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### **CERTIFICATE**

This is to certify that the thesis entitled “*A Cross-Layer based Location Aided Routing using Distributed TDMA MAC for Ad-Hoc Cognitive Radio Networks*” submitted by **Hema Kumar Yarnagula** bearing Roll No: **CSI-11003** is an authentic research work carried out by him under my personal supervision and guidance for partial fulfilment of the requirements and the regulations for the award of the degree of *Master of Technology* with specialization ‘*Information Technology*’ during the session 2011-13 at Tezpur University, Tezpur.

To the best of my knowledge, the matter embodied in the thesis has not been reproduced elsewhere or submitted to any other university/institute for the award of any Degree or Diploma.

Date : 29/05/2013  
Place: Tezpur

A handwritten signature in black ink, appearing to read 'Nitya', written over a horizontal line.

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## ***CERTIFICATE***

This is to certify that **Hema Kumar Yarnagula** bearing Roll No: **CSI-11003** has prepared the thesis entitled "***A Cross-Layer based Location Aided Routing using Distributed TDMA MAC for Ad-Hoc Cognitive Radio Networks***".

The thesis is the result of his effort and endeavors. He has worked under the supervision and guidance of **Dr. Nityananda Sarma**, Professor, Department of Computer Science & Engineering, Tezpur University. The thesis is found worthy of acceptance for the award of the degree of *Master of Technology* with specialization '*Information Technology*' during the session 2011-13 at Tezpur University.

Date : 29/05/2013  
Place: Tezpur

*Utpal Sharma*  
29.05.13

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**CERTIFICATE**

The thesis entitled "*A Cross-Layer based Location Aided Routing using Distributed TDMA MAC for Ad-Hoc Cognitive Radio Networks*" submitted by **Hema Kumar Yarnagula** bearing Roll No: **CSI-11003** for partial fulfillment of the requirements for the degree of *Master of Technology* with specialization '*Information Technology*' at Tezpur University has been examined.

A handwritten signature in black ink, appearing to read 'Hema Kumar Yarnagula', written over a horizontal line.

Internal Examiner

Date : 29/05/2013

Place: Tezpur

A handwritten signature in black ink, appearing to read 'Ganesh', written over a horizontal line.

External Examiner

Date : \_\_\_/\_\_\_/\_\_\_

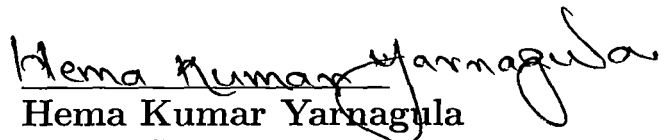
Place: Tezpur

## ***DECLARATION***

I hereby declare that the thesis entitled “*A Cross-Layer based Location Aided Routing using Distributed TDMA MAC for Ad-Hoc Cognitive Radio Networks*” submitted for partial fulfillment of the requirements and the regulations for the award of the degree of *Master of Technology* with specialization ‘*Information Technology*’ during the session 2011-13 at Tezpur University.

The thesis is prepared by me and has not been submitted to any other university/institute for the award of any Degree or Diploma.

Date : 29/05/2013  
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## ***ACKNOWLEDGEMENTS***

It's my great pleasure to show due regards to persons involved in bringing out successful completion of the thesis entitled "***A Cross-Layer based Location Aided Routing using Distributed TDMA MAC for Ad-Hoc Cognitive Radio Networks***" undertaken by me as a prerequisite towards partial fulfillment for the award of the degree of *Master of Technology* with specialization '*Information Technology*' at Tezpur University.

It would not be possible for me to achieve success with my effort alone. There were a lot of people who extended their supportive hands towards me in the way of making my work a success. It is a pleasure to convey my gratitude to all of them.

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