

NSITEXE product brand “Akaria”, expand product portfolio

Full lineup processors for Edge-AI application including Autonomous Driving

NSITEXE, Inc. (Head Office: Minato-ku, Tokyo; CEO: Yukihide Niimi; hereinafter “NSITEXE”) is pleased to announce the release of “Akaria”, a new product brand for next-generation embedded systems. Akaria provides processor IPs with optimal configurations for each customer domain and application, and also software and solutions that utilize the processor IPs. Akaria makes a wide range of contributions to the embedded systems.

Efficient execution of AI and other computing on edge devices, which are subject to severe heat and cost constraints, has become an important issue in embedded systems to realize a mobility society that connects people with cars, smart cities that connect people with cities and CPS (Cyber Physical System) that more closely links virtual spaces with the real world.

NSITEXE addresses this challenge with:
Flexible Processing; Power Efficiency; Real-time Computing; and, Functional Safety.

By further enhancing these four strengths, NSITEXE provides processors supporting a wide range of embedded systems, and Domain Specific Accelerators that are optimized for each application by combining RISC-V-based Standard Processors with Extension Units.

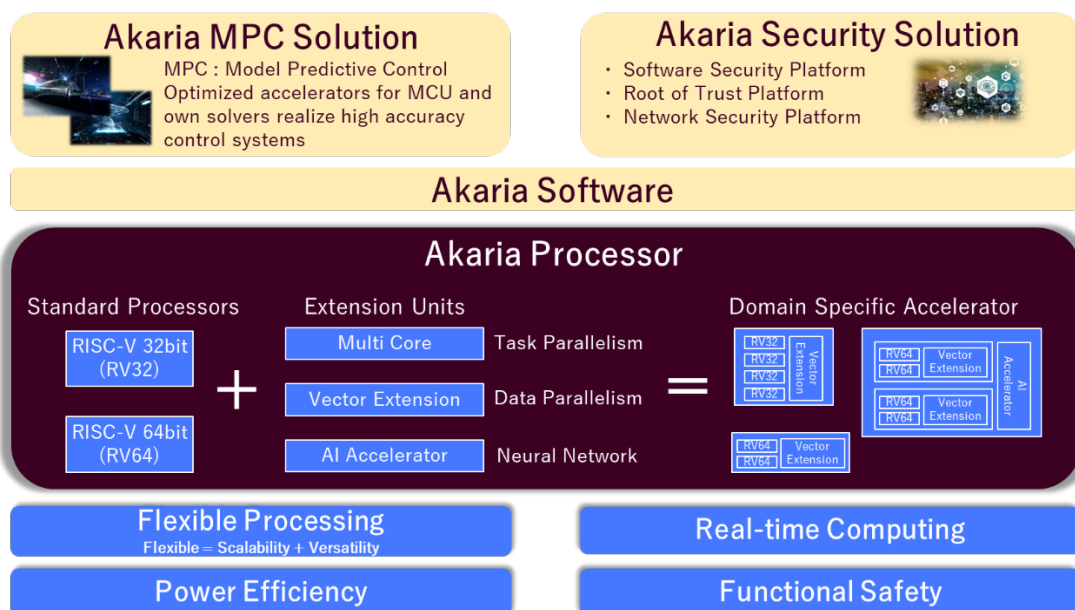


Figure 1 Akaria Overview

NSITEXE deploy the products including these processor IPs under the Akaria brand name. Akaria was named based on the concept that "we want to be a light source that opens up a new era of the embedded systems." The shape of the logo represents the "light source" and its color expresses the passion of NSITEXE to bring the new products into the world, in the highest temperature blue.



Figure 2 Akaria logo

Akaria processors are available in the NS family of Standard Processors and the DR family of Domain Specific Accelerators.

The NS family includes the compact, low-power NS1 series, the 32 bits general-purpose NS3 series, and the 64 bits application NS7 series. We are also considering the 32 bits high-end NS5 series and the 64 bits high-end NS9 series.

