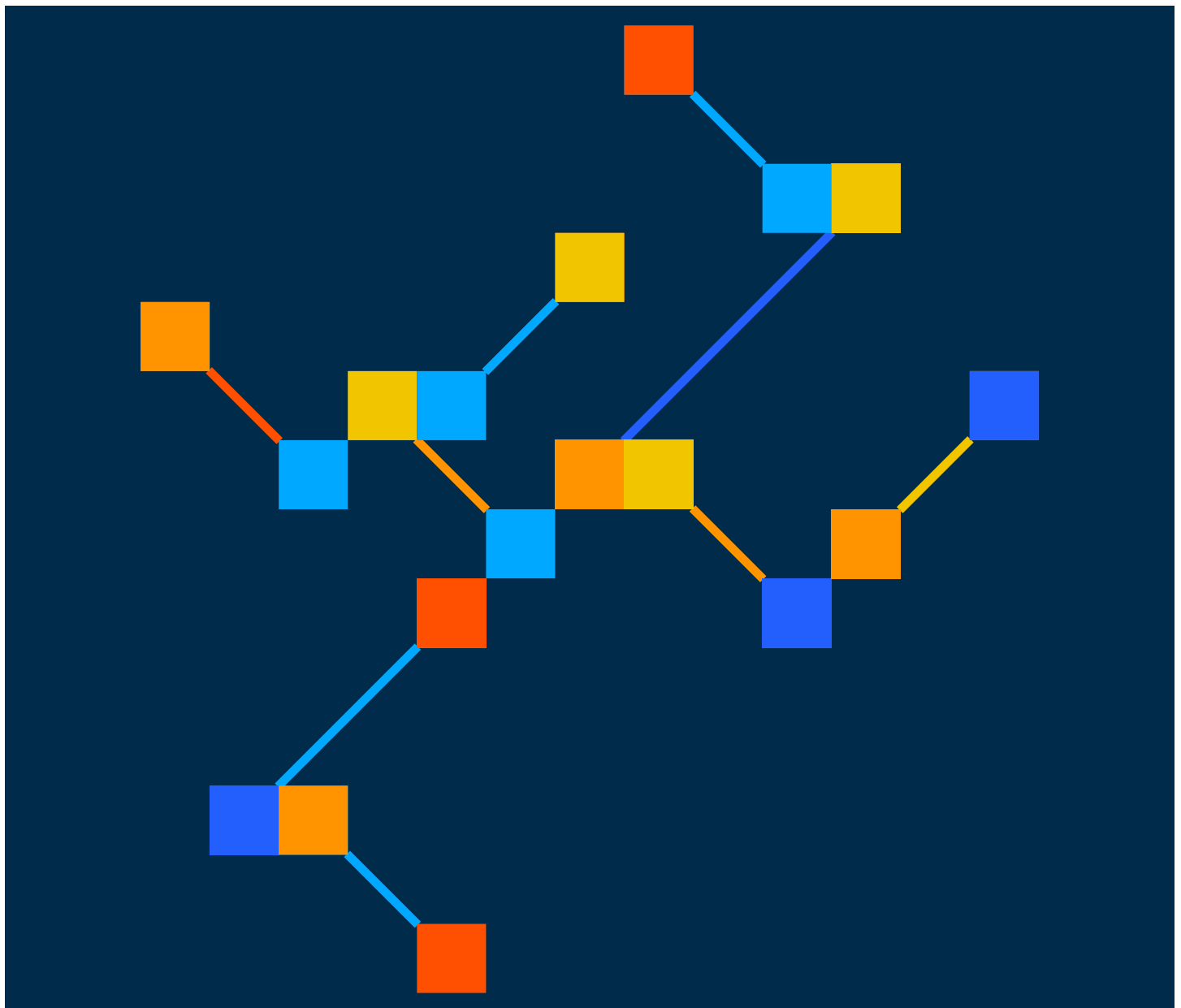# Connecting What's Next In Electronic Systems

Accelerating semiconductor creation with proven flexibility and ease with Arteris.

Introduction

Arteris specializes in advanced semiconductor system IP, specifically on-chip and on-chiplet communications and integration technologies for complex semiconductor designs. Our proprietary solutions include network-on-chip (NoC) interconnect IP and SoC integration automation software, enabling efficient, scalable, and cost-effective chip or chiplet designs.

