

PORTABLE X-RAY MACHINE SPECIFICATION (RTVS)

- 1) The Equipment should be fully digital with latest technology system producing high - quality images with no loss of resolution, even with long distance wireless transmission or extended cable lengths.
- 2) The equipment should have both wireless (with latest technologies) and wired system.
- 3) The complete System with Wireless option should fit into a single or two transport pelicalcases. Weight of the entire should maximum 40 kg.
- 4) The system should provide load - balancing main handle and quiet roll - away wheel design.
- 5) The system should provide new easy - open latches, longer handle and wider wheel base.
- 6) The minimum image resolution should be over 1.8lp/mm or 127 micron for sharp images.
- 7) It should capture image of objects at ground level with height adjustment facility.
- 8) The equipment should have the ability to distinguish 0.07 to 0.08 mm (AWG 40) wire in air and 0.15 to 0.16 mm (AWG 34) wire behind 3 to 4 mm (1/8") of steel.
- 9) The equipment should have total penetration of over 15 to 20 mm steel.
- 10) The RTVS should be mountable on the ROV and Mini ROV.
- 11) Software capabilities - material discrimination, Pseudo coloring facility, brightness and contrast control, split screen **capability, sharpening of images, 3D effect on an image (optional), tilting / rotation of an images, on screen measurement facility, zooming, scrolling of full image etc.**
- 12) The equipment should operate for minimum 4.5 hours on rechargeable battery power. It should have additional facility to operate continuously with 230 volts 50 / 60 Hz adapters or external DC source.
- 13) The system should provide variable power-on delay.
- 14) **A battery low-level indicator should support the system.**
- 15) The system should provide e-mail and LAN connections which are easily achieved via inexpensive additional card.
- 16) The system should provide Software controlled X-ray safety switch.
- 17) The system should provide 100 mtr. thin cable on roll-up reel connecting the Control Unit to the Integrated Imager for remote and safe viewing.
- 18) The system should provide RJ-45 Ethernet Interface cable to connect Control Unit to roll-up reel.
- 19) The system should provide Two Imager batteries with external 230VAC 50/60Hz charger.
- 20) The system should provide External AC converter to power Imager from 230 VAC 50/60Hz.
- 21) The system should provide 3mtr. (10') cable connecting X-ray Imager and X-ray Source.
- 22) The supplier should provide Operators' Manual in original (hard & soft copy) from the Manufacturer in English. He should also provide Marathi manual which can be done later also.
- 23) The system should provide System Restoration and application software CD set.
- 24) The system should provide Incident database management system.
- 25) Audible and visual warning during the X-Ray activation should be available
- 26) The system should provide laptop Control Unit.
- 27) The system should provide Display minimum 15.4" WSXGA+ Widescreen Active Matrix TFT Color LCD / LED HD (wide-viewing angle) displaying 64-bit true-color at 1680 x 1050 XGA resolution.
- 28) The system should provide Processor: Pentium i5 or better, 2GHz with dual core processor or higher, enhanced speed step technology.

- 29) The system should be protected by antivirus software to protect its stored data.
- 30) The system should provide Memory: 4GB RAM, expandable upto 8GB RAM.
- 31) The system should provide Ports: Built-in – minimum 3 USB ports.
- 32) Optical Drive: The system should provide Internal DV. The system should provide DVD writer– DVD+R/+RW hot-swappable (plug-in module) Hard Drive/Capacity: Internal hard disk 500 GB or more.
- 33) The system should provide Battery: Lithium-ion or latest with minimum 4.5 hours usage battery life.
- 34) The Vendor should be Original Equipment Manufacturer (OEM) or authorized by the OEM to participate in the tender procedure.
- 35) Vendor should also specify the life of the system as authorized by the OEM.
- 36) Manufacturer / supplier must have base in India and office in Maharashtra and should have adequate service centers. The complaint if any should be attended within **48 hours**.
- 37) Warranty of the equipment must be minimum **5 years** and warranty of batteries and chargers should be minimum 1 year. **The manufacturer / vendor must be able to extend AMC support till the life of the equipment. The manufacturer / Vendor should give undertaking in this regards.**
- 38) All types of accessories, expandable and consumable items, connecting cables essential with one set of spare cables, operators Manual, Service Manual and Recovery software CD should be provided.

SPECIFICATION OF X-RAY SOURCES

- 1) The System should provide compact - design pulsed X-ray source **or continuous X-ray source** with 40 beam angle.
- 2) The system should provide 120 to 240 kv energy.
- 3) The system should not weigh more than **8 kg** with battery.
- 4) The system should provide two rechargeable battery packs and charger (**150 to 230 VAC**).
- 5) The system should provide X-ray source safety key set.

SPECIFICATION OF X-RAY IMAGER

- 1) The size of imager should be more than 13 inches x 17 inches imaging area.
- 2) The system should not weigh more than 8 kg (including battery).
- 3) The system should provide power to imager by removable and rechargeable battery with fuel gauge (battery level indicator).
- 4) The system should provide system environmental performance.
- 5) The system should be operable at temperature - 0 degree centigrade to 50 degree centigrade and withstand humidity upto 90%.
- 6) The system should provide process free films (minimum 12) for inspection of packages in which there is difficulty in placement of the X-ray imager.

Safety Regulations:

- 1) The whole system should be international CE/FDA/BIS certified.
- 2) The x-ray source should have the AERB Certification.
- 3) Comprehensive training should be imparted for technical staff and support services should be provided till the staff gets familiarised with the system.