EDA Vendor Adoption

Hillel Ofek
Sagantec

As stated in the introduction to the Open Access session, rapid IC technology advances towards deep sub-micron technologies produce ever growing pressure on EDA Vendors. This is evident when examining the requirements to support 65nm and 45nm IC technologies and beyond. The reason is simple. EDA design systems and complex design flows require close cooperation of various analysis and optimization tools that originate from multiple vendors. Also, sharing design data in memory is a performance and ease of use requirement. The current version of Open Access (OA) has evolved from a single vendor (Cadence) to a standard in which contributions from many member companies have been incorporated. It is now used to integrate tools from EDA vendors, internal development groups at semiconductor companies, and universities.

This paper will provide a view of Open Access from the vantage point of an EDA Vendor. It will address the positives and the challenges facing both the EDA Vendors and the EDA Users. Hopefully, the paper will contribute to the understanding of OA adoption, its benefits, and by way of example illustrate current state and show the way to broad adoption of this essential standard.

One can say that a lot has already been achieved by Open Access. Still, many things are needed for a real seamless integration of EDA software, particularly, a complete integration of technology data within OA (design-rules, process models)

Also, Interoperability benefits can only be realized when demanded by EDA customers (and incorporated in their design flows), not just by the EDA vendors.

The following talking points will illustrate the discussion delivered by this paper:

1. Today, OA promise of interoperability is not delivered for full custom design flows. For example, P-cell evaluation in custom IC design requires a plug-in (mechanism exists), which at the very least should be licensed by Cadence to all segments of the OA community.

2. Sagantec vision to "migrate" from proprietary layout design structure and File format to native OA is essential. When implemented in full, Sagantec tools will read the same database as other tools within the design flow. This will no longer require format translations and avoid format conversion issues. It will also allow us to build better solutions than before. An example of a better solution is the P-cell parameter selection. To accomplish that, OA needs a richer set of technology design-rules and it needs to be extended for design-manufacturing data-exchange (DTMC).

3. From an EDA vendor perspective, Sagantec is almost ready with OA implementation and usage. We are now waiting for customers to start adopting OA in their design flows so that our tools and other vendors' tools can be used smoothly.

Another topic of interest is the engineering benefit and cost of Open Access to an EDA vendor's engineering organization. This can be summarized by the following points:

1. Less interface effort
2. Influence on content
3. Less maintenance effort
4. Easier problem solving
5. Incorporation cost
6. Additional overhead

Additionally, we have had the experience of adding new technology to one of our products to create a new integrated product. An effort that usually takes a long time required just 2 months, thanks to the use of OA as a platform and an infrastructure. Essentially, OA served as a backplane to integrate technologies from different sources and different disciplines, by plugging in various old and the new code packages.

In summary, OA is an excellent vehicle to help in enabling users and developers of EDA tools to rapidly and simply construct complex design and DFM flows with components originating from many sources.

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