

# Government of Meghalaya

OFFICE OF THE DIRECTOR GENERAL OF POLICE  
MEGHALAYA :: :: SHILLONG



## NOTICE INVITING TENDER

Subject:-Tender for Procurement of Equipment

The Director General of Police, Meghalaya, Shillong invites Sealed Tenders-affixing non – refundable Court Fee Stamp of 1,000/- (Rupees One Thousand Only), for entering rates contract for supply of Equipment as per specifications attached; to Meghalaya Police from manufacturers, authorized agents, and dealers. Sealed Tender quoted will be received up – to 1200 hrs on 12.09.2024 and will be opened on the same day at 1600 hrs. Tenderers or their authorized representatives may remain present at the time of opening of tenders. Tenders received after 1200 hrs by hand or post will stand automatically rejected. Sealed Tender should be dropped in the Tender Box of this office. The tender is a 2(Two) Bids system i.e.,

- i) Technical Bid, and
- ii) Price Bid

**However, it is mandatory that the tenderers quote for all listed items, failing which, the tender will be rejected.**

### TERMS AND CONDITIONS

1. Tenderer should submit separate sealed cover for Technical Bid and separate for Price Bid. One single price bid is required where the rates of all the items are to be mentioned. Only one rate can be quoted for each item, tenderers quoting different options for the same item will be rejected. The price of the total for all the items would be taken in consideration for evaluation.
2. Rates should be quoted F.O.R destination at Police Headquarters, Shillong and should be inclusive of all charges like packing insurance and other incidental charges. Rates quoted should be clearly and neatly written in figures as well as in words. All correction/cancellation must be initialled, otherwise tender will stand rejected. GST should be quoted separately on taxable items as deduction of Tax at Source will be affected accordingly on Firm's bills.
3. Tenders must be accompanied by Earnest money calculated at 10 (ten) Lakh for non tribal bidders and 5 (five) Lakh for SC/ST tenderers (On production of relevant documents). The Earnest money should be in the form of Deposit at Call duly pledged in favour of the Asstt. Inspector General of Police (A), Meghalaya, Shillong. Earnest money in any other recognized forms like the National Saving Certificate and Fixed Deposit


Receipt are also acceptable provided they are duly pledged in favour of the Asstt. Inspector General of Police (A), Meghalaya, Shillong. The Earnest Money/Security Deposit papers pending in this office in connection with other tenders/supplies shall not be considered as Earnest Money for this tender. Further, no tenderer is exempted from the requirement of depositing Earnest Money on any ground.



4. Successful tenderer will be required to furnish a Security Deposit fixed at 10% of the bid value and execute Contract Agreement to ensure fulfilment of the terms & conditions of the Contract which the successful tenderers will have to enter into. The Security Deposit will be held by the Department free of interest and the deposit shall be subjected to forfeiture in case of non-fulfilment of any of the terms and conditions of the Contract.
5. A Financial Stability Certificate from the Deputy Commissioner, 1st Class Magistrate or of a Schedule Bank certifying that the firm/supplier is capable to undertake the supply should be submitted along with the tender.
6. The tenderer should have an average annual turnover of 2 Crores for the last three financial years
7. Tenders should be addressed to the undersigned by designation and not by name; the sealed envelope containing the tender should be superscribed as "Tender for Procurement of Equipments for Meghalaya Police for the Financial year 2024-25." and be posted under registered cover or sent through messenger.
8. Attested copy of valid GST Registration Certificate along with GSTR-3 latest filed returns of the tenderer should be enclosed without which the tender shall be out rightly rejected.
9. Attested copy of Valid Trading License from the Khasi Hills Autonomous District Council Authority of Meghalaya in case of non-tribal firms/suppliers should be submitted to this office within 15 (fifteen) days from the allotment of works to the successful bidder.
10. Attested copy of Scheduled Tribe Certificate (ST) from Meghalaya for Tribal tenderers should be furnished with the tender, to claim the status for earnest money deposits.
11. An attested copy of Photograph of the Tenderer should be submitted along with Tender.
12. Catalogues/Brochures with detailed technical specifications and compliance statement as per the attached specifications must be enclosed. No deviation in the specifications of the items would be accepted. Detailed compliance statement must be enclosed mentioning each aspect as per the attached format. Non compliance to any of the specifications will automatically leads to rejection of the tender.



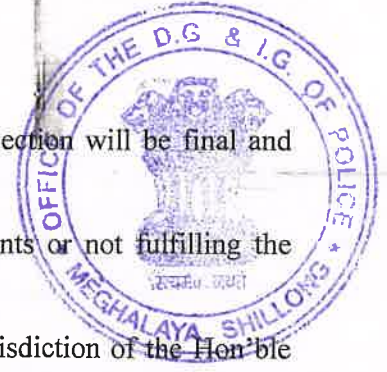
13. All documents submitted should bear the seal and signature of the tenderer otherwise their tender will be out rightly rejected. **However the NIT document as floated should not be a part of the documents to be submitted.**
14. The tenderer must have supplied same/similar equipments to any government organisation/entity within the last 3 (three) years. Performance Statement along with Supply Order and certificate of completion must be attached
15. Those tenderers who are authorized agents/dealers of the OEM should submit authorized dealership certificate which is tender specific.
16. The Director General of Police, Meghalaya is not bound to accept the lowest tendered rates.
17. Once the rates offered in the tenders are accepted, no enhancement of rates will be accepted under any circumstances and the tenderer will be liable to supply at the rates approved and accepted by the Director General of Police, Meghalaya. Failure to make the supplies at the approved and accepted rates will entail cancellation of Contract Agreement and the Security Money will be forfeited to Government.
18. The successful tenderers will be intimated by a letter of acceptance by the Asstt. Inspector General of Police (A). Till then, no tenderer has any right to assume that his/her tenders have been accepted.
19. (A) Delivery shall have to be completed within 12 (twelve) weeks from the date of receipt of supply orders. No extension of delivery period will be entertained beyond the stipulated period unless the approved supplier submits convincing grounds for extension and delivery. In case of the plea that the approved items are no longer manufactured for which the supply cannot be made, an authenticated certificate in original from the concerned manufacturer should be furnished.  
(B): - The application for extension of time must be submitted to this office in time after receiving the firm order, and not later than the date fixed for completion of the supply. Applications for extension of time received after the stipulated time will not be considered.
20. The risk on transport will have to be borne by the suppliers themselves and in case any damaged equipment are detected the same should be replaced immediately as per the approved sample.
21. Payment will be made to the suppliers directly on completion of supplies and on correct receipt of goods by the respective consignee and based on the recommendation of the Line Committee.

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22. Documents/ Vouchers/ R.Rs bill etc., routed through Banks will not be accepted. Consignments will be dispatched by the Firm after payment of all freight charges at source. Freight to pay 'R.Rs' will not be accepted.
23. If the contractor/firm willfully neglects, fail to perform or observe any conditions of contract, or attempt to cheat or indulge in malpractice, the Director General of Police, Meghalaya may take necessary action to impose ban upon such contractors/firms for the future business with this Department.
24. (A) In the event of contractor's failing to perform his/her part of the contract to the satisfaction of the Department or disregard any terms or conditions of the Tender Notice or the Contract Agreement, the contractor shall be liable to all or any of the following action: -
- i) Forfeiture of Security Deposit in whole/part.
  - ii) Making good the loss caused to the Government through the inability, neglect or delaying to comply with the demand.
  - iii) Imposition of penalty (fine) in case of failure to make the supply within the stipulated time at the rate of 0.50% on the total amount of supply ordered for everyday not exceeding 2 weeks that he shall exceed his time either for the total supply or value of item(s) ordered for, and for liquidated damages.
- (B) All losses sustained by the Government due to failure, omission or neglect of the contractor may be realized from his/her Security Deposit and outstanding dues or any other sums which may be due to him/her from the respective Controlling Officer.
25. The Earnest Money of successful tenderer will be released only after he/she furnishes the full Security Deposit within the time fixed by the Department for the purpose failing which, the Earnest Money may be forfeited to the Government.
26. Earnest Money of unsuccessful tenderers will be released by the Department after the selection process of successful tenderers is finalized.
27. The Tender Opening Committee of the Office will open the Technical Bids in the presence of the representatives of the tenderers if any. Only those quotations/Bids which fully comply with the term and conditions prescribed in NIT and also the prescribed Technical Specifications enclosed with the NIT of this office will be accepted. Price Bids of only those Technical Bids which fully conforms to the required Technical Specifications will be opened.
28. If at the time of opening of Tender, should there be any objection raised by the Tenderers/Representatives present as to the validity of any tender, the objection will be duly recorded and will be put up to the Departmental Purchase Board (DPB) for



consideration. The decision of the Purchase Board on such objection will be final and binding.

