

## Technical Specifications of Inertial Measurement System

### Bidder Eligibility Criteria-I

Sl. No	Bidder Eligibility Criteria-I	Complied / Not Complied	Reference Page No.	Remarks, If any
1	The bidder/OEM should have supplied at least 3 similar items to IITs, NITs, IISERs, CSIR Labs or other Govt. R&D organizations in the last 5 years, PO copies or installation certificates along with contact details of end user need to be submitted as the proof of supply. IIT Madras reserves its right to verify the claims submitted by the bidder and the feedback from the previous customers will be part of technical evaluation.			

### Technical Specifications II

An Inertial Measurement System (IMS) equipped with a 3-axis accelerometer, magnetometer (compass) and gyroscope which can measure 9 degrees of freedom and computes quaternions, linear acceleration, gravity vector as well as independent roll, pitch and yaw/heading angles is needed. The data to be collected are:

Sl. NO	SPECIFICATIONS	Complied / Not Complied	Reference, Page. No.
1	Acceleration {x, y, z}		
2	Magnetic field {x, y, z}		
3	Angular velocity {x, y, z}		
4	Orientation {Yaw, Roll, Pitch}		
5	Quaternion {x, y, z, w}		
6	Linear acceleration { x, y, z } (without influence of gravity)		
7	Gravity vector {x, y, z}		
8	Latitude {DD.ddddd° }		
9	Longitude {DD.ddddd° }		
10	Geodial separation Speed {km/h}		
12	Course {°}		
13	Satellite view, Satellite Used		
14	Date and Time		
<b>IMU</b>			

1	Start-Up time 400 ---- ms		
2	Operating temperature --- -40° / +85 °C		
3	Supply voltage --- 4.5-24 V		
4	Acceleration range $\pm 10$ ----- g		
5	. In-run bias stability (x,y) - 10ug & z – 15ug-----ug		
6	Gyroscope Rate Range $\pm 2000$ ---- °/s		
7	In-run bias stability 8 ---- [°/h]		
8	Gyro sensitivity (calibrated) 0.001 ---- [°/s/g]		
9	Magnetometer field range $\pm 8$ --- G		
10	Non-linearity 0.1 --- % of FS		
11	Resolution 0.25 ---- mG		
<b>GPS</b>			
1	Embedded GPS Sensitivity -148dBm (acquisition), -165dBm (tracking)		
2	Time to first Fix < 1s		
3	Speed over Ground 0.03knots		
4	Position Accuracy Horizontal 1.0m Vertical 2.0m		
5	Velocity Accuracy 0.05m/s		
6	Altitude Maximum 50,000m		
7	Velocity Maximum 515m/s		
<b>Terms and Conditions</b>			
1	The equipment must have Three-year warranty and AMC.		

(Note: It is mandatory for the bidders to provide the compliance statement in tabular column format along with catalogue page number (comply/not comply) for the Above points with document proof as required. Failing which bidders will be technically disqualified)