

Master 2008

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Development of a 3-d Inertial Measurement System for Automotive Industry

*ABSTRACT - Masterthesis*

This thesis presents an Inertial Navigation System in which low-cost Micro Electro-Mechanical Systems sensors are used. The system is built using the concept of Rapid Control Prototyping. The modeling of the Inertial Navigation System is made with Matlab/Simulink. This model is tested using some test data to check whether the model is working. Using  $\mu$ -Autobox, Real Time Interface and ControlDesk; the model is tested with real data which is taken from Memsense AccelRate3D Inertial Sensor. The possible sources of error in the Inertial Navigation System system are discussed. Some further suggestions are made for improving the performance of Inertial Navigation System and for lowering the costs.