29. Tenders not accompanied with all the required papers/documents or not fulfilling the terms & conditions will automatically stand rejected.
30. Court jurisdiction in case of any dispute shall be within the jurisdiction of the Hon'ble court of East Khasi Hills.
31. An undertaking should be furnished that the supply/work will be carried out by the contractor/tenderer himself/herself.



**sd/-**  
Director General of Police,  
Meghalaya, Shillong.

**Letter No. MPF/15/SA-MHA/2021-2022/55**

**Dated Shillong, the 27<sup>th</sup> Aug' 2024**

Copy forwarded to:-

1. The Director General of Police Meghalaya, Shillong or favour of kind information.
2. The Inspector General of Police (PW/C) / (SB), Meghalaya, Shillong for favour of kind information.
3. The Spl. Superintendent of Police, CID / SB-I, Meghalaya, Shillong for favour of kind information.
4. The Superintendent of Police, Anti-Infiltration Directorate, Meghalaya Shillong for favour of kind information with a request to kindly paste the NIT in the Notice Board.
5. The Superintendents of Police, East Khasi Hills, Shillong / West Khasi Hills, Nongstoin / South West Khasi Hills, Mawkyrwat / West Jaintia Hills, Jowai / East Jaintia Hills, Khliehriat / Ri Bhoi District, Nongpoh / Eastern West Khasi Hills, Mairang / East Garo Hills, Williamnagar / West Garo Hills, Tura / South Garo Hills, Baghmara / South West Garo Hills, Ampati / North Garo Hills, Resubelpara / F&ES, Shillong / Tura for favour of kind information with a request to kindly paste the NIT in the Notice Board.
6. The Commandants 1st MLP Bn, Mawiong / 2nd MLP Bn, Goeragre / 3rd MLP Bn, Sahbsein / 4th MLP Bn, Sohpien / 5th MLP Bn, Samanda (Vikaspuri, New Delhi) / 6th MLP Bn, Umran / SF-10, Shillong for favour of kind information with a request to kindly paste the NIT in the Notice Board.
7. The Principal, Police Training School, Umran, Ri Bhoi District for favour of kind information with a request to kindly paste the NIT in the Notice Board.
8. The Director of Information and Public Relations, Meghalaya, Shillong for kind information with a request to kindly publish the tender notice and list given (enclosed soft copy) in 3(Three) Newspaper i.e. in English, Khasi and Garo Medium, which are widely circulated throughout the state.

9. The Director, Printing and Stationery, Meghalaya, Shillong along with the soft copy with a request to kindly publish in the next issue of Meghalaya Gazette.



**Tender Notice**

Sealed tenders are invited for supply of Police Equipment for Meghalaya Police for the Financial Year 2024-25. These will be received by the undersigned **up to 12.09.2024 at 1200 hrs** and will be opened on the same day at **1600 hrs**. Full details are available in the office of the undersigned during office working hours or [megpolice.gov.in](http://megpolice.gov.in)

Asstt. Inspector General of Police (Admin)  
Meghalaya, Shillong

10. ✓ I/C Computer Wing (PHQ), Meghalaya, Shillong for information along with a soft copy containing the Tender Notice for uploading the same in the website of Meghalaya Police.

Asstt. Inspector General of Police (Admin),  
Meghalaya, Shillong

**CERTIFICATE OF ACCEPTANCE OF TERMS AND CONDITIONS**

**(To be furnished along with the tender documents)**



I/we have read and fully understood the terms and conditions as laid down in the NIT vide No. **Letter No. MPF/15/SA-MHA/2021-2022/55 Dt. 27<sup>th</sup> August 2024** in respect of supply of police equipment to the Office of the Director General of Police, Meghalaya, Shillong due to be opened on **12.09.2024**.

I/We agree to abide by the same/

I/We have signed all the pages of the tender documents as laid down.

Signature and seal of the Tenderer or his/her  
Authorized Signatory.

Dated .....

Name .....

Address .....

Phone No. ....

**LIST OF ITEMS WITH QUANTITY**

SI No	Item	Quantity	Unit
1	Light Weight Bullet Proof Helmet	2	Nos
2	Concealed Bullet Proof Jacket for VIP	2	Nos
3	Bullet Proof Jacket	2	Nos
4	Night Vision Device	1	Nos
5	Hand Gloves	2	Nos
6	Shatter Proof Goggles	2	Nos
7	Elbow and Knee Pads	2	Nos
8	Balaclava	2	Nos
9	Tactical Belt	2	Nos
10	Search Light/Tactical Light	2	Nos
11	Glowstick	3	Nos
12	Binocular	3	Nos
13	Floodbag	4	Nos
14	Blocking Sheet	4	Nos
15	Computer	3	Set
16	Laptop	4	Nos
17	Non-Linear Junction Detector	1	Nos
18	Deep Search Mine Detector	1	Nos
19	Door Frame Metal Detector Portable	1	Nos
20	Door Frame Metal Detector Fixed	1	Nos
21	Hand Held Metal Detector	1	Nos
22	Explosive Detector	1	Nos



<b>TACTICAL EQUIPMENTS</b>			
<b>Sl No</b>	<b>Item Description and specifications</b>	<b>Compliance (Yes/No)</b>	<b>Deviations</b>
	<b>Bullet Proof Helmet</b> – As per Annexure A		
	<b>Bullet Proof Jacket for VIP</b> - As per Annexure B		
	<b>Bullet Proof Jacket</b> - As per Annexure C		
	<b>Night Vision Device</b>		
	<b>SALIENT FEATURES</b>		
	<ul style="list-style-type: none"> <li>The equipment shall be rugged, and easy to handle, which can be used for reconnaissance/ surveillance operations at night. The equipment shall provide vision at night under the moonlight, starlight and overcast cloudy conditions.</li> </ul>		
	<ul style="list-style-type: none"> <li>The equipment shall be a bi-ocular system.</li> </ul>		
	<ul style="list-style-type: none"> <li>Weight of the equipment shall be <math>\leq</math> 750 grams including batteries and excluding mounting accessories</li> </ul>		
	<b>IMAGE INTENSIFIER TUBE CHARACTERISTICS</b>		
	<ul style="list-style-type: none"> <li>II Tube shall be Multialkali or better</li> </ul>		
	<ul style="list-style-type: none"> <li>II Tube shall have minimum limiting resolution of 68 lp/mm or better</li> </ul>		
	<ul style="list-style-type: none"> <li>II Tube shall have Photocathode sensitivity of <math>\geq</math> 600 <math>\mu</math>A/lm or better</li> </ul>		
	<ul style="list-style-type: none"> <li>SNR of the II tube shall be minimum 25:1 or better</li> </ul>		
	<ul style="list-style-type: none"> <li>FOM of II Tube shall be 1700 or better</li> </ul>		
	<ul style="list-style-type: none"> <li>II tube shall have in-built Bright Source Protection (BSP)</li> </ul>		
	<ul style="list-style-type: none"> <li>II tube shall have in-built Automatic Gain Control (AGC)</li> </ul>		
	<ul style="list-style-type: none"> <li>MTTF of the II tube shall be 10,000 hrs or better</li> </ul>		
	<b>EFFECTIVE RANGEABILITY</b>		
	<ul style="list-style-type: none"> <li>Human(1.8m x 0.5m) Detection range under starlight conditions shall be 400 mtrs</li> </ul>		
	<ul style="list-style-type: none"> <li>Human(1.8m x 0.5m) Recognition range under starlight conditions shall be 300 mtrs</li> </ul>		
	<ul style="list-style-type: none"> <li>Vehicle(light commercial vehicles/trucks/ stallions /armoured vehicles) Detection range under starlight conditions shall be 500 mtrs</li> </ul>		
	<ul style="list-style-type: none"> <li>Vehicle(light commercial vehicles/trucks/stallions/ armoured vehicles) Recognition range under starlight conditions shall be 400 mtrs</li> </ul>		
	<b>EQUIPMENT CHARACTERISTICS</b>		
	<ul style="list-style-type: none"> <li>Magnification of the equipment shall be minimum 4X or better.</li> </ul>		
	<ul style="list-style-type: none"> <li>Field of view of the equipment shall be 7.5° or better.</li> </ul>		
	<ul style="list-style-type: none"> <li>Diopter adjustment range shall be -5D to +5D or better.</li> </ul>		
	<ul style="list-style-type: none"> <li>Minimum focus distance for the equipment shall be 10 mtr to infinity.</li> </ul>		
	<ul style="list-style-type: none"> <li>The equipment shall have integrated IR LED.</li> </ul>		
	<ul style="list-style-type: none"> <li>The equipment shall have live analog video transmission.</li> </ul>		

