

बिहार पुलिस मुख्यालय, पटना

निविदा आमंत्रण सूचना सं०-०७/१२-१३

1. विभाग का नाम- पुलिस महानिदेशक का कार्यालय, बिहार, पटना ।
2. विज्ञापनदाता का पदनाम एवं पता- पुलिस महानिरीक्षक के सहायक (क्यू०), बिहार, पटना ।
3. निविदा प्राप्ति की तिथि एवं समय- दिनांक- 17/08/2012, 14.00 बजे तक ।
4. निविदा खोलने की तिथि एवं समय- दिनांक- 17/08/2012, 16.00 बजे ।
5. निविदा प्राप्ति का स्थान- पुलिस महानिदेशक का कार्यालय, बिहार, पटना के कार्यालय भवन के मुख्य द्वार पर रखी निविदा पेटी ।
6. कार्य का ब्यौरा-

S.N.	Item name	Specification	Qty
1	2	3	4
1	Night Vision Goggles	Specification may be obtained from this office. or on website www. biharpolice. bih.nic.in	50
2	Hand Held Metal Detector	Specification may be obtained from this office or on website www. biharpolice. bih.nic.in	42
3	Deep Search Metal Detector	Specification may be obtained from this office. or on website www. biharpolice. bih.nic.in	7
4	Fixed DFMD	Specification may be obtained from this office. or on website www. biharpolice. bih.nic.in	57
5	Advanced Weapon Simulator- 8 Lane System	Specification may be obtained from this office. or on website www. biharpolice. bih.nic.in	1
6	Operational Kit for BD Unit	Specification may be obtained from this office. or on website www. biharpolice. bih.nic.in	15
7	Bomb Lifting Robot	Specification may be obtained from this office. or on website www. biharpolice. bih.nic.in	1
8	Non-Linear Junction Detector (NLJD)	Specification may be obtained from this office. or on website www. biharpolice. bih.nic.in	2
9	Explosive Vapour Detector	Specification may be obtained from this office. or on website www. biharpolice. bih.nic.in	2
10	Baggage Scanner	Specification may be obtained from this office. or on website www. biharpolice. bih.nic.in	2
11	Explosive Detector (With liquid and vapour both)	Specification may be obtained from this office. or on website www. biharpolice. bih.nic.in	10

निविदा के नियमों, शर्तों की जानकारी के लिए अधोहस्ताक्षरी के कार्यालय में, पुलिस महानिरीक्षक के सहायक (क्यू०) बिहार, पटना के दूरभाष सं०-०६१२-२२१५२९५ पर सम्पर्क किया जा सकता है, कार्यालय के सूचना पट तथा वेबसाइट www.prdbihar.org or www.biharpolice.bih.nic.in पर देखा जा सकता है ।

(क्यू०),

पुलिस महानिरीक्षक के सहायक

बिहार, पटना ।

TERMS & CONDITIONS OF TENDER NO. 07 /2012-13

- 1-Tender of the firms situated inside /out side the State will be accepted with the condition that if their tenders are approved, the firm shall get itself registered with Commercial Tax Department, Bihar before the purchase order is issued.
- 2-The tender should be submitted in two parts, (1) Technical bid and (2) Financial bid duly sealed in two separate envelopes super scribed as technical bid and financial bid. The rates shall be quoted in the Financial bid. All charges like BST/CST/Service Tax /VAT etc. shall be clearly mentioned but net rate (in figures and words) including all taxes and duties shall be quoted. Vague offers like indicating taxes "as applicable" will be summarily rejected. There shall be no cutting, over writing or correction on the rates. All relevant papers/certificates/specifications etc. of items should be enclosed in technical bid.
- 3-The technical and financial bids for each item **should be submitted separately in separate envelopes.** The technical and financial bids for more than one items submitted together in the same envelope shall be summarily rejected. If the financial bid is submitted in the same envelope containing the technical bid then also it shall be summarily rejected.
- 4-The technical and financial bids should be put in two separate sealed envelopes and the envelopes should be marked "Tender No 07/2012-13" (Technical Bid) and marked "Tender No.--07/12-13" (Financial Bid) along with the name and address of the firm. The sealed envelopes containing the technical and the financial bids should be sent in an another sealed envelope which should be marked as marked " Tender No 07/2012-13". This envelope should not bear the name and address of the firm.
- 5-Up-to-date Income Tax returns (Saral) and a photocopy of PAN of the participating firm should be submitted with the technical bid. I.T. return should have stamp and signature of the concerned department, whether filed manually or electronically.
- 6-The turn over of the firm for the 2011-12 financial year should be at least double the amount of the supply order which is being issued. A copy of the profit and loss a/c of the firm for the 2011-12 financial year certified by a Chartered Accountant should be submitted along with the tender. If the tenderer is authorised dealer and authorised supplier of manufacturing firm, then the certified details of the turnover of authorizing firm will be accepted.
- 7- If there is some discount in the price of any item, it should be deducted from price itself and should not be quoted separately.
- 8-If the product is on DGS & D rate contract then a copy of the contract be attached and pricing be done with all taxes including Bihar Sales Tax.
- 9-A copy of test report for the product issued by a competent authority with in last one year should be attached with the technical bid. In case of BP items test report of TBRL will only be accepted.
- 10-All items will be received at Central Clothing Store, Patna, therefore price should be quoted for Central Clothing Store, Phulwarisharif, Patna.
- 11-Firms will have to deposit a sum of rupees 25000/- (Twenty five thousand) only as an **earnest money in the form of postal saving passbook / NSC/Bank draft duly pledged in favour of the undersigned along with the quotations.**
- 12-Technical bids will be opened on 17/08/2012 at 16.00 PM in the office chamber of the undersigned. Representatives of the tenderers may remain present at the time of opening of the technical bid.
- 13-The technical bid will be opened first and if it is found as per tender conditions, it will be put before Central Purchase Committee. The firm may have to participate in discussions with this committee and / or be required to demonstrate the quoted product. Any paper / document will not be accepted after opening the tender.
- 14-Successful firm will have to enter into an agreement after depositing a sum of 5% of the total value of the stores as security money in the form of Postal Saving Pass Book/NSC/Bank Guarantee duly pledged in favour of undersigned.
- 15-The firm will be required to provide satisfactory after sale service.
- 16-The firm will be required to supply all the items within 90 days from the date of placing order.
- 17-Payment for the delivered items will be made after receiving OK report from the Inspection

