

 **DTU Compute**
Department of Applied Mathematics and Computer Science

Tether Control for Unmanned Aerial Vehicle

A nice thesis template

Peter Juhl Savnik (s113556)

Kongens Lyngby 2014



DTU Automation and Control
Department of Electrical Engineering
Technical University of Denmark

Elektrovej
Building 326
2800 Kongens Lyngby, Denmark
Phone +45 4525 3031
elektro@elektro.dtu.dk
www.elektro.dtu.dk

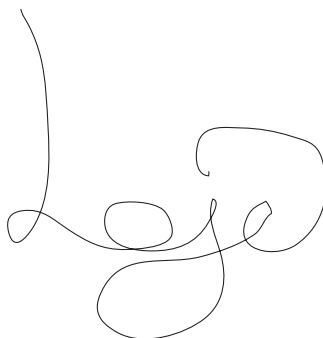
Summary

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Preface

This xxx thesis was prepared at the department of Applied Mathematics and Computer Science at the Technical University of Denmark in fulfillment of the requirements for acquiring a yyy degree in zzz.

Kongens Lyngby, September 22, 2014

A handwritten signature in black ink, appearing to read 'P. J. Savnik', with a large, stylized 'S' at the end.

Peter Juhl Savnik (s113556)

Acknowledgements

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Contents

Summary	i
Preface	iii
Acknowledgements	v
Contents	vii
Todo list	ix
1 Introduction	1
1.1 Problem formulation	1
1.2 Problem limitation	1
2 Analysis	3
2.1 Background	3
3 Long chapter title with π, very long title	5
4 Heading on Level 0 (chapter)	9
4.1 Heading on Level 1 (section)	9
4.2 Lists	10
5 Conclusion	13
A An Appendix	15
Bibliography	17

Todo list

■	1.0 (1) Kilder: Landbrug og Fødevarer	1
■	1.0 (2) Giv projektet et overordnet navn, midlertidigt navn: PTD-Platform for Tethert Drone	1

Introduction

I Danmark udgør landbrugets kornproduktion 35% af Danmarks samlede areal eller 1.495.000 ha til en værdi på 29,4 mia. kr. der produceres i stigende grad mere med mindre ressourcer. Organisationen Landbrug og Fødevarer sætter et stor fokus på at optimere produktionen gennem forskning og innovation.

Et velkendt problem i korn produktionen er når landmanden høster i skovbrynet, ligger der ofte ungt vildt og trygger sig i kornet. Deres naturlige instinkt på fare er at trykke sig endnu mere. det vil sige at når landmanden høster sin mark, flytter dyret sig ikke for maskinen. Det resultere i et stort antal ung vildt som bliver påkørt af landmændene. Det har økonomiske konsekvenser for landmanden, i og med at det høstede korn bliver ødelagt, der kan ske materieller skader på udstyret, nede tid i driften og ikke mindst er det en ubehagelig oplevelse for landmanden.

En forsknings gruppe på DTU Automation har forslået en løsning med en drone der flyver foran køretøjet og med et vision-system kan detektere eventuelle forhindringer.

For et sådan system skal kunne være i drift i længere tid af gangen er der behov for en konstant strømforsyning via et kabel. Dette projekt handler om at udvikle en løsning på håndteringen af kablet.

1.1 Problem formulation

Formålet med projektet er at analysere problemet og forslå en mulig design løsning på hvordan man kan håndtere den kablede forbindelse.

1.2 Problem limitation

1.0 (1) Kilde
Land-
brug og
Føde-
varer

1.0 (2) Giv
projek-
tet et
overord-
net
navn,
midler-
tidigt
navn:
PTD-
Platform
for Teth-
ert
Drone

CHAPTER 2

Analysis

2.1 Background

Det ønskes at udvikle en platform for styring af tøjret droner - PTD Platform for Tethered Drones. En sådan platform kan have mange anvendelsesmuligheder i den industrielle verden - hvilket også sætter en række krav til pålidelighed og robust design.

PTD - Platform for Tethered Drones

Præsentation over-all-system

Design krav/kravspecifikation

Løsningsforslag

CHAPTER 3

Long chapter title with π , very long title

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. What about some inline sans serif text?. $x = 4, y = 7$ which means that $\sqrt{4} = 2$.

Sans serif testing:

- π
-
- π
- *italic*
- ***bold italic***
- **bold**
- teletype

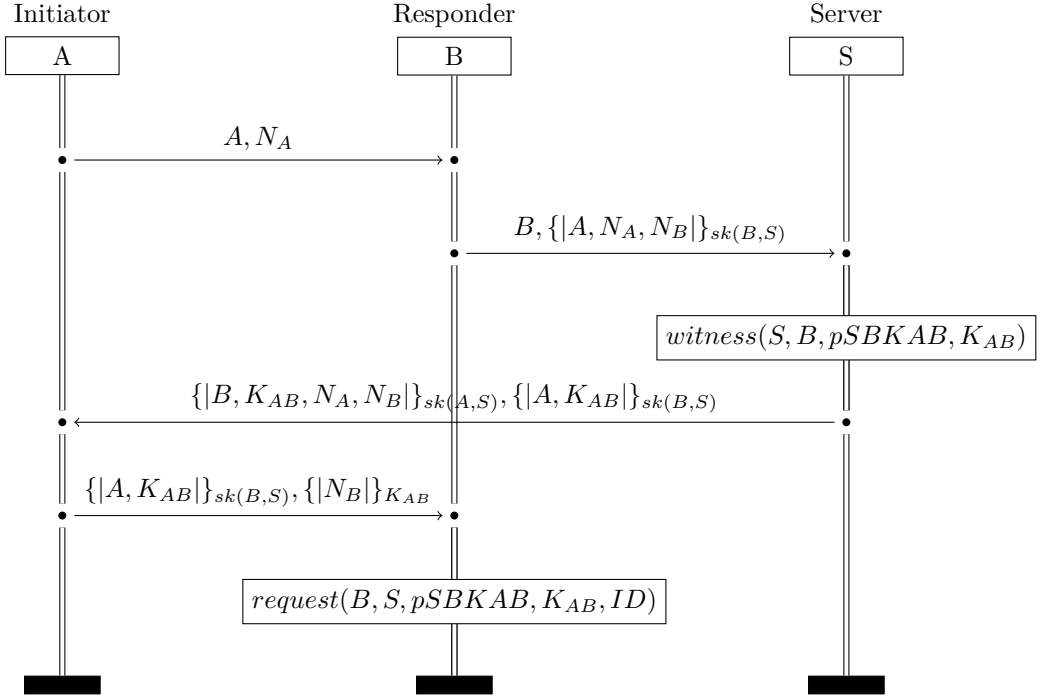


Figure 3.1: Attack against the goal “ B weakly authenticates S on K_{AB} ”.

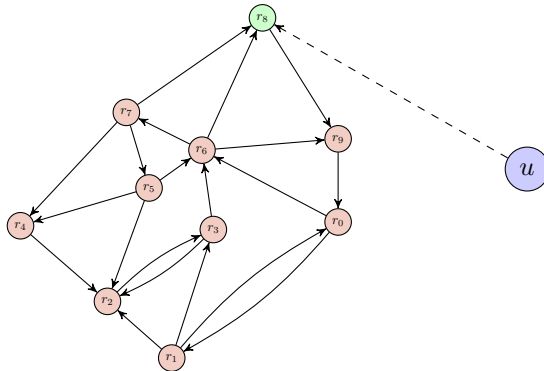


Figure 3.2: Initial topology of sensor network. r_n is a regular node, u is the user. Edges represent how the nodes know each other.

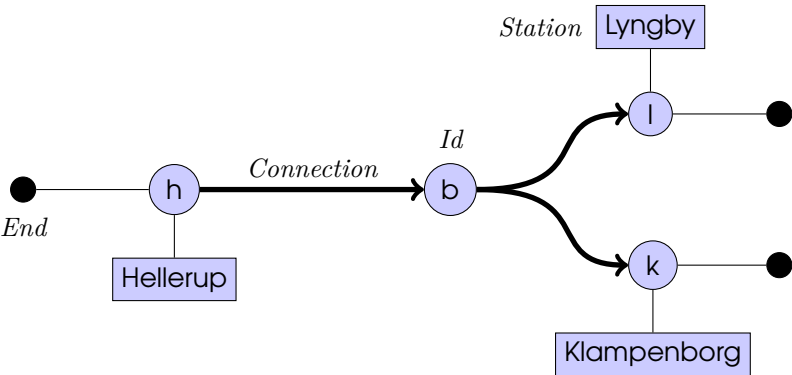


Figure 3.3: Objects in the intermediate network graph.

CHAPTER 4

Heading on Level 0 (chapter)

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

4.1 Heading on Level 1 (section)

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Heading on Level 2 (subsection)

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Heading on Level 3 (subsubsection)

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Heading on Level 4 (paragraph) Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

4.2 Lists

Example for list (itemize)

- First item in a list
- Second item in a list
- Third item in a list
- Fourth item in a list
- Fifth item in a list

Example for list (4*itemize)

- First item in a list
 - First item in a list
 - * First item in a list
 - First item in a list
 - Second item in a list
 - * Second item in a list
 - Second item in a list
- Second item in a list

Example for list (enumerate)

1. First item in a list
2. Second item in a list
3. Third item in a list
4. Fourth item in a list
5. Fifth item in a list

Example for list (4*enumerate)

1. First item in a list
 - a) First item in a list
 - i. First item in a list
 - A. First item in a list
 - B. Second item in a list
 - ii. Second item in a list
 - b) Second item in a list
2. Second item in a list

Example for list (description)

First item in a list

Second item in a list

Third item in a list

Fourth item in a list

Fifth item in a list

Example for list (4*description)

First item in a list

First item in a list

First item in a list

First item in a list

Second item in a list

Second item in a list

Second item in a list

Second item in a list

CHAPTER 5

Conclusion

Morbi pharetra ligula integer mollis mi nec neque ultrices vitae volutpat leo ullamcorper. In at tellus magna. Curabitur quis posuere purus. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Suspendisse tristique placerat feugiat. Aliquam vitae est at enim auctor ultrices eleifend a urna. Donec non tincidunt felis. Maecenas at suscipit orci.

APPENDIX A

An Appendix

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Bibliography