	<b>POWER SUPPLY</b>		
	<ul style="list-style-type: none"> <li>Equipment shall be capable of power-on using commercially available, removable and non rechargeable AA or equivalent batteries.</li> </ul>		
	<ul style="list-style-type: none"> <li>Equipment shall have battery endurance of minimum 10 hours on IR ON mode and 20 hours on IR OFF mode.</li> </ul>		
	<b>ENVIRONMENTAL FEATURES</b>		
	<ul style="list-style-type: none"> <li>Operating temperature of the equipment shall be -30°C to +55°C or better.</li> </ul>		
	<ul style="list-style-type: none"> <li>Storage temperature of the equipment shall be -40°C to +70°C or better.</li> </ul>		
	<ul style="list-style-type: none"> <li>Product shall be JSS-55555 certified by Indian Govt Lab/NABL accredited Lab. Test reports for High temperature, Low temperature, Vibration, Bump, Corrosion(salt), Dust, Drop and Ingress protection to be attached certified by Indian Govt. Lab/NABL accredited Lab. Certificates to be enclosed.</li> </ul>		
	<b>MISCELLANEOUS</b>		
	<ul style="list-style-type: none"> <li>OEM shall have its own NABL accredited lab facility in India for testing and calibration of optoelectronic equipment.</li> </ul>		
	<ul style="list-style-type: none"> <li>The OEM shall be registered with Ministry of Defence (MoD)/Govt agency.</li> </ul>		
	<ul style="list-style-type: none"> <li>The OEM shall have Quality management system certificate as per ISO 9001:2015.</li> </ul>		
	<ul style="list-style-type: none"> <li>The OEM Must have valid DPIIT Licence for Night Vision Binocular In accordance with Press Note 1(2019) Annexure 1 (iii) Allied Items of Defence Equipment (4)(b) Image intensifier equipment including interactive environment system</li> </ul>		
	<ul style="list-style-type: none"> <li>"Supplier are liable to be rejected if they fail to supply the goods on time or supply substandard goods or make any false declaration to any Government agency or for any ground which, in the opinion of the Government, is not in public interest." in accordance with Rule 150(iv) GFR 2017."</li> </ul>		
	<ul style="list-style-type: none"> <li>The bidder should not have short close any order due to supply of substandard goods or defective goods.</li> </ul>		
<b>5</b>	<b>Hand Gloves</b>		
	<ul style="list-style-type: none"> <li>Light Weight tactical gloves</li> </ul>		
<b>6</b>	<b>Shatter Proof Goggles</b>		
	<ul style="list-style-type: none"> <li>Light Weight, Anti-Fog and Scratch Proof</li> </ul>		
	<ul style="list-style-type: none"> <li>Impact Protection and coverage (High-impact polycarbonate lenses that exceed military ballistic impact requirements for goggles)</li> </ul>		
	<ul style="list-style-type: none"> <li>Should meet ANSI Z87.1-2010 ballistic impact and optical requirements or higher</li> </ul>		
	<ul style="list-style-type: none"> <li>Should be CE certified in accordance with EN 166, EN 170, AND EN 172</li> </ul>		
<b>7</b>	<b>Elbow and Knee Pads</b>		
	<ul style="list-style-type: none"> <li>600 denier nylon shell</li> </ul>		
	<ul style="list-style-type: none"> <li>Injection-moulded flex cap design</li> </ul>		
	<ul style="list-style-type: none"> <li>Minimum gap between bottom of cap and nylon carrier</li> </ul>		

	<ul style="list-style-type: none"> <li>• Padded side extensions</li> <li>• Hook &amp; loop elastic straps</li> </ul>		
<b>8</b>	<b><u>Balaclava</u></b>		
	<ul style="list-style-type: none"> <li>• Light</li> <li>• Constructed of 6-oz. NOMEX (flame Protection)</li> <li>• Internal flat-seam stitching to prevent irritation when wearing a helmet</li> <li>• Length: 18"</li> </ul>		
<b>9</b>	<b><u>Tactical Belt</u></b>		
	<ul style="list-style-type: none"> <li>• MIL-standard certified</li> <li>• Buckles and Adapters. – Parachute Grade meeting PIA-H-7195 standards</li> <li>• Nylon webbing only tensile strength: 5,000-7,000-lb.</li> <li>• Hook &amp; loop secures running end - Yes</li> </ul>		
<b>10</b>	<b><u>Search Light/Tactical Light</u></b>		
<b>11</b>	<b><u>Glowstick</u></b>		
<b>12</b>	<b><u>Binocular</u></b>		
	<ul style="list-style-type: none"> <li>• Light weight and durable - Yes</li> <li>• Objective Diameter - 42 mm</li> <li>• Magnification - 8 x</li> <li>• Field of view - 375 ft (at 1000 YD)</li> <li>• Fast Close Focus - Minimum Rotation</li> <li>• Superior Light Transmission with high contrast imaging</li> <li>• Water proof and fog proof - Yes</li> <li>• Grip - Sturdy</li> <li>• Close Focus - 6.6 ft</li> <li>• Exit Pupil - 5.25 mm</li> <li>• Luminosity - 27.65</li> <li>• Rotary Eyecups - With Rubber Armouring</li> <li>• Weight - Less than 800 gm</li> <li>• Accessories - Neck Strap Attachment, Carrying Case</li> </ul>		
<b>13</b>	<b><u>Flood Bag</u></b>		
<b>14</b>	<b><u>Blocking Sheet</u></b>		
<b>15</b>	<b><u>Computer Set with UPS</u></b>		
	<ul style="list-style-type: none"> <li>• Processor - 13th Generation Intel® Core™ i7</li> <li>• Operating System - Windows 11</li> <li>• 16 GB RAM   Storage – 512 GB SSD</li> <li>• MS – Office</li> </ul>		
<b>16</b>	<b><u>Laptop</u></b>		
	<ul style="list-style-type: none"> <li>• Processor - 13th Generation Intel® Core™ i7</li> <li>• Operating System - Windows 11</li> <li>• 16 GB RAM   Storage – 512 GB SSD</li> <li>• MS – Office</li> <li>• Camera with Microphone</li> <li>• 65 W Charger</li> </ul>		