Committee.

18-The firm whose quotation is approved shall be issued A/T. Purchase order shall be issued only after the firm enters into an agreement with the undersigned. Terms & Conditions of the agreement shall be intimated in the A/T.

19-Only such manufactures/authorised dealers and authorised suppliers of manufacturing firm who fulfills the above conditions should quote for supply of items.

20-Updated Technology at the time of supply change in condition.

21-Hands on Training of the user group by the firm shall be ensured.

22-D.G.. of Police Bihar, Patna reserves the right to reject any or all the quotations partially or fully

without assigning any reason thereof.

23-The Quantity indicated may increase or decrease at the time of issuing purchase order.

A I G of Police (Q)

Bihar,Police.

Technical Specifications of Night Vision Goggles

(A) Technical Parameters:-

1	The Night Vision Goggles should be Gen-3 with High quality advanced Image Intensifier Tube which should have Black & White phosphor/ image and no green phosphor.	
2	The Night Vision Goggles should have facility of two positions of IR.	
3	The Night Vision Goggles should have facility of instant IR ON/OFF.	
	i	Magnification 1X
	ii	Intensifier Tube Gen 3 Black and White. No Green Phosphor.
	iii	Detection Range 150 M.
	iv	Field of View 40 Degree (1x)
	v	Range of Focus 0.25 Meter to infinity.
	vi	Diopter Adjustment -6 to +5
	vii	Weight Less than 750 gram with 1X.
	viii	Power Supply Two 1.5 Volt AA Size.
	ix	Automatic Bright Light Shut Off Standard.

(B) Constructional Features:-

1	The Night Vision Goggles should be rugged and versatile design.
2	Super fast lens system to provide the user with a clear and sharp image.
3	Dual eye viewing system for long viewing sessions.
4	Built in IR Illuminator lets you see even in total darkness (with two positions for long and short range).
5	Easy to use digital controls.
6	Battery life should be minimum 10 hours.
7	IR on indicator- warning light ON in the field of view.

Technical Specifications of Hand Held Metal Detector

1	Dimension:- Length- Maximum 400mm Prob Width- Maximum 80mm Body Width- Maximum 40mm
2	Weight- With Battery 500 grm.
3	Should work on rechargeable Ni cd battery (1.2V x 3 Nos.) and A A size dry cell (1.5v x 2 Nos.). Should run for minimum 50 hours on chargeable battery and dry battery both. Built in battery charger.
4	Battery Protection- To be provided against damage due to reverse polarity with a Battery Charging of inductive charger.
5	Indication- LED based audio and multiple indications for: Switch on, Metal detection, Low battery indication and charger.
6	Operation- Operation: Press to on Switch, visual alarms and audible alarm built in Buzzer High Intensity pulsed acoustic alarm Audio fixed 75db (A) 1m.
7	Construction- Should be rugged and impact resistant ABS moulded casing.
8	Scan rate- Minimum 3" to 24" per second.
9	Detection: Should be able to detect ferrous and non ferrous metals, must detect copper wire bunch and must detect paper pins. Pistol .22 at min 6" Cartridges .22 at min 2" Razor blade at min 1" Paper Pin- 25mm One Rubber Coin- 50mm
10	Tunings: Automatic to ensure equal result on wider range of Metal and Alloys.
11	The Firm should be able to provide the following as applicable along with the equipment- Cleaning Kit, Technical Manual giving full description of the items and User hand book.
12	Temperature: 10 degree to 55 degree Cel.
13	Humidity: 0-95%
14	Warranty: 3 (Three) years
15	Should undertake to provide maintenance/ spares support for a period of minimum 7 years.

