UNIVERSITÄT PADERBORN

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PG Soundgates

Project Plan

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1 Introduction

1.1 About this document

This document is the project plan of the project group "Soundgates" at the University of Paderborn. It introduces the topic of our project group in Chapter 1 and the goals we want to achieve in Chapter **??**. Chapter **??** covers systems similar to what we are going to create, escpecially the software called MAX. Chapters **??** and **??** describe how the group will organize itself and the groups' milestones.

Not only should this document serve as a basis for the later evaluation and grading by our professor, but also as a reference for our group during the main working phase. This working phase runs from ??.2013 to ??.2014

1.2 Definitions

Term	Definition
Composite Component	Definition
Component	A basic building block to generate music ??Haben wir uns hier auf Block als Bezeichnung geeinight? Component eher im Sinne von Softwarekomponente
Editor	The Editor is used to create a patch out of components to generate synthesizable code which can be put on a FPGA
FPGA	Field Programmable Gate Array
Patch	The entire system which consists of Components and Composite Components. A set of single Components can build a new Component
Port	The interface from one Component to another one
Simulation	The developed patch is played through the PC speakers

1.3 Project outline

- Creating an editor for synthesizers. - Components of the synthesizer implemented in hardware (and software for simulation purpose) - Implementation of generative music concepts ——- Warum wollen wir das eigentlich tun? Was ist die Motivation dahinter (zumal es das aus Oslo ja aschon in Software gibt)

1.4 Introduction to sound synthsis

- Artifical generation of sound - Generation of basic waveforms - More complex and rich patterns by methods like additive/subtractive/... synth - Further addition of filters etc
- Originated from analog synthesizers, nowadays mostly digital. Software for general purpose PCs exist
- Building patches: job of a sound designer, rather than a musician

1.5 Introduction to generative music

- Creatioin of music depending on user interaction - Users do not need to be musicians - Playful approach to making music - tightly connected to sound synthesis

1.6 Employed systems

1.6.1 VHDL

- Hardware components implemented in VHDL

1.6.2 ReconOS

- Developed at the University of Paderborn - Operating system running on a softcore alongside our VHDL components - Especially useful for integration of external devices (generative music)

1.6.3 Eclipse/GMF

- Synthesizer Editor developed as an Eclipse Plugin. - Will use GMF

2 Goals

3 Related Work

4 Organization

5 Workplan