**BALLISTIC HELMET WITH ENHANCED ALL-AROUND  
PROTECTION OF AK-47 HARD STEEL CORE BULLETS**

**Rifle Protection Helmet**

S.No	Technical Specification
1	<p><b><u>Operational Parameters</u></b>  <b><u>Ballistic Resistance.</u></b> Provide equal protection throughout the covered area of the helmet against 9x19 mm FMJ/Pb bullets at <math>430 \pm 15</math> m/s from 5 m.</p>
2	<p><b><u>Enhanced Protection Modular Attachment.</u></b> Be provided with suitable modular attachments to enhance the above-mentioned protection levels of the Ballistic Helmet to protect against 7.62x39 mm Hard Steel Core bullets at <math>700 \pm 15</math> m/s from 10m. Be modularly attached over the shell of the Ballistic Helmet to cover the front, sides, and back of the BH. Be rugged to sustain protection levels under operational conditions.</p>
3	<p><b><u>Trauma Level (Back Face Signature)</u></b>            (a) Not more than 13 mm for a minimum of five randomly fired shots of bullets for 9 x 19mm.(One shot on the front, one shot on the Rear, two shots on each side, and one shot on crown)             (b) Not more than 15 mm for a minimum of four randomly fired shots of bullets for AK HSC (One shot on the front, one shot on Rear, and two shots on each side)</p>
4	<p><b><u>Operating Temperature.</u></b> Be able to operate between minus 20°C to plus 45°C.</p>
5	<p><b><u>Design.</u></b> As per Advanced Combat Helmet design. Coverage Area of a medium size helmet shell (inner) will be minimum 1100 sq cm. Coverage Area of the modular appliques/ attachment will be minimum 600 sq cm. It should be bolt-free design. It should facilitate unhindered use of handset of communication radio, in-service Night vision devices, personal spectacles and respirators/ chemical hoods.</p>
6	<p><b><u>Size and Weight.</u></b> The size (to fit the head sizes given below) and weight of the complete helmet with modular attachment (enhanced protection):-             (a) <b><u>Small size.</u></b> -48 to 52 cms (Weight - Maximum 2.1 Kg).            (b) <b><u>Medium size.</u></b> -52 to 57 cms (Weight - Maximum 2.2 Kg).            (c) <b><u>Large size.</u></b> -57 to 62 cms (Weight - Maximum 2.3 Kg).</p>
7	<p><b><u>Ergonomics.</u></b> Be comfortable to wear continuously for prolonged hours in varied operating environments. Design should not hinder aiming during use of personal/ crew served weapons. Inner padding to enable air circulation to mitigate heat retention.</p>
8	<p><b><u>Harness.</u></b> The harness should be provided with adjustable straps/ fasteners with multipoint support, comfortable chin cup, internal layer, hook disks and a complete pad set. The harness retention system must ensure NO WOBBLE of the Helmet during continued usage by providing 360° grip around the head. Quick release mechanism to ensure ease of wearing, adjusting and removal of helmet even while wearing ECC gloves.</p>
9	<p><b><u>Surface &amp; Interiors.</u></b> Shell of Ballistic Helmets must have a matt finish. The padded interiors must be easily removable and easy to wash and dry. Material of pads &amp; harness must be anti-bacterial &amp; anti-fungal in nature. Material of pad covers and harness straps be of wicking nature and retard any kind of smell.</p>
10	<p><b><u>Reversible Cloth Cover.</u></b> A reversible cloth cover must be provided to cover shell, including the modular attachments for enhanced protection, of the helmet. The pattern should be Indian Army Combat Uniform Digital pattern with Desert Tan shade on reverse. The fabric must be flame retardant and water resistant. Patches of hook and loop fasteners be provided on the cover to enable attachment of accessories as desired.</p>

11	<b>Carry Bag.</b> A carry bag with a zipper be provided to enclose the helmet during transportation. Be in same colour shade as helmet shell, be light weight and cushioned to ensure damage free handling during transportation. The fabric of carry bag must be water proof.
12	<b>Accessories.</b> Shroud and tactical side rails be provided to facilitate attachment of various accessories. (Weight of this should be extra, not more than 350 gms)  (a) <b>Shroud.</b> Be fitted on front side of Helmet bolt-lessly and allow accommodating the interface of Night Vision devices.  (b) <b>Tactical Side Rails.</b> Be provided on both sides of the Helmet to accommodate IR torch & Visor with appropriate mounting. Must conform to MIL STD 1913.
13	<b>Colour.</b> The complete Ballistic Helmet should be olive green in colour {PANTONE Number 18-0420 TPG (Four Leaf Clovers)}. Harness and accessories such as tactical side rail and shroud must be in same colour as the shell or in Black colour.
14	<b>Service Life.</b> Minimum eight years for Ballistic Helmet Shell with Enhanced Protection Attachments. Minimum two years for all other components.
15	<b>Size Markings.</b> The size and manufacturer details to be marked by engraving/ laser etching on the inner side of the helmet and should not wear off with rough use.
16	The OEM should have the Industrial license issued from DPIIT under IDR Act 1951 for defence Sector.
17	The Enhanced protection band of the Ballistic helmet should be made of Monolithic ceramic (single-piece ceramic construction). The ceramic should be Boron Carbide (B4C)
18	The OEM of the Ballistic helmet should provide the RMAC (Raw Material Assurance Certificate).
19	Ballistic test reports should not be older than 1 year from the date of the RFP.
20	The Composite of the Enhanced protection band should be made using ceramic of density < 2.66 gm/cc.
21	Ballistic Test report should be submitted for the aforementioned specifications from any NFSU/TBRL or any Indian Govt Accredited Lab.



S. No.	Specifications Bullet Resistant Vest
1.	Before commencement of ballistic trial vendors shall be briefed about test procedures. They will be asked to sign certain certificates (Annexure A & A1). Tests will be conducted as per Trial Directive.
2.	The decision of Technical Evaluation Committee will be final. The test results will be recorded on the same day and firms' signatory shall be required to sign Compliance Test Report (CTR). No re-testing of tested samples on the firm's request will be undertaken.
3.	Test sequence will be decided through draw of lots.
4.	Action on Fair and unfair shots will be taken as per Trial Directive.
5.	Physical examination of the tender sample would be carried out by a Group of Officers nominated by the Chairman of Technical Evaluation Committee.
6.	Only vendor or one authorized representative of firm would be present during the physical examination which would include physical parameter and weight, comfort and checking of documents.
7.	Vendor or authorized representative of firm must submit in writing, any objections, or representation, if any, with regards to these trials, to the officer In charge of the team, within One hour on the completion of evaluation of their sample.
8.	User BOO shall carry out the Human Fitment Trial and Functional Operational Trial and Functional Operational Trial of BR Vest for Male & Female (As per requirements of User) before ballistic trial evaluation.
9.	Ballistic trials as per the QRs will be held at TBRI/CFSL, Chandigarh or any other facility (Any <b>NABL accredited Lab which is specifically approved for Ballistic testing</b> ) as decided by Technical Evaluation Committee. The entire proceedings of the preparation of various equipment's such as plasticine box, proceedings of the preparation of various equipment such as plasticine box, chronometer, mounting etc, standardization, reading of these instruments and their mounting and conduction of the ballistic trials, will be carried out by the experts of the laboratory.
10.	The final results would be made available to the vendor or authorized representative of firm at a designated place and time, decided by the Chairman of the Technical Evaluation Committee.
11.	The decision of the Chairman, Technical Evaluation Committee shall be final on the representation of vendor or authorized representative of the firm.

**A.**

**DESIGN PARAMETERS FOR BR VEST**

Shall conform to Trial Directive, "Ballistic Resistance of Vest," Protection against:

- (i) 9x 19 mm cartridge fired through Sub Machine Gun (Such as Sten Machine, MP-5, Carbine, any other variant) from a distance of 5 meters to achieve a muzzle velocity  $430 \pm 15$  m/s and the weight of the bullet between 7.4 to 8.2 g.
- (ii) .357 SIG FMI Flat Nose (FN) bullet with a specified mass of 7.9 to 8.3 g, velocity of  $440 \pm 15$  m/s from a distance of 5 meters. **(Optional)**
- (iii) .44 magnum Semi Vested Hollow Point (SJHP) bullets with a specified mass of 15.4 to 15.8g, velocity of  $430 \pm 15$  m/s from a distance of 5 meters. **(Optional)**

**B.**

**SIZES OF SOFT ARMOUR PANEL (SAP)**

SAP should be of three different sizes i.e. STANDARD, LARGE, & EXTRA LARGE.