Technical Specifications of Deep Search Metal Detector

1	Physical Characteristics- The detector and its accessories should be lightweight and made of non corrosive (exceptionally corrosion protected) material, aluminum, carbon fiber, glass fiber etc.
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2	Weight and Dimensions:-
(a)	Length of Telescopic Rod- Search head should be connected with a telescopic rod, which should allow prolonged usage by the operator in kneeling, standing and lying position without causing undue fatigue of both minimum and maximum possible extension. The length of telescopic rod should be (i) Collapsed 1000mm +/-5% (ii) Extended 1620mm +/-5%
(b)	Weight-
(i)	Telescopic pole and search head maximum- 2 Kgs
(ii)	Electronic control unit (maximum) – 2 Kgs.
(iii)	The maximum operating weight of the equipment including telescopic pole, search head and electronic control unit Maximum 4.5 Kgs
(iv)	Bag weight including accessories of detector- 5 Kgs.
(v)	Total weight of the equipment including carrying case- Maximum 13 Kgs
©	Search Head: The Search Head may be in any shape i.e. circular, oval, rectangular etc. However the total area of search head should be between 210 Sq cm to 710 Sq cm.
3	The electronic circuit should be hermetically sealed and separate from batteries so that in case of battery leakage the electronic circuit is not damaged. The manufacturer will provide a certificate from a recognized laboratory for the same. The manufacturer shall provide a compliance certificate for the same.
4	Detector design should allow its use both with and without earphone. The equipment must have volume control facility. Detector must give detection sound when operated without earphone. If earphone is used the detection sound should not be heard in open but only in earphone.
5	Must have a power control and sensitivity control to detect all type of ferrous/ non ferrous metals.
6	Must have visual display, LCD/LED bargraph to be enough visible in day light.
7	Must have self-compensating capability to detect the metals in different types of terrain/soil/water (including salt water). Certification to this effect will be provided by the manufacturer from a recognised laboratory. Compliance certificate shall be provided by the manufacturer for the same.
8	Detection Capabilities:-
(a)	Should detect all ferrous and non ferrous metals.
(b)	Must be capable of detecting buried mine/metals in:-
(i)	All types of soils including laterite (Ferrous and aluminium oxides) (Certificate required from approved testing facilities)/Compliance certificate shall be provided by the manufacturer for the same.
(ii)	Under water 1 ft.
(iii)	In all weather condition from arid to pouring rain. The equipment should meet international standard IP-67)/ Compliance certificate shall be provided by the manufacturer for the same.
(iv)	Over the temperature range of -20 degree to +55 degree C (Certification required from approved testing facilities)/ Compliance certificate shall be provided by the manufacturer for the same.
(v)	Metal near metal: The requirement should be able to differentially detect two detonators No. 27/33 placed at a distance of 01 ft apart.
(vi)	The equipment should detect Metal inside metal. It should give different tone when Metal added.
(vii)	The equipment should give different tone according to size of metal.
(viii)	Should have facility advance low battery indication audio/visual, 4 hours before low battery cut of circuit.
9	Detection Setting Procedure: The Detector should be operational and capable of being set for operation in air/ metal free soil within 20 seconds of switching on of setting switch. Trigger level/ threshold control to be provided.
10	Detection Sensitivity:-
(a)	The size and shape of the objects with which the tests will be conducted are as under:
(i)	0.15 gm metal- 1 inch x 1 inch tin foil
(ii)	50mm nail- Thickness 03mm and dia of head 06mm.
(iii)	Salty water- 03 gm iodized common salt in 01 ltr of water.
(b)	The sensitivity of the detector must meet the following specifications:-
(i)	In Free Air-
(aa)	0.15 gm metal- 15cm
(ab)	50 mm Nail vertical- 29cm
(ac)	50 mm nail horizontal- 23cm
(ii)	Under Ground-
(aa)	0.15 gm metal- 11cm
(ab)	50 mm Nail vertical- 27cm
(ac)	50 mm nail horizontal- 17cm
(iii)	In Clean Water-
(aa)	0.15 gm metal- 11cm
(ab)	50 mm Nail vertical- 28cm
(ac)	50 mm nail horizontal- 19cm
(iv)	Under Ground-
(aa)	0.15 gm metal- 11cm

