SYNOPSYS®
Predictable Success

Synopsys Professional Services Helps Phonak Establish Rapid Prototyping Flow for Ultra Low Power Designs

"The cooperation with Synopsys Professional Services helped us to successfully complete our FPGA emulation project for the next-generation platform of hearing aid devices and get an early start on software development. The collaboration was marked by very efficient communication, timely responses and quick adaptation to changes in project objectives."

Vesselin Parushev,
Project Leader, Microsystems, Phonak AG

Headquartered near Zurich, Switzerland, Phonak, a member of the Sonova Group, has developed, produced and globally distributed state-of-the-art hearing systems and wireless devices for more than 60 years. The combination of expertise in hearing technology, mastery in acoustics and strong cooperation with hearing healthcare professionals allows Phonak to significantly improve people's hearing ability and speech understanding and therefore their quality of life. With a worldwide presence, Phonak drives innovation and sets new industry benchmarks regarding miniaturization and performance.

To accelerate early software development for their next generation of hearing aid devices, Phonak needed to implement a rapid prototyping solution based on a standard FPGA emulation platform. Because the ultra low power, latch-based HDL design using multiple gated clocks was unsuitable for a traditional FPGA implementation, Phonak needed to find a solution for a tool-based clock conversion or consider modifying the HDL code, a

task that would consume valuable time in an already tight schedule. Since Phonak's engineers were new users of Synopsys' ASIC prototyping tools, they needed a solution that resulted in knowledge transfer and a reusable flow, in addition to meeting near-term project goals.

Synopsys Solution
- Confirma Synplify Pro FPGA synthesis and CHIPit® Iridium system
- Synopsys Professional Services

Cooperation Benefits
The joint team successfully completed the porting of the FPGA emulation flow for Phonak's hearing aid design platform to Synplify Pro, and mapped the design to CHIPit hardware. The resulting Confirma-based flow met project objectives with support for gated clock conversion and real-time operation. Most importantly, the team used real-world hardware testing to avoid possible schedule delays and silicon re-spins that can result from having to modify unverified firmware code.