**C.**

**AREAS OF COMPONENTS OF SOFT ARMOUR PANEL**

Each component should be made of multi layers of same material. Each layer will be in single piece and of equal shape and size to maintain uniform thickness all over area up to edge level. Coverage area of the SAP should be as per the sizes mentioned below:-  
(Table-1)

S. No	Category	STANDARD (In m <sup>2</sup> )	LARGE (In m <sup>2</sup> )	Extra Large (In m <sup>2</sup> )
1	For Male	0.30	0.33	0.36
2	For Female	0.32	0.35	0.38

Dimension			
Length (Bottom of neck scoop to bottom of vest)	35cm	37cm	39cm
Chest Size	90cm	95cm	100cm

- (i) Should be thin enough to be properly concealable with max thickness of 05mm, including trauma pad if any.
- (ii) Negative tolerance in terms of area measurement is not permissible.
- (iii) Measurements will be made with the help of scaled drawing on graph paper and using planimeter.

#### D.

##### WEIGHT OF VEST-

Total weight of BR vest for ammunition 9 x 19 mm. MV 430 ± 15 m/s including SAPs, Outer cover and trauma liner should not exceed as mentioned below:-

S. No.	Category	STANDARD (In Kg)	LARGE (In Kg)	Extra Large (In Kg)
1	For Male	1.5	1.6	1.7
2	For Female	1.9	2.1	2.2

(Table -2)

Total weight of BR vest for optional ammunitions .357 SIG F&M (440 ± 15 m/s), .44 Magnum (430 ± 15 m/s) including SAPs, Outer cover and trauma liner should not exceed as mentioned below:-

(Table - 3)

S. No.	Category	STANDARD (In Kg)	LARGE (In Kg)	Extra Large (In Kg)
1	For Male	1.8	1.95	2.1
2	For Female	1.9	2.1	2.2

<b>E.</b>	<b>CARRIER SYSTEM</b> <ul style="list-style-type: none"><li>(i) Made of high quality fabric preferably cotton based.</li><li>(ii) The cloth of the carrier must be pre-shrunk before stitching.</li><li>(iii) The fabric must be suitable to wear in the Indian conditions of heat, rain, and humidity.</li><li>(iv) Should have a proper sweat management system for:-<ul style="list-style-type: none"><li>(a) Body Sweat and odour absorption.</li><li>(b) Vapour, Moisture and breathable for cooling effect.</li><li>(c) Fire/UV/Oil/Chemical resistant.</li><li>(d) Machine Washable.</li></ul></li></ul>

	<p>(e) The carrier shall be adequately stitched and reinforced to prevent fabric ripping or seams opening due to laundering.</p> <p>(f) One Extra carrier to be provided with each BR Vest.</p> <p>(g) The Carrier should be single piece with separate front and back SAPs. Zips may be provided on sides.</p> <p>(h) Overlapping of SAPs be provided on both the sides where front and back panels joins, to leave no gaps. This would provide maximum coverage area for protection all around.</p> <p>Note: - The methods of testing criteria for measuring the properties of outer carrier shall be as per IS: 11871-1986, IS: 14887: 2014 (Annex C, After UV exposure of 192 hrs the strength retention shall be min 85 per cent) IS: 392-1989 and IS 391 – 1975.</p> <p>Vendor should supply 3 meters of each fabrics used both at the time of tender and from actual production for laboratories testing.</p> <ul style="list-style-type: none"> <li>• Duration of flame after removal of burner-maximum 5 second (Test method IS 11871).</li> <li>• Duration of flame afterglow-maximum 5 second (Test method IS 11871).</li> <li>• Hydrostatic Head-Minimum 100 cms of water for 24 hrs (Test Method IS391-1975).</li> <li>• Water penetration should be zero (Test Method IS392-1989).</li> </ul> <p>The test specified will be conducted at a Government Institute, having required technical expertise. The Institute will be selected by technical Evaluation Committee in consultation with experts. All tests will be in accordance with Trial Directives. Any changes in the SOP will be decided by Technical Evaluation Committee.</p>
<p><b>F.</b></p>	<p><b>DESIGN /CONSTRUCTION</b></p> <p>i) Customize design according to the need of user and provide protection against 9mm bullet and desirable/optional protection against .357 SIG FMJ Flat Nose (FN) bullet and with .44 magnum Semi Vested Hollow Point (SJHP) bullets with a above specified mass and a velocity.</p>



	<p>ii) Adjustable at the shoulders, waist, with appropriate Hook and Loop fasteners (Velcro's), as per 8156-2014. An adjustable Velcro should be provided with double locking of vest with Velcro (from front for male &amp; from rear for female).</p> <p>iii) The Vest should be designed and fabricated to withstand hard daily wear.</p> <p>iv) Thread tension should be maintained such that no loose stitches.</p> <p>v) The vendor has to declare the type of materials, number of layers, and their aerial density in technical bid of tender and they have to maintain the same in bulk supply.</p> <p>vi) SAP should be encased in some materials so as to make it water proof.</p> <p>vii) Outer carrier shall be machine washable and body sweat and odour absorption.</p> <p>Note:-</p> <p>i. Vendor to provide "Raw Material Assurance Certificate" in support of their SAP designs.</p> <p>ii. Vendor must provide Certificate from the original anti-ballistic material supplier, confirming that the required volume of material/grade is purchased for the commercial supply of BR Vest and same is being used during bulk supply of BR Vest. For confirmation, user should provide few samples out of bulk supplied of BR Vest to the original anti-ballistic material supplier and obtain the requisite report.</p>
<p><b>G.</b></p>	<p><b>TRAUMA PAD FOR TRAUMA ATTENUATION</b></p> <p>(i) Trauma pad made of extremely light weight, thin and flexible material.</p> <p>(ii) It must cover uniformly up to edge level of the SAPs. Seam sealed along with SAP.</p> <p>(iii) Back face Signature (BFS) should not exceed 44 mm in Plasticine block.</p>
<p><b>H.</b></p>	<p><b>LABELLING-</b> The outer carrier and the two Soft Armour panels must be labelled as giving in below:-</p> <p>Name, logo or other identification of the Manufacturer : xyz</p> <p>Name of the Product : aabb</p> <p>Date of Manufacturing : dd : mm : yyyy</p>

	<p>Date of Receipt : (to be filled by user)</p> <p>Size : Standard/Large/Extra Large</p> <p>Identification number : abcd-----</p> <p>Reference : Tender No. with date</p> <p>Note: - Strike face of Vest should be clearly marked</p>
<p><b>I.</b></p>	<p><b>SOFT ARMOURT PANEL (SAP)</b></p> <p>(i) SAP shall be able to withstand BIS Level 1 in respect of the calibre &amp; the weapon selected for trial and other parameters such as weight &amp; velocity of the bullet in ammunition selected for trials.</p> <p>(ii) To provide full front and back torso protection as well as full sides and upper shoulders.</p> <p>(iii) The weight of the material shall be so balanced as to make the SAP lightweight, breathable, soft, and pliable.</p> <p>(iv) The aerial density of the panels shall be such as to provide the rated ballistic and trauma protection.</p> <p>(v) No tears, rips, worn spots, discolorations, loose or torn stitching and set wrinkles on the SAP shall be allowed.</p> <p>(vi) The panel shall be treated with approved and durable water repellent.</p> <p>(vii) The SAP shall be removable from outer carrier to allow for periodic cleaning.</p> <p>(viii) The SAP shall be placed in tightly sealed with some material so as to make it completely water repellent and waterproof.</p> <ul style="list-style-type: none"> <li>• Hydrostatic Head-Minimum 100cms of water (Test Method IS391-1975).</li> <li>• Water penetration should be zero (Test Method IS 392-1989.)</li> </ul> <p>Note: Vendor must declare number of layers and type of material (aerial density of material) used for fabricating Soft Armour Panel as per original manufacturer of the material. Raw Material Assurance Certificate (RMAC) must be given from original manufacturer in respect of material for SAP, valid for a period of six months from the closing date of tender. The vendor has to make bulk supply as per the above declaration.</p>
<p><b>J.</b></p>	<p><b>OTHER STIPULATIONS</b></p>