	(ab) 50 mm Nail vertical- 28cm
	(ac) 50 mm nail horizontal- 19cm
©	Detector must be capable of pinpointing detected metal (+ -) 5cm range. The distance will be taken from the centre of the search head to the centre of the object.
(d)	Detection tone should be distinct from the working tone. The instrument should be free from radio and static
11	Electrical Parameter:- The detector must be powered by the standard size commercially available D type Alkine dry cells for 50 hours and rechargeable cell for 40 hours. Must have facility to indicate low battery.
12	Transport, Storage and Transit:- The detector together with its accessories must come in a lightweight, durable compact back pack carry bag that is capable of surviving in all adverse environmental conditions. The back pack carry bag weight inclusive of detector inclusive of detector accessories must not exceed 5 g.
13	Weight of the complete detector in its bag and transport box must not exceed 13 kgs. Transport box should be ruggedised enough to withstand shock and drop from a 3 mtr height, without suffering and damage to the transport box, body or equipment (Detector) kept inside it.
14	Period of warranty of supplied equipment minimum 2 years.
15	manufacturer should undertake to provide spares for 10 years.

Technical Specifications of Fixed DFMD

1	Technology	Pulse Induction Technology
2	No. of Zones	Minimum 8 Zones
3	Operational Frequencies	Under selectable
4	Sensitivity	Adjustable
5	Zone sensitivity and adjustment	All zones individually adjustable.
6	Metal Detection	(i) Should detect (a) Ferrous, Non-ferrous, Ferrite and Alloys (b) Uniformity in entire frame area © In all orientation and (d) In all possible speed of interception. (ii) (a) Pin point detection with identification at correct zone level without interference/ false identification of adjacent zone. (b) Detection of Metal when thrown from one side to other side. (c) No Alarm when no metal man passes.
7	Alarm Signal	Alarm for Detection- Alpha numeric display and zone display.
8	False Alarm rate	Less than 3%
9	Inside Clear Dimensions and Weight	Height- Not less than 198 cm Width- 72-80 cm Depth- 57-60 cm
10	Interference suppression	(i) Should not interfere with adjacent installed DFMD'S within a distance of 1 ft. (ii) Should not be affected by opening/closing of a metallic gate in vicinity. (iii) Should not be affected by heavily reinforced floors/rooftops/walls. (iv) Should not be affected by external RF transmission and EMI (Electro-Magnetic Interference). (Supported by Test Certificate from NABL or other accredited labs from the country of origin of the equipment)
11	Capacity/ Throughput Rate	50 persons per minute adjustable traffic count.
12	Power Supply	(a) 220 VAC 50 Hz Mains (b) Rechargeable battery for minimum 8 hours operation with inbuilt charger.
13	Calibration	Inbuilt Auto Calibration.
14	Safety	Magnetic field should be harmless to magnetic media, electronic devices (Supported by Test Certificates from NABL India or other accredited labs from the country of origin of the equipment). Wearers of heart pacemakers and pregnant women (Supprted by Test certificates from Govt. recognised Medical Institute). Should confirm to international standards of safety/ radiations. Should be data safe.
15	Self Diagnostics	Used friendly self-testing diagnostics ti identify faulty condition.
16	Operating Ambience	Temperature- From 10 degree C to 55 degree C Humidity- Upto 95% no condensation.

17	Control Panel	Easily accessible, modular design with standard plugs and connectors. Adjustable control should only be activated on the insertion of a removable key or by password.
18	Construction	Lightweight, Rigid, laminated side panels and cross piece, ABS plastic boots for panel protection. Base wheels for easy mobility and should be waterproof/weatherproof and usable at outdoor locations.
19	Water proof	The DFMD will be checked in ON condition by pouring water continuously for 15 minutes.
20	Warranty	Warranty- 3 years. Sufficient spares should be available in stock with the supplier and certificate for availability of spares for at least 7 years after the warranty period.
21	Accessories	One Test sample for each machine for testing during commissioning and during maintenance. Training Tools- Charts, slides, traing brochure, training work model, blow up diagram, video films on demonstrations and use etc. Technical manual giving full description of the item. Practical training at least once a year continuing during warranty period. User's handbook and literature on preservation/ maintenance as applicable. Procedure for packing, handling, transportation, storage and battery replacement.

Technical Specifications of Operational Kit for BDDS

The Link locator should be mounted on trolley for easy operation. The trolley should be on good quality wheels to more in all terrain. The detection of semi conductor devices and other electronic junctions should be their and the search held should be installed on trolley so that BD unit operate easily.

