WI-MAX based Self Navigating UGV With Optimal Path Planning

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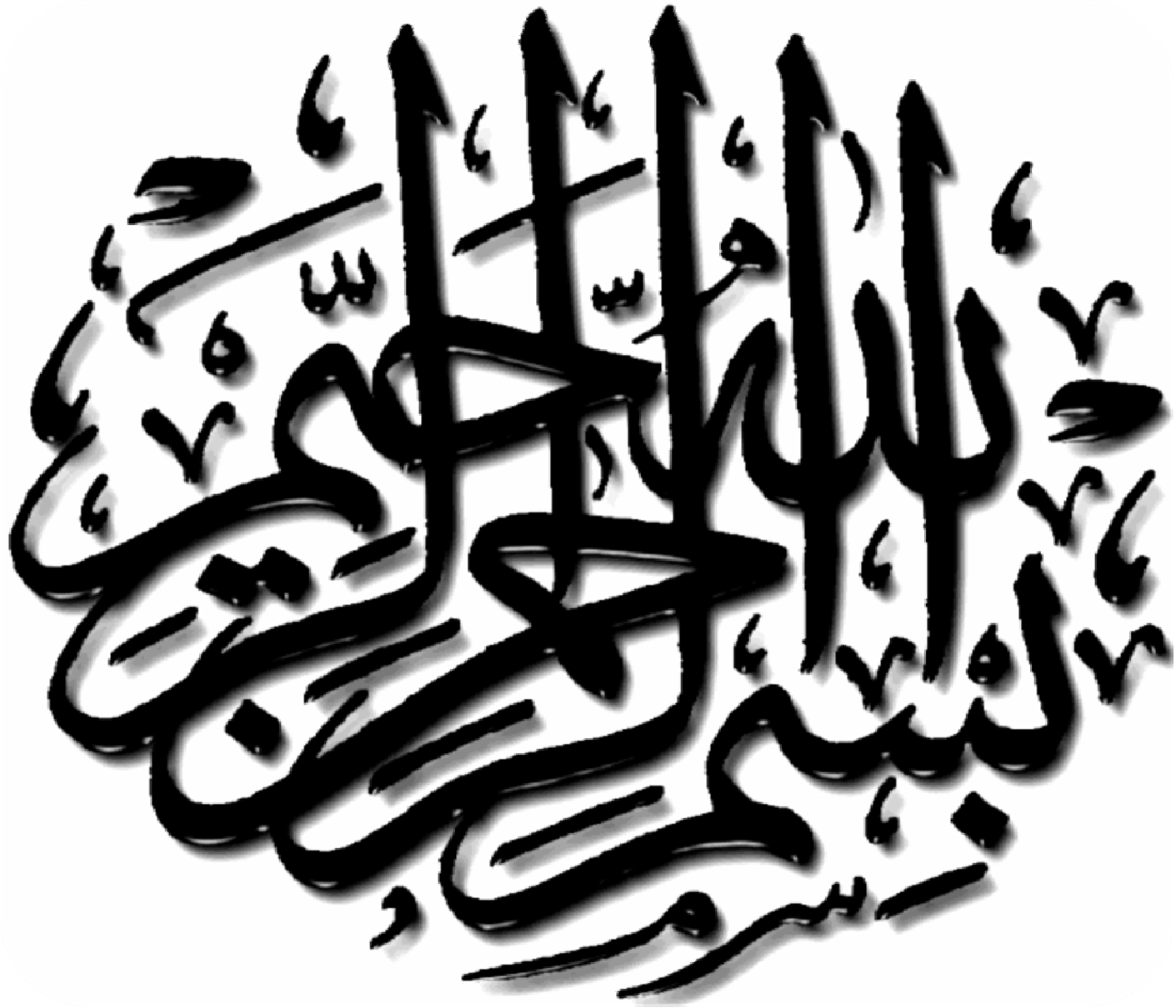

Date: _____

CERTIFICATE

We accept the work contained in the degree project report titled WI-MAX based Self Navigating UGV with Optimal Path Planning as a confirmation to the required standard for the partial fulfillment the degree of BEE.

_____
Project Coordinator

_____	_____	_____
Supervisor	**Internal Examiner**	**External Examiner**

_____
Head of Department

Declaration

We hereby declare that this Project named Wimax based UGV with Optimal Path Planning, neither as a whole nor as a part hereof has been copied out from any source. It is further declared that we have developed this project on our own and the accompanied report entirely on the basis of our personal efforts made under the sincere guidance of our seniors and teachers. If any part of this report is proved to be copied out or found to be reported, we shall standby the consequences. No portion of the work presented in this report has been submitted in support of any other degree or qualification of this or any other university or institute of learning.

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Acknowledgment

ALLAH the Almighty! We are grateful to YOU, for giving us the strength to take, and for YOUR infinite help to complete this project. Without YOUR help and blessings, we would have never been able to complete this project.

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ABSTRACT

The basic purpose of our final year project is to make WIMAX based surveillance UGV with optimal path planning. A project with this concept was completed by Bahria University final year engineering students last year. Project was WIMAX based which provides live video streaming of UGV current environment through an IP camera mounted on it for surveillance purpose. A laptop was placed on UGV for aid in video streaming and interface availability for serial connections. UGV was controlled manually thorough web server. Introducing concept of Self-Navigating optimal path planning, we will be implementing Point-Bug algorithm in which UGV will find sudden points for reaching its target location. GPS module will guide for current and target location, Ultrasonic sensors which will give sudden points and digital compass will determine angle at which UGV is supposed to turn. For online surveillance, a website has been designed where the user could view the surroundings of the UGV through a camera attached to a PCB with WIMAX connectivity. User may control UGV manually by logging in password to graphic console panel which controls motion of UGV as well as automatically by only giving target location to UGV through GPS. The project has various practical applications including military, household, Industrial, Automobiles etc. the core purpose of the project is to provide surveillance which is getting very important in military use. Planning for a mission or devising a certain strategy is better done by the help of such devices that provide real time surveillance of the traffic place without physically being present at that place.

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