

**DRAFT QRs OF HANDHELD REAL TIME VIEWING SYSTEM (RTVS)**

<u>S/No</u>	<u>Specification</u>	<u>Response from the firm</u>	
1.	Handheld Real Time Viewing System is a compact portable X-Ray machine that can be carried in a backpack and is designed to take digital 16 bit X-Ray image on the spot to locate power source, mechanism, detonator, explosive materials etc in any concealed suspicious boxes/enclosure items. The Hand heldReal Time Viewing Systemshould have a compact Imager, X-Ray Source, Hand held tablet and Accessories as per the below mentioned specifications:	<b>Compliant (Mention Yes or No)</b>	<b>Comments/ suggestion (in case non compliant)</b>
2.	<p><b><u>IMAGER:</u></b></p> <ul style="list-style-type: none"> <li>i) Imaging Area should be minimum 25 cm X 20 cm.</li> <li>ii) Imager Size should be maximum 35 cm x 30 cm x 1.8 cm.</li> <li>iii) Image Area Position: 16 mm or less from bottom.</li> <li>iv) Imagershould be flat panel detectors of solid-state x-ray digital radiography using amorphous siliconor better.</li> <li>v) Imager weight: Less than 2.5 Kg with rechargeable battery.</li> <li>vi) Dynamic Range / Bit Depth of the Imager should be True 16 bitor better.</li> <li>vii) Image quality should of high quality with high 16 bit resolutionor better.</li> <li>viii) Imager should have inbuilt wireless for data transfer.</li> <li>ix) Seamless wireless connection from Imager to control unit.</li> <li>x) Continuous working time of the Imager not less than 4 hrs.</li> <li>i) The Imager to be IP 53 ratedor better.</li> <li>xi) User friendly to use.</li> </ul>		
3.	<p><b><u>X-Ray Source:</u></b></p> <ul style="list-style-type: none"> <li>i) The X-Ray source should be Pulsedor constant potential X-Ray Source.</li> <li>ii) The X-Ray source should not have any radioactive material.</li> <li>iii) Penetration: Should be able to penetrate minimum 25 mm of steel.</li> <li>iv) The X-Ray source should be of 250 KVP or more energy.</li> <li>v) The weight of X-Ray source with battery should be less than 6Kgs.</li> <li>vi) Less X-Ray dose (Output dose not more than 4.0mR/Pulse for a user – measured from 1 meter from X-Ray Source)</li> <li>vii) The X-Ray source to be remotely operable through wireless option With only small connector from X-Ray Source to the ruggedized MIL STD connector of the Control unit.</li> <li>viii) The X-Ray Source to be operated with standard commercial Available rechargeable Lithium-Ion batteries.</li> </ul>		

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<u>S/N</u> <u>o</u>	<u>Specification</u>	Response from the firm	
4.	<p><b><u>Display Unit:</u></b></p> <p>(i) The display unit should be ruggedized tablet with minimum 10" screen size with HD daylight-readable with intel core i5 or latest processor, 8 GB RAM, 256 GB SSD Hard Disk, latest Windows Operating System and USB connectors.</p> <p>(ii) The display unit should be completely touch screen for easy operation.</p> <p>(iii) The display unit weight with battery to be less than 1.5 Kgs.</p> <p>(iv) The display unit should be working on normal windows operating system.</p> <p>(v) The display unit should be IP65 and MIL STD compliant.</p>	Compliant (Mention Yes or No)	Comments/ suggestion (in case non compliant)
5.	<p><b><u>System Accessories:</u></b></p> <p>i) Communication:Efficient Wireless data transfer. The wireless range Should be minimum 200 meters (line of sight).</p> <p>ii) Continuous working time not less than 4 hours.</p> <p>iii) 220V AC Battery Charger for the Display Unit (Tablet), X-Ray Source to be provided with each equipment.</p> <p>iv) The charging of Imager to be done through the Control Unit to charge Both the control unit and Imager simultaneously.</p> <p>v) The operating manual should be provided with each equipment.</p> <p>vi) The display unit should come with the software having the following features:</p> <p>(a) Software which allows for taking just one image and enhancing both the easy to penetrate and difficult to penetrate objects on the same image showing everything with just one touch and highlighting all the threats.</p> <p>(b) Image enhancement, 800% Zoom, Visual Data Base including picture name, time, date &amp; description and annotations.</p> <p>(c) Split screen capabilities, Audible and Visual warning during X-Ray activation.</p> <p>(d) Window Leveling, sharpening of images, Tilting/Rotation of an Image and on screen measurement facility, etc.</p>		