Transmitter:-

1	Display	Should have a visual display.
2	Should have control functions	(a) Volume (b) Power selection
3	Audio	With and without headphone.
4	(a) Detection Range in open space (b) Detection range in underground	Minimum 0.55m or better Minimum 0.25m or better
5	Battery	Rechargeable battery, should provide minimum 6 hours operation time one single full charge. Should provide one spare battery. Battery should have protection against reverse polarity.
6	Battery Charger specification	180 to 240 V
7	Operational Temperature Range	.- 5 degree C to 50 degree C or better.
8	Humidity	90% RH
9	Activation	The system should not activate any active radio controlled device in close proximity to search head.

Technical Specifications of Advance Weapon Simulator- 8 Lane System

1	The Outdoor Advance Weapon Live Firing Simulator should be eight target lane system with dedicated movements and an advanced shoot and see system incorporated for training special forces, commandoes and specialized troops, armed battalions in enhancing skills in small arms live firing. The system is portable, electronically operated, remote controlled system and rugged to withstand extreme weather system.	
	Lane Units:-	
2	It will have Seven Lane Targets with following common features:-	
	a	Wirelessly controlled individually or collectively.
	b	Each target fitted with internal hit sensor to indicate hits with 100mm accuracy and with facility to remotely setting the sensitivity level.
	c	12v Battery operated with the capacity to turn Target Target 200 times.
	d	Rechargeable and detachable battery with 10 hour operation on single charge.
	e	Should operate up to maximum distance of 1000m from the Hand Held Controller.
	f	Should transmit battery status to the controller.
	g	Portable system with rugged steel tubular frame.
	h	Weight of each target not more than 25 kg.
	i	Maximum size of target unit 500mm x 300mm x 330 (LxWxH)
	j	Hit sensor should be internally mounted with a feature to set the sensitivity. It should have at least 3 sensors for accurate reading.
	k	His sensor should be mounted internally.
	l	Corrosion resistant.
	m	Target must have provision for trigger devices such as Infrared sensors.

	n	Radio receiver should operate at 458Mhz to avoid conflict with telecom towers or jammers.
3		Movement for the seven lane targets should be as under. All target should have the ability to function as turning swing out, pop up, slashing and slicing target.
	a	Two Targets- Should turn 90 degree as seen from the firer.
	b	Two Targets- Should have 'slicing' movement.
	c	Two Targets- Should swing out.
	d	One Target- Should pop up and down.
4		Each of the seven targets should be controlled with a portable, hand held digital controller. It should be capable to control the targets independently and collectively. The hand held controller should have the following features:-
	a	Weight not more than 500 gm.
	b	Size not more than 25 cm in length, 15 cm in width and 6 cm in height.
	c	Should have keypad for feeding instructions.
	d	Should have a screen for display of data.
	e	Should have a rechargeable battery.
	f	Should be capable of changing target identification data.
	g	Should be able to control targets individually or collectively.
	h	Should be able to control up to 25 targets.
	i	Should operate minimum 50 m in slightly undulating terrain and 100 m line of sight state.
	j	Display hit result for each target together with the time taken for the first bullet to hit the target after exposure.
	k	Should be able to adjust individual bullet hit sensitivity.
	l	Should be able to find battery status.
	m	Should switch off target remotely.
	n	Should designate each target.
	o	Should be programmable by computer.
	p	Should be capable of setting target hit reaction settings.
		Shoot and See Unit:-
5		One independent 'shoot and see' target system with a sensor fitted target, a monitor at the firing end and a server to wirelessly transmit the data.
6		Should permit any small arms weapon including snipers to fire.
7		Should be fully portable, rugged and withstand extreme weather condition.
8		Should have following features:-
	a	Should operate up distance of 1800 m (Maximum distance for a sniper) from the firer.
	b	Should be a plug and fire system requiring no calibration.
	c	Rugged steel design for the monitor.
	d	Size of target height (70"), width (45"), thickness (5") with provision to attach disposable figure 12 paper target.
	e	Should function in temperature range of Minus 30 deg to Plus 55 deg.
9		Target System should have the following features:-
	a	Should detect bullet hitting the target at supersonic as well as subsonic speed.
	b	Should have stand to enable setting up in field conditions.
	c	Should have self sealing rubber panels on the target to avoid repair after each bullet hit.
	d	Should be able to operate on AC and Generator set.
	e	Should have sensors that detect bullet hit with accuracy of 10mm.
	f	The sensors should be protected from bullet with a protective hatch which should not be more than 25 cm and should permit maintenance.
	g	Should not require replacement of rubber target sheet before taking 3000 bullet hits.
	h	Should have wireless connectivity with firer end to instantly transmit the hit details.
	i	Should up to 2000m line of sight terrain.
	j	The target should have a replaceable shield to protect the target from direct sunlight and ozone rays
	k	The shield should allow easy pasting of target profiles.
	m	Should have inbuilt system to indicate damage of a wire and a malfunctioning sensor.
	n	
10		The Firing End Monitor should have following features:-
	a	Monitor built on LCD tech designed for all weather use should have a stainless steel chassis.
	b	The monitor should be a 10" rugged LCD, using 25W power with a stand of 45cm should display the visual image of the target and the bullet hit on the target.
	c	Should indicate shots in the sequence of firing with serial numbers.
	d	The shot indicated must be calibrated with target.
	e	Facility to feed name of firer must be provided.
	f	Should have scoring system.
	g	Monitor should be readable in sunlight.
	h	Monitor screen should be able to bear impact of flying empty cartridges from automatic weapons.
	i	Monitor screen should be laminated and with anti reflective glass for protection.
	j	Weight of monitor, stand and steel casing should weigh less than 10kg.

