

No.IV-21011/33/2009-Prov-1
Government of India
Ministry of Home Affairs

26, Man Singh Road, Jaisalmer House,
New Delhi, 7.6.2010

To

The DGs:Assam Rifles/BSF/CISF/CRPF/ITBP/NSG/SSB/BPR&D

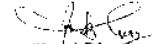
Subject:- Revised QRs/Technical Specifications for the **Through Wall Radar System**
as **See Through/Through Wall Radar System** - regarding

Sir,

I am directed to refer to this Ministry's letter of even number dated 24.8.2009 vide which the approved QRs of various items including **Through Wall Radar System** were circulated and to convey the approval of the Competent Authority for revision the QRs/Technical Specifications of Through Wall Radar System Titled as the **See Through/Through Wall Radar System**, which are enclosed for information and Record.

2. Henceforth, all the CPMFs should procure the above items required by them strictly as per the laid down Technical Specifications/QRs.

Yours faithfully,


(Suraj Bhanu)

Deputy Secretary to the Govt. of India

Encs: 4 sheets

Copy to:-

DD(Procurement),MHA

Copy for information to:-

PS-6 JS(PM),MHA

Grand file
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Amendments

ORs OF SEE THROUGH/ THROUGH WALL RADAR SYSTEM

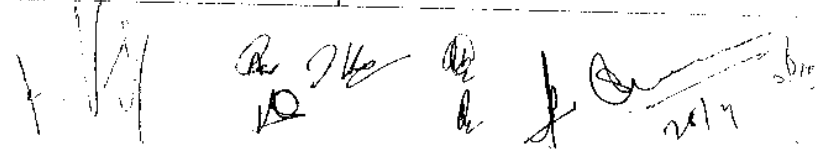
A Hand held Portable Compact Ruggedised Through Wall Imaging Radar Systems capable of sensing and tracking people on other side of a wall.

1	Penetrable wall materials	Capable of penetrating (accumulative) thick wall made of cement, plaster, brick, concrete, adobe, stucco and Dry wall, unbaked brick, mortar, Schist, cinder, roof, wood, and in rain or humid conditions.
2	Detection Range (Area with obstacles) [Maximum Range from the system when the wall can be anywhere in between]	20mtr(minimum)
3	Stand off operation	Able to operate when mounted on a tripod minimum 10m from a wall.
4	Detection Ability	Capable of detection of person or a group of persons in a room. It should be able to locate and track the movement of a person or persons on a continuous basis.
5	View (Display Mode)	Minimum 3D view of people in motion or sub-motion.
6	Operation Ready	Not more than 30 seconds from turning on the unit to full Operational.
7	Darken Screen	Facility to Blank out the display unit during Operation remotely (through Wireless video monitor) as well as locally.
8	Location Accuracy (In a free space)	±50 cm Approx.
9	Tracking	Capable of tracking the movements of a person in a room containing items such as tables, chairs, TV's, computers and AC units.
10	Field of view	Min 130° in Azimuth and 100° in Elevation
11	Display Resolution	Min 640 x 480 pixels or better with Sunlight readable LCD-TFT color display
12	Display size	4" x 5" (min)
13	Weight	Less than 8 kg including battery and wireless video transmitter
14	Frequency Range	1GHz to 10 GHz
15	Dimension	Less than 54 x 44 x 18 cm
16	Wireless Video	Wireless video transmitter (internal or external) to enable the user to be located with following range from the system with remote video monitor. LOS - 300 mtr (min) NLOS - 50 mtr (min)
17	Remote Video Monitor	(a) Screen Size : 3" Full VGA or better (b) Resolution : 480 X 640 or better with Sunlight readable LCD-TFT color display (c) Weight : 2 kg max (d) Blue tooth technology : Bluetooth type II (e) Additional Communication Option: 3G UM1S.

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18	Remote Operations	<p>The remote video monitor should be able to control the following parameters of Through Wall Radar during operation.</p> <ul style="list-style-type: none"> (a) Entire Menu (b) Visuals (c) Transmission of antennas (power output) (d) stealth mode (e) recording (f) Angle of Vision of Though Wall Radar. (g) Blanking out the screen of Though Wall Radar.
19	Video output	<p>Remote video monitor have a video output Jacks for real time transmission of Data to Command Control Centre.</p>
20	Ethernet Port	<p>Connectivity with Laptop using Cat 5 cables for Data Analysis, Recording, upgrading the system with new software versions and running future external applications.</p>
21	External Power	<p>The equipment should operate from external power from minimum 200 to 240 V AC and minimum 12 to 24 VDC. The unit should operate from external power and recharge the battery simultaneously.</p>
22	Battery	<ul style="list-style-type: none"> (a) Rechargeable battery (Secondary Battery) <ul style="list-style-type: none"> (i) Type : 10.6 to 16 V, Li-on (ii) Endurance : Minimum 3 hrs of continuous use. (b) Primary Battery <ul style="list-style-type: none"> (i) Endurance: Min 4hrs (c) Battery charging time - Not more than 3 hrs.
23	Battery life indicator	<p>Battery life should be indicated /displayed on the screen of Through Wall Radar and Remote Video Monitor simultaneously during operations.</p>
24	False Alarm Rate	<p>Low false alarm rate not more than 1 false indication every 10 hrs.</p>
25	Software	<p>The manufacturer shall provide all software upgrades free of charge during the warranty period</p>
25	Main Software Features required	<ul style="list-style-type: none"> (a) View through solid barriers: Should show in real-time, the room occupancy in three dimensions. This software analyses radar signals in high-frequency to display all moving objects concealed behind the wall or door. (b) Discover the number of people: The user-friendly application allows the operator to know the exact location and number of people when walls or obstacles obstruct the view. (c) Focusing on living being features: It should be capable to identify people and animals by their external movement and displays a person who is unable to move just by the movement of their internal organs, as for example when breathing and /or heart throb. (d) Coverage: Range should be adjusted gradually in 3 levels. (e) On-Screen Targets: Should be able to display ten targets located at least 0.5 meters of distance between targets simultaneously



