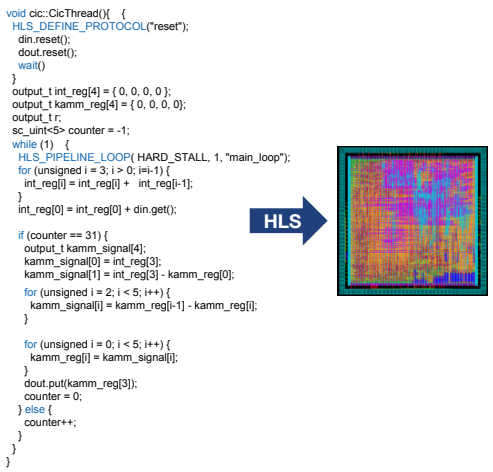
Chair of
„Secure Digital Circuits“

der Bundeswehr Universität München

High-Level Synthesis of a Generic Cordic Accelerator

Introduction

The Cordic algorithm, which enables the hardware-efficient calculation of trigonometric functions, is one of the work horses of digital integrated circuits. Thereby, the optimal hardware architecture highly depends on throughput and silicon area requirements. With this regard, a High-Level-Synthesis approach, for which the integrated circuit is modelled in a high programming language such as SystemC or C, is promising as it enables an easy adaption towards different requirement sets.



Short Project Description

The goal of this project is to develop a generic Cordic description in C language which can be synthesized to an integrated circuit. The benefit of the approach is proven by synthesizing a Cordic hardware accelerators for different throughput requirements and compare implementation costs to state-of-the-art Cordic implementations.

Prerequisites

- Interest in signal processing and VLSI design
- Basic knowledge in SystemC or C is helpful

What you will learn

After the project you will be able to design digital integrated circuits using a High-Level-Synthesis design flow. In addition, you get familiar with one of the most powerful digital algorithms used in many modern communication systems.

Contact

matthias.korb@unibw.de