

OPEN ACCESS OVERVIEW “Industrial Experience”

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Abstract - Renesas Technology Corp. designers turned to OpenAccess to address the major design challenges with systems on chip for the automotive, wireless, digital consumer and industrial markets. OpenAccess provides Renesas with an industry standard database that has the capacity and performance needed for today's largest designs. The C++ API (C++ Application Programming Interface) facilitates fast access to a unified data model for both logical and physical design. It enables an efficient level of access to the data model to integrate tools developed in-house with commercially available tools for translation free interoperability.

I.Introduction

Renesas is advancing the development of design system (named REAP) for SoC that uses OpenAccess as the design database. In this session, the performance data of the thought of the REAP system development in Renesas, System configuration, Function, and a part of flow, function is described as “Industrial Experience”. Also, and it introduces the design rule checker that uses C++API and it Renesas originally has as an example of using more positive OpenAccess and the outline of the composition of the prototyping system

II.Renesas’ Design Environment “REAP”

In design system REAP v1.X of RENESA, conversion, the generation at each format even if the data format that the tool supported by a general and EDA vender leaving and the management of the data of a variety of design road inside in the step of each design when SoC (System on a Chip) is designed and it develops handles is various and is the data of the same content as straightening, and leaving are current states.

The problem of often happening only has to notice the mistake at once by using old data by forgetting to generate the mistake of the data format that should be converted or data, and it will be discovered mostly as verification

trouble in the design step the next from now on. There is a thing that hangs for about 1-3 weeks though the problem is corrected and a necessary design step is done over again in the worst case, too.

The adoption of OpenAccess was decided to REAP v2.X as a design system that managed the data under the design and had various, new features.

It comes the problem of disappearing of the necessity that generates the format of the data of each EDA tool with the introduction of OpenAccess and manages on the site of each SoC design, and originating in a simple mistake that makes a mistake in the data format that should be converted is able to be able not only to be solved but also to connect EDA vender tool and an in-house development tool easily. The EDA design system can be smoothly constructed for that.

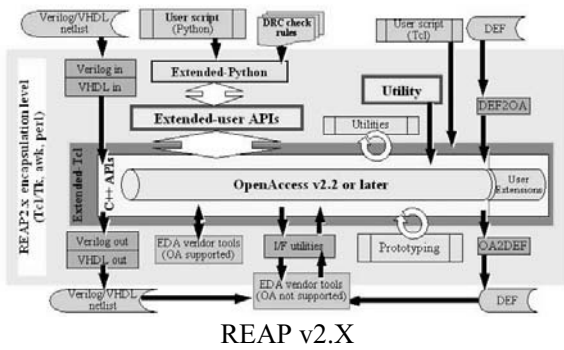
In RENESAS, it is prepared with OpenAccess.

- Abundant C++ API and manual
- LEF/DEF interface
- Verilog interface
- SPEF interface
- Stream interface
- Milkyway translator
- API access environment of Tcl language base

is used, and the development of REAP v2.X is advanced.

The feature of REAP v2.X is dual scripts environment that values the interface of the TCL base that values continuance from REAP v1.X and the extendibility of REAP v2.X and builds in Python.

Other features are thing to have used the EMH function that OpenAccess offers positively. Because the correction generated on the layout system chip implementation side is reflected in the logical circuit correction dynamically with a logical hierarchy maintained, efficiently doing the static, logical agreement verification with the formal verification tool becomes possible. .



III. Summary

RENESAS developed the SoC design environment that used OpenAccess. REAP continuously is improved, enhanced, and comes to be offered to SoC designer outside the company.