Along with increasing its product lineup of the DR 1000 series for microcontrollers, the DR 4000 series for high-end applications such as autonomous driving, and the ML series specifically used for neural networks, NSITEXE will also provide services to build custom IP under DR family.

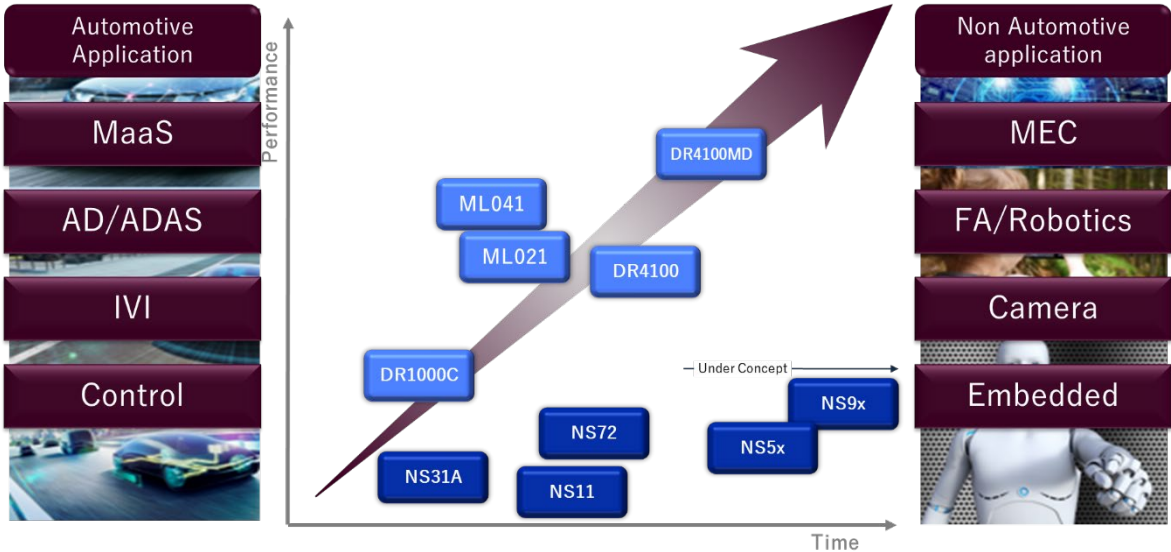


Figure 3 Akaria roadmap

The DR family provides scalable solutions optimized for each application including the next generation of complex AI application by combining versatile MIMD-based accelerators with dedicated AI accelerators (Figure 4). The MIMD-based accelerators leverage task-level parallelism with multi-core Standard Processors and data-level parallelism with Vector Extension that comply with RISC-V Vector Extension version 1.0. The AI accelerators named ML series realize the industry's most power-efficient neural networks.

The combination achieves overall optimization for each layer of advanced AI network by conducting two-dimensional convolution and pooling through ML

series, and processing complex user-specific layers through the MIMD-based processor (Figure 5)

