Experience of Using OpenROAD Flow Scripts on a Specific Design

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Kunal Ghosh
VLSI Dept.
VLSI System Design
Bangalore, India
kunalpghosh@gmail.com

Indira Iyer
PNR Dept.
Precision Innovations
San Diego, United States
iiyer@precisioninno.com

Phillip Guhring
EDA Dept.
LibreSilicon
Austria, Europe
pg@futureware.at

***Abstract*— In this paper, we present our experience of using OpenROAD Flow Scripts (ORFS) on a specific design project. ORFS is a set of integrated scripts that allow for RTL-to-GDSII flow using open-source tools. The OpenROAD Flow project aims for automated, no-human-in-the-loop digital circuit design with 24-hour turnaround time. We discuss the benefits and challenges of using ORFS and provide recommendations for future projects.**

Keywords*— *OpenROAD Flow Scripts, RTL-to-GDSII flow, open-source tools, automated design, no-human-in-the-loop.

I. Introduction (*Heading 1*)

OpenROAD Flow Scripts (ORFS) is a powerful toolset that enables full RTL-to-GDS flow using open-source tools. The OpenROAD Flow project aims to automate digital circuit design with no human intervention and achieve a 24-hour turnaround time. In this paper, we describe our experience of using ORFS on a specific design project and highlight the benefits and challenges of this approach.

II. Design Flow Overview

Our experience of using ORFS on a specific design project has been positive overall. The use of open-source tools allows for flexibility and cost-effectiveness, while the automation of the design flow significantly reduces the time and effort required for the design process. We were able to achieve a design turnaround time of less than 24 hours, which is impressive considering the complexity of the design.

However, we also encountered some challenges during the design process. The use of open-source tools requires careful consideration of tool compatibility and versioning, as well as potential issues with tool performance and stability. Additionally, the lack of human intervention can sometimes lead to unexpected design results that require careful analysis and debugging.

III. Experience of Using ORFS

Our experience of using ORFS on a specific design project has been positive overall. The use of open-source tools allows for flexibility and cost-effectiveness, while the automation of the design flow significantly reduces the time and effort required for the design process. We were able to achieve a design turnaround time of less than 24 hours, which is impressive considering the complexity of the design.

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IV. Conclusions and Recommendations

In conclusion, our experience of using OpenROAD Flow Scripts on a specific design project has been largely positive. The use of open-source tools and automation greatly simplifies the design process and allows for rapid exploration of design alternatives. However, careful consideration of tool compatibility and versioning, as well as careful analysis of design results, is necessary to avoid unexpected issues.

We recommend the use of ORFS for future projects that require a rapid design turnaround time and cost-effective design flow. Further development and testing of the toolset will likely address some of the challenges encountered during our design process

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