

FAKULTÄT FÜR INFORMATIK

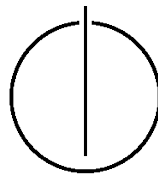
DER TECHNISCHEN UNIVERSITÄT MÜNCHEN

Practical Course Report

HW/SW co-design with a LEGO car

Car2X Communication

**Hagen Schmidtchen, Paul Bergmann,
Johannes Windelen, Florian Janssen**



Contents

1	Introduction	3
1.1	Motivation	3
1.2	Problem description	3
1.3	Approach	3
2	Concept	4
2.1	Hardware structure	4
2.2	Communication Flow	4
2.3	Car2X Protocol	4
3	Hardware	5
3.1	Topology	5
3.2	Configuration QSYS	5
3.3	Configuration Top Level File	5
3.4	Problems	5
3.5	WiPort	5
4	Software	6
4.1	Communication Core	6
4.2	CarControl Core	6
4.3	Shared memory Controller	6
4.4	Protocol extensions	6
5	Conclusion	7
A	Stuff...	8

Chapter 1

Introduction

1.1 Motivation

1.2 Problem description

1.3 Approach

Chapter 2

Concept

2.1 Hardware structure

2.2 Communication Flow

2.3 Car2X Protocol

Chapter 3

Hardware

This chapter describes the basic concept and configuration of the car-system's hardware. A basic knowledge of Altera Quartus II is assumed.

3.1 Topology

3.2 Configuration QSYS

3.3 Configuration Top Level File

3.4 Problems

3.5 WiPort

Chapter 4

Software

4.1 Communication Core

4.2 CarControl Core

4.3 Shared memory Controller

4.4 Protocol extensions

Chapter 5

Conclusion

Appendix A

Stuff...