threat and non-threat objects. The image gallery shall have threat images of all possible dimension of cabin baggage.	Board will check practically.
29.	Images of Guns/Fire Arms made of organic materials and IEDs of various types and shapes should be available in various shapes, sizes and orientation.	Board will check practically.
30.	The resolution of image should be minimum 1280x1024 pixels or higher. The image produced by the software should be as real as it is produced on monitor of real X- BIS during operations at Security Hold Area (SHA). High resolution images shall not have the effects of pixel stress i.e. image gets blurry, grainy or pixilated when zoomed etc. The image gallery shall contain real X-rayed images of baggages. Their reproduction on the monitor should be as natural as that are in real situations. Further, the resolution of the images should be customizable as per the requirement of the user.	Board will check practically.
31.	The System should have the facility of uploading the locally captured images by the administrator/ Instructor. The uploaded images by the administrator must not form part of the master library of concerned OEM by any means (offline/online). It shall also have a facility by which some classic/exemplary images can be booked marked and retrieved hassle free subsequently.	Firm will submit OEM Certificate.
32.	The system should be able to simulate all the features like zoom, magnification, image enhancement features, black & white pseudo colour, organic & inorganic material discrimination and all other aspects of X-Ray screening procedure as per the major features of specific keyboard as available in the X-BIS machines at Indian Airports. Keyboard of the actual X-BIS machine should be provided.	Board will check practically.
33.	The system should allow viewing of images from different angles.	Board will check practically.
34.	The images should be both coloured and black & white.	Board will check practically.

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35.	The images should include items like e-cigarette, satellite phone, tools, blades, lighters, blunt weapons, dummy weapons, disabling, and incapacitating weapons and images of all restricted items enumerated in relevant circulars/orders of different Govt. of India Ministries and their agencies including BCAS (AvSec Order 11/2024 and its further addendums) and such other items prescribed as prohibited for carry on (cabin) baggage under Indian regulations time to time.	Board will check practically.
36.	The images should be of actually scanned bags. There should also be provision for reassembling of images which the instructor can reassemble for different categories of images and not from images of individually scanned items assembled to merely re-assemble a real bag.	Board will check practically.
37.	The system should separately incorporate the feature of Threat Image Projection (TIP) for training of students on this aspect in accordance with the relevant guidelines of the concerned Ministries/Departments/Agencies of Govt. of India. The threat images for the above purpose may include, inter alia, IED, Guns, Knives, Parts of IEDs, Provision of creating Virtual bags by the user and uploading on server. Emerging threat items can also be added. Provision of percentage of the threat items to be decided by the user.	Board will check practically.
38.	The system should display X-BIS images at the same resolution as that of an X-BIS machine used in India or other countries and minimum resolution of image is 1280x1024 pixels.	Board will check practically.
	OTHER FEATURES:	
39.	The system should be compliant to relevant circulars/orders related to X-BIS issued by the concerned Ministries/Departments/Agencies of Govt. of India.	Firm will submit OEM Certificate.
40.	The firm should give the evidence of executing similar projects with National/International Aviation Security clients of high repute.	Firm will submit OEM Certificate.
41.	Installation & 7 year maintenance of the entire system (i.e., Both Software and Hardware) should be provided free of cost. Complete software shall be guaranteed against all defects/bugs and for a satisfactory performance, as per all the listed features during the period of contract.	Firm will submit OEM Certificate.
42.	No license fee for the software should be required to be paid by the purchaser for the entire warranty period of seven years. There should be an online facility to check the specification as well as warranty and registration at OEM website.	Firm will submit OEM Certificate.
43.	On installation, free of cost training should be provided by the supplier to 10 Instructors per location for a period of 5 working days of 8 hours duration each. Further, the free of cost training should be provided by the supplier upon every upgradation.	Firm will submit OEM Certificate.
44.	The system and software updates and upgrades should be provided free of cost upto 7 years as and when they are available either with supplier or Original Equipment Manufacturer (OEM). Online driver and software updates facility should be available.	Firm will submit OEM Certificate.

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45.	Training on XBIS Simulator should essentially cover operations, maintenance, node/client service/equipment management & maintenance, Server Operating System (OS) management & maintenance in respect of management & running of XBIS Simulator Client-server configuration and finally system resources management.	Firm will submit OEM Certificate.
46.	The software should be able to upload real images from the X- BIS operational in the Security Hold Area (SHA) and can superimpose the threat images on them for training, so that the screener can be trained on images of bags being carried out by passengers and may not rely solely on images available in the software. The supplier will update the image library on quarterly basis for a period of 7 years. The images shall be arranged by the supplier from Indian and Foreign airport facilities with X-BIS operation. Minimum 500 images of different threat objects and shall be updated once in every 6 (six) months every year. If possible, an additional library of images may be arranged by the supplier for provision of keeping extra images of different threat baggage.	Board will check practically.
47.	The system &/or its individual components and/or features shall be scalable, machine independent and should come with forward or backward seamless integration facility.	Firm will submit OEM Certificate.
48.	The software should not be programmed to shutdown automatically if the purchaser desired not to renew the license of the software or AMC for the hardware with the suppliers.	Firm will submit OEM Certificate.
49.	To enable the maximum value to be derived from the training, It is mandatory that all the necessary training documentation and materials (e.g. software documentations system handbooks, training manuals, Video training manual) shall be made available to user/client.	Board will check practically.

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