**DRAFT QRS/ TRIAL DIRECTIVES OF HANDHELD REAL TIME VIEWING SYSTEM (RTVS)**

<u>S/ No</u>	<u>QR</u>	<u>Trial Directives</u>	<u>Response from the firm</u>	
			<u>Compliant (Mention Yes or No)</u>	<u>Comments/ suggestion (in case non compliant)</u>
1.	It is designed to take digital 16 bit X-Ray image on the spot to locate power source, mechanism, detonator, explosive materials etc in any concealed suspicious boxes/enclosure items. The Portable Digital Radiography System should have the Imager, X-Ray Source, Display Unit and System Accessories as per the below mentioned specifications:	1. The BOO to take X-Rays of various IED Models to incl (a) Plastic Briefcase (b) Pipe Bomb (c) School Bag (d) Steel Tiffin Box 2. The system should be able to generate good quality X-Rays wherein various components of the IED can be identified	Compliant	
2.	<b><u>IMAGER:</u></b> ii) Imaging Area should be minimum 25 cm X 20 cm. iii) Imager Size should be maximum 35 cm x 30 cm x 1.8 cm. iv) Image Area Position: 16 mm or less from bottom. v) Imager should be flat panel detectors of solid-state x-ray digital radiography using amorphous silicon or better. vi) Imager weight: Less than 2.5 Kg with rechargeable battery. vii) Dynamic Range / Bit Depth of the Imager should be True 16 bit or better. viii) Image quality should of high quality with high 16 bit resolution or better. ix) Imager should have inbuilt wireless for data transfer. x) Seamless wireless connection from Imager to control unit. xi) Continuous working time of the Imager not less than 4 hrs. xii) The Imager to be IP 53 rated or better. xiii) User friendly to use.	1. To be physically checked by BOO 2. To be physically checked by BOO 3. A detonator to be kept on flat surface at a height of 1.5 cm and X-Ray to be taken. X-Ray taken should clearly show the detonator. 4. Firm to furnish National/international accredited lab certificate. 5. To be physically checked by BOO 6. Firm to furnish National/international accredited lab certificate. 7. Firm to furnish National/international accredited lab certificate. 8. To be physically checked by BOO 9. To be physically checked by BOO 10. To be physically checked by BOO 11. The imager to be submerged in water for 30 min and checked for optimum functioning. 12. To be physically checked by BOO		

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3.	<p><b>-Ray Source:</b></p> <p>i) The X-Ray source should be Pulsedor constant potential X-Ray Source.</p> <p>ii) The X-Ray source should not have any radioactive material.</p> <p>iii) Penetration: Should be able to penetrate minimum 25 mm of steel.</p> <p>iv) The X-Ray source should be of 250 KVP or more energy.</p> <p>v) The weight of X-Ray source With battery should be less than 6Kgs.</p> <p>vi) Less X-Ray dose (Output dose not more than 4.0mR/Pulse for a user – measured from 1 meter from X-Ray Source)</p> <p>vii) The X-Ray source to be Remotely operable through wireless option with only small connector from X-Ray Source to the ruggedized MIL STD connector of the Control unit.</p> <p>viii) The X-Ray Source to be Operated with standard commercial available rechargeable Lithium-Ion batteries.</p>	<p>i) Firm to furnish National/ international accredited lab certificate.</p> <p>ii) Firm to furnish National/ international accredited lab certificate.</p> <p>iii) Firm to furnish National/ international accredited lab certificate.</p> <p>iv) Firm to furnish National/ international accredited lab certificate.</p> <p>v) To be physically checked by BOO</p> <p>vi) Firm to furnish National/ international accredited lab certificate.</p> <p>vii) To be physically checked by BOO</p> <p>viii) To be physically checked by BOO</p>	Compliant (Mention Yes or No)	Comments/ suggestion (in case non compliant)

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4.	<p><b><u>Display Unit:</u></b></p> <p>(i) The display unit should be ruggedized tablet with minimum 10" screen size with HD daylight-readable with intel core i5 or latest processor, 8 GB RAM, 256 GB SSD Hard Disk, latest Windows Operating System and USB connectors.</p> <p>(ii) The display unit should be completely touch screen for easy operation.</p> <p>(iii) The display unit weight with battery to be less than 1.5 Kgs.</p> <p>(iv) The display unit should be working on normal windows operating system.</p> <p>(v) The display unit should be IP65 and MILSTD complaint.</p>	<p>i) Firm to furnish OEM certificate.</p> <p>ii) certificate To be physically checked by BOO</p>	Compliant (Mention Yes or No)	Comments/ suggestion (in case non compliant)
5.	<p><b><u>System Accessories:</u></b></p> <p>i) Communication: Efficient Wireless data transfer. The wireless range should be minimum 200 meters (line of sight).</p> <p>ii) Continuous working time not less than 4 hours.</p> <p>iii) 220V AC Battery Charger for the Display Unit (Tablet), X-Ray Source to be provided with each equipment.</p> <p>iv) The charging of Imager to be done through the Control Unit to charge both the control unit and Imager simultaneously.</p> <p>v) The operating manual should be provided with each equipment.</p>	<p>i) To be checked by the BOO by operating the system from a distance of 200m. LOS distance between the imager and the Control Unit to be 200m</p> <p>ii) To be physically checked by BOO</p> <p>iii) To be physically checked by BOO</p> <p>iv) To be physically checked by BOO</p> <p>v) To be physically checked by BOO</p>		

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5.	<p>(vi) on screen measurement facility, etc.The display unit should come with the software having the following features:</p> <p>(a) Software which allows for taking just one image and enhancing both the easy to penetrate and difficult to penetrate objects on the same image showing everything with just one touch and highlighting all the threats.</p> <p>(b) Image enhancement, 800% Zoom, Visual Data Base including Picture name, time, date &amp; description And annotations.</p> <p>(c) Split screen capabilities, Audible And Visual warning during X-Ray activation.</p> <p>(d) Window Leveling, sharpening of images, Tilting/Rotation of an Image and on screen measurement facility, etc.</p>	vi) To be physically checked by BOO	Compliant (Mention Yes or No)	Comments/ suggestion (in case non compliant)