Arteris' silicon-proven network-on-chip (NoC) interconnect IP streamlines communication between various on-chip components such as processors, memory, AI/ML accelerators, and I/O systems. By enhancing performance, efficiency, and scalability, Arteris' technology accelerates the development of sophisticated chips while reducing costs.

Arteris' SoC integration automation software delivers cutting-edge tools that enable packaging, reuse, and integration of diverse IP blocks using the IP-XACT (IEEE 1685) standard. This software suite provides semiconductor and system companies with a streamlined design environment—from early architecture stages to a fully documented and traceable chip design.

Highlights

- Network-on-Chip IP Technology: Removes bottlenecks in data transfer for faster and more reliable performance within semiconductors.

- SoC Automation Tools: Software automates and expedites the integration of IP blocks in hardware-software systems.

- Global Partnerships: Collaborating across the semiconductor ecosystem, including leaders in processor architecture (Arm, Intel, and RISC-V), EDA (Synopsys and Cadence), and foundries (TSMC, Samsung, Intel Foundry Services and others) to ensure seamless integration with next-gen chip architectures.

Addressing Complexity in Modern Semiconductors

Today's semiconductors are more complex than ever, integrating multiple processors, AI/machine learning units, and memory channels. Traditional on-chip communication methods are no longer sufficient to support such advancements. The global demand for sophisticated system IP is accelerating due to trends like smaller die sizes, multi-die systems, increased operational frequencies, and the need to manage latency. Arteris' solutions transcend complexity and address the needs of the market by enabling efficient data movement, reducing chip size, and optimizing power consumption.

Advanced system IP from Arteris is vital across industries, including automotive, enterprise computing, communications, consumer electronics, and industrial. The automotive sector is undergoing significant transformation with automated driving, electrification, and connectivity advancements. The emergence of the "software-defined car" highlights the need for high-performance interconnect IP to meet stringent safety, latency, and power requirements. Similarly, applications in enterprise computing, communications, consumer electronics and industrial demand advanced interconnect solutions to address bandwidth, efficiency, and scalability challenges.

Arteris leads these sectors by providing proven, configurable NoC IP and integration software that reduces time-to-market and production costs.

| Automotive | Communications | Consumer Electronics | Enterprise Computing | Industrial |
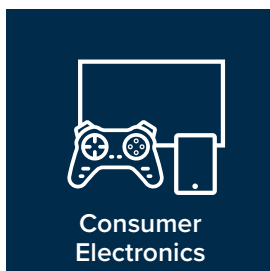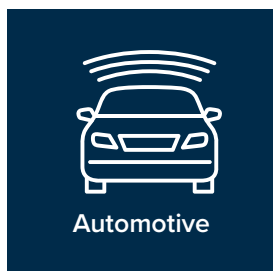
Artificial Intelligence / Machine Learning   **Functional Safety and Reliability**   **Hardware / Software**

Pioneering On-Chip Communication Was Just The Start

Arteris was founded in 2004 and has been at the forefront of commercially available NoC IP technology, addressing the growing demands of modern semiconductors. Arteris expanded its capabilities through two strategic acquisitions, including Magillem in 2020 and Semifore in 2022, which enhanced the SoC integration automation software solutions. These software tools automate design workflows, from configuring NoC IPs to assembling and integrating all IP blocks, ensuring seamless hardware and software coordination.

Today, Arteris' products integrate seamlessly with industry-standard architectures (Arm, RISC-V and x86 based chips and chiplets) and subsystems like memory controllers, UCIe, and BoW interfaces. The products offered by Arteris are uniquely configurable, empowering customers with the freedom to innovate, while simultaneously improving design efficiency and performance.

Catalyst of Innovation For The World's Most Transformative Brands

Arteris technology has been used in over 860+ designs resulting in 3.75+ billion units shipped worldwide. With over 100 patents, Arteris' innovative technologies address critical challenges like power efficiency, die area optimization, reduced latency, and ease of integration. Traditional approaches struggle to meet these demands. By leveraging advanced NoC IP and SoC integration automation tools from Arteris customers gain:

- Tailored Integration: Configurable IP customized for diverse design flows and applications.
- Improved Power and Performance: Optimized for silicon area, power consumption, and routing efficiency.
- Streamlined Processes: Automation to simplify hardware-software integration and enhance system verification.

Emerging trends, including system disaggregation, multi-die systems, and heterogeneous integration, present future growth opportunities for Arteris. With an expanded focus on safety certification, AI/ML optimization, and expert compatibility with manufacturing technologies (e.g., TSMC, Samsung, Intel) Arteris is positioned to lead in emerging markets demanding innovation and performance.

