

Index

• Abstract	3
• Introduction	5
• Chapter 1	9
1.1 Mapping	9
1.1.1 Source of information	10
1.1.2 Creating the map	11
1.1.3 Maintenance of the map	12
1.2 Path Planning	15
1.2.1 Problem definition	16
1.2.2 Geometric Solutions	17
1.2.3 Solutions based on control	26
1.3 Conclusions	27
• Chapter 2	29
Ros 2.1	29
2.1.1 Key Concepts	30
2.1.2 Operation	32
2.2 MoveIt!	35
2.2.1 Octomap	36
2.2.2 OMPL	38
2.2.3 MoveGroup	40
2.3 Conclusions	43
• Chapter 3	45
3.1 Gazebo & Hector quadrotor	45
3.2 Configuration	49
3.3 Test	53
3.4 Conclusion	57
• Chapter 4	59
4.1 Integration of the application in real environment.....	59
4.2 SHERPA	61
4.3 Possible additions in SHERPA	63
4.4 Conclusions	66
• Bibliography	69

