

**Technical Specifications for Purchases Exceeding 2.5 Lakhs for the Subsurface Mechanics and Geo-Energy Laboratory under the IoE-CoE**

Requirement: MASW test apparatus, including 12 nos of independent 3 channel seismograph with GPS and internal battery, 12 nos of 2 Hz or less natural frequency triaxial geophones ( either inbuilt in the seismograph or mounted externally) and all the associated cables and accessories..

<b>Sl No.</b>	<b>Specification</b>	<b>Requirement</b>
<b>1.</b>	<b>Each 3 channel Seismograph</b>	<b>12 Nos.</b>
i.	Using only inbuilt memory, maximum recording length for active/passive acquisition using all 3 channels and 4000 SPS sampling rate	<b>3.1 Billion samples or higher</b>
ii	Using only inbuilt memory, maximum recording duration for active/passive acquisition using all 3 Channels and 4000 SPS sampling rate	<b>3 days or longer</b>
iii	Minimum sample interval	<b>¼ ms (4000 SPS) or lower</b>
iv	Inbuilt memory	<b>Minimum 8 GB or higher</b>
v	Expandable Memory (External memory slot)	<b>YES</b>
vi	Inbuilt clock synchronization	<b>GPS</b>
vii	Minimum measured/instantaneous dynamic range	<b>125 dB @ 500 SPS</b>
viii	A/D Converter	<b>24 bit sigma delta or higher</b>
ix	Data format	<b>SEG-Y, SEG-2</b>
x	Working temperature range	<b>- 20°C to +70°C or better</b>
xi	Working humidity range	<b>0-100%</b>
xii	Min recording duration using all 3 channels and powered by only internal battery @ 4k sampling rate	<b>3 days or more</b>
xiii	Option for external power source	<b>YES</b>

xiv	Waterproof	<b>YES</b>
xv	Mode of operation	<b>Each 3 Channel seismograph should operate independently</b>
<b>2.</b>	<b>Triaxial geophones</b>	<b>12 Nos.</b>
i	Natural frequency	<b>2 Hz or less</b>
ii	Operating temperature range	<b>-40<sup>0</sup> C to +100<sup>0</sup> C</b>
iii	Waterproof	<b>YES</b>
<b>3.</b>	<b>All necessary connectors and cables to extract the data to a PC/Laptop</b>	<b>YES</b>
<b>4.</b>	<b>Minimum warranty</b>	<b>One year</b>
<b>5.</b>	<b>Vendor Eligibility Criteria</b>	<ol style="list-style-type: none"> <li>1. The bidder should be the manufacturer or the authorized representative of the original equipment manufacturer (OEM). In case of representative the OEM's authorization letter needs to be submitted by the bidder.</li> <li>2. The bidder, OEM or the principal should have supplied at least 10 instruments quoted to IIT-M in India or abroad in the last 5 years to R &amp; D institutes, prospecting companies and similar educational institutions. Relevant Purchase order copies need to be submitted with the bid.</li> <li>3. The bidder should have supplied/manufactured MASW seismographs (active or passive) for two years or more</li> <li>4. The bidder should have service centre in India.</li> <li>5. The bidder should submit certificate that the quoted instrument is new and not used earlier at the time of supply.</li> </ol>

		6. The bidder should not be delisted/ debarred by any government organization in India.
<b>6.</b>	<b>Installation</b>	The equipment or machinery has to be installed or commissioned by the successful bidder and a product demonstration has to be provided by the successful bidder within 30 days from the date of receipt of the item at site of IIT Madras