



1. **What did ANSYS announce today?**

ANSYS has acquired Helic, a premier provider of software that analyzes and mitigates the risk of electromagnetic crosstalk for semiconductor designs.

2. **Why is this significant?**

Key market drivers such as 5G, AI, and cloud are driving the increased use of on-chip signal frequencies past 2 GHz, and complex multiple silicon die in a single package (3D-IC). These trends have driven the need for robust physics-based electromagnetics solvers, with the capacity to handle the number of geometries seen in semiconductor designs.

Helic has pioneered the use of such electromagnetics solvers -- first with on-chip spiral inductor analysis (as needed by RF applications used in mobile phones, such as wifi, bluetooth), and more recently for on-chip inductive noise analysis.

This acquisition combines ANSYS flagship electromagnetics solvers, such as HFSS and SIwave, and ANSYS' market leading RedHawk-SC power-integrity noise analysis tool, to provide a comprehensive solution for on-chip, 3D-IC and chip-package-system electromagnetics and noise analysis.

With this acquisition, ANSYS will enable semiconductor designers to deliver devices in all advanced nodes, optimize the die size, and capture with precision electromagnetic and parasitic effects from DC up to 110 GHz.

3. **What does Helic do?**

Helic provides software that mitigates the risk of electromagnetic crosstalk in System on Chip (SoC) Designs. Since 2000, Helic cutting-edge technology has enabled analog/RF and high-frequency IC design engineers to synthesize inductive devices and model electromagnetic and parasitic phenomena with accuracy, speed and seamless design flow interoperability.

In the last few years, as frequency, bandwidth and level of integration continued to escalate, Helic tools have been successfully used by top semiconductor companies to debug and analyze electromagnetic crosstalk issues in their advanced SOC designs.

Helic products are particularly suited for the intricacies that come with designing integrated circuits for Wireless Communications, Internet of Things (IoT), Computing, Automotive, and high-speed Networking. With Helic, engineers can design devices in all advanced nodes, optimize the die size, and capture with precision electromagnetic and parasitic effects from DC up to 110 GHz.

4. **Who is Helic used by?**

Helic has a good set of tier-1 semiconductor companies -- including leaders in the HPC, 5G, mobile and AI markets, and a broad set of smaller companies focused on high speed and RF applications. Helic's product focus and technical differentiation have built a good base of customers that the ANSYS sales channel will be able to expand upon.

5. **Why is this acquisition important?**

ANSYS believes the need for simulation-based on-chip electromagnetic analysis will become significant over the next 5 years. This acquisition brings a market pioneer into the ANSYS family, and is a direct adjacency to the ANSYS electronics and semiconductor businesses we have in place. With Helic, we have both the products and talented engineering team to address the market needs driven by 5G, AI and cloud.

6. **Where is Helic based?**

Helic is headquartered in the United States, with R&D based in Athens Greece.

7. **How many people does Helic employ?**

Helic employs over 50+ people worldwide.

8. **What are Helic's key products?**

The Helic product family includes: VeloceRF, an inductive device compiler and modeling tool which provides DRC clean devices for as low as 10 nm geometries; RaptorX, a pre-LVS electromagnetic modeling tool with unprecedented capacity to handle simulation for highly complex circuits; and Exalto, a post-LVS RLCK extraction tool that captures unknown crosstalk including electrical, magnetic and substrate coupling. Pharos is the new product announced in 2018 enables IC designers to quickly and accurately uncover nets that are susceptible to EM and substrate crosstalk in their designs.

9. **How will this acquisition affect ANSYS and Helic customers?**

This acquisition will bring significant benefits to both ANSYS and Helic customers. ANSYS customers will benefit from easy access to on-chip electromagnetics solvers, integrated with the flagship ANSYS electronics (in particular HFSS) and semiconductor tools. Helic customers will benefit from inclusion in the ANSYS platform for multi-physics and chip-package-system.

10. **How does Helic fit into the overall structure at ANSYS?**

Helic R&D and AE will join the Semiconductor Business Unit. The Helic team will report to Yorgos Koutsoyannopoulos, and Yorgos will report to John Lee. Sales will integrate into the ANSYS sales channel, consistent with how electronics and semiconductor products are sold today.