	k	The software should have at least five target profiles built into the software.
11	Portable Field Wireless Server System for each lane to control each lane independently. It should have following features:-	
	a	Packaged inside a weatherproof shockproof case and convenient portability.
	b	The server should be connected to the target with military grade connectors.
	c	It should have facility to connect three three monitors.
	d	Should have automatic switching on and off function when connected/disconnected with target/monitor.
	e	Should be weather and water proof and sealed to IP 64 standard.
	f	Should have visual indication for displaying if connected to firing monitor and target.
	g	All systems should be IP 64 or IP 67.
	h	Should have a quality management system complying the requirements of ISO 9001:2008.
	i	Should have service centre in India and should respond to service request within 72 hours.

Technical Specifications of Bomb Lifting Robot

1	Technical Parameters of System	<ol style="list-style-type: none"> 1. The System should be able to search the field for mines for detection of small metals, explosives, semiconductor electronic junctions mounted in a robot with a robotic arm and works as per customer requirements. 2. When Robot is in search operation, it should give firstly the detection of Mines/IED/RCIED, such mine is detected and pin pointed, then the explosive detection process should start to confirm and identify the object. After identification the robotic arm should have facility to lift the object up to 10 kg. 3. A CCTV camera should transmit the real time image to the control unit. 4. The control unit should be able to operate the robot from a distance of 20 meters.
2	Physical Dimensions	<p>A. ROBOT</p> <ol style="list-style-type: none"> 1. Total length (with mine search coil)- Max 1300mm 2. Length (Without mine search coil)- Max 800mm 3. Breadth- Max 650mm 4. Height (With search coil)- Max 650mm 5. Height (Without search coil)- Max 400mm 6. Ground clearance- Max 100mm 7. Wheel Base- 530mm
3	Robotic Arm	<ol style="list-style-type: none"> 1. The robotic arm should have a claw to hold the object. 2. The claw should open Max. 200mm. 3. The claw should rotate in both clockwise and counter clockwise direction at 360 degree. 4. The arm should rotate 360 degree in the horizontal axis and 180 degree in the vertical axis.

Technical Specifications of Bomb Lifting Robot

Transmitter		
1	Frequency	840 Mhz to 915 MHz
2	Power Output	Should not be more than or equivalent to 4 watt continuous.
3	Modulation	AM/FM/Pulse or continuous
Receiver		
4	Should have Rx frequency for 2nd and 3rd harmonics	1680 to 1830 MHz and 2520 to 2745 MHz respectively.
5	Sensitivity	Should not be more than- 150 dbm
Antenna-Should have high gain antenna		
6	Cables	All cables and connectors should be well secured.
7	Display	Should have a visual display.
8	Should have control functions	(a) Volume (b) Power selection
Output		
9	Audio	With and without head phone
10	Display	Visual display distinguishing both 2nd and 3rd harmonics.
11	Test Target	A single power diode.
12	(a) Detection Range in open space (b) Detection Range in underground	Minimum 0.55 m or better Minimum 0.25 m or better

13	Test false Alarm rate	Should be less than 3 %.
Power Requirements		
14	Battery	Rechargeable battery, should provide minimum 6 hours operation time one single full charge. Should provide one spare battery. Battery should have protection against reverse polarity.
15	Battery charger specification	180 to 240 V.
Weight Required (Approx)		
16	Operational weight	Should not be more than 6.5 kg (weight in hand should not exceed 3.5 kg.)
Operation Condition		
17	Operational Temperature Range	.-5 degree C to + 50 degree C or better
18	Humidity	90% RH
19	Activation	The system should not activate any active radio controlled device in close proximity to search head.
Miscellaneous		
20	The firm should be able to provide the following, as applicable, along with the equipment- (a) Cleaning Kit (b) Special Maintenance Tools © Training Aggregate- Charts, Slides, Training Brochure, Training Work Model, Blow up Diagram, Video Films etc. (d) Physical Training in India. (e) Tech Manual giving full description of the Item. (f) User's Hand book and Literature on preservation/ maint, as applicable (g) Procedure for packing, handling/transportation/storage.	

