Indian Institute of Technology Kanpur
Department of Civil Engineering

Inquiry No- CE/JNM/2013-14//04 29 August, 2013

Subject: Quotations are invited for a Multi-channel + Multi-electrode Portable Resistivity fully automated system to collect 2D and 3D Imaging, IP and SP system with 48/72 (or more) with single connectivity, and 200 Watt or more and 1.2 Amp or higher current output for collecting data from deeper subsurface succession.

With reference to the subject mentioned above, you are invited to submit the quotation in a sealed cover in order to reach us latest by September 05, 2013, 5.00PM in the form of a hard copy to the address mentioned below. If you have any questions please call 05122597723 or email: javed@iitk.ac.in.

The prospective suppliers are required to send quotation in two parts in separate sealed envelopes, as "**Technical Bid**" and "**Financial Bid**". The Technical Bid should contain detailed technical specification of the product being offered and should not mention any prices. The Financial Bid should include the detailed price quotation clearly including the cost of the equipment, taxes, service charges if any, shipping and handling charges. The two separate and sealed envelopes should be clearly marked appropriately as "Technical Bid" and "Financial Bid".

Terms and Conditions:

1. Maximum education discount, if any should be offered.
2. Validity of quotation should be at least for 60 days.
3. Prices should be on CIF and FOB separately (if imported).
4. Prices should include the installation and training cost.
5. Normal payment terms for the Institute will be applicable (90% on delivery of the items and the remaining 10% after satisfactory installation/ inspection).
6. Quotation should carry proper certifications like agency certificate, proprietary certificate,etc.
7. Delivery should be made within 3 months.

Technical Specifications for Multi-channel + Multi-electrode Portable Resistivity fully automated system to collect 2D and 3D Imaging, IP and SP system:

Multi-channel, Multi-electrode Resistivity imaging system with 48/72 electrodes. Self Potential (SP) and Induced Polarization (IP) system with fully automatic data acquisition capabilities for collecting direct 2D and 3D imaging. The system should be with all essential software and complete accessories: electrodes, jumpers, reversible multi-core cable, and chargers for internal batteries, transportation case and other required accessories for field survey. The equipment should satisfy the following requirement:

1. General: The unit should be compact and light with display, main processing unit, Internal memory and multi-electrode system are integrated in the same housing. No separate electronics other than cables
2. Power Source: Internal rechargeable battery source for complete field survey, Imaging & VES data acquisition. There should be a connectivity port for external battery connection to the system.
3. Resistivity Measurement: Direct measurement of Resistivity, SP and IP.

4. Interface: Equipment can be interfaced with PC or laptop for data processing and creation of sequences.
5. Cable: Reversible cables with takeouts should be in the 10m spacing depending upon the number of electrodes. All the cables should be Reversible Type, so that any segment can be connected at any point of the survey line, and that Roll-Along and Move Sequence data acquisition option can be carried out without loss of time in the field.
6. Automatic Ranging: Microprocessor Controlled.
7. Output Current: Minimum 2500mA or more.
8. Output Voltage: Minimum 600V and 1200V peak to peak.
9. Voltage measuring Resolution: 1micro Volt or better.
10. Output Power: 200W or more.
11. Current measurement precision: 0.5% typical.
12. Input Impedance: 100 Meg Ohm minimum.
13. Input voltage protection: up to 1000V.
14. Voltage measurement precision: 0.5% typical.
15. Measurement Methods: In-built software controlled Roll Along and Move Sequence facility must be there.
16. Noise Reduction: Continuous digital stacking selectable from 1 to 255 stacks. Noise should be monitored before injection of current.
17. Standard Deviation Standard Deviation Computation facility should be there to estimate the quality of data collected in the field at the time data collection as well as for processing.
18. SP compensation: Through automatic linear drift correction.
19. Resistivity accuracy: 0.5% typical.
20. Induced Polarization: Measured over four predefined windows.
21. Environmental: weather proof, Shock proof, Operating Temp: -20 to +70 degree Centigrade.
22. Users in India: Users of same model instrument with same wattage and current output must be supplied in India to the Govt. users. Proofs to be provided.

Software:

1. For 2-D and 3-D Sequence creation for all standard / customized type arrays. There must be facility for 2-D and 3-D viewing of the sequence along with its orientation and position of quadric-poles. This should be designed in Laptop/PC in the laboratory and should have facility to transfer the same to System, so that data can be collected in the field easily.
2. For Data transfer from Resistivity Imaging System to PC/Laptop and vice versa.
3. For data processing, like elimination noise, topography correction, blocking high and unwanted data, viewing pseudo sections of Rho and IP etc.
4. For 2-D & 3-D data inversion and modeling.

SCHEDULE OF REQUIREMENT:

1. Multi-electrode Resistivity imaging, IP and SP system with 72 electrodes	:	1 No
2. Reversible take outs Cable in the105m spacing with 72 takeouts.	:	1 No
3. Software for creation of various resistivity strings 2D & 3D (as mentioned above):		1 No
4. Software for data downloading and data uploading and processing (as above)	:	1 No
5. 2D & 3D Inversion Software for resistivity data interpretation	:	1 No

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