

# High Level Synthesis in VLSI Design

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**Abstract**—In this paper, I present the research about High Level Synthesis in VLSI Design, its uses and methods.

**Index Terms**—scheduling, optimization problem, genome.

## I. INTRODUCTION

Very Large Scale Integration also known as VLSI is a technology that is in use in many digital systems. VLSI technology currently allows hundreds of thousands of transistors in a single application-specific integrated circuit (ASIC), and the level of integration is increasing at a rapid rate[1]. VLSI Design is a design of a single Integrated Circuit (IC) which can perform several complex functions. This includes integrated circuits made for a specific design as well as generic components (like microprocessors and memories) that are created once and produced in large quantities (i.e., ASICs). An integrated circuit (IC) is a very small semiconductor chip. In this semiconductor chip there are electronic components and their interconnections are fabricated. High-level synthesis changes behavioral descriptions into digital network structures. A requirement of this step is to determine the number of cycle steps. A schedule induces a resource allocation (because some operations are executing simultaneously) and a completion time (the cycle in which the last operation finishes its execution). Scheduling is very important to manage an activity without errors especially when the activity is performed in some big company with a routine. Many computer scientists in 1950s and 1960s studied independently that evolution could be used as an optimization tool for the problems of engineering.

## II. VLSI DESIGN METHODOLOGY

## III. HIGH LEVEL SYTHESIS

## IV. TOOLCHAINS

## V. ANALYSIS

## VI. CONCLUSION

## REFERENCES

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