Technical Specifications of Explosive Vapour Detector

1	Technogy	State of the art technology for real time detection of Explosives. There should be no radio active source inside the Detector.
2	Detection Capability	Should be able to detect all types of Explosives viz. RDX, TNT, Dynamite, PEK, PETN, Gelatin, Black Powder etc.
3	Sensitivity	Detection of famto gram quantities of explosives in vapour and particle mode.
4	Selectivity	Should have high discrimination between explosive and non-explosive material. False alarm rate not to exceed 3%.
5	Sample Collection	Air sample collection of vapour particle and surface wipe of trace particle without changing any fitment/attachement it should be user friendly.
6	Endurance	Capable of continuous operation for not less than 4 hours including continuous vapour sampling on fully charged battery with another external battery for 8 hours working.
7	Initial Warm up Time	The equipment should be ready for use for the first time in approximately 15 minutes.
8	Analysis Time	Not more than 10 seconds.
9	Recalibration	Should be ready for re-use within one minute.
10	Power	Should operate on AC mains 220 Volts, 50/60 Hz and also rechargeable DC battery. Battery charger and additional batteries to be provided housed in the suitcase.
11	Alarm and Display	Clear Audio/ Visual alarm for detection. Alarm/Indication for low
12	Operating Temperature	0 degree to 55 degree C
13	Humidity	Should work smoothly in 95% non-condensing condition.
14	Weight and Dimensions	Portable, light weight, easy to carry in field operations.
15	Upgradability	Capability for up-gradation of programmes of new explosives.
16	Maintenance and Operations	Easy routine maintenance and user friendly operations. There Should be no consumable items.
17	Carrying Case	The equipment should be provided with a proper carrying case for easy and safe transportation.
18	Weight	1.3 kgs in hand with Internal Battery. Explosive detector should also have detachable facility to reach narrow places for detection and should in 2 parts to reduce weight in hand upto 500 grams and control unit on belt.

19	Warranty	Warranty- 5 years. Sufficient spares should be available in stock with the supplier and certificate for availability of spares for at least 5 years after the warranty period. The supplier should also have arrangement/facility for repair and after sales service for the above period.
20	Training	The firm should also have the arrangement/facility for imparting training for the above period.
21	Miscellaneous	The firm should be able to provide the following along with the equipment:- (i) Training Tools- charts, slides, training brochure, training work model, blow up diagram, video films on demonstration and use etc. (ii) Technical manual giving full description of the item. Practical training at least 4 times in a year continuing during warranty period. (iii) User's handbook and literature on preservation/maintenance as applicable. (iv) Procedure for packing, handling, transportation, storage and battery replacement.

Technical Specifications of Baggage Scanner

1	Tunnel Size- 61 cm W (width) x 40 cm H (Height) +/- 10%
2	Conveyer belt speed should be between 0.18 and 0.3 meter per second. Conveyer movement bidirectional.
3	All machines should operate on 220 VAC/110 VAC (+10%-14%) 50Hz +/-3Hz/60Hz +/-3Hz, Single Phase fluctuations in the range of 170V to 260V. Single Phase 3 to 5 Amp.
4	Conveyer capacity 100 kg or more.
5	Though put should be 200 bags per hour or more.
6	Sensors>1000 diodes, L-shaped detector (Folded array type), In case of defective diode arrays, scanning should be disabled and error message should be displayed on the screen.
7	X-ray Voltage- 140 KV or more.
8	X-ray source/ Generator - It should be capable to operate smoothly for a period of at least six years.
9	Duty Cycle- 100%
10	The X-ray bim divergence should be such that the complete image at maximum size of bag is displayed without corner cuts.
11	The radiation level should not exceed accepted health standard (2uSv/hr at a distance of 5 cm from external housing). Relevant certificate from AERB should be attached.
12	The operating temperature normally should be - 10 degree C to 50 degree C.
13	Storage temperature- 40 degree C + 70 degree C.
14	Humidity- 90% non-condensing.
15	Resolutions- The machine should be able to disply single un-insulated tinned copper wire of 40-SWG or 36 AWG. All penetration and resolution condition should be met without pressing any functional key and should be online.-A
16	Penetration should be 30mm thickness of steel (Guaranteed) or more.
17	Continuous Electronic Zoom facility should be available to magnify the chosen area of an image eight times (8x) or more. Image features shall be keyboard controllable.
18	Video Display- 17" or better LCD Monitor SVGA High Resolution, low radiation, flicker free, resolution at least 1280 x 1024, 24 bit colour real time processing.
19	The machine should have features of Multi-energy X-ray imaging facility where material of different atomic number will be displayed in different colours to distinguish between organic and inorganic materials. With this method to distinguish high density organic materials including explosives. Machine should have variable colour or materials 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 diode and that should be online.
20	Radiation 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/manufacturer should furnish relevant certificate from Atomic Energy Regulatory Board of India regarding radiation safety. The company manufacturing the equipment should have ISO certification for manufacturing and servicing of X-Ray Screening machines.
21	Film safety guaranteed safety for high- speed films upto 1501600. The machines should be film safe. In other words photographic films must not be damaged due to X-ray examination.
22	Machine should be properly sealed from all the sides for pest proof. Dust proof cover is to be provided for covering when system is not in use.

