Government of India
Ministry of Finance, Department of Revenue
Directorate of Logistics
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INVITATION FOR EXPRESSION OF INTEREST (EOI) FOR X-RAY BASED AIR CARGO INSPECTION SYSTEMS

EOI No. 441/31/2016/EQ-ACIS   **DATE: 30.01.2018**

Period during which the EOI document will be available on website www.cbec.gov.in, www.dolcbec.gov.in and www.eprocure.gov.in	Time 1400 Hrs, Dated 30.01.2018 Time 1300 Hrs, Dated 15.03.2018
Closing date and time for receipt of EOI online	Time 1300 Hrs, Date 15.03.2018
Place of receipt of EOI	Online www.eprocure.gov.in
Last date for submission of completed EOI document	Time 1300 Hrs Date 15.03.2018

Government of India
Ministry of Finance, Department of
Revenue Central Board of Excise
&Customs Directorate of Logistics
4th Floor, Lok Nayak Bhawan, Khan Market Lok Nayak Bhawan, New Delhi-
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INVITATION FOR EXPRESSION OF INTEREST

Dated: 30.01.2018

Directorate of Logistics, New Delhi invites Expression of Interest (EOI) for X-ray based Air Cargo Inspection Systems

1. The Directorate of Logistics, New Delhi is involved in procurement, deployment and maintenance of anti-smuggling equipments required by the field formations of Central Board of Excise and Customs. It is proposed to deploy X-ray based Air Cargo Inspection Systems, for non-intrusive inspection of the contents of air freight containers, unit load devices, pallets received at Air-Cargo Complexes etc. The objective is to verify the correctness of declarations of the consignments and to detect presence of undeclared or mis-declared items or items wrapped/concealed inside other items or cavities; such as weapons, explosives, narcotics, currency notes, IED circuitry, chemicals etc., without a need to open and physically examining the consignments.

2. Expressions of Interest are invited from reputed manufactures / suppliers for supply of X-ray based Air Cargo Inspection Systems along with essential accessories for deployment at Air Cargo Complexes functional under various Customs field formations. Closing date and time for receipt of EOI online at **www.eprocure.gov.in** is 15.03.2018 at 1300 Hrs.

3. The detailed proforma – Annexure 'A' giving broad scope of work, general requirements, system requirements, specifications, imaging performance and other requirements can be downloaded from **www.eprocure.gov.in**, **www.cbec.gov.in** and **www.dolcbec.gov.in**.

Sd/-

(COMMISSIONER)
Directorate of Logistics

F.No.441/31/2016/EQ-ACIS
Government of India
Ministry of Finance
Department of Revenue
Central Board of Excise and Customs
Directorate of Logistics
Customs and Central Excise
* * * *

New Delhi, the 30 January, 2018

EXPRESSION OF INTEREST FOR SUPPLY OF
X-RAY BASED AIR CARGO INSPECTION SYSTEMS

1. The Directorate of Logistics, Customs and Central Excise provides logistics support to the field formations of Customs and Central Excise in India. The Directorate is examining the feasibility of deploying X-ray based inspection systems for non-intrusive inspection of the contents of air freight containers, unit load devices, pallets received at Air-Cargo Complexes etc. The objective is to verify the correctness of declarations of the consignments and to detect presence of undeclared or mis-declared items or items wrapped/concealed inside other items or cavities; such as weapons, explosives, narcotics, currency notes, IED circuitry, chemicals etc., without a need to open and physically examining the consignments.

2. Expressions of Interest are invited for supply, installation, commissioning and testing of X-ray based Air Cargo Inspection System (ACIS) along with essential accessories. Recommended specifications for ACIS are detailed below. Prospective suppliers may suggest modifications /additions to these specifications, as found necessary, along with the explanations for suggested changes.

