# New SoC Security Platform Announced by CAST and Beyond Semiconductor

The GEON™ Security Platform provides an efficient IP solution for SoC protection challenges with a suite of interoperating security modules

EMBEDDED WORLD — Nuremberg, Germany — February 25, 2019 — Semiconductor intellectual property (IP) provider CAST, Inc. and lead development partner Beyond Semiconductor today announced a new IP platform that helps design teams build System on Chip (SoC) designs that are secure from threats of all sorts.

The GEON Security Platform is a suite of essential security modules that work together to provide a highly-efficient SoC protection solution. The initial GEON modules are:

- **GEON Secure Boot** provides a hardware root of trust and ensures that only authentic, vendor-issued software is allowed to run on a device.

- **GEON Firmware Encryption** protects the confidentiality and integrity of firmware or of software and related data.

- **GEON Secure Debug** provides public key infrastructure (PKI) authentication of a debug user and the device, enabling secure JTAG access and secure post-production failure mode analysis (FMA), which is especially important in automotive applications.

- **GEON HSM** implements a hardware security module on a chip, enabling cryptographic operations while protecting (not exposing) secret key material.
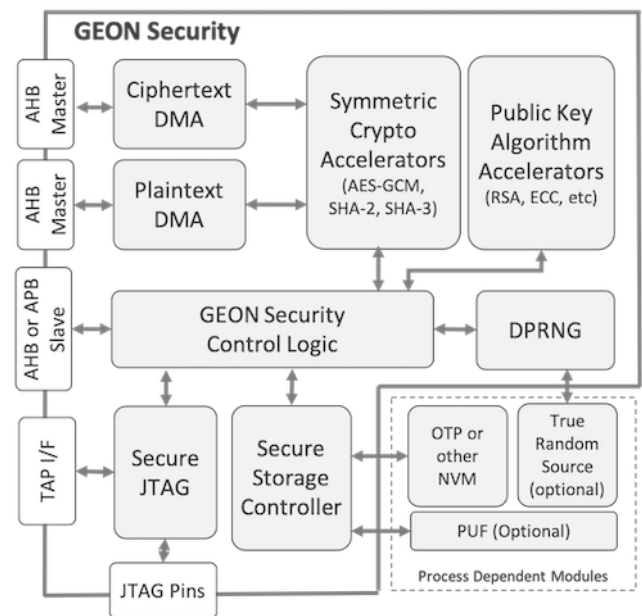
These modules work together and share resources to reduce the chip area and overhead required for complete SoC security. For example, if multiple modules need AES-GCM encryption, the GEON Platform implements and shares a single AES-GCM function to save area in the security block.

Design teams can use the GEON Security Platform with any CPU core, including ARM®, MIPS™, RISC-V, and the BA2x™ cores from Beyond. All of the security functions are based on Beyond's established cryptographic cores—including AES-GCM, SHA-3, RSA, and ECC—each of which is also available as a standalone core.

Answering the Increasing Need for SoC Security

Building Systems on Chips that are secure has become the number one priority for many design teams. The complexity of designing in SoC security and handling the diverse types of systems and applications with their different security requirements makes this task today's gating item in chip time-to-market planning.

Beyond has developed GEON to ease this burden through a flexible yet comprehensive and interoperating IP platform. This platform and the individual modules have already been production proven through successful incorporation in multiple customer systems by Beyond.

Customers using Beyond's design services have been facing increasingly complex security requirements in their new SoCs. In dealing with these challenges, customers have a real need for outside expertise to help them along. Utilizing proven third-party IP to simplify built-in security is a great start in that direction, especially when provided by companies like CAST and Beyond with long reputations for superb customer support.

"Our goal is reasonable, yet highly effective security," noted Matjaz Breskvar, CEO of Beyond. "It is important to keep in mind that the implementation of security functionality often comes with significant impacts on chip area and project schedules. The configurability of GEON security modules enables right-sizing protection mechanisms in accordance with a realistic threat model."

Nikos Zervas, CEO of CAST, points out that a key factor in the market is having reusable IP for security. "Design teams very often reinvent the security functions for each new chip. Having a set of modules that are reusable across all designs saves our customers major amounts of time and money," Zervas said.

Learn More About the GEON Security Platform

The GEON Security Platform is expected to ship in the second quarter of this year. More production-proven modules that implement additional, complementary security functions will be added to the Platform soon thereafter.

Visit the GEON Security Platform web page to learn more, or stop by CAST's stand at Embedded World (Feb. 26–28 in Nuremberg, stand 4-101) to discuss your security needs and find out the latest from the partners. Not going to Embedded World? Give CAST a call at +1 202.391.8300 or email info@cast-inc.com.

Learn more about Beyond Semiconductor at www.beyondsemi.com and CAST at www.cast-inc.com.

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