Arteris technology enables leading brands to meet the challenges of AI-enabled everywhere plus time to market pressure. Arteris system IP has become a critical enabler of semiconductor innovation.

Product Portfolio Summary

Arteris technology ensures higher product performance with lower power consumption and faster time to market, delivering better SoC economics for its global customer base, including semiconductor manufacturers, OEMs, hyperscale system houses, semiconductor design houses, and other producers of electronic systems.

Arteris regularly releases new products to address the rapid evolution of SoC and chiplet technology, across our two core product platforms:

Network-on-Chip IP Products

- Non-coherent NoC IP with FlexGen™, FlexNoC® and FlexWay™
- Cache-coherent NoC IP with Ncore™
- Last-level cache with CodaCache®
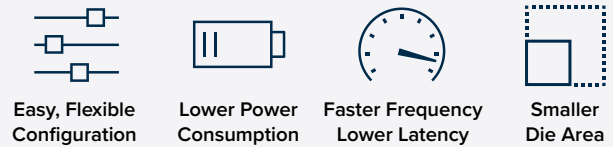
SoC Integration Automation Software Products

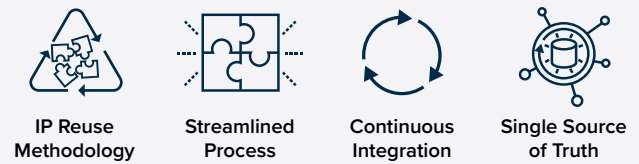- IP and SoC software with Magillem® Registers, CSCompiler and Magillem® Connectivity
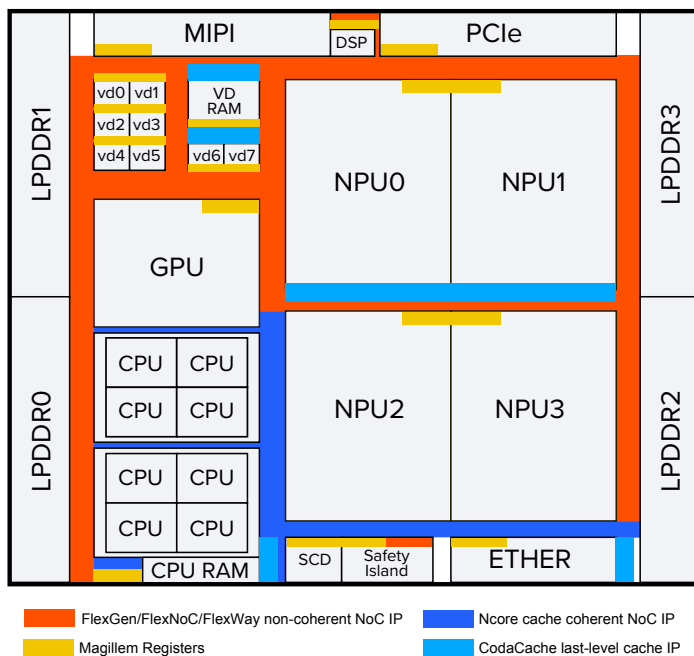
Arteris content in an SoC:
- NoC IPs: 10-13% of Silicon,5-20+ NoCs
- Registers: 3-20% of Silicon

Network-on-Chip (NoC) IP Advantages

| Easy, Flexible Configuration | Lower Power Consumption | Faster Frequency Lower Latency | Smaller Die Area |

SoC Integration Automation Advantages

| IP Reuse Methodology | Streamlined Process | Continuous Integration | Single Source of Truth |

Product Portfolio Explained

Network-on-Chip (NoC) IP Products

At the forefront of innovation, Arteris offers an industry-leading suite of commercially available interconnect IP solutions, adopted in billions of devices worldwide.

FlexGen, FlexNoC and FlexWay – Non-Coherent NoC IP

Silicon-proven and used in hundreds of chip designs, the FlexGen, FlexNoC and FlexWay revolutionize on-chip communication by transforming read/write signals into digital packets. This packetized approach optimizes performance and simplifies the connection between on-chip IP blocks, much like the internet facilitates seamless connectivity for countless devices.

- FlexGen automates the generation of the NoC, dramatically improving productivity while simultaneously delivering expert-level results without the expert.
- FlexNoC serves mainstream applications, delivering scalable performance for complex, high-demand systems.
- FlexWay is tailored for simpler, more streamlined SoCs.