Sl. No.	Recommended Specifications	Confirmation / Comments/ alternate specifications by Vendor
2.1	**Scope of Work**	
	i) Supply, installation & commissioning of ACIS;	
	ii) On-site training of staff and Maintenance during warranty period of two years;	
	iii) Comprehensive Annual Maintenance Services for a period of 8 years after warranty.	
2.2	**General Requirements**	
	i) ACIS will be used for the scanning of air freight containers/ULDs/ pallets used by different airlines/ air cargo handlers. *[Supplier to indicate types, dimensions, weights, etc. of containers/ pallets/ ULDs that can be scanned through the proposed machines]*	
	ii) ACIS will be installed in the general areas of existing operational sites in Air-Cargo Complexes. *[Supplier to indicate the space requirement (length x breadth x height) to install, operate and maintain the machines; floor loading per unit area due to weight of the machine should also be mentioned]*	
	iii) System should be designed to work with the commercial electrical power supply available in India *[Supplier to indicate electrical power requirement in terms of voltage, 3-phase / 1- phase 50 Hz AC and wattage]*	
	iv) The machine & its systems should be designed to operate at temperatures of 0° C to 50° C, Relative Humidity: 5 to 95% non-condensing and storage temperatures of (-) 10° C to 55^oC, and no deviation in the performance parameters should be noted. *[Supplier to indicate any specific environmental condition required to be provided at the site of installation]*	
2.3	**System Requirements**	
	i) The system should have computer image processing, so that suspect items hidden or masked by any other object are identified and highlighted on the monitor screen for the operator. *[Supplier to indicate features available for this]*	

	ii)	Scanning (X-Ray) system should be an efficient and effective system, based on latest and proven technology, and should be ideally suitable for air-cargo terminals for screening of air freight containers/ ULDs/ pallets of various sizes. *[Supplier to provide the details of the technology deployed in the proposed machines and how it is suitable for the intended application.]*	
	iii)	System should permit rapid and reliable X-ray examination of extremely opaque objects and at the same time show on the monitor screen details of very thin wires, electrical circuitry, chemical power in pouch, currency notes, etc. hidden/masked in other objects. *[Supplier to indicate features available for this. Supplier to describe the type & energy of X-ray source/generator and type of detectors deployed to meet above objectives]*	
	iv)	ACIS should have real time image processing, including automated on-line framing of suspicious materials without any operator involvement. *[Supplier to indicate features available for this]*	
	v)	Protective construction for ACIS should be at least IP 54, while that for conveyor unit should be IP 65 or better. *[Supplier to indicate the IP ratings for different components]*	
	vi)	The design, material selection, manufacture, inspection, testing and its reliability evaluation should ensure availability of 95% or better up time of the machine. *[Supplier to indicate mean-time-between-failure for the proposed machine]*	
	vii)	System should have safety feature, surveillance devices, interlocks, emergency stops, monitoring devices, etc. both inside and outside of the machine. *[Supplier to indicate the details of provisions available on the machine]*	
	viii)	System should have feature to alert the operator in case contraband/ targeted commodity is encountered during scanning. *[Supplier to indicate the commodities which could be identified with the features available or could be developed]*	
2.4	**Specifications of ACIS**		
	i)	Features: *[Supplier to provide the details]*	
		(a) Tunnel size (L x W x H):	
		(b) Conveyor load capacity:	
		(c) Cargo orientation for scanning:	
		(d) Motorized Load-unload conveyor length (I/O side):	
		(e) Motorized conveyor height (I/O side):	
		(f) Scan area (W x H):	
		(g) Scan height (minimum):	
		(h) Mode of scanning:	
		(i) Image generation (single view/ dual view):	
	ii)	Material Discrimination: 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 among organic, in-organic, metallic, non-metallic, intermediate materials, including explosives and narcotics. *[Supplier to indicate features available for this purpose]*	
	iii)	Facility of image processing and enhancement with features like pseudo colour, image zoom, contrast stretching, variable contrast, inverse video, edge enhancement, boxing & highlighting, indication of non-penetration zone, etc. should be available. Image features should be keyboard controllable. Step less or dynamic zooming is preferred. *[Supplier to indicate the available features]*	
	iv)	Systems should have high performance imaging capability. In addition to achieving the required detectability, contrast sensitivity and spatial resolution, images are to appear clear & focused and with sharp edges & correct aspect ratio. *[Supplier to indicate the available features]*	