23	Facility for variable contrast must be incorporated to allow enhancement of lighter and darker portion of the image.
24	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.
25	Full diagnostic built in test facility. All models should have software controlled diagnosis report facility and system should give print out if printer is connected.
26	All software features of machine should be online and password protected.
27	Machine should be capable for recalling 20 or more previous images.
28	It should have the capability of archiving 10000 or more images with date and time stamp.
29	Control desk with security housing and locking provision should be available. The Operator personal identification number can be entered the keyboard along with generation of log.
30	Facility of image enhancement should be available.
31	All models should have online recording facility and images can be recorded in CD R/W or/and USB and should be able to view images so recorded on stand-alone Pc.
32	Lead impregnated safety screens should be available at either ends of the tunnel. This should be covered by relevant AERB certificate. Idle rollers to be provided at either ends of the tunnel to facilitate placing of baggage at input and output.
33	All software features should be controlled from key board of machine only. Keyboard function should be user friendly.. To enable/disable the software feature system should not be rebooted.
34	The threat image projection (TIP-Optional) system software to be incorporated in all X-ray BIS operation.
35	Operational Training- Operational staff has to be provided free training.
36	Operating and Service manual shall be provided with each machine.
37	Other features:- (a) Edge and Variable edge enhancement. (b) Inverse Video © Set up time not more than 10 minutes (d) Pseudo colour € Date and Time display
38	Minimum Computer Configuration:- Intel V Pro configuration (a) CPU- should be able to deliver the output to meet the specifications mentioned as above. (b) Hard Disk Drive- 320 GB 7200rpm serial ATA HDD or Better. © Mouse- Optical (d) Ports- 6 USB Ports (with at least 2 in front), 1 Serial Port, 1 parallel port, 1 PS/2 Keyboard and 1 PS2 Mouse Port, audio ports for microphone and headphone in front. (e) CD-R/RW Drive- DVD Writer. (f) Networking facility- 10/100/1000 on board integrated network port with remote booting facility remote system installation, remote wake up, out of band management using any standard Management Software.
39	UPS- 2 KVA online back up time of 30 minutes.

Technical Specifications of Explosive Detector (With liquid and vapour both)

1	Technogy	Based on Raman Spectroscopy for identification of liquid explosives.
2	Detection Capability	Should be able to identify Explosives in liquid form such as TATP, NG, EGDN, Astrolite G, Nitromethane, Nitrobenzene, Hydrazine etc. in addition to default library compounds.
3	Selectivity	Should have high discrimination between explosive and non-explosive material. (With false alarm rate less than 3%)
4	Sample Collection	Should be able to identify through plastic/glass bottles and containers without opening the bottle or container.
5	Endurance	Capable of continuous operation for not less than 3 hours.
6	Warm up Time	The equipment should be ready for use for the first time within approximately 3 minutes from cold start.
7	Analysis Time	Not more than 1 minute.
8	Alarm/Display	Clear display of ID of the threat material.
9	Temperature	Should work under extreme climatic temperature range of 0 degree C to 45 degree C.
10	Humidity	Should work under climatic humidity range of 0 degree to 95 degree C
11	Weight	Not more than 3 Kg.
12	Computer Capability	Computer Capatible through USB/Blue tooth for data transfer.
13	Power Source	Should operate on rechargeable battery (with charger operated on AC mains 220 volts, 550/60 Hz) and one spare battery to be also provided. Battery life of minimum 3 hours on one charge.
14	Carrying Case	Proper carrying case to be provided for easy and safe transportation.

15	Warranty	Warranty- 3 years. Sufficient spares should be available in stock with the supplier and certificate for availability in stock with the supplier and certificate for availability of spares for at least 7 years after the warranty period.
16	Miscellaneous	The Firm should be able to provide the following along with the equipment:- (a) Training tools- Training brochures, Operating manual, Video CD on demonstration and uses etc. (b) Practical training at least 2 times in a year continuing during warranty period. (c) User's handbook and literature on maintenance as applicable. (d) List if the Institution in India where your product has been supplied. (e) Provide Technical Specification of your quoted product.