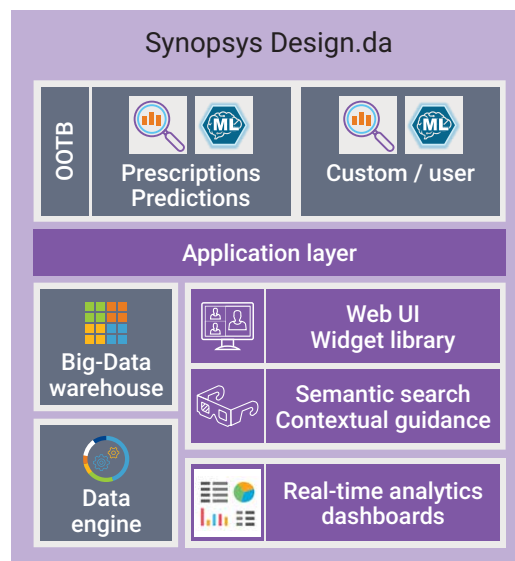**SYNOPSYS®**

Synopsys Design.da

End-to-End AI-Driven Data Analytics Platform

Overview

Engineering teams are under constant pressure to get products to market faster without sacrificing quality. The insights locked in the data collected through design, manufacturing, test, and fabrication operations hide a wealth of information regarding the health and status of your SoC design. Tools in the Synopsys.ai data continuum family allow design teams to increase productivity across the full design-to-silicon lifecycle by connecting, analyzing, and drawing inference from this data.

Design debug and optimization times heavily dominate engineering schedules making it a challenge to meet the exacting product feature specifications and short time-to-market windows. There is a strong need to improve designer focus, productivity, and effectiveness. EDA metrics and tool-flow data are an under-valued and under-utilized gold mine of opportunity. Tapping into this data can enable designers to find and fix the right problems, faster.

Central to design data analysis is the Synopsys Design.da solution that leverages proprietary data collected during the design flow to bring unmatched productivity and a better, faster, and smarter way to achieve design convergence. Synopsys Design.da is the industry's first comprehensive data-visibility and machine intelligence-guided design optimization and signoff-closure solution. Combining open-source industry-standard databases with a cloud native architecture, Synopsys Design.da delivers better observability to help mitigate project risk, intelligently uncovers actionable data insights to enable more efficient designer workflows, and provides a knowledge framework for a continuously improving design process.

All Data, All the Time

Synopsys Design.da is a comprehensive insight-to-action solution that enhances the design process through powerful, scalable, and always-on analytics. The tool uses numerous AI-driven engines throughout the flow to continually analyze the data to achieve optimal power, performance, and area (PPA) targets. This analysis generates critical design insights that can have a significant impact on design productivity and SoC quality.

Synopsys Design.da presents a holistic view of all project data; it then efficiently and autonomously highlights user customizable metrics progressions / regressions while curating the associated analysis data for additional insight. It transforms and loads the data into open-source, industry-standard databases. The tool performs analysis not only to show what is happening but also why it is happening. The solution automatically classifies design trends, identifies limitations, and provides prescriptive, guided root-cause analysis across the entire design flow.

This always on data collection and analysis uncovers insights that allow teams to be more collaborative and encourage knowledge sharing. Data analytics insights not only increase efficiency and productivity, but also enable the design of more differentiated products, faster. Synopsys Design.da leverages the data and the analysis derived from early to late stages of design blocks by learning from the data and passing that knowledge on to later stages of the design cycle. The tool uses real-time analytics data collection to monitor and provide warnings about current run quality and probability of success. As more data is collected, analytics predictions become more robust for monitoring, rating, and predicting key events and performance.

The solution rests and can be expanded on a customizable user interface and analytics platform that allows CAD / design teams to encode their expert knowledge for use by the design community, whether it is internal to the company or to the design group.

Conclusion

Design debug and optimization is a significant bottleneck to meeting design targets, increasing design quality, and meeting shrinking time-to-market windows. Tapping into the proprietary data collected throughout the design flow can unlock powerful actionable insights that not only increase productivity, but also allows for better designs, faster. Synopsys Design.da uses AI-driven engines to constantly collect and analyze the data to optimize the design and bring more focus to engineering teams. Synopsys Design.da enables more efficient designer workflows and provides a knowledge framework for continually improving the design process.

For more information about Synopsys products, support services or training, contact your local sales representative or visit us on the web at: www.synopsys.com