**Port Software Design**

***SteerTurnIllum***



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Index

1 Glossary 3

2 Introduction 4

2.1 Purpose of the Document 4

2.2 Overview 4

3 Design Requirements 5

4 Information about this Document 6

4.1 Copyright 6

4.2 Version Index 6

# Glossary

This section contains a glossary of all the important terms and acronyms used inside the document.

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| **Term / Acronym** | **Description** |
| AUTOSAR | AUTomotive Open System ARchitecture |
| VFB | Virtual Functional Bus |
| SWC | Software Component |
| RTE | Runtime Environment |
| BSW | Basic Software |
| OS | Operating System |
| S/R | Sender / Receiver |
| C/S | Client / Server |
| ECU | Electronic Control Unit |
| uC | Microcontroller |
| ADC | Analog Digital Converter |
| DIO | Digital Input / Output |
| PWM | Pulse Width Modulation |

Table 1 - Glossary.

# Introduction

## Purpose of the Document

The purpose of the document is to define the software design of the ***Port*** driver for the ***SteerTurnIllum*** embedded academy project.

## Overview

While the AUTOSAR ***Port*** module is complex and is usually configured via generators, in this project it is manually implemented and its single feature is to initialize the direction and mode of all the used uC pins.

# Design Requirements

1. The Port driver shall be implemented according to AUTOSAR 4.3.1 specifications.
2. The Port driver shall implement the following interfaces and all their required data types for initializing the directions and modes of all the used uC pins:

* *Port\_Init();*

1. The Port driver shall include *Init.h* and directly use the *Init\_gv\_Full\*Bits()* and / or *Init\_gv\_Masked\*Bits()* functions for loading registers.
2. The Port driver shall consist of the following files:

* *Port.c*: Implements all the required interfaces in a generic way.
* *Port*.*h*: Exports all the required interfaces, data types and the post-build configuration.
* *Port\_PBcfg.*c: Defines the list of registers and values to be written for setting the directions and modes of all the used uC pins.

# Information about this Document

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## Version Index

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Table 2 - Version Index.