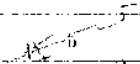
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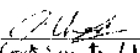
26	Provision of Data Storage	<p>There should be provision of Data storage at Remote Video Monitor as well as Through Wall Radar having the following capacities as under:</p> <p>(a) Through Wall Radar Side : 300 Minutes (Min)</p> <p>(b) At Remote Video Monitor Side : 300 Minutes (Min)</p>
27	Radiation Safety	<p>Radiation safety certificate for the operator is issued by authorized agency.</p>
28	Accessories	<p>(a) Laptop – For data storage and analysis (Quantity 1 per system.)</p> <p>Laptop Specifications:</p> <p>(i) Microprocessor minimum 2.60 GHz Intel core 2 duo Processor or better.</p> <p>(ii) Microprocessor Cache 4 MB level 2 cache</p> <p>(iii) Memory-minimum 4 GB DDR2 or better</p> <p>(iv) Video Graphics compatible with High Definition</p> <p>(v) Hard Disk-min 500 GB</p> <p>(vi) Multimedia Drive Blue ray compatible</p> <p>(vii) Wireless connectivity/Bluetooth</p> <p>(viii) Network card</p> <p>(ix) PCI Express Card slots</p> <p>(x) External ports: 4 USB 2.0, HDMI, Sata, VGA, RJ 45, S-video capture, IEEE-1394</p> <p>(xi) Latest Windows Operating System.</p> <p>(b) Hand held/Compact Light weight Remote video monitor for remote viewing Quantity 1 per system.</p> <p>(c) Additional Batteries-Adequate No of batteries to be provided for continuous 48 hrs operation without charging.</p> <p>(d) External battery charger-2 per system</p> <p>(e) Hard case for transportation. (qty one per system)</p> <p>(f) Soft backpack carrying case for easy portability by a single person Quantity 1 per system.</p> <p>(g) Tripod Quantity 1 per system</p>


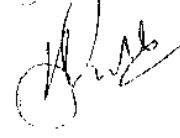


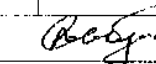
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	Dead Zone	Vendor must specify the distance against the wall. Vendor to provide pictorial and written brief to cover a 20' x 15' room with 18" (45cm) thick wall so as to nullify the dead zone. The deployment of the system at different places to cover the entire room must be clearly marked.
30	Environmental Specifications for through Wall Radar	<p>(a) Temperature Conditions: Operating : -20°C to +55°C Storage : -40°C to +85°C Charging : 0°C to +40°C</p> <p>(b) Drop Test: 1m (min)</p> <p>(c) Vibration: MIL-STD-810E, method 514.4, procedure I, Cat. 8 (Ground Mobile)</p> <p>(d) Ingress protection: Should be sealed against dust and protected against powerful water jet as per IP66 Standards.</p> <p>(f) Humidity: 90% RH, Uncondensed (+55 deg C)</p> <p>All environmental specifications are certified by recognized lab (National/International) and certificate should be submitted during demo/ Trial of equipment.</p>
31	Literature	Operating and Technical literature of the system should be in English language.
32	Warranty	Min 3 years
33	Annual Maintenance Contract/Repair Cover	The vendor will provide AMC 5 years after expiry of warranty. The manufacturer shall guarantee to complete repairs and return the equipment to the customer within 15 days of reporting the fault, during the period the equipment is under warranty/AMC repair cover to be made available ex Delhi.
34	Demonstration and Training	Demonstration of the complete system with adequate quantity of equipment to be given in Delhi on no cost no commitment basis. In situ training of users for one week on operation, maintenance, fault finding and user level repairs.


 Rajesh Patel, on 15/11/10

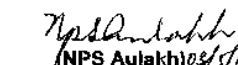

 NPS Aulakh, on 15/11/10

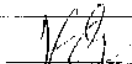



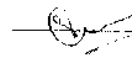

 NPS Aulakh, on 15/11/10

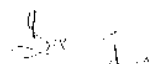

 NPS Aulakh, on 28/11/10

Approved/Not approved


 NPS Aulakh, on 28/11/10
 Director General, NSG


 NPS Aulakh, on 15/11/10


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