	<p>VEST STYLE : POLICE</p> <p>SERVICEABILITY : 5 YEARS (SAP &amp; trauma liner)</p> <p>GUARANTEE : The outer Carrier shall be guaranteed for a period of 2 years against all manufacturing defects.</p> <p>HUMIDITY : 95% at 40°C</p> <p>STORAGE : Normal Room Temp.</p>
<p><b>K.</b></p>	<p><b>IMMUNITY LEVEL/PROTECTION:</b></p> <p>(i) <b>Soft Armour Panels</b></p> <p>As described in table below, six shots (4 + 2 (1 each from 30° and 45° angle) fired through 9mm Sub Machine Gun (Such as Sten Machine, MP-5, Carbine, any other variant). One extra shot on seam provided on projection for bust in Female vest.</p> <p style="text-align: center;"><b>(Table – 3)</b></p> <p>Note:-</p> <ol style="list-style-type: none"> <li>1. *BFS – Back Face Signature on Plasticine.</li> <li>2. Selected weapon and lot of ammunition, for which reference velocity has been once achieved, will remain the throughout ballistic testing of all tender samples of various firms.</li> </ol>

Armour Type	Test Bullet	Bullet weight	Reference Velocity	Hits per Armor part at 0° angle of incidence	BFS* Depth Maxi	Shots per Panel (front and rear)
BIS Level 1	9mm FMJ RN	7.4 gm to 8.2gm	430 ± 15 m/s	4+ (01 each at 30° and 45°)	44 mm	6+1 (in case of female vest)
	.357 SIG FMJ Flat Nose (FN) (Optional)	7.9 gm to 8.3 gm	440 ± 15m/s	4+ (1 each at 30° and 45°)	44mm	6+1 (in case of female vest)
	44 magnum Semi Vested Hollow Point (SJHP) (Optional)	15.4 gm to 15.8 gm	430 ± 15m/s.	4+ (01 each at 30° and 45°)	44mm	6+1 (in case of female vest)
<b>L.</b>	<p><b>SAMPLE</b></p> <p>i) The supplier/manufacturer shall provide complete 04 BR Vests. Out of which, 02 complete BR Vests of particular size and two (one each) complete BR Vest of two sizes.</p> <p>(ii) Each model/brand of BR Vest should be submitted against a separate tender form.</p>					

<b>M.</b>	<b>Testing facilities-</b> Ballistic trials as per the QRs will be held at CFSL and TBRL, Chandigarh or Any Other Facility (Any NABL accredited Lab which is specifically approved for Ballistic testing) as decided by Technical Evaluation Committee.
<b>N.</b>	Vendor must possess a Valid BIS License and all the vest should have the CML no. on every vests.



## **Technical Specifications of Bullet Resistant Jacket**

**Threat Level:** BIS Level 5 (As per Table 7 of IS 17051:2018 Amendment no. 1 July 2020)

**BFS:** ≤ 25 mm (As per Para 6.2.2. and Annex D of IS 17051:2018).

**Configuration:** The configuration should be Standalone (As per Para 3.25 of IS17051:2018). Only the Hard Armour Panel

**Areal Density of HAP:** The Aerial Density of the HAP should not be more than 33 Kg/ sqm. (As per Table 6 of IS 17051:2018)

**Pocket with flaps on Outer Carrier:** The BRJ should be provided with the 2 nos pockets to accommodate 4 nos AK Magazine (2 magazine in each pocket) and 2 nos. pockets to accommodate 2 grenade (1 each).

**Kamarbandh:** A belt of nylon material having minimum width of 10 cm should be provided around the waist to properly secure the bullet resistant jacket with the body of the wearer around waist, so that weight of jacket is distributed on waist/shoulders. The belt / kamarbandh should be provided with double locking of jacket with hook and loop fastener. (As per Para 5.1.4 of IS 17051:2018)

**Outer Cover fabric:** The colour of the fabric should black in colour and the specification of the fabric should be as per Para 5.1.1. of IS 17051:2018 and Table 2 of IS 17051:2018)

**Hook and Loop Fasteners:** All the clothing flaps of the jackets should be provided with hook and loop fastener, so that it can be worn and taken off easily and quickly. The hook and loop tape fastener should be supplied colour. The shade of the hook and loop fastener should be uniform throughout on both hook and loop fastener. The hook and loop fastener should conform to the requirements specified in Table 3 of IS 17051:2018. (As per Para 5.1.2. of IS 17051:2018)

**Color of the Fabric:** Black

**Water repellent covers for HAP :** The HAPs should be encased in water repellent cover. Water repellent cover should meet the water resistance requirement as specified in Table 2, SI No. (v) of the IS 17051:2018.

**Labeling of Ballistic Component:** All ballistic components of the bullet resistant jacket should be properly labelled. The label should be on the wear side of the component. The labelling should be in bold legible letters and should contain the following information:

- a) Type of the material such as soft/hard armour panel;
- b) Manufacturer name/logo/identification mark;
- c) Threat level;
- d) Name of product/model number;
- e) Size;
- f) Panel ID;
- g) Lot/batch number;
- h) Date of manufacturing in DD:MM:YYYY format; and
- j) Date of expiry in DD:MM:YYYY format.

The strike face should be clearly marked in large legible letters on the strike side

**Declaration of material:** The supplier should declare the type of materials, number of layers, and their areal density in technical bid of tender and should have to maintain the same in bulk supply. The information should be kept in sealed/secured condition and will only be opened in case of failure of lot during bulk testing for comparison.

**Sizes:** Small/Medium/Large (As per IS 17051:2018)

**Warranty:** 01 Year

**Hard Armour Panel:** Front, Back

**Protection Area of the HAP:** The minimum protection area of the Soft Armour Panel should be as per Table 4 of IS 17051:2018.

<b>Panel \ Size</b>	<b>Small</b>	<b>Medium</b>	<b>Large</b>
Front (in sq. m)	0.700	0.735	0.772
Back (in sq. m)	0.700	0.735	0.772

**The Maximum Weight of the Jacket:** The maximum weight of the Bullet Resistance Jackets should be as per IS 17051:2018 Amendment no. 1 July 2020.

<b>Size</b>	<b>Weight</b>
Small	5.32 kg
Medium	5.59 kg
Large	5.87 kg

**Manufacturing License:** OEM should have the Industrial License issued from DPIIT under the Industries(Development & Regulation -IDR) Act, 1951. If vendor participate with the OEM authorization letter, in that case vendor should present the OEM's Industrial License.

**NSIC:** NSIC certificate shall not be considered as manufacturing license.

**Hard Armour Plates of the Bullet Resistance Jackets:**

- i) The ceramic of the Hard Armour Plate should be B4C (Boron Carbide).
- ii) The composite of Hard Armour Plate should be made using ceramic of density < 2.60 gm/cc.
- iii) The hard armour panel should be monolithic to ensure ceramic material presence up to the edges.

**BIS License:** The Product should be BIS certified and the CM/L Number should marked on the Jacket. The OEM should submit their valid BIS certificate.

**JV/Consortium:** JV and consortium is not allowed in the bid.

**Quick release mechanism:** The bullet resistant jacket should have quick release mechanism which allow release of the jacket in single action by using one hand (left or right) from the torso within 5 s. The released jackets should stay in one piece so as to reassemble for ready to wear within 30 s at night condition by trained users. (As per Clause 5.1.8 of IS 17051:2018 Amendment no. 1 July 2020). The weight of the QR System should not be more than 350 gms.