To enhance functionality, Arteris offers a range of optional add-ons:

- Resilience Package for on-chip data protection, ensuring compliance with ISO 26262 and IEC standards for safety-critical markets like automotive.

- Large Design Performance Package designed for scalable, peer-to-peer, on-chip communication in large systems, including machine learning neural networks.

Shipping since 2011, FlexNoC and FlexWay have been adopted into billions of production-grade SoCs, cementing their place as trusted industry solutions. FlexGen launched in February 2025.

Ncore – Cache Coherent NoC IP

Ncore delivers an advanced, silicon-proven, cache coherent interconnect designed for exceptional scalability and efficiency across diverse markets. High-performance multiprocessor systems rely on cache coherency to manage shared memory effectively, and Ncore ensures data consistency across processors by propagating changes efficiently.

Featuring a modular and distributed architecture with configurable snoop filters and proxy caches, Ncore offers unparalleled flexibility to system architects. Its optimized design enables superior performance compared to traditional mesh-based interconnects, especially in heterogeneous cache-coherent systems.

Launched in 2016, Ncore has driven sustainable innovation across industries such as automotive, consumer electronics, industrial, and communications. With ISO 26262 ASIL D automotive safety certification achieved in 2023, Ncore has solidified its role as a premier interconnect IP solution for safety-critical applications.

CodaCache Last-level Cache

CodaCache elevates system performance and reduces latency with a dedicated, silicon-proven, last-level cache IP. By minimizing frequent DRAM access, CodaCache ensures efficient data retrieval and higher overall system efficiency. Fully configurable to meet specific area, timing, and system requirements, CodaCache supports features such as adjustable associativity of up to 16 ways and multiple target ports. This flexibility and customization make it an industry-leading solution for optimizing performance across a wide array of system-on-chip (SoC) architectures.

SoC Integration Automation Software Products

Arteris' SoC integration automation software products optimize the development of complex system-on-chip (SoC) devices by managing the assembly of multiple IP blocks, automating register configurations, and connecting critical design parameters with documentation. Designed to shorten design schedules and increase productivity, Arteris products empower architects, logic designers, software developers, verification teams, and documentation teams to work more efficiently and cohesively.

Magillem and CSRCompiler products, have been certified with "Tool Confidence Level" (TCL) by TÜV SÜD for use in automotive, aerospace, and industrial mission-critical markets.

Magillem Connectivity

Magillem Connectivity streamlines the integration and management of complex IP blocks within system-on-chip (SoC) designs by providing a robust platform for automated interconnect generation and verification. This innovative solution supports seamless implementation of standardized interfaces, ensures compliance with industry protocols, and automates error-prone tasks such as configuration management and data consistency checks. By reducing manual effort and minimizing the risk of design flaws, Magillem Connectivity enables engineering teams to focus on innovation while maintaining a high level of precision and reliability in their workflows.

Magillem Registers

This software tool provides a comprehensive solution for managing and automating the creation of control and status register (CSR) designs. By leveraging advanced algorithms and a high-level abstraction approach, this tool significantly reduces the complexity involved in register definition and integration. It ensures compliance with industry standards while maintaining data accuracy and consistency across the workflow. Magillem Registers supports the generation of multiple output formats, enabling seamless compatibility with downstream tools and processes. This innovative approach streamlines the register design process, improving productivity and reducing errors in system-on-chip (SoC) and chiplet development.

Integrated and Scalable Solutions for Maximum Efficiency

Combining Arteris SoC integration automation software suite with Arteris' industry-leading NoC IP offers enhanced integration capabilities. This synergy accelerates design, ensuring speed and scalability while addressing key needs such as connectivity, register configuration, embedded software, and seamless design workflows.

Domain Expertise Fuels Success

The mission of Arteris is to deliver silicon-proven system IP and expert support. With a retention rate of over 90%, Arteris is known for its commitment to customer success through deep domain expertise to support the engineering teams building the chips of the future. This rich, industry expertise spans wide and deep across the company.

Charlie Janac	Laurent Moll	Michal Siwinski
Chairman President & CEO	Chief Operating Officer	Chief Marketing Officer
Nick Hawkins	Paul Alpern	Ken Way
Chief Financial Officer	Vice President General Counsel	EVP Global Sales

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ARTERIS **IP**