PLUNIFY

ATOMOS Meets Aggressive Time-to-Market Deadlines for Multiple Pro Video Products using InTime

"Faced with an aggressive time-to-market schedule, Plunify's InTime tool helped us meet deadlines on multiple product lines. Leveraging InTime technology is a timing closure flow we can rely on."

Jeromy Young, CEO, ATOMOS

Atomos is a manufacturer of high quality video related recording devices. With offices all across the globe, Atomos has a clear vision -- to revolutionise digital video production by combining smart workflows with simple operation to deliver cost-effective recording and conversion solutions for today's video and film professionals.

CHALLENGES

➢ Atomos had four product designs to deliver over the year-end holiday period, each with aggressive deadlines.

➢ After source code updates, all four designs had to be optimised simultaneously until performance and functionality requirements were met.

➢ Given the extremely limited time before shipping, both the designers and implementation flows had to work round the clock to close timing.

InTime

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OVERVIEW

Real-Time processing of high resolution, bandwidth-intensive audio and video data poses daunting R&D challenges, which can adversely impact the overall product development time and delay product Time-To-Market.

Existing approaches involve debugging source code, re-examining and tweaking the design constraints – potentially wasting tremendous amounts of time in doing so as there is no de-facto tool or (semi-) automated process to optimize designs; at least not until the InTime tool was developed.

Atomos' server resources were also hard-pressed to explore compilation parameters for all four designs simultaneously.

SOLUTION

Atomos deploys InTime software in their timing closure flow.

- Run all designs at the same time to train InTime on optimization possibilities.
- The engineers start the InTime tool and let it run by itself.
- The tool analyses design and uses different synthesis and/or place-and-route options to close timing.
- Once the tool discovers a promising optimization, compute resources are automatically redirected to focus on it and close timing more quickly.

BENEFITS

- No changes to source code are required.
- Rely on automatic calibration synthesis and place-and-route parameters based on rigorous tests.
- Engineers keep their focus on fixing design bugs or further enhancing the product, rather than spending time to explore the FPGA tools in detail.
- InTime finds multiple solutions for design closure.

WHY InTime?

Especially when schedules were tight, Atomos engineers did not have the luxury of learning and integrating a new tool into their existing FPGA design flow.

InTime requires less than five steps to open a design and start an optimization cycle. Its Machine Learning algorithms adjusts synthesis and place-and-route parameters to guide the design towards better performance.

InTime has been proven to out-perform other similar exploration tools by 80% in terms of quality of results.

And because InTime grows its optimization database with every successive project it runs, the company's Return on Investment increases over time in the long run.