<b>BDDS ITEMS</b>			
<b>SI No</b>	<b>Item Description and specifications</b>	<b>Compliance (Yes/No)</b>	<b>Deviations</b>
1	Non Linear Junction Detector – As Per Attached QRS		
2	Deep Search Mine Detector - As Per Attached QRS		
3	Door Frame Metal Detector Portable - As Per Attached QRS		
4	Door Frame Metal Detector Fixed- As Per Attached QRS		
5	Hand Held Metal Detector - As Per Attached QRS		
6	Explosive Detector- As Per Attached QRS		

		<b>QRS FOR NON LINEAR JUNCTION DETECTOR</b>		
<b>SL No</b>	<b>Parameters</b>	<b>QRS</b>	<b>Compliance</b>	<b>Deviations</b>
<b>TRANSMITTER</b>				
1	Frequency	Pure Spectral frequency 800 - 802 mHz with in built spectrum analyzer		
2	Power Output	Average power should not exceed 4watt continuous (Test Certificate for the same should be submitted from an accredited Indian Laboratory authorized to carry out such tests)		
3	Modulation	Pulse or Continuous		
<b>RECEIVER</b>				
4	Should have Rx frequency for 2nd & Third harmonics	1600 - 1604 MHz And 2400 - 2404 mHz for 2nd & 3rd harmonics respectively		
5	Sensitivity	Should be better than -120dbm		
<b>ANTENNA</b>				
6	Cables	All cables and connectors should be internal		
7	Display	Should have a visual display		
8	Should have control functions	(a) Volume (b) Power Selection (c) Digital Signal Processing (DSP) with instantaneous reaction time.		
<b>OUTPUT</b>				
9	Audio	On set loudspeaker and independent earphone / headphone set.		
10	Display	The visual display should show & distinguish between 2nd and 3rd Harmonics. Color LCD display showing the strength of the 2nd & 3rd harmonic & spectrum analyzer on the sweep head		
11	Test Target	A single power diode		
12	Detection range in open space	Minimum 0.4m or better		
	In Dug underground	Minimum 0.15m or better		
13	Test false alarm rate	Should be less than 5%		
<b>POWER REQUIREMENTS</b>				
14	Battery	Rechargeable battery. Should provide minimum of 3hours operation time on a single full charge. Should have one spare battery. Battery should have protection against reverse polarity		
15	Battery Charger Specifications	180V to 240V		



2	Weight and Dimensions	<p>i) Complete operational unit with batteries &amp; Search head 3.5 Kgs (Maximum)</p> <p>ii) Bag pack weight of the equipment with search head 5 Kgs (Maximum)</p> <p>iii) Total weight of the equipment including all accessories and ruggedised carrying case 12Kgs (Maximum)</p> <p>iv) Packed length of equipment should be maximum 700mm</p> <p>v) operating length:- (Measured from the rear end of arm rest to edge of coil, coil being placed parallel to the shaft). The maximum operating length should be between 700 to 90MM and the maximum operating length should be in between 1500 to 1750MM</p>			
3	Search Head	<p>The search head should be in any i.e. Circular or oval.</p> <p>i) The circular search coil should have diameter between 20cm to 26cm and oval search coil should have dimension between 20cm to 30cm</p> <p>ii) Extendable rods with clamps to extend the length of detector</p> <p>iii) Ruggedised/replacable Protective cover for the search head should be provided.</p>			
4	Detection sensitivity	<p>i) The size and shape of the objects with which the tests be conducted are as under</p> <p>a) 0.15 gm metal - 1 inch x 1 inch tin foil</p> <p>b) 50 mm nail - Thickness 03 mm and dia of head 06 mm.</p> <p>c) Salty water - 03 gm iodized common salt in 1 lks of water</p> <p>ii) The sensitivity of the detector must meet the following specifications:</p> <p>In free Air :</p> <p>(a) 0.15 gm metal 27 cm;</p> <p>(b) 50 mm nail vertical 33 cm;</p> <p>(c) 50 mm nail horizontal 25 cm;</p> <p>Under Ground</p> <p>(a) 0.15 gm metal 20 cm;</p> <p>(b) 50 mm nail vertical 28 cm;</p> <p>(c) 50 mm nail horizontal 18 cm;</p> <p>In clear water</p> <p>(a) 0.15 gm metal 20 cm;</p> <p>(b) 50 mm nail vertical 20 cm;</p>			

		(c) 50 mm nail horizontal 19 cm; In salty water		
		(a) 0. 1 5 gm metal 20 cm;		
		(b) 50 mm nail vertical 28 cm;		
		(c) 50 mm nail horizontal 19 cm;		
		iii) Detector must be capable of pinpointing detected metal to =10 cm range and will be checked in free air, underground, clear water and salty water. The distance will be. Taken from the center of the search head to the center of the object.		
		iv) Detection tone should be distinct from the working tone the equipment should be free from radio and static interference and the- equipment should have the radio frequency interference elimination feature and this feature should be independent of sensitivity button.		
		v) Ground compensation feature should be in the equipment for manual ground compensation by the user if required for any particular soil and this feature should be independent of Sensitivity button		
		vi) The equipment should have Audio Threshold feature to enable the user to increase or decrease audible response from the Target for a better detection of Target.		
5	<b>Detection Capability</b>	i) Very easy and effective searching of large areas. ii) Should detect all ferrous and nonferrous Metals. There Should be different Audio tone/Pitch to differentiate between ferrous and non Ferrous metal. iii) Must be capable of detecting buried metals in all types of soil including laterite. iv) It should work in all-weather condition from arid to pouring rain. v) Usage time should be minimum 12 hours on rechargeable batteries. vi) Operating temperature: -20. to + 55" C. vii) The equipment should be able to differentially detect two detonators placed at a distance of one ft apart. i) The integrated unit should have Led display Bright enough to be visible in sunlight.		
6	<b>Control Panel and display unit</b>	ii) Visual LED indication must be observable in normal operation of detector with the option to switch off the LED (to work under discrete mode).		

		ii) Display should show signal strength / intensity of metal.		
		iii) It should have visual as well as audio signal for metal detection.		
		iv) The control unit should have low battery indication and also audio alert to enable the user to replace the batteries.		
		v) The Control Unit should have adequate buttons for volume control, sensitivity control, radio frequency interference elimination button etc		
		vi) It should have inbuilt speaker as well as provision for headphones.		
		vii) When equipment is switched on, battery level status should be displayed/indicated through LED/Audio beeps)		
7	Source of Power	i) The equipment should function properly with commercially available rechargeable as well as alkaline batteries. ii) Two sets of rechargeable batteries with battery charger to be provided with each equipment. iii) The battery usage time should be minimum 12 hours with both type of batteries mentioned above		
		iv) The battery usage time should be minimum 12 hours with both type of batteries mentioned above		
8	Transportation on and Storage and transite	i) The detector together with its accessories must come in a light weight durable, compact soft carrying case, preferable water resistant ii) A ruggedized carrying case should also be provided for safe transportation.		
9	Operational Life	Minimum eight years		
10	Warranty	i) Warranty of the equipment should be 2 year (24 Months) ii) Supplier and manufacturer should give undertaking for supplying spare parts and services for 8 year including warranty period.		
<b>QRS FOR MULTIZONE DOOR FRAME METAL DETECTOR</b>				
		<b>QRS</b>	<b>Compliance</b>	<b>Deviations</b>
SL No	Parameters			
1	Detection	(i) The system should be capable of detecting ferrous, non-ferrous and alloy metals concealed in the body of a person when passed through the archway. ii) Uniform detection from top to bottom is required. iii) Should be able to detect multiple metal objects of various weight, size and shape in all the zones simultaneously from head to toe. Passage Dimension :- Height ~ Min 200cm Breadth - Min 72cm Width = Min 57 cm		



2	Passage Dimension	Height ~- Min 200cm Breath -Min 72cm Width = - Min 57 cm		
3	Speed of Passage	Performance of the DFMD should be independent of the speed of person passing through. This is particularly important as a person's foot may swing through the rest on the ground between the archway pillars archway without touching the ground, or may come to rest on the ground between the archway pillars		
4	Weight	80 kg maximum		
5	Power supply	100 - 260 VAC, 50 - 60Hz, 12-24VDC, should be provided with internal battery back up for 6 hours minimum in operational condition.		
6	Alarm indication	(i) There should be Acoustic and optical alarm with alphanumeric display height on person bar display ( metal locator ) and low battery indication  (ii) There should be provision for suitable setting for adjustment of volume of the audible alarm to overcome the ambient noise present in the vicinity.		
7	Sensitivity	DFMD should have multi zone capability with uniform sensitivity in all zones.		
8	Zones	Not less than eight real horizontal detection zones, covering full height of the equipment		
9	Calibration	DFMD shall have inbuilt feature of both amannual and automatic calabration.		
10	Security	(i) There should be a provision to secure the access to the control unit by a password protected alpha numeric keypad. (i) There should be a provision to secure the access to the control		
		(ii) DFMD should reset itself within 3 Sec after alarm condition.		
		(iii) Unit should have traffic and alarm counter. The equipment should work in bidirectional mode.		
11	Other features	(i) High discrimination between small masses and personal metallic objects. (ii) Automatic synchronization for DFMDs located close to each other up to a distance of one feet side by side.		

