
A Communication architecture for UAV swarms

*A thesis submitted in fulfilment of the requirements
for the degree of Master of Technology*

by

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May 2019

Certificate

It is certified that the work contained in this thesis entitled "A Communication architecture for UAV swarms" by "Sai Aditya Chundi" has been carried out under my supervision and that it has not been submitted elsewhere for a degree.

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Abstract

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Department: **Electrical Engineering**

Thesis title: **A Communication architecture for UAV swarms**

Thesis supervisor: **Ketan Rajawat**

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UAVs have received considerable attention in the last decade, both in industry and academia. Potential applications are wide and varied, encompassing both military and domestic spaces. Search and rescue missions during disasters, environmental monitoring and surveillance, precision agriculture and farming are some of the domestic applications, while the scope of their usage in military space can be readily appreciated. Communication between individual UAVs is a critical component in enabling a distributed architecture for swarm applications. Wireless ad-hoc networks offer an appealing solution for the inter UAV communication and there has been significant interest in realizing robust ad-hoc networks in UAVs. But, the research is progressing in designing the entire protocol stack from scratch, specifically for UAVs, starting from PHY and MAC layers. Though there have been works which used 802.11 based ad-hoc networks for the communication in multi UAV setups, they have been academic

Acknowledgements

I would extend my sincerest gratitude...

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Abbreviations

FEA	F inite E lement A nalysis
FEM	F inite E lement M ethod
LVDT	L inear V ariable D ifferential T ransformer
RC	R einforced C oncrete

Symbols

D^{el}	elasticity tensor
σ	stress tensor
ε	strain tensor

For/Dedicated to/To my...

Chapter 1

Chapter Title Here

1.1 Main Section 1

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Appendix A

Appendix A

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