

2007 Paper 5 Question 1

Software Engineering

An inertial navigation system is a device that uses gyros and accelerometers to measure changes in its position and orientation. It is typically used in aircraft to provide a backup navigation mechanism for GPS and other radio-based systems, and to provide an altitude reference when flying on autopilot.

You have been hired to adapt such a device to be the main navigation system for an unmanned submersible. Describe the methodology you would use, with particular reference to how you would assure your customer of the device's dependability, and what sort of problems you would watch out for.

[20 marks]