Department of Applied Mechanics
Indian Institute of Technology, Madras
CHENNAI – 600 036.

To

Date: September 16, 2015

Due Date: October 8, 2015

Dear Sir/Madam,

1. Quotations are invited in **two bid format (Separate Technical and Commercial bids in separate sealed envelopes)** and **in duplicate** for the supply of **Electromagnetic Tracking Sensor (Sixteen numbers) with Transmitter and signal processing unit** details of which are given in the next page ("Technical Specifications"). The tender should be addressed to the undersigned.
2. The quotations, duly sealed (clearly superscribed on the envelope as "technical" and "commercial") should be sent to the undersigned so as to reach him on or before the due date. The opening of technical bids will happen within a week (on a day agreed by the purchase committee). Only commercial bids from those vendors whose technical bids qualify will be opened. Other commercial bids will not be considered for the competition.
3. The quotations should be valid for at least thirty days (preferably sixty days) from the due date.
4. The period of delivery should be clearly indicated on the quotation.
5. All relevant technical literature pertaining to quoted items must be presented along with full specifications and drawings (if any). This must be presented along with the "technical bid". Bids without relevant technical details will be considered incomplete and hence will not be considered for the competition. The decision of the purchase committee is final in this regard.
6. Quotes should include freight and insurance charges where applicable.
7. A list of reputed Indian industries/academic institutions to which the vendor has supplied the product must be included (with details of contact person, address, phone, email etc). Due consideration will be given to bidders who have experience in supplying this product. In addition, the committee will consider the comments by buyers regarding the product quality, adherence to specifications, service and warranty. Bids from vendors whose buyers are not satisfied with the product will not be considered for competition. In this regard, the decision of the purchase committee is final.
8. Payment: Payment terms will be discussed only with the selected bidder after selection of commercial bid. In general, we prefer making payments after the product reaches our premises, installed and is found to be functioning satisfactorily (within 30 days of delivery).
9. We reserve the right to NOT purchase the product from any of the vendors if none of them meet our technical requirements.

Yours faithfully

(Sd/-)
Varadhan SKM
Assistant Professor
ASE 154 (Aerospace Building)
Dept of Applied Mechanics
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Chennai 600036, India

Technical Specifications for Miniature Electromagnetic Tracking sensors with Transmitter and Signal Processing Unit

S.no	Parameter	Description/Specification	Does your product meet the technical Specification (if Yes, please tick)	If Yes, Mention the relevant reference page. no in your Technical Literature.
1.	No. of Electromagnetic Tracking Sensors	16 Electromagnetic Tracking Sensors.		
2	No of Degree of Freedom	Six-Degree of freedom kinematic sensors (position/orientation in all three directions).		
3.	Sensor diameter	It should be lesser than 2mm.		
4	Maximum measurement uncertainty (due to non-linearity, cross-talk and hysteresis)	It should be lesser than **1mm RMS** for all X,Y,Z displacements and lesser than **0.25° RMS** for all orientations (roll, pitch, yaw) at **30 cm** from source/transmitter.		
5.	Spatial Resolution for X,Y,Z displacements.	It should be better than **0.01mm (10 microns)** at **30 cm** from source/transmitter. (For example: A resolution of **0.009 mm** is considered "better" than a resolution of **0.010 mm**).		
6.	Spatial Resolution for roll, pitch and yaw.	It should be better than **0.0005°** at **30 cm** from source/transmitter. (For example: A resolution of **0.0004°** is considered "better" than a resolution of **0.0005°).**		
7	Update Rate	It should be greater than **200 Hz (**adjustable**).**		
8	Latency	It should be lesser than **5ms.**		
9	Transmitter Range	Range of up to**1.5 m** would be applicable.		

S.no	Parameter	Description/Specification	Does your product meet the technical Specification (if Yes, please tick)	If Yes, Mention the relevant reference page. no in your Technical Literature.
10	Marking Device (Stylus)	It should be provided for capturing anatomical landmarks.		
11	Other EMTS Interference	Less or no interference.		
12	Computer Interface	It should have compatibility with USB 2.0 or greater and should also have provision for RS 232 communication.		
13	Software Compatibility	The software and drivers provided should support both windows and Linux based system.		
14	GUI(User interface)	It should have different user specific/customizable options for viewing system(EMTS) setting parameters such as output formats, coordinate systems, filter options etc.		
15	Output Formats	It should have user specific position selections in Cartesian coordinates, orientations in directional cosines, Euler angles, etc.		
16	Pre-Processing Unit	Signal processing unit should handle 96 channel data (16 sensors X 6 DOF).		
17	Output Data Format	The format should be compatible with both Mat lab and LabVIEW.		
18	SDK(Software Development Kit)	It should be available to be further developed for 3D object rendering purpose which will be useful for on-line manipulation of visual feedback.		
19	Library Assistance	The vendor must provide all assistance for using the sensors, such as provision of software (e.g. DLLs for easy LabVIEW and Mat lab interfacing).		
20	Calibration Files	Details of calibration options must be provided.		

S.no	Parameter	Description/Specification	Does your product meet the technical Specification (if Yes, please tick)	If Yes, Mention the relevant reference page. no in your Technical Literature.
21	Calibration Kit	It should come with inbuilt on-site calibration kit to cancel out the interference produced by the near-by object, earth magnetic field, and electrical wires in the room. This can be added as an add-on by the vendors.		
22	Portability	It should be portable and should be easy to transport in future.		
23	Accessories	It should come with travel case and other maintenance accessories.		
24	Technology	The technology preferred is Electromagnetic Tracking no other technology will be accepted.		