	v)	Threat Image Projection (TIP) System software to be incorporated in ACIS operation. Threat Image Projection data on the actual X-ray machine will be read only file. *[Supplier to indicate the available features]*	
	vi)	If the machine fails to penetrate a particular item then an alarm (both visual & audio) should be generated to notify the operator. *[Supplier to indicate the available features]*	
	vii)	The detection of materials as specified in the manifest should be reflected in the quality of image that the operator sees on the screen and should indicate correct shapes, density as attenuation of signals. Features available to operator should enable him to perform various functions through simple menus. *[Supplier to provide details of available features including image depth in bit]*	
	viii)	System ergonomics should be to avoid fatigue, strain on operators' vision and ensure ease of performance. *[Supplier to indicate numbers, features & function of work stations].*	
	ix)	The operating system of the workstation(s) should be in robust design for 24 x 7 x 365 days operations. *[Supplier to indicate OS used and the tasks which are performed by application software]*	
	x)	Machine should be network ready for importing data into the system and exporting data & images from the system to remote locations. *[Supplier to describe available features]*	
	xi)	All data and images should be archived on a unified storage, processing platform enabling them to be processed on any of the work stations. *[Supplier to indicate the details of the same]*	
	xii)	Data management servers should be available to enable connectivity between the sites of ACIS installation and remote central location(s) for storage, retrieval and on-line/off-line processing of images. *[Supplier to indicate the provisions and requirements for the same]*	
	xiii)	Scanning should be safe for food, beverages, pharmaceuticals, chemical, liquids, gases, electronic/ digital-ware, etc. The machine should also be film safe. *[Supplier to indicate conformity of requirements and also to indicate the dose to cargo per scan]*	
	xiv)	The machine should be completely self-shielded. Radiation levels should not exceed accepted health standards. *[Supplier to described the shielding arrangement provided and also to indicate open radiation exclusion zone (L x W), required if any, beyond the machine outer dimensions]*	
	xv)	Radiation dose, if any, to the operators of the scanning machine should well within accepted health standards. *[Supplier to indicate expected dose to the operator in an hour]*	
	xvi)	The machine should be conveyor type with adjustable speed. It should be possible to reverse the direction of rotation of the conveyer to retrieve the object for rescanning. *[Supplier to indicate the optimum speed to achieve quality imaging]*	
	xvii)	Features, if any, to integrate the machine with an automated air-cargo handling system. *[Supplier to provide the details of the feature]*	
	xviii)	It should be possible to capture container/ ULD identification number/ details and tag it to its scanned image. *[Supplier to indicate the details of the feature]*	
2.5		**Imaging Performance *[Supplier to indicate]***	
		Penetration (equivalent of steel):	
		Useful penetration, if applicable (equivalent of steel):	
		Single wire resolution/ wire detectability (in air) :	
		Thin metal imaging (minimum thickness of steel strip):	
		Thin organic imaging (minimum thickness of plastic sheet):	
		Spatial resolution (Horizontal/Vertical) :	
		Contrast sensitivity:	
		IQI sensitivity:	

	Material discrimination: as under Para 2.4(ii)		
	Evaluation of imaging performance (as per specific design Combine Test Piece or as per ANSI N 42.46 / IEC 62523 or any other):		
2.6	**Other Requirements**		
	i)	Make & model of ACIS being proposed. In case the respondent is not an OEM, confirmation that the respondent is duly authorized to represent the concerned OEM.	
	ii)	Time required to supply and commission the ACIS from the date of placement of order.	
	iii)	`No-objection certificate (NOC)' or `Type approval certificate' as the case may be, from Atomic Energy Regulatory Board (AERB), Govt. of India will be required for the offered model of machine.	
	iv)	Details of earlier supplies of similar ACISs made in India or abroad.	
	v)	Possibility of arranging a demonstration of the proposed machine in India or abroad.	
	vi)	Budgetary quote of the offered ACIS (in Indian Rupees or any freely convertible currency) including the CIF costs for delivery at the site, the costs of installation, commissioning, etc.,	
	vii)	Comprehensive Annual Maintenance Charges (may be indicated as % of cost the machine).	
	viii)	Technical Brochures to be attached.	
	ix)	Any other additional features, information, etc. that are considered relevant and wish to be highlighted.	

3.   Expressions of interest should reach the undersigned by **March 15, 2018 (1300 hrs)**.

(Sandeep Prakash)
Commissioner