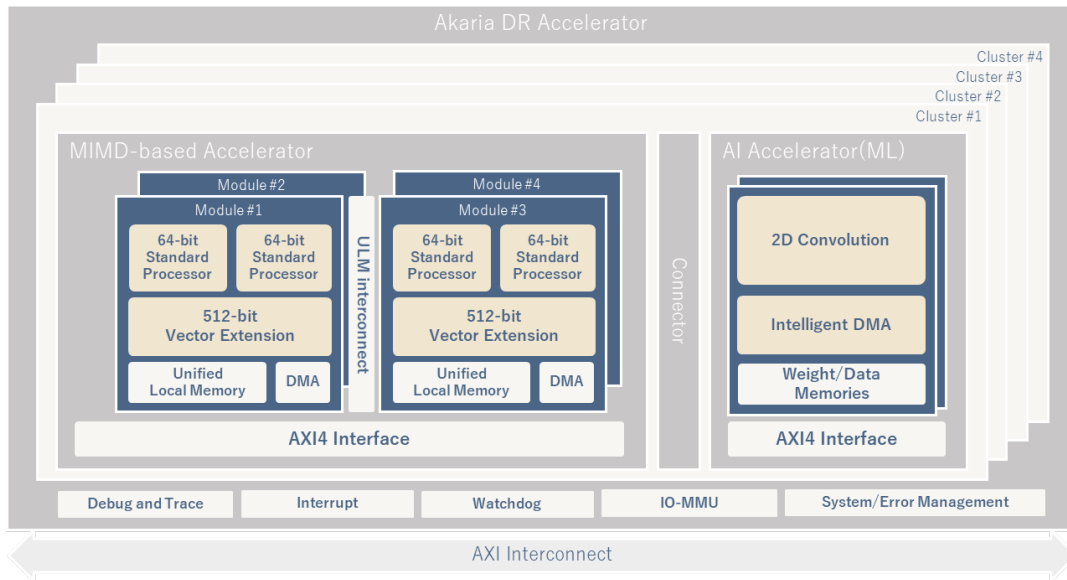


Figure 4 DR Family

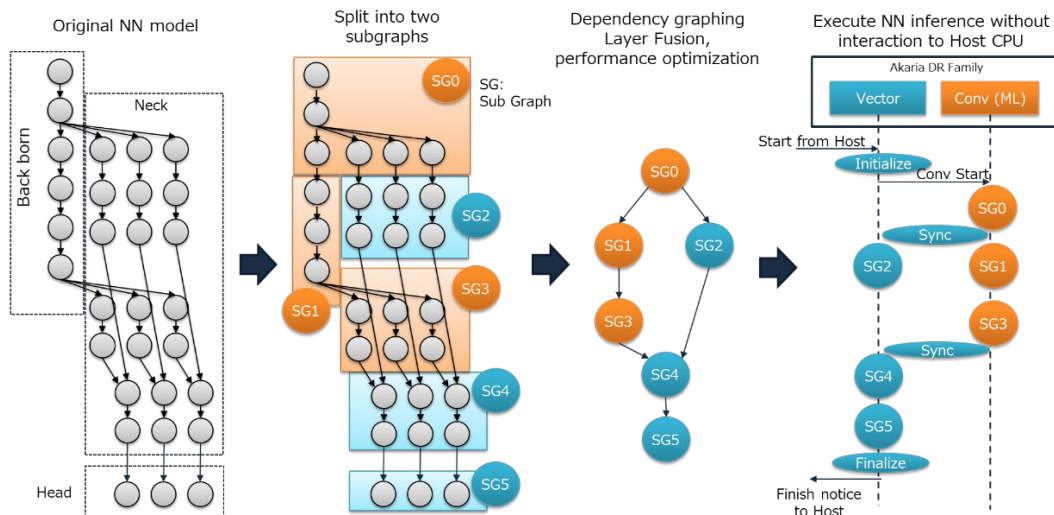


Figure 5 Neural Network execution by DR Family

Hideki Sugimoto, CTO, NSITEXE, Inc.

NSITEXE has been developing products based on the four strengths mentioned above. We continue to develop not only individual processor IPs but also their combinations, software, and solutions. We create and grow Akaria brand to offer value to customers. We provide the most advanced computing services to the customers working for embedded systems and, development infrastructures essential for a smart society including clean energy.

Based on Akaria's innovative processor technology, NSITEXE hopes to contribute to innovations in the area of mobility, smart cities and CPS that enrich people's lives.

About NSITEXE

NSITEXE is an IP vendor that develops advanced processors, including RISC-V based processor IP for functional safety and, was established in 2017 as a spin-off from DENSO Corporation. High-efficiency, high-quality semiconductor IP addresses a wide range of applications and contributes to the evolution of next-generation semiconductor technology.

If you have any questions about this press release, please contact:

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