12	<b>Static Metal Compensation</b>	DFMD installed closed to fixed sheet or pieces of metal, which form part of the building or its fittings. The DFMD should compensate for the presence of such metal and its performance should not be degraded by the presence of metal as stated above.		
13	<b>Healthy and Safety</b>	(i) Magnetic field should be harmless to magnetic media, electronic devices and should be film safe, (Supplier shall submit test certificates from national and international accredited lab). (ii) Operation of DFMD shall not be affected by infrared, ultraviolet, electromagnetic or RF radiation. Offered equipment shall comply with CE or equivalent safety/immunity standard (Supplier shall submit test certificates from national/ international accredited lab). (iii) DFMD should be harmless to pacemaker and pregnant woman (Supplier shall submit test certificates from national / international accredited lab as per ICNIRP guidelines).		
14	<b>Interference rejection</b>	(i) Interference which is mains borne or radiated by an external source, should not cause the DFMD to raise the alarm spuriously. It should be possible to use the equipment such as radio, portable telephone, walkie-talkie sets, X-Ray Monitors etc at a distance of one meter from the archway without causing spurious alarms (ii) Moving metal beyond one meter from DFMD should not affect performance of the DFMD. It should be possible to move metallic items like trolleys, metallic gate opening/closing one meter away from the DFMD without the generation of false alarm DFMD shall work satisfactorily without any deterioration in performance within the temperature range of -20 to +55 deg C, RH up to 90% non condensing		
15	<b>Operating Temperature</b>	DFMD shall work satisfactorily without any deterioration in performance within the temperature range of -20 to +55 deg C, RH up to 90% non condensing		
16	<b>Accessories to be provided</b>	(i) Operating Manual for the user (ii) Standard Test Piece (STP) for testing of equipment to be provided by the supplier with each equipment		
		<b>Optional</b> (i) Should have a ruggedized Polypropylene shock proof container for safe transportation of product compliant to IP-65 and latest Mil Std (As per requirement of the Intendor/user)		

**QRS FOR HAND HELD METAL DETECTOR**

SL No	Parameters	QRS	Compliance	Deviations
1	<b>Dimensions</b>			
	Length	Maximum 500 mm		
	Probe width	Maximum 120 mm		
	Body Width	maximum 65 mm		
2	<b>Weight</b>	Maximum 500 gms		
3	<b>Power Source</b>	Alkaline battery 3 volt (1.5x2), volt should run minimum 550 hrs on 10% detection rate		
4	<b>Battery protection</b>	To be provided against damage due to reverse polarity		
5	<b>Indication</b>	(a) Single LED based audio and visual multiple indication for:- (i) SWITCH ON (ii) METAL DETECTION (iii) LOWER BATTERY INDICATION		
6	<b>Operation</b>	Single push button operation		
7	<b>Construction</b>	Should be rugged and impact resistant ABS moulded casing		
8	<b>Scan Rate</b>	Minimum 3" to 24"/sec		
9	<b>Detection</b>	Should be able to detect ferrous and non ferrous metals Pistol .22 at min 6" Cartridge .22 at min 2" Razor blade at min 1"		
10	<b>Tuning</b>	Automatic to ensure equal results on wide range of metals and alloys		
11	<b>Miscellaneous.</b>	The firm should be able to provide following, as applicable along with the equipment:- (a) Cleaning kit (b) technical manual giving full description of the item (c) user's hand book		

<b>QRS FOR EXPLOSIVES DETECTOR</b>				
SL No	Parameters	QRS	Compliance	Deviations
1	General.	Explosive detection is a non destructive inspection process to determine whether a container contains explosive material. Explosives detection is commonly used at airports, ports and for border control.		
<b>OPERATIONAL CHARACTERISTICS</b>				
2	Sensitivity	The detector should be able to detect all types of organic and inorganic explosives in vapours liquid, powder particle and mixture form at varying temperature without touching the suspected item.		
3	Selectivity	System should not respond to odorof non-explosive substances.		
4	Specificity	False alarm rate should be less than 5%		
5	Carrier Gas	Detector system should not require the use of carrier gas. The equipment should also not require any consumables for detection		
6	Auto Calibration	Adjustment/Resetting for further operations should be automatic		
7	Warm Up Time	Should be less than 15 seconds		
8	Analysis Time	Should be less than 30 seconds		
9	Electromagnetic Interference	Operations should not be affected by electromagnetic interference of other electronic/magnetic devices.		
10	Operating Temperature	(a) minimum - Minus 10 degrees C. (b) Maximum - Plus 55 degrees C. (c) Humidity - Up to 95 % non - condensing.		
11	Indication	Equipment should out both visual and audio alarm signal.		
<b>PHYSICAL CHARACTERISTICS</b>				
12	Versatility	Equipment should be rugged for military use and should be able to function correctly in all whether conditions prevalent in India		
13	Ease of Operations	Results given by the detector/equipment should be self explanatory and should not require any reference.		
14	Display	(a) Equipment should have a full coloured LED/LCD display (b) Clear display with touch screen (c) Equipment should display following details:-		

		(i) Type of explosive on detection		
		(ii) System on/off.		
		(iii) Status of system calibration.		
		(iv) System battery status.		
		(v) Mode of detection.		
		(vi) Any other function of the equipment.		
15	<b>Data Transfer</b>	Equipment should have USB port /bluetooth for data transfer		
16	<b>Power Supply</b>	(a) It should operate AC/DC supply. (b) Battery Endurance - Minimum 4 hours. (c) Lithium Ion Battery with minimum 2 yrs life and 500 cycle.		
17	<b>Portability</b>	(a) Equipment should be one man portable. (b) It should fit into one hand carrying case. (c) Weight - Maximum operating weight 2 kgs.		
18	<b>Safety</b>	(a) The equipment should be safe to handle. (b) should be free from any kind of radiation hazard to the operator. (c) Laser output of the equipment should not activate/ detonate the IED.		
19	<b>Database</b>	System database/library of explosives should be upgradable and extendable at the user level.		
20	<b>Carrying Case</b>	Should be hard, strong, rugged, light weight and water proof.		
21	<b>Carrying Case (while operating)</b>	(a) Case should be ultra - light. (b) It should have provision for carrying accessories and consumables. (c) It should have provision for wearing by the operator. (d) Should be water proof.		
22	<b>Spares and Service</b>	(a) Carrying Case - One per equipment. (b) Carrying Case (for operations) - One per equipment. (c) Battery Charger - One per equipment. (d) Test Samples - Nos to be specified by the users at the time of tendering. (e) Spare Battery - Nos to be specified by the users at the time of tendering. (f) User hand Book (English) - One per equipment (g) Tech Service Manual (English) - One per equipment (h) Manufacturers list of Recommended Spares duly priced		
23	<b>Training</b>	One week of in-situ training to be carried out by the OEM		